

The Impact of Anticipating Satisfaction on Consumer Choice

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How do preferences change when consumers focus on the anticipated satisfaction with a purchase rather than choice? In a series of three studies, we show that preferences, both expressed and revealed, change depending on the degree to which anticipated satisfaction is evoked. These shifts in preferences arise because, compared to choice, anticipated satisfaction elicits a mental-imaging processing strategy that is both more effort intensive and qualitatively different. By providing direct evidence from thought protocols and by presenting evidence suggesting that these shifts in preferences vanish when mental imagery is discouraged or made more difficult, we show that the effect arises out of a processing strategy that requires effortful mental imagery of one or more of the options in the decision-making task. Finally, we demonstrate the uniqueness of the effect by showing that it cannot be generated with heightened processing or by an orientation that is directed toward the extent to which the options are liked.

During shopping, consumers often arrive at their final choices with quite different decision goals in mind. For example, the consumer's goal could be *choice oriented*, that is, deciding on which alternative to buy from a set of alternatives, whether or not to buy an item, or whether to buy an item now or later. Alternatively, the goal could be *value oriented*, that is, evaluating each alternative separately on different value-related criteria such as, "How much am I willing to pay for this item?" or "Is this a good deal?" and then choosing the one that is valued most favorably. Research suggests that the type of goal the consumer uses can have a considerable effect on preferences. For example, findings in the literature suggest that preferences flowing from a choice orientation are likely to be different than those arising from a value orientation (Carmon and Simonson 1998; Coupey, Irwin, and Payne 1998; Fischer and Hawkins 1993; Fischer et al. 1999; Schkade and Johnson 1989; Tversky, Sattah, and Slovic 1988). Such preference shifts are not limited to value versus choice orientations. Researchers have also shown shifts in preferences between

orientations that focus on choice and those that focus on *purchase likelihood* (Nowlis and Simonson 1997) or on *attitudes toward the brand* (e.g., "Do I like item X?"; Shiv, Edell, and Payne 1997).

The purpose of this article is to explore the effects on the construction of preferences of yet another decision goal shoppers might have, an orientation to *anticipated satisfaction*, where consumers assess the likely satisfaction with each item before making the final choice. More specifically, this article has two primary objectives. First, we identify preference shifts that are likely to arise from an *anticipated-satisfaction-oriented* goal compared to a *choice-oriented* goal. Second, we provide evidence that these shifts arise from differences in processing strategies engendered by the two orientations. That is, just as other researchers have shown that a choice orientation leads to strategies that focus on prominent attributes (Coupey et al. 1998; Tversky et al. 1988) or on easy-to-compare attributes (Nowlis and Simonson 1997), our objective is to show that yet another mechanism contributes to preference shifts in the presence of anticipated-satisfaction goals, one that involves effort-intensive mental imagery.

We propose that when anticipating satisfaction, the consumer forms mental images related to one or more of the options, and the final decision is likely to be based on the focus of these imagery-related processes. The work by McGill and Anand (1989a) suggests that, whenever consumers engage in mental imagery, vivid attributes, that is, attributes that are easy to visualize and construct imagined experiences from, attract more of the attentional resources allocated to the task. This increased attention to a piece of

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information often results in a disproportionate weighting of the information when preferences are constructed (e.g., Hawkins 1994; MacKenzie 1986; McGill and Anand 1989a). Hence, we propose that, since consumers are likely to engage in mental imagery when anticipating satisfaction, (1) alternatives with vivid attributes are more likely to attract attention, (2) their vivid attributes are likely to be weighted more heavily, and (3) thereby generate greater preferences for alternatives with vivid attributes than when the goal is choice oriented.

Consider, for example, a consumer who is deciding between two new cars, one of which has leather trim and a sunroof, while the other has a lower price. We propose that when a consumer approaches this decision with an anticipated-satisfaction-oriented goal, s/he is likely to engage in imagery-related processes. Assuming that leather trim and sunroof are more vivid than price, more attentional resources are likely to be allocated to the vivid attributes during such processes when preferences are constructed with an anticipated-satisfaction goal rather than with a choice goal. As a result, in the presence of an anticipated-satisfaction goal, the attributes leather trim and sunroof are likely to have a bigger impact on the construction of preferences compared to price, and the consumer is more likely to choose the car with these vivid attributes.

The process we propose is not new. Conceptually, anticipating satisfaction is tightly related to MacInnis and Price's (1987) notion of preconsumption mental imagery, where the consumer vicariously experiences the satisfaction of consuming a product prior to actual consumption. It also shares kinship with the consumption visions offered by Phillips (1996), Phillips, Olson, and Baumgartner (1995), and Walker and Olson (1997), where the consumer forms a "visual image of certain product-related behaviors and their consequences" that enables the consumer "to vicariously experience the self-relevant consequences of product use" (Walker and Olson 1997, pp. 159, 161). Further, anticipating satisfaction is related to the imagery heuristic proposed by Anand-Keller and McGill (1994) and McGill and Anand (1989a), where the consumer makes a decision by "imagining the actual experience with an alternative and assessing the desirability of the alternative according to the affective response to this imagined experience" (Anand-Keller and McGill 1994, p. 29). Finally, the nature of processing shares affinities with the role of narratives in consumer decision making, where consumers "try to imagine the sequence of events that surround the purchase and use of a product in various situations and the consequences of this use" (Adaval and Wyer 1998, p. 208).

All of these accounts share with ours a focus on the imagined experience with the good or service. We add to their contributions by (1) identifying an antecedent, anticipated-satisfaction goal, to such imagery-related processes, and (2) carefully defining the uniqueness of the effects of this antecedent factor and defining its boundaries. In terms of uniqueness, we show that preference reversals cannot be generated by apparently similar tasks and that the

effects found cannot be accounted for by other frameworks. In terms of boundaries, we show that the reversals do not occur when effortful mental imagery is inhibited, thus demonstrating the critical role of active mental processing.

Before exploring the impact of anticipating satisfaction, it is important to assess the degree to which it occurs in the marketplace. We conducted a preliminary study examining goal orientations as expressed by questions that consumers ask themselves during shopping. Nineteen respondents from an undergraduate marketing class maintained diaries of the questions that they asked themselves during one visit to a supermarket discount store and one visit to a grocery store. Two independent judges then placed these questions into four categories: (1) *choice related* (e.g., "Which item do I pick?" "Do I buy item X or not?" "Do I buy item X now or later?"), (2) *value related* (e.g., "Is this a good deal?" "Can I afford it?"), (3) *anticipated satisfaction related* (e.g., "Will I be satisfied with this purchase?" "Will I be happy if I decided on item X?"), and (4) other questions, most of which were related to product attributes (e.g., "What's the fat content?" "How long is the warranty?"). The table below presents the percentage of different types of questions that emerged:

	<i>Mass merchandise</i>		<i>Grocery</i>	<i>Overall</i>
	<i>store</i>	<i>store</i>		
Choice-related (%)	32.1	42.4		37.8
Value-related (%)	30.2	33.3		31.9
Anticipated-satisfaction (%)	27.3	9.8		17.6
Others (%)	10.4	14.5		12.7

The data show that, while anticipated-satisfaction questions, and therefore anticipated-satisfaction-oriented goals, may not occur as often as choice- or value-oriented goals, they do occur with substantial frequency, particularly for purchases within mass merchandisers. Also revealing are the kinds of products that evoked anticipated satisfaction. At the grocery store, such goal orientations occurred primarily for items associated with sensory experiences (wine, special desserts, and so on) and, in one case, a piece of outdoor furniture. At the mass merchandise outlets, they occurred primarily for items that are purchased infrequently, such as videocassettes, shoes, clothes, and lamps. In other words, anticipated-satisfaction goals seem to arise primarily in contexts involving more extensive problem-solving behaviors, where the frequency of prior purchases is relatively low, and for items involving sensory experiences.

Previewing briefly, we will present three experiments that explore the differential impact of anticipating satisfaction on choice, and demonstrate the contexts in which this decision strategy is likely to be evoked. The experiments enable us to make the following claims. First, anticipating satisfaction causes consumers to construct their preferences by using a processing strategy that requires mental imagery of one or more of the options. This proposition was first articulated by Tversky and Griffin (1991), but, to the best of our knowledge, the proposition has never been subject

to rigorous empirical testing. Second, the impact of anticipating satisfaction on preferences tends to get nullified either by explicit instructions to use a reasons-based processing strategy or by constraining the processing resources needed to engage in mental imagery. Finally, the strategy involving preconsumption mental imagery is distinct from that evoked by simple elaboration or by judgments of how much the options are liked. Throughout, we attempt to rule out alternative accounts, and in experiment 3, we collect process measures to further increase our certainty that the processing strategy associated with anticipating satisfaction is tightly bound to the generation of mental imagery.

CONCEPTUAL BACKGROUND

In the sections that follow, we first present evidence from the literature suggesting that the nature of the decision goal activated by the preference-elicitation task affects the processing strategy to cause shifts in preferences. We also present the underlying psychological mechanisms that have been proposed in the literature for these shifts in preferences. We then focus on anticipated satisfaction, highlighting the processing strategy associated with such goals, and the contexts in which preference shifts are likely to occur when such goals exist.

Influence of Decision Goals on the Construction of Preferences

A growing body of research demonstrates that preferences are contingent on decision goals activated by the preference-elicitation task or response mode. Early work in this topic area focused on contrasting preferences arising from a choice-oriented goal, activated by a direct choice question, with those arising from a value-oriented goal, activated by a matching task. While in the choice task subjects indicate which option they would choose, in the matching task they indicate how much more one alternative would have to cost to make the available options equal in attractiveness (Carmon and Simonson 1998; Fischer and Hawkins 1993; Goldstein and Einhorn 1987; Schkade and Johnson 1989; Tversky et al. 1988). The general finding in this literature is that preferences often change when these two different goal orientations are brought to bear in the decision by the elicitation task, that is, if alternative A is preferred to alternative B with a choice-oriented goal, the opposite is the case with a value-oriented goal. More recent work has shown that other elicitation methods can also produce different preferences compared to choice. These elicitation methods include non-monetary matching judgments (e.g., Coupey et al. 1998), attractiveness judgments (Fischer and Hawkins 1993), purchase-likelihood judgments (Nowlis and Simonson 1997), and attitude judgments (Shiv et al. 1997).

One of the most common explanations for why preferences change, and the framework we will use in our article, is the *compatibility principle* (see, e.g., Coupey et al. 1998; Nowlis and Simonson 1997; Slovic, Griffin, and Tversky 1990; Tversky et al. 1988). In its general form, this principle

states that the preference shifts arise from a correspondence between a specific stimulus attribute and the type of question asked, which results in an enhanced weighting of the attribute (see, e.g., Tversky et al. 1988). This principle has been widely used by researchers to explain shifts in preferences that arise when different decision goals are employed by decision makers. For example, Tversky et al. (1988) argue that preference shifts between choice and willingness-to-pay judgments (i.e., value-related judgments) arise due to attribute prominence (i.e., importance) being more compatible with the former than with the latter. Terming this phenomenon the *prominence effect*, Tversky et al. (1988) propose that, as a consequence of their compatibility, alternatives with prominent attributes tend to be preferred more than those with less prominent attributes when the consumer approaches the choice task with a choice-related goal than with a value-related goal. In another impressive series of studies, Nowlis and Simonson (1997) show that the compatibility of the elicitation task with another stimulus property, the ease of comparison of attributes, can also give rise to the preference shifts. They show that preferences are likely to differ depending on whether the task involves direct comparisons between brands or separate assessments of the brands. For example, their findings suggest that easy-to-compare attributes get more weight in choice than in purchase-likelihood ratings for each of the options.

In an effort at examining the underlying psychological mechanism responsible for compatibility effects, Fischer and Hawkins (1993) show that these effects arise because different response tasks induce different types of processing strategies in which certain types of attributes are implicated more than others when constructing the response. For example, Fischer and Hawkins show that the prominence effect arises because choice tasks induce a lexicographic processing strategy in which prominent attributes are used to construct the response. Similarly, Nowlis and Simonson (1997) propose that preference reversals between choice and purchase-likelihood judgments arise because the processing strategy induced by the former favors attributes that are easy to compare across the alternatives, more so than other attributes. Further, as will be seen shortly, the mechanism that we propose for preference shifts between choice and anticipated satisfaction is also based on the work of Fischer and Hawkins (1993).

Anticipating Satisfaction and the Compatibility Principle

In line with the compatibility principle, we propose that preference shifts between an anticipated-satisfaction goal and a choice goal arise due to the compatibility between the vividness of attributes (i.e., the ease of constructing attribute-related images) and anticipating satisfaction. Consider the following scenario:

Imagine that you have just graduated and will be starting on your new job in a month. You have \$1,500 and are considering one of the two options given below:

A. Buy a notebook computer which you will use in your new job. Your job entails travel and portability of the notebook computer will come in very handy.

B. Go on a dream vacation. Here is a chance to indulge yourself before the “grind” of the new job begins.

You have been planning on both of these options for a long time and both are equally important to you. But you can choose only one.

Let's suppose that one group of decision makers simply chooses between the two options. Another group makes judgments of anticipated satisfaction, that is, members in the group rate how satisfied they are likely to be with each of the two alternatives before their choice. The question is, will the group asked to anticipate satisfaction make different choices?

To answer this question, 52 respondents were presented with the above scenario. One group of respondents chose immediately after reading the scenario. Another group rated their anticipated satisfaction with each of the two alternatives on three 1–7 scales anchored on dissatisfied/satisfied, unhappy/happy, and feel bad/feel good. They then made their choices. Two methods were used to compare preferences across the conditions. In one case, the choice data, that is, revealed preferences across the two conditions, were compared. In the second method, choices were first imputed from expressed preferences in the judgment condition and then compared to the revealed preferences in the choice condition (e.g., Montgomery et al. 1994; Nowlis and Simonson 1997).

To make predictions in accordance with our conceptualization, a separate group of 67 respondents rated the stimulus material on two seven-point, vividness-related items adapted from Anand-Keller and Block (1997) and McGill and Anand (1989b)—the degree to which the alternatives were easy to imagine and easy to picture. The results of this pretest suggested that the dream vacation was more vivid ($M = 6.37$) than the notebook computer ($M = 5.06$; $F(1, 66) = 45.84, p < .0001$). Thus, we predicted that the more vivid dream vacation will be chosen more in the anticipated-satisfaction condition.

The results were consistent with our key proposition. A comparison of the actual choices revealed that the percentage of respondents choosing the dream vacation was higher (65 percent) in the anticipated-satisfaction condition than in the choice condition (35 percent; $z = 2.11, p < .05$). Similar results were obtained with choices imputed in the anticipated-satisfaction condition (68 percent vs. 35 percent in the choice condition; $z = 2.35, p < .05$). These findings suggest that alternatives with vivid attributes are likely to be preferred more when the goal is anticipated-satisfaction oriented than when it is choice oriented.

Proposed Psychological Mechanism

The above finding, while intriguing, raises a number of questions as to the psychological processes that cause such

preference shifts. In line with the psychological mechanism proposed by Fischer and Hawkins (1993) to account for compatibility effects, we propose that the preference shifts arise because anticipating satisfaction induces processes that involve mental imagery of the various aspects of the stimulus. The critical issue then is defining the kinds of attributes that are likely to be the focus of mental imagery and hence likely to be weighted more heavily when anticipated-satisfaction judgments are used as the elicitation method. The work by McGill and Anand (1989a) suggests that when consumers engage in processes involving mental imagery, the focus of these processes is likely to be predominantly on vivid attributes such as “excellent view outside a house” or “sporty yet elegant styling of a car” presumably because vivid attributes are easier to construct images with. As a result of the enhanced attentional resources being allocated to imagining vivid attributes, such attributes tend to get greater weight than nonvivid attributes when preferences are constructed. These findings suggest that vivid attributes are likely to receive greater attention during the imagery-related processes that ensue in the presence of anticipated-satisfaction goals, which, in turn, is likely to cause such attributes to be weighted more heavily when preferences are constructed with an anticipated-satisfaction goal than with a choice goal.

The work of McGill and Anand (1989a, 1989b) also suggests that the opportunity to elaborate cognitively needs to be high for the vividness effects to occur, and that such effects disappear if consumers do not have the opportunity to allocate the processing resources that are required to construct mental images. What this suggests is that the preference shift that was observed in our pilot study is more likely to occur when processing resources are available than when they are not.

Alternative Psychological Mechanisms

While the preference shift that was obtained in our pilot study is consistent with our conceptualization, it is also consistent with two alternative explanations that we will attempt to rule out in our later experiments. One alternative psychological process that could account for the observed preference shift is the *hedonic-cue explanation*, whereby anticipated-satisfaction goals cause respondents to focus spontaneously on the hedonic nature of the alternatives. After all, a dream vacation is obviously more hedonic than a notebook computer (as borne out in our pretest), and a respondent who assesses how happy and satisfied s/he is likely to be with the options is more likely to focus on the happiness-related aspects of the options. Note that this alternative account is in line with the compatibility principle—alternatives with hedonic attributes are more likely to correspond with an anticipated-satisfaction task than a choice task, leading to a greater preference of such alternatives when the goal is anticipated-satisfaction oriented than when it is choice oriented. The key difference between this alternative account and our explanation is that the hedonic cue can operate without much cognitive work or im-

agery simply by noting that the dream vacation is the more hedonic of the two alternatives. By contrast, according to our explanation, the impact of anticipating satisfaction is expected to diminish with a limitation in processing opportunity.

Another alternative psychological process that could account for the observed preference shift is the *mere-elaboration explanation*. The work of Billings and Scherer (1988), Schkade and Johnson (1989), and Shiv et al. (1997) suggests that, in general, elicitation tasks such as choices evoke less extensive processing compared to judgments. Further, the work of Chaiken (e.g., Chaiken, Wood, and Eagly 1996), Kruglanski (e.g., Kruglanski and Webster 1996), and Higgins (1996) suggests that salience effects, where salient aspects of the stimulus receive a bigger weight in the construction of preferences, are more likely to occur when the processing is less rather than more extensive in nature. Note that in the pilot study, the attribute "portability" was explicitly mentioned in the stimulus and, hence, may have been more salient than attributes associated with the dream vacation (which were not explicitly mentioned). It is, therefore, quite possible that the observed preference shift arose not from mental imagery, but because respondents in the choice condition engaged in less extensive processes and so decided primarily on the salience of information provided in the stimulus (i.e., the information related to the portability of the computer). Respondents in the judgment condition, in contrast, engaged in more extensive decision-making processes, which resulted in an attenuation of salience effects and the reduced weighting of the salient attribute (portability) and the increased weighting of attributes related to the dream vacation. Note that one critical aspect of this mere-elaboration explanation, as with the hedonic-cue explanation, is that judgments of anticipated satisfaction do not engender processes that involve mental imagery. This is one key aspect that we will test in our experiments.

METHOD

Overview of the Experiments

We report the results of three experiments that examined the impact on expressed (i.e., choices imputed by converting anticipated-satisfaction ratings to ordinal data) as well as revealed preferences (i.e., actual choice) of anticipated-satisfaction goals, activated by judgments of how satisfied one will be after the selection. The primary purposes of the experiments were (1) to replicate the preference shift that was observed in our pilot study across different scenarios with different vivid versus nonvivid attributes, and (2) examine whether the preference shifts were due to mental imagery being associated to a greater degree with anticipating satisfaction than with choice. Another objective of the experiments was to rule out alternative explanations to our findings—the hedonic-cue explanation (i.e., the preference shifts occur because judgments of anticipated satisfaction cue hedonic attributes and cause such attributes to be weighted more heavily in judgments than in choice), and

the mere-elaboration explanation (i.e., the preference shifts occur because judgments are associated with more elaborate processes compared to choice, processes that are not associated with mental imagery). We attempted to rule out the hedonic-cue explanation in experiment 2, and the mere-elaboration explanation in experiment 3. In addition, we also collected thought protocols in experiment 3 to provide direct evidence of the nature of processing associated with anticipated-satisfaction goals.

In all experiments, undergraduate students fulfilling a course requirement were first presented with instructions on the cover page asking them to read a scenario and subsequently answer some questions. They were asked to go through the questionnaire sequentially without turning back to earlier sections. The scenario involved two alternatives arrayed horizontally on a page. After reviewing the scenario, the choice-oriented group turned to a "choice page" that asked them to select between the two options defined by their titles. The second group had an intervening page that asked for anticipated-satisfaction judgments for each alternative before the "choice page."¹ It is important to note how our procedure expands on previous work (e.g., Bazerman, Loewenstein, and White 1992; Tversky and Griffin 1991). In these studies, respondents did not make choices in the anticipated-satisfaction conditions, but choices were inferred by the researchers from the respondents' judgments. We believe that our procedure offers a harder test of preference shifts because having anticipated-satisfaction judgments precede choice is no guarantee that the latter will be consistent with the former. For example, it is quite possible that an individual who rates an alternative (e.g., a dream vacation) to be higher on anticipated satisfaction than another alternative (e.g., a notebook computer) will actually end up choosing the latter (i.e., the computer) rather than the former (i.e., the vacation). However, to be consistent with the previous literature, we also examined preference shifts by imputing choice in the anticipated-satisfaction conditions.

Experiment 1

The primary objective of experiment 1 was to gain insights into the underlying psychological processes contributing to the preference shift found in our pilot study. More specifically, the objective was to test if mental imagery was required for the preference shift. This objective was accomplished by determining whether the shift in preferences would go away if respondents were instructed to avoid using mental imagery. The second purpose of experiment 1 was to overcome some of the limitations of the noncomparable notebook computer/dream vacation scenario used in the pilot study. First, the attributes for the options were not specified, and hence vividness was operationalized at the alternative level rather than at the attribute level as required by our

¹The order in which the judgments were made was counterbalanced; in none of the experiments or the pretests did the order of making the judgments significantly affect choice, and therefore this factor will not be discussed further.

conceptualization. Second, the noncomparable alternatives could have differed on dimensions other than hedonic and vividness. For example, the benefits from a notebook computer can be obtained over a period of time, while those from a dream vacation are likely to be more short-lived. Further, respondents could have had greater expertise (due to greater prior experience) and familiarity with the dream vacation than with the notebook computer. To overcome these limitations, experiment 1 operationalized vividness at the attribute level and used the scenario in which the attributes are comparable and clearly presented. In the scenario shown below, alternative A is superior on the attribute “power protection” and inferior on the attribute “price” compared to alternative B, but the alternatives do not differ on the other attributes such as “processor speed” and “storage capacity.”

Imagine that you have just graduated and will be starting on your new job in a month. You are planning to buy a computer and are considering one of the two options described below:

A. *DELL Dimension XPS Pro 150p*

Built-in power protection: protects against brownouts, blackouts, and power surges which could seriously damage your computer and result in data loss; price: \$2,049; 150 MHz Pentium processor; 2.5 GB hard drive

B. *DELL Dimension XPS Pro 150n*

No built-in power protection; price: \$1,799; 150 MHz Pentium processor; 2.5 GB hard drive

We pretested these attributes on 70 respondents from the same population as the main experiment. Respondents used a 1–7 disagree/agree scale indicating the degree to which price and power protection are “easy to imagine” and “easy to picture” (to get at the vividness of the attributes) and “associated with feelings” (to get at the hedonic nature of the attributes). In addition, they evaluated these two attributes in terms of the extent that they are easy to compare the computers on. This measure is important because Nowlis and Simonson (1997) have shown that preferences are likely to differ depending on whether the elicitation task involves direct comparisons or separate assessments of the brands. Since our anticipated-satisfaction condition involves separate assessments of the alternatives, the Nowlis and Simonson (1997) mechanism predicts an increase in weight for the “easy to compare attribute.” A within-subject ANOVA revealed that the attribute “power protection” was (1) more vivid ($M = 5.33$) than the attribute “price” ($M = 4.49$; $F(1, 69) = 6.17, p < .01$); (2) more difficult to compare ($M = 4.60$) than “price” ($M = 5.51$; $F(1, 69) = 12.33, p < .0008$); and (3) not different in its hedonic nature, that is, being associated with feelings ($M = 4.47$) compared to the attribute “price” ($M = 4.38$; $F < 1$).

In a separate pretest, 19 respondents rated on a 1–7 scale the importance of price and power protection (order counterbalanced) when buying computers. The reason for this

pretest is that Tversky et al. (1988) have argued that preference shifts occur because more important attributes have a bigger impact on the construction of choices than on the construction of judgments. Hence, if the attributes differ on importance, any observed preference shifts could also be accounted for by the explanation proposed by Tversky et al. (1988). A within-subject ANOVA revealed that the attribute, price, was indeed more important ($M = 5.74$) than power protection ($M = 4.00$; $F(1, 17) = 14.0, p < .02$).

Based on the pretests, we predict that preferences for the more expensive alternative with power protection will be higher in the anticipated-satisfaction condition than in the choice condition, but only when the opportunity to imagine is high. If the results on choice support our expectation, they would support our conceptualization that the underlying process associated with anticipated-satisfaction goals involves mental imagery. The premise for this assertion is that the attribute power protection is more vivid, that is, easier to imagine, than price, and that shifts in preferences will be obtained only when the opportunity to imagine is not constrained. Such an interaction would weaken support for the hedonic-cue explanation, according to which preference shifts between anticipating satisfaction and choice occur because the former cues hedonic aspects of the options. This would suggest that, if no difference exists on the hedonic dimension (as is the case in this experiment), then no preference shift ought to be observed. However, if a shift is observed, then another psychological mechanism rather than hedonic cuing ought to be responsible for the preference shifts.

Design and Procedure. Experiment 1 used a 2×2 between-subjects design, with decision goal (anticipated satisfaction vs. choice) as one of the factors, and opportunity to imagine as the second factor. Opportunity to imagine had two levels (high vs. low), which was manipulated by instructing one group of respondents, before they made their choice/judgments, not to engage in mental imagery. These instructions were identical to those used in Anand-Keller and McGill (1994) and McGill and Anand (1989a): “We do request that you be careful and well-reasoned when responding to the question that follows. Please don’t let your imagination get the better of you. Rather, try to make a logical assessment of the computers.” A second group of respondents did not get these instructions and hence were free to process information as they wished. Ninety-nine respondents were assigned randomly to the four conditions, and the procedure paralleled that used in experiment 1.

Measures. The choice measure in this experiment was identical to the one used in experiment 1. To evoke and measure anticipated satisfaction, we added two more questions to the “satisfaction,” “happiness,” and “feeling-good” items used in experiment 1. These, adapted from Oliver (1980), were also seven-point items anchored on “I would think I did not do the right thing” (1) / “I would think I did the right thing” (7) and on “I would think I was unwise” (1) / “I would think I was wise” (7). Since the Cronbach

alpha was 0.94 for computer A and 0.95 for computer B, the five responses were averaged to form an anticipated-satisfaction variable for each alternative. Manipulation-check measures for the opportunity-to-imagine factor were also obtained in experiment 1. After making their choices, respondents were asked to indicate the extent to which they imagined themselves using the computers and the extent to which they tried to form a picture of themselves using the computers when making their choices (in the choice conditions) or judgments (in the anticipated-satisfaction conditions) on two seven-point items anchored on "not very much" / "a great deal." Since the Cronbach alpha was 0.89, the responses to these two measures were averaged to form one variable representing the extent of mental imagery that respondents engaged in.

In addition, since the attribute "built-in power protection" limits the risks of blackouts, brownouts, and so on, two measures, the product of which has often been used to assess the degree of risk (see, e.g., Bauer 1960; Dowling and Staelin 1994), were also presented to respondents—the probability of the occurrence of brownouts, blackouts, and power surges during the life span of a computer, and the extremity of the consequences of such risks (i.e., the extent of damage that can occur to a computer due to brownouts, blackouts, and power surges). As in previous research, the risk measure was formed by multiplying the probability and the extremity measures. The reason for including this measure was that if our conceptualization is valid, that is, if respondents in the satisfaction-high-imagery condition engage in mental imagery, their assessment of the risk of brownouts, blackouts, and so on ought to be higher in this condition than in the other conditions. This line of reasoning is consistent with findings in the literature on mental imagery (e.g., Gregory, Cialdini, and Carpenter [1982]; see also MacInnis and Price [1987]), which suggest that engaging in mental imagery tends to enhance risk perceptions.

Finally, respondents indicated the extent to which they disagree/agree with the statement, "I consider myself to be knowledgeable about choosing computers." This measure provided a covariate in our analyses. Tests showed that this covariate did not interact with any of the experimental factors, indicating that the assumption of homogeneity of regression slopes was met.

Results. As shown in Table 1, the results on the manipulation-check measure revealed that the manipulation of the opportunity-to-imagine factor was successful. A between-subjects ANCOVA, with the extent to which respondents engaged in mental imagery as the dependent variable and how knowledgeable respondents were about choosing computers as the covariate, revealed a significant decision-goal by opportunity-to-imagine interaction ($F(1, 95) = 3.91, p < .05$). When respondents were free to process as they wished, their ratings on the extent to which they engaged in mental imagery were higher in the anticipated-satisfaction condition ($M = 5.73$) than in the choice condition ($M = 4.25; F(1, 95) = 8.81, p < .004$). In contrast, when respondents were instructed not to imagine, their rat-

TABLE 1
INFLUENCE OF ANTICIPATING SATISFACTION ON
SUBSEQUENT CHOICE AND TASK PERCEPTIONS
MODERATED BY OPPORTUNITY TO IMAGINE, EXPERIMENT 1

	High opportunity to imagine		Low opportunity to imagine	
	Anticipated satisfaction	Choice	Anticipated satisfaction	Choice
Choice of alternative A (superior on power protection) (%)	79.2**	50.0	53.8	48.0
Choice of alternative A (imputed in the satisfaction conditions) (%)	82.6**	50.0	56.5	48.0
Perception of risk (M)	31.7**	22.2	23.3	23.4
Extent of mental imagery (manipulation check) (M)	5.73**	4.25	4.33	4.22

**Difference between anticipated satisfaction and choice is significant at $p < .05$.

ings of the extent to which they imagined were not significantly different across the two conditions ($M_{judgment} = 4.33; M_{choice} = 4.22; p > .20$).

Consistent with our conceptualization, a logit analysis with actual choice as the dependent variable and decision goal, opportunity to imagine, and knowledge (covariate) as the independent variables revealed a significant main effect of decision goal ($\chi^2 = 4.25; p < .04$) and a significant decision-goal by opportunity-to-imagine interaction ($\chi^2 = 4.23; p < .04$). As shown in Table 1, when respondents were free to process as they wished, the proportion of respondents choosing alternative A (the computer with built-in power protection) was significantly higher in the anticipated-satisfaction condition (79.2 percent) compared to the choice condition (50 percent; $z = 2.12, p < .05$). However, when respondents were instructed not to engage in mental imagery, the proportion of respondents choosing alternative A was not significantly different across the anticipated-satisfaction and choice conditions (53.8 percent vs. 48 percent; $p > .20$).

The pattern of results using choices imputed by converting the anticipated-satisfaction ratings into ordinal data in the anticipated-satisfaction conditions mirrored those using actual choices (see Table 1). As with actual choices, a logit analysis revealed a significant decision-goal by opportunity-to-imagine interaction ($\chi^2 = 4.72; p < .03$). When respondents were free to process as they wished, the imputed choice for alternative A (the computer with built-in power protection) in the anticipated-satisfaction condition (82.6 percent) was significantly higher than the actual choice in the choice condition (50 percent; $z = 2.33, p < .05$). How-

ever, when respondents were instructed not to engage in mental imagery, the imputed choice of alternative A in the anticipated-satisfaction condition (56.5 percent) was no different than the actual choice in the choice condition (48 percent; $p > .20$).

A similar pattern of results was also obtained with respondents' perceptions of risk. A between-subjects ANCOVA with respondents' perceptions of risk as the dependent variable and how knowledgeable respondents were about choosing computers as the covariate revealed a significant decision-goal by opportunity-to-imagine interaction ($F(1, 94) = 5.21, p < .03$). Further, planned contrasts revealed that when respondents were free to process as they pleased, their risk perceptions were higher in the anticipated-satisfaction condition ($M = 31.7$) than in the choice condition ($M = 22.2$; $F(1, 94) = 8.73, p < .004$). However, when respondents were asked not to imagine, their perceptions of risk were not significantly different across the two decision-goal conditions ($M_{\text{judgment}} = 23.3$; $M_{\text{choice}} = 23.4$; $p > .20$).

Discussion. The results of experiment 1 were consistent with our conceptualization. When respondents in the anticipated-satisfaction condition were free to process as they wished, both their expressed and revealed preferences for the alternative with advantages on vivid attributes increased relative to those who simply chose without anticipating satisfaction. When respondents were discouraged from imagining, their preferences were not affected by the nature of the response mode. The measure related to risk produced results consistent with our conceptualization. Risk assessments were greater when anticipating satisfaction than when choosing, but only when respondents were free to process as they pleased. When the opportunity to imagine was constrained, the risk assessments were unaffected by the elicitation task.

The pattern of results obtained in experiment 1 suggests that the hedonic cue may not be a valid account for these findings. The two options did not differ on the hedonic dimension, yet preference shifts were observed. This suggests that another psychological mechanism rather than hedonic cuing was responsible for the preference shifts.

There were some weaknesses in experiment 1 that motivated our design for experiment 2. Note that in experiment 1 we manipulated the opportunity-to-imagine factor by explicitly asking respondents not to imagine. While this procedure was adapted from Anand-Keller and McGill (1994) and McGill and Anand (1989a), it could have resulted in an experimenter demand effect. When reading the explicit instructions not to imagine, respondents could have felt obliged to avoid the easier-to-imagine alternative. In experiment 2, we attempted to rule out this second demand account by manipulating the opportunity-to-imagine factor without having explicit instructions not to imagine but with an increase in cognitive load.

Also, the preference shifts could have occurred because the options were easier to compare and more important on price than on surge protection, causing respondents who

made separate assessments of the brands (anticipated-satisfaction condition) to weight the latter attribute more heavily than the former (Nowlis and Simonson 1997; Tversky et al. 1988). While these theoretical accounts do not predict the interaction found with processing ability, in the second study we deliberately chose attributes that do not differ on either ease of comparison or importance so that, if a preference shift is still observed, it would bolster our case that the ability of anticipated satisfaction to produce reversals occurs independently of these other mechanisms.

Experiment 2

The primary objective of experiment 2 was to replicate the findings of experiment 1 with a more subtle manipulation of the opportunity-to-imagine factor. In experiment 1, this factor was manipulated by explicitly instructing respondents not to engage in mental imagery, a procedure that has been used by Anand-Keller and McGill (1994) and McGill and Anand (1989a). In experiment 2, the opportunity-to-imagine factor was manipulated by subjecting one group of respondents to cognitive load by having them memorize a nine-digit number before they made their judgments/choices, a procedure that has been widely used in the social cognition literature (see, e.g., Gilbert, Giesler, and Morris 1995; Gilbert, Pelham, and Krull 1988; Swann et al. 1990; Trope and Alfieri 1997). The rationale for using this procedure is based on MacInnis and Price (1987) and McGill and Anand (1989b), who argue that imagining future consumption experiences requires processing resources. Constraining the availability of processing resources should therefore affect the opportunity to engage in mental imagery and thereby affect the construction of preferences in the anticipated-satisfaction condition but not in the choice condition since studies have shown that choice tasks, in general, do not require as much processing resources as judgments (Billings and Scherer 1988; Schkade and Johnson 1989; Shiv et al. 1997). Consequently, the interactive pattern of results obtained in experiment 1 ought to replicate in experiment 2: when the opportunity to imagine is high, choice proportions for the alternative with vivid attributes ought to be higher in the anticipated-satisfaction condition than in the choice condition; when the opportunity to imagine is low, choice proportions ought to be similar across the two decision-goal conditions.

This procedure for manipulating the opportunity-to-imagine factor also enabled us to test another aspect of our conceptualization, the one related to the relationship between the availability of processing resources and vividness effects. The work of McGill and Anand (1989a) suggests that processing resources need to be available for vivid attributes to affect preferences. This, in turn, suggests that if the interactive pattern of results obtained in experiment 1 is not obtained in this experiment, despite the alternatives differing on the vividness dimension, then our conceptualization will not be a viable account for the preference shifts.

Another purpose of experiment 2 was to examine the robustness of our findings by using a different scenario that

was adapted from the one used by Anand-Keller and McGill (1994). In this scenario alternative A is superior on the attribute "view and atmosphere" and inferior on the attribute "rent" compared to alternative B, as shown below.

Imagine that you have just graduated and are moving to the city where you have accepted a job. You would like to rent an apartment and are considering the following:

A. Rent: \$490 per month; view: poor—back of another building; atmosphere: a bit dark and dreary

B. Rent: \$810 per month; view: excellent—city scape and river; atmosphere: bright and sunny

To make predictions, we conducted two pretests similar to the ones conducted in experiment 1. In the first pretest, 70 respondents were exposed to the above scenario and then asked to evaluate "view and atmosphere" and "rent" on how vivid, hedonic, and easy to compare they are (one at a time, with order counterbalanced). The results of a within-subject ANOVA indicated that "view and atmosphere" was (1) easier to imagine ($M = 6.13$) than the attribute "rent" ($M = 5.18$; $F(1, 69) = 28.48, p < .0001$), (2) more hedonic ($M = 6.10$) than "rent" ($M = 5.14$; $F(1, 69) = 25.02, p < .0001$), and (3) no more easy to compare ($M = 5.69$) than "rent" ($M = 5.76, p > .20$). In a second pretest, 21 respondents revealed that "view and atmosphere" was no more important ($M = 4.90$) than "rent" ($M = 4.81, p > .20$). The results of these pretests suggest that in order to replicate the results of experiment 2, when the opportunity to imagine is high, more respondents should prefer apartment B over apartment A when the decision goal is anticipated satisfaction than when it is choice. When the opportunity to imagine is low, preferences should not be different across the two decision-goal conditions.

Design, Procedure, and Measures. Experiment 2 used 105 respondents in a balanced 2×2 between-subjects design, with decision goal and opportunity to imagine as the two factors. Decision goal was manipulated as in the previous experiment. Opportunity to imagine was manipulated by instructing one group of respondents, just before they made their choice/judgments, to memorize a nine-digit number. A second group of respondents received no such instructions and hence was subject to less cognitive load. The remaining procedure and measures paralleled those used in experiment 2 except for the risk assessment, which was deleted since it was not relevant to this experiment. Also, the measure related to the extent of mental imagery, which served as a manipulation-check measure in experiment 1 (because opportunity to imagine was manipulated through explicit instructions), served as a process measure in this experiment. If our conceptualization is valid, one ought to find the same interactive pattern of results on this measure that was found in experiment 1.

Results. Logit analyses yielded a nonsignificant decision-goal by opportunity-to-imagine interaction ($p > .20$) with actual choice as the dependent variable, and a mar-

ginally significant interaction with imputed choice as the dependent variable ($\chi^2 = 2.83, p = .09$). However, as can be seen in Table 2, the results were in the predicted direction. When the opportunity to imagine was high, that is, when respondents were not under cognitive load, the proportion of respondents choosing alternative B (the apartment with better view and atmosphere) was higher in the anticipated-satisfaction condition (85.7 percent) compared to the choice condition (63 percent; $z = 1.94, p < .06$). In contrast, when respondents were under cognitive load, the proportion of respondents choosing alternative B was no different across the judgment and choice conditions (63 percent vs. 56.5 percent; $p > .20$).

Further, the pattern of results using choices imputed by converting the anticipated-satisfaction ratings into ordinal data in the anticipated-satisfaction conditions mirrored that using actual choices. When respondents were free to process as they wished, the imputed choice for alternative A in the anticipated-satisfaction condition (89.3 percent) was significantly higher than the actual choice in the choice condition (63 percent; $z = 2.29, p < .05$). However, when respondents were constrained from engaging in mental imagery, the imputed choice of alternative A in the anticipated-satisfaction condition (59.3 percent) was no different than the actual choice in the choice condition (56.5 percent; $p > .20$).

The results on the process measure related to the extent of mental imagery provide further support for our conceptualization. While, as with the results on actual choices, an ANOVA yielded a nonsignificant decision-goal by opportunity-to-imagine interaction, planned contrasts revealed that when respondents were not under cognitive load and

TABLE 2

INFLUENCE OF ANTICIPATING SATISFACTION ON SUBSEQUENT CHOICE AND TASK PERCEPTIONS MODERATED BY OPPORTUNITY TO IMAGINE, EXPERIMENT 2

	High opportunity to imagine		Low opportunity to imagine	
	Anticipated satisfaction	Choice	Anticipated satisfaction	Choice
Choice of alternative B (superior on view and atmosphere) (%)	85.7*	63.0	63.0	56.5
Choice of alternative B (imputed in the satisfaction conditions) (%)	89.3**	63.0	59.3	48.0
Extent of mental imagery (M)	5.78**	4.67	5.18	4.82

*Difference between anticipated satisfaction and choice is significant at $p < .06$.

**Difference between anticipated satisfaction and choice is significant at $p < .05$.

were free to process as they wished, their ratings on the extent to which they engaged in mental imagery were higher in the anticipated-satisfaction condition ($M = 5.78$) than in the choice condition ($M = 4.67$; $F(1, 101) = 10.47, p < .002$). In contrast, when respondents' opportunity to imagine was hampered by the cognitive task, their ratings of the extent to which they imagined were not different across the two conditions ($M_{\text{judgment}} = 5.18$; $M_{\text{choice}} = 4.82$; $p > .20$).

Discussion. The results of experiment 2 support our conceptualization that the preference shifts due to anticipating satisfaction occur because of an increase in imagery-based processes. Under lower cognitive load, respondents exhibited greater preferences for the alternative with vivid attributes when the response mode was anticipated-satisfaction judgment than when the mode was choice. In contrast, when the opportunity to imagine was constrained by having respondents memorize a nine-digit number, preferences were unaffected by the nature of the response mode. The results on the process measure related to the extent of mental imagery were also consistent with our conceptualization. The extent to which respondents engaged in mental imagery was higher when the decision goal was anticipated satisfaction than when it was choice, but only under light cognitive load. When we increased the cognitive demands, the extent to which respondents engaged in mental imagery was not affected by the response mode.

Experiment 2 continues the process of ruling out alternative accounts. First, it is difficult to account for these results with the hedonic-cue explanation. As shown by the ratings, respondents could immediately recognize the "view" attribute as more hedonic than "rent." However, if it is to serve as a cue to preference, it should not have been affected by the processing restriction, which it was. This result, combined with the first study where the attributes did not differ on their hedonic nature, makes the hedonic-cuing account difficult to maintain. Second, the preference shifts in experiment 2 cannot be due to relative ease of comparison or importance of the attributes, since the attributes do not differ on these characteristics. Finally, the use of cognitive load to limit processing capacity makes it very unlikely that respondents could have inferred the desired response even if they had wanted to act in accordance with experimenter demands.

Experiment 3

Experiment 3 had a number of functions. First, it was designed to provide more direct evidence, through the use of thought protocols, on the nature of the underlying processing associated with anticipated-satisfaction goals. Second, it enabled us to rule out the mere-elaboration explanation as a viable alternative account for our findings. Recall that this explanation is based on the work of Billings and Scherer (1988), Schkade and Johnson (1989), and Shiv et al. (1997), which suggests that the preference shifts observed in the previous experiments could have arisen due to anticipated-satisfaction judgments being associated with more

elaborative processing compared to choice (note that according to this alternative account, anticipated satisfaction gives rise to non-imagery-related elaborative processes). Experiments 1 and 2 are particularly vulnerable to this alternative account in that the anticipated-satisfaction conditions evoked explicit elaboration in their use of a rating task prior to choice.

The above line of reasoning yielded a third objective of experiment 3. If it is the case that it is the elaborate nature of processing associated with judgments that yielded the preference shifts, then such shifts ought to be obtained with other types of judgments as well. In experiment 3, we investigated whether preference shifts will occur with another type of elicitation task, one related to separate assessments of how much the alternatives in a choice task are liked. Experiment 3 used a scenario that was similar to the one used in experiment 1, but did not have price as a differentiating attribute. (Recall that in experiments 1 and 2, one attribute on which the options differed was price.) In the scenario, alternative A is superior on the attribute "power protection" and inferior on the attribute "memory" compared to alternative B, but the alternatives do not differ on the other attributes such as "processor speed" and "storage capacity," and "price."

Forty-eight respondents from the same population as the main experiment participated in a pretest that was identical to the ones carried out in experiments 1 and 2. A within-subject ANOVA revealed that the attribute "power protection" was (1) more vivid ($M = 5.34$) than the attribute "memory" ($M = 4.39$; $F(1, 47) = 5.43, p < .02$), (2) no more difficult to compare ($M = 4.16$) than "memory" ($M = 4.22$; $p > .2$), and (3) not different in its hedonic nature ($M = 3.31$) compared to the attribute "memory" ($M = 3.27$; $F < 1$). In a second pretest, 21 respondents revealed that "power protection" was no more important ($M = 4.89$) than "memory" ($M = 4.66$; $p > .20$). Based on the results of the pretests, we predict that preferences (both revealed and expressed) for the alternative with power protection will be higher in the anticipated-satisfaction condition than in the other conditions.

Design, Procedure, and Measures. Experiment 3 used a one-factor (decision goal) between-subjects design with 148 respondents. Four levels of the decision-goal factor were used—choice, choice after elaboration, anticipated satisfaction, and liking. As in the preceding experiments, respondents indicated their preferences after reading the scenario: in the choice condition, respondents chose between the alternatives immediately after the scenario; in the choice-after-elaboration condition, respondents first reported, after reading the scenario, whatever thoughts went through their minds while reading the scenario, and then made their choices (a procedure adapted from Shiv et al. 1997); in the other two conditions, respondents rated the computers, one at a time, before making their choices. The choice measure was identical to that used in experiments 2 and 3. In the liking condition, respondents preceded their choice with how much they liked the computers on three seven-point items

anchored by “I don’t like it” (1) / “I like it a lot” (7), “It is bad (1)” / “it is good” (7), and “It is undesirable” (1) / “it is desirable” (7). Note that in all the experiments reported in this article, the wording of the measures was such that only the anticipated-satisfaction judgments involved an anticipatory component (e.g., “I would be dissatisfied / satisfied”). To show that the observed preference shifts were not due to this anticipatory component, a separate study similar to experiment 3, but without the choice-after-elaboration condition, was carried out. The results of this experiment are not reported in the article. In this study, the liking judgment items were constructed to incorporate an anticipatory element (as with the anticipated-satisfaction judgments). The items were, “I would not like it / I would like it,” “It would be bad / it would be good,” and “It would be undesirable / it would be desirable.” To further reinforce the anticipatory element, subjects in all conditions were told to anticipate using the computers for three years. The results did not differ from those in experiment 3, suggesting that the anticipatory component by itself is not sufficient to lead to preference shifts. To ensure that the anticipated-satisfaction measure was parallel in construction to the liking measure, only three items were used (as in the pilot study)—“dissatisfied / satisfied,” “unhappy / happy,” and “feel bad / feel good”—with the items being preceded by “I would be.”

Immediately after choosing, respondents reported what ever went through their minds when they were choosing (in the choice condition), making their judgments (in the two judgment conditions), or thinking about the scenario before choice (in the choice-after-elaboration condition).

Results. Since respondents’ processing was not constrained in experiment 3 (as in some conditions of experiment 2), we expected the logit analyses with actual and imputed choices as dependent variables to yield significant main effects of decision goal, with choice of computer A (the one with the surge protection, but lower memory) being higher in the anticipated-satisfaction condition compared to the choice condition. As expected, the main effects were significant for both actual choice ($\chi^2 = 5.64, p < .02$) and imputed choice ($\chi^2 = 6.14, p < .01$) as the dependent variables. Further, as can be seen in Table 3, choice of computer A in the anticipated-satisfaction condition was 72.2 percent, which was different from the choice in the choice condition (51 percent) at a marginal level of significance ($z = 1.86, p < .06$). A similar pattern of results was obtained with choices imputed in the anticipated-satisfaction condition: imputed choice of computer A in the anticipated-satisfaction condition was 71 percent, which was different from the actual choice in the choice condition (51 percent) at a marginal level of significance ($z = 1.68, p < .09$).

Two other related objectives of experiment 3 were to examine if this shift in preferences was because of the elaborate processing associated with anticipating satisfaction and whether similar shifts would occur with another judgment task (liking judgments). The results indicate that the preference shift is unique to anticipating satisfaction: choice of

TABLE 3
INFLUENCE OF ANTICIPATING SATISFACTION, LIKING JUDGMENTS, AND MERE ELABORATION ON SUBSEQUENT CHOICE AND TASK PERCEPTIONS, EXPERIMENT 3

	Anticipated satisfaction	Choice	Liking	Mere Elaboration
Choice of alternative A (superior on power protection) (%)	72.0*	51.0	50.0 ⁺	46.0 ⁺⁺
Choice of alternative B (imputed in the satisfaction and liking conditions) (%)	71.0*	51.0	48.3 ⁺	47.0 ⁺⁺
Total thoughts (protocols) (<i>M</i>)	4.03 ^{**}	1.89	2.11	4.20 ^{**}
Proportion of mental imagery-related thoughts (protocols) (<i>M</i>)	.26 ^{**}	.03	.055	.055

*Value is significantly different from choice, $p < .10$.

**Value is significantly different from choice, $p < .05$.

⁺Value is significantly different from anticipated satisfaction, $p < .10$.

⁺⁺Value is significantly different from anticipated satisfaction, $p < .05$.

computer A in the mere-elaboration condition (47 percent) and the liking condition (50 percent; imputed choice = 48.3 percent) was similar to that in the choice condition (51 percent) and lower than that in the anticipated-satisfaction condition (72.2 percent; $z_{\text{mere elaboration vs. anticipated satisfaction}} = 2.30, p < .05$ for actual choices, and 2.02, $p < .05$ for imputed choices; $z_{\text{liking vs. anticipated satisfaction}} = 1.93, p < .06$ for actual choices, and 1.84, $p < .07$ for imputed choices).

To understand the underlying psychological processes that accounted for the above results, we examined respondents’ thought protocols. Two independent judges who were blind to the hypotheses and to the experimental treatments coded the thought protocols on (1) the total number of thoughts, and (2) thoughts related to scenes, visualized events, imagery, and so on (e.g., “I saw my computer blow up during a thunder storm”; “I imagined how much I would regret if I bought a computer without surge protection”; the coding scheme used by McGill and Anand [1989a] was employed for this purpose). Separate ANOVAs with the proportion of imagery-related thoughts (subject to an arcsin transformation) and the total number of thoughts as the dependent variables were carried out. Planned contrasts revealed that the proportion of imagery-related thoughts was significantly higher in the anticipated-satisfaction condition (.26) compared to the choice condition (.03; $F(1, 144) = 27.06, p < .0001, p < .0001$), to the liking condition (.055; $F(1, 144) = 20.85, p < .0001$), and the choice-after-elaboration condition (.055; $F(1, 144) = 20.33, p < .0001$).

A similar analysis on the total number of thoughts yielded an unexpected result. While the total number of thoughts

was significantly higher in the anticipated-satisfaction (4.03) and the mere-elaboration condition (4.20) compared to the choice condition (1.89), it was no different in the liking condition (2.11) compared to the choice condition. In other words, even though a number of previous researchers have found that judgments are often associated with more extensive processing compared to choice, we find that this may not be the case with liking judgments.

To examine if the extent to which respondents engaged mental imagery mediated the effects of decision goal on choices, a Baron and Kenny test was carried out. According to Baron and Kenny (1986), mediation is said to exist if three criteria are met: (1) the independent variable, decision goal, influences the potential mediator, that is, the extent of mental imagery (represented by the number of imagery-related thoughts), (2) the potential mediator influences the dependent variable (choice), and (3) the relationship between the independent variable, decision goal, and the dependent variable, choice, is weakened when the mediator is introduced as a covariate. An ANOVA revealed that the first criterion for mediation was supported by a significant main effect of decision goal on the number of imagery-related thoughts ($F(1, 144) = 16.73, p < .0001$). Logistic regression analyses provided support for the second criterion by revealing significant main effects of the number of imagery-related thoughts on actual choice ($\chi^2 = 10.15, p < .001$) and imputed choice ($\chi^2 = 9.21, p < .002$). Another set of logistic regression analyses provided support to the third criterion: the significant main effects of decision goal on actual and imputed choices (reported earlier) were no longer significant once the number of imagery-related thoughts was included as covariates in the models ($\chi^2 = .005, p > .20$ for actual choice; $\chi^2 = .46, p > .20$ for imputed choice). Thus, complete support was obtained for all three criteria, suggesting that the extent of mental imagery that respondents engaged in did serve as a mediator between the independent variable, decision goal, and choice.

Discussion. The results of experiment 3 provide more confirmation that mental imagery is a key component to the effect on preferences of anticipating satisfaction that is not observed with other judgments (such as liking judgments). The results also suggest that the fact that noncomparative measures were used for anticipated-satisfaction judgments may not be a plausible account (Nowlis and Simonson 1997) for the preference shifts observed in the previous experiments. In experiment 3, noncomparative measures were used for both anticipated-satisfaction and liking judgments, yet the shift in preferences was observed only for the former (compared to choice).

GENERAL DISCUSSION

Summary of Findings

The primary objective of this article was to explore the effects on preferences of a decision goal consumers sometimes have in shopping contexts, one related to anticipated

satisfaction, and to compare these effects to those arising from a choice-oriented decision goal. Another important objective was to provide evidence that a decision goal involving anticipated satisfaction evokes processing strategies that involve a greater degree of mental imagery, resulting in a greater allocation of attentional resources to vivid attributes, and hence a greater weighting of such attributes in the construction of preferences.

Three experiments were conducted to fulfill the study objectives. The experiments served not only to demonstrate preference shifts between anticipated satisfaction and choice, but also to examine the underlying psychological processes responsible for such shifts. Two alternative explanations that could potentially account for the shifts in preferences were ruled out. One was the hedonic-cue explanation, according to which the observed preference shifts occur because anticipated-satisfaction goals cause people to focus spontaneously on the alternative that has an advantage on the hedonic dimension. Consequently, alternatives that have an advantage on the hedonic nature of their attributes ought to be preferred more than alternatives that have a disadvantage on this dimension. The second was the mere-elaboration explanation, according to which the reason for the preference shifts is not that people engage in mental imagery but that they engage in extensive processing, which enables them to retrieve attribute values not readily available in the stimulus. Two other alternative explanations arising from attribute importance or ease of comparison were also tested. In experiment 2, the alternatives did not differ on either of these dimensions. As a result, the preference shifts that were observed in this experiment could not have occurred because of those factors (Nowlis and Simonson 1997; Tversky et al. 1988).

The results of the three experiments supported our conceptualization about the role of mental imagery in bringing about preference shifts between anticipated satisfaction and choice. When the opportunity to engage in mental imagery was reduced either by explicit instructions (experiment 1) or by imposing cognitive load (experiment 2), shifts in preferences were not obtained between anticipated-satisfaction judgments and choice, and respondents' choices of alternatives were unaffected by the decision goal. It was only when respondents were free to engage in mental imagery that shifts in preferences obtained—that choice proportions for alternatives with high values on vivid attributes were higher with anticipated satisfaction than with choice.

Further support for our conceptualization was obtained from process measures collected in experiments 2 and 3. In experiment 2, respondents rated the extent to which they engaged in mental imagery when constructing their preferences. The ratings of the extent of mental imagery were higher with anticipated satisfaction than with choice, but only when respondents were not subject to cognitive load. In experiment 3, respondents' thought protocols were collected. Consistent with our conceptualization, the proportion of imagery-related thoughts was significantly higher when

the decision goal was anticipated satisfaction related than when it was choice related.

A feature of experiment 3 was its demonstration that the psychological process involving mental imagery is unique to anticipated satisfaction and that such processes will not be engendered with other judgments such as ratings of liking of the alternatives. The results of this experiment validated our conceptualization. First, preference shifts were found only between anticipated satisfaction and choice and not between liking judgments and choice. Second, the thought protocols revealed that the extent of mental imagery was higher in the anticipated-satisfaction condition than in the liking condition.

Implications of Our Findings and Directions for Future Research

At a managerial level, our findings have implications for the measurement of consumer preferences. Given that consumers use anticipated-satisfaction goals during their shopping trips (based on the preliminary study that we report early in this article), and given discrepancies between preferences elicited through different response modes, the problem facing a manager is which preference-elicitation method should be employed to correctly predict market behavior. The solution suggested by researchers (see, e.g., Nowlis and Simonson 1997), and shared by us, is to use those elicitation procedures that correspond with how consumers normally construct preferences in the marketplace. For example, if consumers often use anticipated-satisfaction-oriented goals when shopping for certain products (vacations, homes, and computers are examples of such products identified in our research as well as in McGill and Anand [1989a] and Anand-Keller and McGill [1994]), the marketers of such products will be wiser using anticipated-satisfaction judgments rather than choice or even attitude/purchase-likelihood judgments as measures of preferences.

Our findings also have implications for strategies that marketers might adopt for persuading consumers. For example, a real estate agent selling an expensive property should encourage potential buyers to ask themselves how satisfied they are likely to be with their purchase. In contrast, when the property's main selling point is its cost, the agent should discourage potential buyers from focusing on anticipated satisfaction.

At a theoretical level, this article not only identifies the type of decision goals consumers often use in various shopping contexts and the importance of knowing consumers' decision goals in order to predict preferences, but also documents the distinct nature of the underlying psychological processes associated with anticipated-satisfaction goals compared to those associated with other goals that have been the focus of most previous work (e.g., Coupey et al. 1998; Fischer and Hawkins 1993; Nowlis and Simonson 1997; Tversky et al. 1988). In doing so, this article also contributes to two bodies of work in the literature, one related to mental imagery and the other related to preference shifts across

different elicitation tasks. Our findings identify anticipated satisfaction as yet another antecedent to constructs that have been the focus of prior work, such as mental imagery (e.g., MacInnis and Price 1987), the imagery heuristic (e.g., Anand-Keller and McGill 1994; McGill and Anand 1989a), consumption visions (e.g., Phillips et al. 1995), and the role of narratives in consumer decision making (Adaval and Wyer 1998). Further, our findings add to a growing body of literature on shifts in preferences not only by demonstrating preference shifts between anticipated-satisfaction judgments and choice, but also by identifying yet another underlying mechanism that could give rise to these shifts.

We conceptualize vivid attributes as those that are easy to visualize and construct imagined experiences from (Anand-Keller and McGill 1994). While, as in previous research, we were able to identify these attributes by semantic differential scales, such identification begs the interesting question about what makes vivid attributes easy to imagine and therefore more susceptible to anticipating satisfaction. Future research can add significantly to our knowledge by examining this issue. For instance, a starting point for addressing this issue may be the work on scripts (Abelson 1981) and narratives (Schank and Abelson 1995) and on the role scripts and narratives play in mental imagery (Adaval and Wyer 1998). One testable proposition that arises from this literature is that an attribute is vivid if scripts or narratives related to the attribute are accessible in memory so as to facilitate construction of imagined experiences. These scripts contain props (such as a fireplace in the living room), roles (such as a romantic partner), and sequence rules (such as lighting up the fire, dimming the lights, and then settling down with a glass of wine), and can arise from prior experiences or from external sources (e.g., an advertisement that conveys a narrative about how wine sets the mood for a romantic evening). Exciting future research will detail the mechanism by which attributes evoke props, roles, and sequence rules and thereby facilitate the effects of anticipated-satisfaction goals that were delineated in this article.

Future research also needs to investigate the managerial and theoretical implications of our findings. For example, future research might examine buying situations where consumers are likely to use an anticipated-satisfaction goal orientation. Our preliminary study indicated that the anticipated-satisfaction goal tends to be used for infrequently purchased items and for items involving sensory experiences. A more thorough investigation will provide additional insights that would assist managers in formulating marketing strategies.

The focus of this article was on anticipated satisfaction, that is, how satisfied a consumer will be with a purchase. In contrast, most work in the satisfaction literature (e.g., Oliver 1980) has focused on retrospective satisfaction, that is, how satisfied a consumer is or has been with a purchase. Future research might examine if shifts in preferences can be obtained with retrospective satisfaction judgments as well, and whether the underlying mechanism related to mental imagery will give rise to the shifts as with judgments of

anticipated satisfaction. Finding preference shifts with retrospective satisfaction judgments will not only have theoretical implications but also have considerable managerial import, given that several firms now seem to rely on consumers' ratings of retrospective satisfaction in formulating their strategies.

Further, the focus of this article was on anticipated satisfaction, that is, how happy and satisfied a consumer is likely to be with a purchase. Additional research might investigate if similar patterns of results are observed if the consumer assesses how unhappy and dissatisfied s/he is likely to be with a purchase. For example, future research might build on Simonson (1992) by examining if the systematic influences of judgments of anticipated regret on consumer choices arise from psychological processes that are similar to those observed in this article with judgments of anticipated satisfaction.

Across our experiments, we designed alternatives that controlled for the effects of attributes differing on importance or ease of comparison. Valuable insights can be gained in future research if the effects demonstrated by Nowlis and Simonson (1997) and Tversky et al. (1988) are allowed to operate simultaneously with those related to anticipated satisfaction so as to begin identifying boundary conditions for, and the relative impact of, these competing mechanisms. Also, in our experiments, we used between-subjects designs to test our propositions. Significant insights have been provided by recent research that has focused on demonstrating preference shifts using within-subject designs. In particular, the use of within-subject designs has facilitated the identification of boundary conditions for carry-over of processing from one response mode to another (see, e.g., Coupey et al. 1998; Fischer and Hawkins 1993). Future research might examine the boundary conditions under which the effects related to anticipating satisfaction carry over to choice. For instance, Coupey et al. (1998) suggests that carry-over effects are more likely when consumers are familiar with a product category. It would be interesting to examine if the moderating role of product familiarity will extend to anticipated-satisfaction judgments as well.

Finally, we examined preference shifts between choice-oriented and anticipated-satisfaction-oriented goals, goals that we found are quite commonly used by consumers in actual shopping contexts. In doing so, we gained rich insights into the underlying psychological processes that give rise to these preference shifts. More particularly, by manipulating levels of an independent variable (opportunity to imagine) in different ways and by using process measures as dependent variables, we not only demonstrated that these preference shifts arise due to processes involving mental imagery, but also ruled out alternative explanations arising from previous work in the literature. Apart from the issues delineated above, future research also needs to examine the effects of decision goals on preferences in richer contexts than the ones used in this article (binary choice, with limited information presented on the alternatives). This effort would expand the already rich insights that have been derived from

the examination of the effects of decision goals on consumer choice.

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