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BEYOND REFERENCE PRICE: THE ROLE OF UNMET PRICE EXPECTATIONS IN CONSUMERS' PERCEPTIONS OF VALUE

By

Joan Marie Lindsey-Mullikin

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A Dissertation Submitted to the Faculty of the COMMITTEE ON BUSINESS ADMINISTRATION In Partial Fulfillment of the Requirements For the Degree of DOCTOR OF PHILOSOPHY WITH A MAJOR IN MANAGEMENT In the Graduate College THE UNIVERSITY OF ARIZONA 1999
As members of the Final Examination Committee, we certify that we have read the dissertation prepared by Joan M. Lindsey-Mullikin entitled "Beyond Reference Price: The Role of Unmet Price Expectations in Consumers' Perceptions of Value" and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy.

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III. ABSTRACT

This dissertation posits a new approach for understanding the reference price phenomenon. It is proposed that Festinger's (1957) theory of dissonance reduction provides a practical framework for studying situations in which consumers' encountered prices are significantly different from their expectations. The three modes of dissonance reduction initially proposed by Festinger (to change one's attitude or cognition, to seek consonant information, or to trivialize some element of the dissonant relationship) are experimentally manipulated. These three modes of dissonance reduction are then evaluated for their impact on consumers' perceptions of value and consumers' purchase intentions. A computer-controlled shopping experiment is utilized to test the hypotheses.
INTRODUCTION

There is a large body of theory to support the notion that individuals use some internal reference point to make judgments and choices regarding some observed phenomenon, e.g., Helson 1964. A reference price is an internal standard against which observed prices are compared. There is now considerable empirical evidence in the marketing and consumer behavior literature to support the reference price concept (Kalyanaram and Winer 1995). Since the concept of reference price is well established, the next logical step is to go beyond studying reference price formation to investigate the consumer's response to observed prices, given their particular reference price.

An actual price observed by a consumer will be less than, greater than, or equal to the consumer's reference price. Consumers have been shown to have a limited ability to accurately recall prices (Dickson and Sawyer 1990) and therefore frequently observe prices that are unexpected. The consumer's reaction to unexpected prices is of particular interest to marketing and consumer behavior researchers because of the potential that the unexpected prices have to impact the consumer's perceptions of value and his/her ultimate purchase decision.

THEORETICAL EXPLANATIONS FOR REFERENCE PRICE

The literature on reference pricing has been extremely constructive in demonstrating the role price plays in the consumer buying decision process. Much of this research has used prospect theory (Kahneman and Tversky 1979), assimilation contrast
theory (Sherif and Hovland 1961), and/or adaptation level theory (Helson 1964) to explain what happens when consumers encounter a market price that differs from their reference price. However, prospect theory is rooted in risky choice, which requires that consumers have a better understanding of probabilities than most research acknowledges them to have, and social judgment theory does little to explain what happens when alternatives fall outside the "latitude of acceptance." Adaptation level theory suggests that consumers routinely adjust their reference prices as new pricing information is encountered, but it does not offer much insight regarding their reactions at the time of the discrepant encounter. Much pricing research has been conducted in terms of expected utility theory, where consumers are posited to maximize their utility for each transaction. Contrary to expected utility theory, consumers do not always act in a rational manner when evaluating price. Moreover, expected utility theory does not address the concept of price expectations or reference prices.

Although much of the research on reference price has viewed price as an economic concept, there are many interesting behavioral implications to the concept. "Classic" economic approaches to pricing are increasingly being supplemented by behavioral research concerned with how individuals react emotionally and psychologically to price and price-related cues (Alba, Broniarczyk, Shimp, and Urbany 1994; Monroe 1990; Monroe and Petroshius 1981; Thaler 1985; Winer 1988). The knowledge that many aspects of price are behavioral in nature and therefore conducive to the theory applicable to social psychology and to consumer behavior is not new to the
Marketing discipline. However, much remains to be learned regarding how these behavioral aspects impact the buying decision process. In particular, a new perspective is proposed for examining observed differences between reference prices and actual encountered prices and the resulting impact on buying decisions.

NEW THEORETICAL PERSPECTIVE

This dissertation proposes a new perspective for evaluating reference price. Specifically, it is proposed that Festinger’s Theory of Cognitive Dissonance provides a useful framework for evaluating those circumstances when consumers observe a price that is different from their reference price. Festinger (1957) proposes that individuals seek to maintain an internal balance among their belief structures and that new information received that is consistent with previously held beliefs helps to maintain that balance. However, when new information is processed that is inconsistent with prior beliefs, then dissonance results. Dissonance is a tension state that results from inconsistent cognitions. Festinger (1957) proposed that when dissonance is experienced to a magnitude that motivates action individuals use one of three modes of dissonance reduction to restore their internal balance. Although there has been lively debate in the social psychology literature regarding dissonance theory (See Section V. Literature Review), the theory has evolved full circle to Festinger's original propositions that dissonance results from inconsistent cognitions. It is proposed that when a consumer observes a price that differs from their price expectations, then dissonance results. Further, it is proposed that the three modes of dissonance reduction originally proposed
by Festinger (1957) can be induced to reduce the dissonance resulting from the discrepant price encounters. Finally, depending on the dissonance reduction mode engaged the consumer may then have differing perceptions of value, and consequently, differing likelihoods of making a purchase.

CONSUMER’S REACTIONS TO UNMET PRICE EXPECTATIONS

Consumer price expectations have been found to play a key role in consumer purchase decisions (Oliver and Winer 1987; Kalwani, Yim, Rinne, and Sugita 1990, Kalwani and Yim 1992). Commonly seen consumer reactions to unexpected price encounters are presented in Table 1. It can be seen that many of the consumer responses to unmet price expectations can be categorized within one of Festinger’s three modes of dissonance reduction.
Table 1
Commonly Seen Consumer Reactions to Unmet Price Expectations

<table>
<thead>
<tr>
<th>Seek Consonant Information:</th>
<th>Change Attitude:</th>
<th>Trivialization:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Any search will be biased)</td>
<td>Update Price Expectations ↓</td>
<td>Reduce the importance of:</td>
</tr>
<tr>
<td>Evaluate alternative suppliers</td>
<td>↓</td>
<td>(1) money</td>
</tr>
<tr>
<td>Evaluate substitute products</td>
<td>Attribute higher prices to:</td>
<td>(2) shop around savings</td>
</tr>
<tr>
<td>Plan to search for additional info ↓</td>
<td>(1) product quality</td>
<td>(3) saving money</td>
</tr>
<tr>
<td>Seek info (or) remain dissonant ↓</td>
<td>(2) Updated product info</td>
<td>(4) a good deal</td>
</tr>
<tr>
<td>Change attitude, trivialize or remain Dissonant ↓</td>
<td>(3) product attributes</td>
<td>(5) fair pricing</td>
</tr>
<tr>
<td></td>
<td>(4) General rising Prices</td>
<td>(6) value ↓</td>
</tr>
<tr>
<td></td>
<td>Dissonance is Reduced</td>
<td>Dissonance is Reduced</td>
</tr>
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</table>
The first column shows the first dissonance reduction mode, labeled “seeking consonant information.” This mode of dissonance reduction is characterized by a biased and filtered search on the part of the consumer. That is, the consumer will tend to favor information that is consistent with prior beliefs as opposed to information that is contrary to prior beliefs. It is reasonable to assume that in order to reduce dissonance the consumer will seek out alternatives, e.g., other retailers, substitute products, or plan for future searches. The search may result in future searches, maintenance of the dissonant state, or result in the use of the other modes for dissonance reduction, i.e., attitude change or trivialization.

The middle column of Table 1 shows “attitude or cognition change” as the mode of dissonance reduction. The change of attitude or cognition may occur when price expectations are updated. Updated price expectations may occur when external reference prices are encountered and asking prices are reevaluated in terms of the external reference price. Similarly, the prices of similar products may be observed thus resulting in an updating of price expectations. Price expectations may also be updated when attributions are made that reconcile the higher price. Thus, the higher or lower price may be attributed to higher or lower than expected product quality, or the attributes present or absent in the product e.g., power steering or no air conditioning, respectively. The updating or causal attribution explaining the unmet price expectations will result in reduced dissonance.
Trivialization is the mode in the last column of Table 1. Trivialization occurs when the importance of some element of the dissonant relationship is reduced. The importance of money, or shop-around savings, receiving a good deal, a good value, or a fair price can be trivialized, e.g., made to be inconsequential or insignificant, by the consumer who will ultimately reach a state of reduced dissonance.

PERCEPTIONS OF VALUE AND PURCHASE INTENTIONS

While identifying and demonstrating the accessibility of these dissonance reduction modes in a buying context has theoretical merit on its own, the ultimate purpose of this study is to investigate the resulting impact of each dissonance reduction mode on consumers' subsequent perceptions of value and purchase intentions. The implications of each mode for marketing strategists and practitioners are immediate and substantial. For example, if point-of-sale personnel can be trained to identify and resolve this dissonance in a manner that enhances consumers' perceptions of the value arising from the purchase encounter, then marketers can make considerable progress in fulfilling their objective of creating and delivering superior customer value. On the other hand, it may be discerned that certain commonly accepted approaches to resolving this dissonance, e.g., attitude change, may result in negative perceptions of value which then negatively impact the purchase decision.

The literature supporting this concept is reviewed and synthesized in the succeeding chapter, followed by a description of the research method employed to test the hypothesized relationships.
COGNITIVE DISSONANCE THEORY

The Theory of Cognitive Dissonance (Festinger 1957) has been used for many years to explain phenomena in numerous disciplines, e.g., consumer behavior (see a discussion below regarding dissonance theory in consumer behavior research), economics (Gilad, Kaish, and Loeb 1987; Cameron and Golby 1990), and organizational behavior (Burnes and James 1995). Literally hundreds of publications have been generated on cognitive dissonance theory (Cooper and Fazio 1984). The theory of cognitive dissonance is based upon the assumption that humans strive to maintain some level of internal consistency among their opinions, attitudes, knowledge, and values (Festinger 1957 p. 260). Paired or coexisting cognitive elements are thought to be irrelevant, consonant, or dissonant to each other. Situations arise that result in dissonance among cognitions, and the desired level of internal consistency is no longer attainable due to the opposing nature of multiple simultaneous cognitions. So it can be said that dissonance is a tension state that results from inconsistent cognitions. If the magnitude of the dissonance is large enough to motivate action, some mode of dissonance reduction (Festinger proposed three methods) is undertaken to reduce or eliminate the dissonance and sustain some degree of internal harmony. Festinger's proposed three methods of dissonance reduction are changing one's attitude regarding the dissonant element, seeking consonant information, and reducing the importance of one or more of the dissonant elements in the relationship.
The three modes are discussed in greater detail below beginning with the section entitled “Attitude Change and Seeking Consonant Information.

THE EVOLUTION OF DISSONANCE THEORY

In its 40-year history, the theory of cognitive dissonance has been subject to lively and dynamic debate within the field of social psychology. As stated above, Festinger’s original propositions held that dissonance occurs as a result of encountering inconsistent cognitions. Later studies in the 1970s and the 1980s posited that additional conditions were necessary for dissonance to occur. In their seminal summary of dissonance theory, Fazio and Cooper (1984) posited that in addition to Festinger’s original propositions, for dissonance to occur, personal responsibility for aversive consequences with foreseeable consequences must also be present. For example, telling a friend that a drink is good tasting when the taste is really very bitter would be an example of dissonance under the Fazio and Cooper (1984) definition. The personal responsibility would lie in the fact that you gave your friend the information about the taste of the beverage. The aversive consequence is that your friend would unsuspectingly taste something bitter, and that is aversive because it is something that you would rather not have occurring. Finally, your prior knowledge would render you able to foresee the consequence in which the friend would taste the bitter drink and consider it an unpleasant experience. The literature has gone full circle, however, and has now returned to Festinger’s original propositions (Simon, Greenberg, Brehm 1995; Harmon-Jones, Greenberg, Simon, Nelson, and Brehm 1996), which state that the only condition required for dissonance to occur is that an individual must encounter a tension state due to inconsistent cognitions. In Harmon-Jones
et al (1996) experimental subjects drank a beverage and were given high (full freedom) or low (coerced) choice to write a sentence saying they liked the beverage. Subjects then threw away the paper (absence of any consequence) and then rated how much they liked the beverage. Attitude change was found to occur (traditional evidence of dissonance) even when aversive consequences are not produced. The term “dissonance” is often erroneously used interchangeably with other emotions such as frustration or dismay. However, it is a tension state that results from inconsistent cognitions.

ATTITUDE CHANGE AND SEEKING CONSONANT INFORMATION

Most of the literature on cognitive dissonance concentrates on two of Festinger’s three modes of dissonance reduction. The two modes addressed were (1) to change one’s attitude or cognition, and (2) to seek consonant information in support of the originally held belief. The vast majority of the studies have focused on the first mode, attitude or cognition change. Many studies varied in the degree of choice that the experimental subjects were allowed (Simon, et al 1995). Studies were performed with both high and low choice situations. In low choice and forced compliance paradigm studies, subjects are placed in conditions where they are instructed to behave in a manner that is not consistent with their belief structure or attitudes or is considered counterattitudinal by the subject. It was found that after participating in some counterattitudinal behavior, subsequent attitude change occurred in the direction of the behavior. For example, after being persuaded to write an essay in favor of comprehensive exams, a counterattitudinal behavior, the subjects subsequently had changed their attitudes about comprehensive exams. The studies also varied in the degree of external justification
that the subjects were granted for completing the counterattitudinal experimental exercise. External justification could come from wanting to please an authority figure and therefore participating in behavior that the authority figure directed, or from receiving a large sum of money for performing some counterattitudinal act. The subjects in a condition of low external justification who participated in a counterattitudinal act were more likely to experience dissonance.

The other mode of dissonance reduction receiving research attention is seeking consonant information. The typical selective exposure study (see Frey 1981a) found that when a decision between two closely related alternatives was to be made, the "tendency was to prefer supportive information to contradictory information." If an individual believes that grass should be green, upon encountering red grass, they will tend to seek information that supports their initial green-grass beliefs. This was particularly true in situations when the choice was irreversible. When subjects believed that their decisions were changeable they were more inclined to prefer the contradictory information.

TRIVIALIZATION

Trivialization is the third mode of dissonance reduction posited by Festinger (1957) but it has not been addressed in the social psychology literature until recently (Simon et al. 1995) and has not been addressed at all in the consumer behavior or marketing literature. Trivialization reduces dissonance by decreasing the importance of some element of the dissonant relationship (Festinger 1957 - p. 264 as stated by Simon, Greenberg and Brehm 1995). Trivialization was found to occur in the following conditions: when an individual's attitude was made highly salient, when the individual was
offered the opportunity to trivialize before given the opportunity to change their attitude, when the attitude was framed with a more important and relevant value, and finally when the attitude was framed with an important value but one not associated with the self. In Simon et al. (1995), for example, it was found that student subjects reminded of their preexisting attitude regarding mandatory comprehensive final exams and then asked or told to write an essay in favor of the exams, were more likely to trivialize the dissonant element to reduce dissonance than were the subjects who were not reminded of their preexisting attitude regarding the exams.

DISSONANCE STUDIES IN CONSUMER BEHAVIOR

Cognitive dissonance theory has been used in consumer behavior research for many years; however, much less often in recent years. The dissonance paradigm most relevant to consumer attitudes involves the choice among alternatives (Petty and Cacioppo (1984b) and subsequent changes in attitude toward the accepted and rejected options. It is posited that when consumers make a choice from alternatives, it is inevitable that there remain alternatives that were not chosen. They must deal with the dissonance caused by foregoing some alternatives and will therefore look upon the selected choice as more desirable and the unselected alternatives as less attractive.

Cummings and Venkatesan (1976) examined twenty-three empirical studies that used the theory of cognitive dissonance for an increased understanding of consumer behavior. A vast majority of the studies can be summarized into two categories: (1) an examination of the effects of dissonance arousal on attitude change and tendency to repurchase, and (2) [an examination of the] effects of dissonance arousal on selective
information seeking by consumers" (Cummings and Venkatesan 1976). It was concluded after examining the twenty-three studies that more evidence exists for the applicability of dissonance theory to consumer behavior with respect to attitude change and tendency to repurchase than how the magnitude of dissonance impacts consumer information-seeking behavior.

Most recently in consumer behavior research, Morwitz and Pluzinski (1996) used cognitive dissonance theory to test if exposure to the results of political polls had an impact on the choices that voters make. They demonstrated that mechanisms to reduce dissonance [do] occur in an important election setting. They found that when voters are in a dissonant state prior to voting and the polls are either confirming or disconfirming expectations about the outcome, voters reduce dissonance by changing their preferences to reflect the confirming poll results. They found, however, that voters in a state of cognitive consistency prior to poll exposure strive to maintain the consistency and will not be affected by subsequent information from the polls.

**INTERNAL REFERENCE PRICE**

Most often in marketing as noted above, cognitive dissonance has been addressed as a post-purchase phenomenon. In the present paper, however, Festinger's original conceptualization of two inconsistent cognitions is taken as the starting point for dissonance arousal. Therefore, when a consumer encounters a price that noticeably differs from their price expectations (or internal reference price) to the magnitude that the discrepancy results in dissonance, they will take appropriate steps to reduce that dissonance. The dissonance results from one cognition, the price expectation, being
inconsistent with another cognition, the actual price. From the marketing literature, we infer that consumers possess an internal consistency regarding the prices of certain products. When an encountered price arouses dissonance to a level that will motivate action by the consumer, it is posited that consumers will use some mode of dissonance reduction to reinstate their internal consistency regarding price.

A reference price is an internal standard against which observed prices are compared (Rosch 1975; Kalyanaram and Winer 1995). There is a large body of theory to support the notion that individuals use some internal reference point to make judgments and choices about some observed phenomenon. There is now considerable empirical evidence in the marketing and consumer behavior literature to support the reference price concept (Kalyanaram and Winer 1995). The present research extends the existing literature regarding reference price by considering the next logical step for a reference price inquiry, i.e., what happens when a consumer encounters an actual price that differs from their reference price or price expectations. The price encountered by a consumer can be equal to, less than, or greater than the consumer’s price expectations. Of interest in this research are the consumer’s reactions to actual prices that exceed or fall short of the consumer’s initial price expectations or internal reference price. In this manuscript the terms price expectations and internal reference price are used interchangeably. The term “expected price,” rather than the synonymously used term “reference price,” is helpful in conveying the idea that customers not only use information from past prices, but also consider contextual variables (e.g., store environment) and expectations of future prices in making purchase decisions (Kalwani and Yim 1992). The incorporation of this definition is
important in the study of the dissonance resulting from price encounters since there will be occasions where consumers will simply change their price expectations during the shopping experience. Updating price expectations to more closely reflect the store’s asking price is consistent with Festinger’s (1957) mode of dissonance reduction by changing one’s attitude or cognition.

CONTEXTUAL AND TEMPORAL COMPONENTS OF REFERENCE PRICE

The formation of expectations is based upon memories of actual experiences, perceptions of current stimuli, inferences drawn from related experiences, and information from others (van Raaij 1991). One’s internal reference price is formed by a combination of contextual and temporal components. Contextual variables include other prices in the product category in the store at the time at the point of purchase (Rajendran and Tellis 1994). A temporal (time) component refers to the prices faced on previous purchase occasions and stored in long-term memory. There is an on-going debate in the pricing literature regarding whether it is contextual or temporal components that provide the best fit in the specification of the utility function of brand choice models (Briesch, Krishnamurthi, Mazumadar, and Raj 997). There have been many operationalizations of the reference price construct, and a misconceptualization and subsequent operationalization can result in no improvement in model fit. Briesch et al (1997) performed an empirical comparison of five reference price models that varied on a continuum of memory and stimulus based operationalizations. The brand-specific memory-based model provided the best operationalization of reference price in all product categories.
CONSUMERS' PERCEPTIONS OF VALUE

Discussions regarding price do not proceed at length without mention of the importance of the consumer's perception of value. Value is a difficult construct to operationalize. This is true because value is a highly abstract concept that is often used interchangeably with and confused with the concepts of quality, benefits and price (Dodds, Monroe and Grewal 1991). It is sometimes described as the ratio of quality to price (Monroe and Petroshius 1981; Lichtenstein, Netemeyer and Burton 1990). Consumers describe value as a set of varied attributes that seems to be highly personal and idiosyncratic even within product categories (Zeithaml 1988). Four groups of definitions for value are found and can be summarized as follows: (1) value is low price, (2) value is whatever I want in a product, (3) value is what I get for what I give, and (4) value is the quality I get for the price I pay (Zeithaml 1988). When consumers have an expected level of quality in mind at some expected price, they are also in a position to assess the value of a given offering. When the actual price is not as expected, this disrupts the balance of the value equation, which may then directly impact the current or even future choice. Therefore, for an investigation regarding unmet price expectations to be complete, an assessment of the impact on consumers' perceptions of value must be made. For consumers to have positive perceptions of value is important in the development of long-term relationships.
PURCHASE INTENTIONS

Of ultimate interest to marketers and to consumer researchers is whether or not a consumer will make a particular purchase. Dodds, Monroe and Grewal (1991) found support for a hypothesized positive relationship between purchase intentions and perceptions of value. The association between purchase intentions and perceptions of value can best be explained through the concept of an acceptable price range or a range of price insensitivity. Prices encountered within an acceptable range are considered a good value and will not deter the consumer from making a purchase. Prices outside the acceptable range will negatively affect the consumers perceptions of value. For example, a higher than expected price may cause a consumer to refrain from a purchase simply because the price is too high. A lower than expected price may also make a consumer refrain from making a purchase since they may be suspicious of the product’s quality (Dodds et al 1991).

MAJOR RESEARCH QUESTIONS

This body of literature suggests several questions of importance to marketing and consumer researchers, as well as, to marketing practitioners. For example, can marketers induce the individual modes of dissonance reduction discussed above? If the dissonance reduction modes can be induced, what effect, if any will the dissonance reduction mode have on a consumer’s perceptions of value? Additionally, what effect will the individual dissonance reduction modes have on the consumer’s purchase intentions? The conceptual framework and hypotheses that address these research questions are included in the following section.
VI. FRAMEWORK AND HYPOTHESES

CONCEPTUAL FRAMEWORK

In this research, it is proposed that Festinger's theory of cognitive dissonance provides a useful framework for evaluating discrepant price encounters. Each element of the framework is discussed in conjunction within a marketing context, below. An overall summary of the conceptual framework is presented in Figure 2.

INTERNAL REFERENCE PRICE

As a starting point for the research, it is taken as a given that consumers have an internal reference price in mind when planning a purchase. The reference price may be a firm estimate regarding price expectations or a fuzzy estimate regarding expectations. The firm or fuzzy nature of consumer's price correspond to "salience" in the Conceptual Framework in Figure 2.

SALIENCE

It has been found that the mode of dissonance reduction that an individual chooses may depend on the salience of the critical attitude or cognition (Simon et al. 1995). For example, an attitude or cognition that is made highly salient will provide a condition in which trivialization (as a mode of dissonance reduction) is likely. Alba and Chattopadhyay (1986) describe brand salience as "prominence or "level of activation" of a brand in memory. Salience has been discussed in terms of level of exposure to a stimulus. Borrowing from the brand literature, "price salience" is the extent to which a reference
price is fixed in a consumer’s memory and is easily retrieved during a shopping experience. The more experience a consumer has with purchasing a given product class, the more salient a reference price is likely to be.

ENCOUNTERED PRICE

The consumer will then encounter some actual price. If the actual price is equal to the observed price, then no dissonance is expected to occur because the cognitions (actual price and reference price) are consistent with each other. This case is illustrated in Figure 2 by the upward sloping arrow. However, if the reference price and the encountered price are not equal, then it is proposed that the consumer will experience dissonance. In other words, if the internal reference price is less than or greater than the encountered price, the consumer will experience dissonance. This is consistent with Festinger's proposal that dissonance results from inconsistent cognitions. The cognition regarding the expected price is not consistent with the newly encountered cognition regarding the actual price.

THE INDUCTION OF MODES

An important question for marketers involves whether or not a given dissonance reduction mode can be induced. In the conceptual framework in Figure 2, it is proposed that any one of the three modes of dissonance reduction can be induced to reduce the dissonance associated with a discrepant price encounter.

As stated above, Festinger (1957) proposed three modes of dissonance reduction: attitude or cognition change, seeking consonant information, and trivialization. Attitude or cognition change as defined in this study involves a change in the consumer's price expectations. Marketers use many methods of communication to change consumers' price
expectations. One method used to change expectations is the use of the external reference price. An external reference price is a merchant-supplied price designed to enhance the attractiveness of the offered price. The external reference price has clearly enhanced consumers' perceptions of value (Lichtenstein and Bearden 1989). A commonly seen format of the external reference price is the “Compare at $X, Our Price $Y.” This format is commonly used by off-price retailers such as T.J. Maxx and Marshalls. In this study, we define attitude change as a subsequent adjustment of one’s internal reference price in the direction of the encountered (actual) price.

The dissonance reduction mode entitled, “seeking consonant information” is defined in this study as an effort by the consumer to obtain additional pricing information from alternative sources. Trivialization as a mode of dissonance reduction is defined in this study as the consumer reducing the importance of price. In this study, the reduction in the importance of price is operationalized by making the consumers’ purchase decision highly reversible. The purchase decision is highly reversible in the sense that the retailer offers a lenient refund policy if the consumer is not completely satisfied with the purchase.

The induction of dissonance reduction modes is of interest to marketers because dissonance arousal may negatively impact purchasing behavior or perceptions of value. Moreover, the chosen mode of dissonance reduction may also subsequently alter the decision behavior.

PERCEPTIONS OF VALUE AND PURCHASE INTENTIONS

Again referring to Figure 2, the framework posits that upon successful inducement of the dissonance reduction modes, consumers will have some perception of the value of
the transaction and a resulting intention of whether or not to make a purchase. It is essential for marketers to evaluate the impact of the dissonance reduction mode on the consumers' perceptions of value. It is also of importance to marketers to understand the respective modes' impact on purchase intentions. It is anticipated that each mode will have varying impact on consumers' perceptions of value and purchase intentions.
Figure 1

Conceptual Framework

Conceptual Framework

![Diagram showing the conceptual framework with nodes and arrows indicating relationships between concepts such as Salience, Encountered Price, Experience Dissonance, Perception of value, Purchase Decision, and the dissonance reduction mode.]
Given this framework, listed below are the research propositions and hypotheses.

PROPOSITIONS

From prospect theory (Kahneman and Tversky 1979), the consumer’s reaction to discrepant prices will depend on whether the price encountered is greater than or less than the consumer’s expectations. The consumer will make a choice based upon some frame or context (Winer 1988). The value function describing prospect theory is defined over gains and losses and not in absolute terms. The function for gains is concave and the function for losses is convex. Consumers are proposed to be more averse to losses than to gains. Given this, the following proposition is set forth.

Proposition 1: Consumers’ experiences of dissonance will differ when encountered prices are higher versus lower than expected.

Although reference price has generally been assumed to be a point estimate, it is more accurately represented as a region (Kalyanaram and Little 1994). The region representing a reference price is known as latitude of price acceptance or range of price insensitivity. Litchtenstein et al. (1988) found that greater knowledge of the prices of brands in a category leads to a narrower latitude of price acceptance. Consumers with better knowledge of price are more likely to notice even small deviations from their reference price (Kalyanaram et al. 1994). Consumers with higher purchase frequency have a better knowledge of price (Kalyanaram et al. 1994). Given these findings the following proposition is presented.

Proposition 2: Consumer’s experience of dissonance will vary when “salience” or familiarity is high versus low.
PERCEPTIONS OF VALUE RESULTING FROM GREATER THAN EXPECTED PRICE ENCOUNTERS

When a price is highly salient or familiar to a consumer, it will be more difficult to obtain higher perceptions of value than where a price is not highly salient. Since the consumer is highly aware of the regular price, a higher offered price will appear more discrepant to the consumers. The firm nature of the highly salient price will make certain attempts to reduce dissonance less effective. Therefore, it is reasonable to make the following hypothesis regarding the nature of perceptions of value.

H1: Perceptions of value when presented with actual prices greater than expected prices will be higher for non-salient price than salient price.

SALIENT CONDITION

The following three hypotheses relate to the salient price condition. In these conditions the consumer will be familiar with the price of the product. The price estimate is firmly held in the consumer's mind. As noted above, these consumers will generally report lower perceptions of value (than the non-salient consumers) since they are fully aware of what the "right" price should be.

H2a: Perceptions of value for consumers reducing dissonance through attitude change will be higher than the control.

Of the three dissonance reduction modes, the consumers who are induced to reduce dissonance through attitude change are the only ones for whom the result is a new reference price. Therefore since these consumers actually change their price expectations, it is expected that upon encountering a higher than expected price, because the consumer
is induced to change their price expectations, these consumer will have higher perceptions of value than the control. That is, these consumers will perceive the product/service to be "worth" the encountered actual price.

H2b: Perceptions of value for consumers reducing dissonance through seeking consonant information will be lower than the control.

The consumers who elect to seek consonant information will believe that when they acquire the additional price information, that information would reinforce their initial (consonant) price belief. Therefore, this group would be expected to have perceptions of value for the current offering that are lower than the control.

H2c: Perceptions of value for consumers reducing dissonance through trivialization will be no different than the control.

While these consumers reduce the importance of price, their price estimates remain unchanged, as would their perceptions of value. For example, reducing the importance of price would not change the consumer's response to a question such as, "do you think this purchase is a good value?" There are other benefits to decision reversibility, possibly satisfaction with the purchase transactions and goodwill toward the retailer, however, these are not captured in the value measure used in this study.

NON-SALIENT CONDITION

The following three hypotheses relate to the non-salient price condition for price encounters that are greater than expected. Since consumers have been shown to be unable to provide accurate price recall (Dickson and Sawyer 1990) the following circumstances may be more frequently encountered in the actual market place than the salient condition.
H3a: Perceptions of value for consumers reducing dissonance through attitude change will be higher than the control.

As stated in the discussion (following H2a) of the salient condition, the consumers who elect to reduce dissonance through attitude change are the only ones that create a new reference price in order to reduce dissonance (their cognition is changed). Therefore, it is expected that upon encountering a higher than expected price, since the consumer has changed their price expectations, the consumer will have a higher perception of value than the control. Additionally, this finding may be evident more for the non-salient condition than for the salient condition since the consumer is not as familiar with the price and their estimate will be less firm.

H3b: Perceptions of value for consumers reducing dissonance through seeking consonant information will be higher than the control.

Since these consumers are uncertain about their price estimate, an offer by the retailer to seek additional information may provide assurance regarding the value of the price estimate and thus result in higher perceptions of value.

H3c: Perceptions of value for consumers reducing dissonance through trivialization will be higher than the control.

These consumers are not certain about their price estimate (non-salient) and therefore will react to the reduction of the importance of price as an incremental benefit versus a substitute benefit for a higher price. Thus, they will experience higher perceptions of value than the control.
PERCEPTIONS OF VALUE RESULTING FROM LESS THAN EXPECTED PRICE ENCOUNTERS

The discussion thus far has been for hypotheses regarding consumers that have been presented with an actual price that is greater than expected. The following hypotheses predict relationships for consumers that are presented with prices that are lower than expected. The following three hypotheses relate to the salient price condition. In the salient conditions the consumer is familiar with the price of the product.

SALIENT CONDITION

H4a: Perceptions of value for consumers reducing dissonance through attitude change will be lower than the control.

Consumers in this condition will be encountering a price that they “know” is lower than it should be. Rather than adjust their reference price downward, they are likely to perceive the offering to be initially of lower quality. Consumers in this condition would only change their perception of value only after experiencing the product/service.

H4b: Perceptions of value for consumers reducing dissonance through seeking consonant information will be higher than the control.

The consumer expects a higher price and additional information that confirms their belief in the higher price will serve to reinforce the value of the encountered price. This will result in perceptions of value that are higher than a comparable control group.

H4c: Perceptions of value for consumers reducing dissonance through trivialization will be higher than the control.
Consumers in this condition are less likely to have non-price related concerns, such as concerns about the quality of the product, due to the availability of the full refund. With these “assurances” of comparable quality the consumer’s perceptions of value should be higher than the control group.

NON-SALIENT CONDITION

The following three hypotheses relate to the non-salient price condition.

H5a: Perceptions of value for consumers reducing dissonance through attitude change will be lower than the control.

Since these consumers are not familiar with the price, any attempt by the retailer to change price expectations based upon offerings from alternate retailers will be viewed as reliable and therefore would result in lower perceptions of value than the control.

H5b: Perceptions of value for consumers reducing dissonance through seeking consonant information will be the higher than the control.

Since these consumers are not familiar with the price, any attempt by the seller to encourage price seeking at alternate sources is likely to be viewed as reliable and therefore would result in higher perceptions of value than the control.

H5c: Perceptions of value for consumers reducing dissonance through trivialization will be higher than the control.

Since the consumer is unfamiliar with the product’s price, attempts to reduce the importance of price will be viewed as an incremental benefit of the offering thus resulting in higher perceptions of value than the control.
PURCHASE INTENTIONS FOR GREATER THAN PRICE EXPECTATIONS

SALIENT

H6a: Consumers who elect to change attitude will be more likely to buy compared to the control.

Consumers will be more likely to buy than not buy since their attitude was changed and therefore should make purchases at the approximately the same rate as consumers that encounter their expected price.

H6b: Consumers who elect to seek consonant information will be less likely to buy than the control.

These consumers are seeking to have their initial price expectations reinforced and therefore will be less likely to buy.

H6c: Consumers who elect to trivialize will be more likely to buy than compared to the control.

These consumers will be more likely to buy because of the incremental benefit associated with the reduction of the importance of price.

NON-SALIENT

H7a: Consumers who elect to change their attitude will be more likely to buy compared to the control.

These consumers are uncertain about the price of the product and are thus more likely to presume their initial expectation were incorrect. They were already intending to make a purchase, they will continue to do so.
H7b: Consumers who elect to seek consonant information will be more likely to buy than the control.

These consumers are uncertain about the price and any prompt from the seller to seek consonant information will be viewed as confidence by the seller that the offered price is correct.

H7c: Consumers who elect to trivialize will be more likely to buy than the control.

This will permit them to make the purchase with less concern about the accuracy of their original expectations. Because the consumer has the option of a full refund, issues of price are no longer a concern. The will result in a greater likelihood of purchase.

PURCHASE INTENTIONS FOR LESS THAN PRICE EXPECTATIONS

SALIENT

H8a: Consumers who elect to change their attitude will buy at the same rate as the control.

These consumers change their attitude toward price and are more likely to buy due to lower purchase costs.

H8b: Consumers who elect to seek consonant information will be more likely to buy than the control.

These consumers have a good knowledge of the price and have been encouraged to seek price information from other retailers. Given they have just encountered a lower than expected price these consumers will make the purchase.

H8c: Consumers induced to trivialize will be more likely to buy than the control.
These consumers having just encountered a lower than expected price have been guaranteed a full refund and there relinquish their concerns about other non-price aspects of the price, such as quality.

NON-SALIENT

H9a: Consumers who elect to change their attitude will be less likely to buy compared to the control.

These consumers have changed their attitude, however, they have been told that other retailers offer even lower prices. Thus, they will make purchases from the competitor.

H9b: Consumers who elect to seek consonant information will be more likely to buy than the control.

These consumers having encountered a less than expected price will be less willing to seek pricing information from alternate retailers and therefore will make a purchase.

H9c: Consumers who elect to trivialize will be more likely to buy than the control.

These consumers are not firm in their price expectations, and have been suggested to reduce the importance of price. The reduced importance of price is viewed as an incremental benefit, and therefore, these consumers would elect to make a purchase.
VII. METHOD

EXPERIMENT

A computer-controlled experiment has been selected, as the most effective technique for collecting the data needed to test the hypotheses set forth in Section VI. A between-subjects full-factorial design is utilized. The experiment is a 2 (price) x 2 (salience) x 3 (mode) design with three control conditions. There are two levels of price discrepancy: above and below the subject’s initial price expectations. There are two levels of price salience or familiarity: a high degree of salience regarding product price and a low degree of salience regarding product price. There are three modes of dissonance reduction: attitude or cognition change, seeking consonant information, trivialization. The three control conditions do not include dissonance reduction mode manipulations but include the presentation of three levels of observed or actual price. The three price levels for the control conditions are greater than, less than, and equal to the subject’s initial price expectations. The two dependent variables are (1) perceptions of value, and (2) purchase intentions. The study design and dependent measures are discussed in further detail. A discussion of the external and internal validity of the experiment can be found in Appendix E.

This study requires a computer-controlled environment because of the price level conditions. Each subject’s initial price estimate is collected and manipulated in real time in order to calculate an actual or observed price. Manipulations at the individual subject
level enable the presentation of price discrepancies [expected price – observed or actual price] at a magnitude that is constant across subjects within a particular price condition.

Subjects sit at a private computer terminal in order to complete the 15-minute experiment. They are asked to type in an identification code that is assigned to them as they enter the room. The randomly assigned identification code determines the treatment the subject receives. They are instructed to advance through the program one screen at a time and to enter their responses. The complete texts of the experimental scenarios are included in Appendices C and D. Each of the forms referred to in Appendices C and D represent an individual viewable computer screen.

PRETEST

As indicated above, the experiment includes two levels of price salience or price familiarity: a high degree of salience regarding the price of a product and a low degree of salience regarding the price of a product. The manipulation of price salience is accomplished through the product/service included in the scenario. Seventeen (17) products/services thought to be relevant to college students (see SUBJECTS below) were chosen for testing. The pretest instrument is included in Appendix B. It was found that subjects were highly confident about the prices of certain products, had more experience with these products, and produced less variation in the price expectation estimates. The first-run movie was chosen for the salient condition since it ranks very high on the criteria mentioned above. On the other hand, subjects were less confident about the price of other products, had more variation in their price expectations, and had less experience with the purchase of the products. The corresponding service with the most reported variability and
low confidence level was the no-appointment haircut, which was chosen for the non-salient condition. The no-appointment haircut was chosen to parallel the movie in that it, too, is a service. A summary of the pretest results is included in Appendix E.

DEPENDENT MEASURES

The two dependent measures in this study are the consumer’s perceptions of value and their purchase intentions (buy or not buy). In order to evaluate the impact of each of the three modes of dissonance reduction on the consumer’s perceptions of value several measures are taken. The measures are borrowed from the existing marketing and consumer behavior literature. Three sets of questions combined are designed to measure the subjects’ perception of value. These measures follow. The full text of these questions can be found in Form 29, 30, and 31 in scenario texts in Appendix C and D.

Value Set 1: “Now we would like for you to indicate your reaction to your shopping experience. Please type in the number that best reflect how you feel about the situation described above (in the scenario).” Based upon seven point likert-type scales the subjects respond to scales entitled bad/good, unfair/fair, low value/good value, and unlikely/likely to purchase again.

Value Set 2: “My attitude toward this deal is.” Based upon seven point likert-type scales the subjects are asked to respond to scales entitled unfavorable/favorable, bad/good, and unattractive/attractive. These scales are an adapted version of Burton and Lichtenstein (1988) and Lichtenstein and Bearden (1989).

Value Set 3: “The movie ticket (or other product/service) is.” The subjects are asked to respond to scales entitled a bad buy/an excellent buy, no savings at all/large savings, and

After going through the scenario and being presented with a manipulated price level for a particular product/service the subjects' purchase intentions are measured. The subjects are asked to choose one of the following: (1) I would buy the product/service, or (2) I would not buy the product/service.

MANIPULATION CHECKS

Manipulation checks are required for the three dissonance reduction modes: trivialization, seeking consonant information, and attitude or cognition change.

The four trivialization measures are taken from Simon et al. (1995) and have been adapted to measure the importance or significance of paying more or less than planned for a particular purchase. As noted above these four scales are measured on a nine-point scale. The full text of the trivialization questions can be found in Form 32 and 33 in Appendices C and D.

In order to obtain measures of the subjects' perceptions of the benefits involved with seeking consonant information three questions were asked. These scales are measured on a seven-point scale. The questions are: (1) I would make every effort to verify prices at other stores before being satisfied, (2) People who shop around before buying always get the best price, and (3) If I have a price in mind for something, I check several places before I pay something different. The scales attached to these questions are
strongly disagree/strongly agree. For the full text see Form 34 and 35 in Appendices C and D.

Updated price expectations for the five- (5) products/services are then obtained. The updated price expectations serve as a manipulation check for the attitude or cognition change mode of dissonance reduction. It is investigated whether the dissonance reduction mode manipulation resulted in changed price expectations (Price$_1$ - Price$_0$). The subjects are asked, “Having gone through this study, what are your price expectations for the following products and services?” For the full text see Form 38 in Appendices C and D.

MEASURES

The following measures are used in the experiment. The measures are reported by the subjects as point estimates for price expectation at time zero and time one. Some of the experience questions are fill-in-the-blank questions, e.g., “when was the last time you went to a first run movie in a cinema?” Other measures are on a seven-point likert-type scale that is customary in marketing and consumer behavior research. The trivialization questions are based upon nine-point scales following the procedures found in Simon et al (1995) who used nine-point scales for the importance and significance questions.

The subjects are asked to report their price expectations for five (5) different products/services. Five products/services are chosen – one product/service is the experimental stimulus and the other four products/services are distracter questions. The subjects are asked to provide an estimate of their confidence regarding their estimate of their price expectations. Finally, various questions are asked regarding their personal experience with the product/service. For example, they are asked questions about the
recency and frequency of their use of the product/service. For the full text see Forms 2 through 19 in Appendices C and D.

Since choice is an important element of the study of cognitive dissonance (see the discussion above on induced compliance in the Literature Section) the subjects were asked how much freedom of choice they felt they had in making the purchase described in the scenario. This measure was taken using a seven-point scale. The experimental scenarios were designed to carefully control the levels of choice that the subjects were afforded in the purchase situations. Variables are taken under consideration in developing the text of the scenario that could potentially affect the degree of perceived choice. These are the degree of familiarity with the retail market, time constraints - time available for shopping, location constraints due to proximity to shopping locations, products/services that are especially conducive to increased susceptibility to interpersonal influence, products/services that are especially conducive to increased susceptibility to social approval, products/services conducive to increased susceptibility to the motivation to conform, and products/services that may be seen as "investment in future" similar to educational material, e.g., textbooks, calculators, or a suit for a job interview.

The subjects were asked if the scenario presented in the experiment was a scenario that they may expect to encounter. This measure was taken to get some indication of whether the scenario was realistic and relevant to this group of subjects for the purpose of evaluating external validity.

Each subject is then asked to report their age and gender. The subjects are asked to state their opinion of what was the purpose of the study. The subjects' opinion
regarding the purpose of the study will be analyzed in the event that demand effects are suspected to have occurred.

Other covariate measures are taken to check for day effects, time effects, gender effects, age effects, involvement with the experiment, and involvement with the product category. Cell size is 12 - 14 subjects per cell, to obtain the desired statistical power for these tests.

EXPERIMENTAL MANIPULATIONS

The manipulations required for the proposed design include a condition of (1) price level manipulations, (2) salient versus non-salient price, (3) the three modes of dissonance reduction. A discussion for each of these manipulations follows respectively.

Price Level Manipulations

The manipulations will have to be performed via computer because on-line manipulations of the subjects' initial price expectations are required in order to present a price-based stimulus that is sufficiently discrepant enough to produce dissonance. That is, the encountered or actual price stimulus that is designed to create dissonance will be a function of the initial price expectations that the subjects report for a particular product or service. The degree of discrepancy required to create sufficient dissonance has been determined to be fifty percent less than initial expectations and fifty percent higher than initial price expectations. That is, actual price = f(initial price expectations and the price level manipulation). However, in subsequent studies (not addressed by this proposal) it may be found that there is a relationship between the percentage of the price discrepancy and the degree of dissonance and hence the subsequent ability to trivialize, seek consonant
information, and to change attitude. The multiple levels of discrepancies are not proposed in the research design at this time.

Salient Versus Non-Salient Manipulation

As discussed in the PRETEST section above, the salient versus non-salient conditions were manipulated by the choice of product or service that the subject was presented in the experimental scenario. For the salient condition, a first-run movie in a cinema is used. For the non-salient condition, a no-appointment haircut is used.

Dissonance Reduction Mode Manipulation

There are three modes of dissonance reduction used in this experiment. Each subject receives one mode inducement that is carried out through a discussion with a salesperson or cashier. The discussions are designed to induce one of the three modes of dissonance reduction. In the attitude change manipulation the sales person responds in much the same format as the information provided by an external reference price on a price tag or in an ad. “We charge less. Other stores charge at least 25 percent more.” In the seeking consonant information manipulation the salesperson agrees with the subject. “Yes, we charge $x, and other stores charge a variety of prices.” The salesperson then encourages the subject to seek information regarding the prices offered by their competitors. The trivialization manipulation involves a salesperson informing the subject of the highly reversible nature of the product/service purchase. Convenient full refunds are made available to the subject.
SUBJECTS

Students enrolled in undergraduate Introduction to Marketing classes at a Southwestern university participated as subjects in the experiment. The subjects participated in partial fulfillment of the course requirements for research participation. In addition, the subjects were paid $5.00 each for their participation in the experiment. The requirement for a payment of $5.00 per subject was mandated by the administration of the computer lab used to conduct the experiment. The experimental stimuli were chosen to include products/services frequently purchased by undergraduate college students as discussed in the PRETEST section above.
VIII. RESULTS

RELIABILITY ANALYSIS FOR THE PERCEPTIONS OF VALUE SCALES

A reliability coefficient of .93 was produced using ten (10) seven-point items in the "Perceptions of Value" measure. Scores reported reflect mean score where 1 = low value and 7 = high value. The mean value for the combined total scales is 4.48 with a standard deviation of 1.40.

REPORTED LEVELS OF CHOICE

An overall mean level of "freedom of choice" across all conditions is 4.59 on a seven-point scale (1 = low choice, 7 = high choice) with a standard deviation of 2.00. The reported mean level of choice for the three price levels are significantly different with 3.9, 5.28, and 4.68 (alpha = .001) reported for the conditions of greater than, less than, and equal to, respectively. The reported mean levels of choice across the four mode conditions or across the two product conditions are not significantly different.

SUBJECT MEASURES

The average age of the respondents is 23 years old. Fifty-two percent of the respondents are male. Subjects reported a mean score of 4.25 with a standard deviation of 1.92 on a seven-point scale when asked if they felt like the situation presented in the experiment was one that they were likely to encounter (1 = not at all, 7 = very much).

HIGHER THAN EXPECTED PRICE ENCOUNTERS

The mean scores for the "perception of value" are lower for the condition where encountered price is greater than price expectations than for the condition where
encountered price is less than price expectations. The means for the "greater than" price expectations range from 2.9 to 3.9 (1 = low value, seven = high value). The means for the "less than" price expectations range from 4.7 to 6.1. Although these findings are intuitive, to date this relationship has not been shown empirically in the marketing literature. In addition, these findings provide evidence that the actual or encountered price manipulations are functioning as planned.

ADDITIONAL MANIPULATION CHECKS

Checks are made for each of the manipulations of the three modes of dissonance reduction (see Table 2). First, a check for the attitude or cognition change manipulation involves a measure of price expectations at time zero, prior to the manipulation, compared to a measure of price expectations at time one, or following the manipulation. A significant difference between price expectations for the manipulation compared to the control condition indicates a successful attempt to induce attitude or cognition change as a mode of dissonance reduction.

Secondly, a check for the seeking consonant information manipulation involves increasing the "price seeking" behaviors of the subjects. A successful seeking consonant information manipulation involves a higher mean score for the manipulated condition compared to the control, which includes a comparable price manipulation, but with no dissonance reduction mode manipulation. Third, a check for the trivialization manipulation involves reducing the importance of price. A successful trivialization manipulation involves lower scores for the mean of four importance measures for the manipulated condition compared to the control. The results of the manipulation checks
### Table 2: Manipulation Checks

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<th>Control Mean</th>
<th>Finding</th>
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<tbody>
<tr>
<td>pricevar = &gt; and prodvar = sal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude Change (PE2 - PE1)</td>
<td>6.8462 - 6.346*</td>
<td>7.4867 - 7.2000</td>
<td>support @ .060, .073</td>
</tr>
<tr>
<td>Seeking Consonant Information</td>
<td>5.0476</td>
<td>4.8889</td>
<td>directional support only</td>
</tr>
<tr>
<td>Trivialization</td>
<td>6.2321</td>
<td>6.15</td>
<td>no support</td>
</tr>
<tr>
<td>pricevar = &gt; and prodvar = nonsal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude Change (PE2 - PE1)</td>
<td>13.7143 - 13.4600</td>
<td>19.2 - 18.6</td>
<td>support @ .081, .086</td>
</tr>
<tr>
<td>Seeking Consonant Information</td>
<td>5.2857</td>
<td>4.9111</td>
<td>support @ 0.0835</td>
</tr>
<tr>
<td>Trivialization</td>
<td>6.3867</td>
<td>5.6667</td>
<td>support @ 0.079</td>
</tr>
<tr>
<td>pricevar = &lt; and prodvar = sal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude Change (PE2 - PE1)</td>
<td>6.8667 - 6.9333</td>
<td>6.4266 - 6.8571</td>
<td>directional support @ .19, .104</td>
</tr>
<tr>
<td>Seeking Consonant Information</td>
<td>4.0417</td>
<td>4.4048</td>
<td>no support</td>
</tr>
<tr>
<td>Trivialization</td>
<td>6</td>
<td>6.5357</td>
<td>directional support only</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude Change (PE2 - PE1)</td>
<td>9.8571 - 11.5</td>
<td>10.2727 - 13.6364</td>
<td>support @ .022, .014</td>
</tr>
<tr>
<td>Seeking Consonant Information</td>
<td>4.6889</td>
<td>4.4848</td>
<td>directional support only</td>
</tr>
<tr>
<td>Trivialization</td>
<td>6.2321</td>
<td>6.2273</td>
<td>no support</td>
</tr>
</tbody>
</table>
Figure 2

Estimated Marginal Means of MEANVALU

Actual Price > Price Expectation

Salient

Non-salient

MODEVAR

- Attitude Change
- Seeking Consonant
- Trivialization
- Control
Figure 3
Estimated Marginal Means of MEANVALU

Actual Price < Price Expectations

PRODVAR

1.00 Salient

2.00 Non-Salient

MODEVAR
- Attitude Change
- Seeking Consonant
- Trivialization
- Control

1.00

2.00

3.00

4.00
for four conditions are listed in Table 2. Although all manipulations were not successful the hypotheses are tested below.

DISSONANCE REDUCTION AND CONSUMERS' PERCEPTIONS OF VALUE WHEN ACTUAL PRICE IS GREATER THAN EXPECTED (see Figures 2 and 3)

Hypothesis 1 – Directional Support

Subjects that are presented with a greater than expected price for a non-salient product report mean scores for perceptions of value are significantly higher than the subjects presented with a salient product. The mean score for perceptions of value for the salient condition is 3.33. The mean score for the perceptions of value for the non-salient condition are 3.60 (alpha = .11).

Hypothesis 2a – Supported

When presented with a salient product at a higher than expected price, the reported mean perceptions of value for the subjects receiving the attitude change manipulation are significantly higher than the control condition. The mean perceptions of value score for the subjects receiving the attitude change manipulation is 3.94. The mean perceptions of value score for the subjects receiving the control condition is 2.98 (alpha = .045).

Hypothesis 2b – No Support

When presented with a salient product at a higher than expected price, the reported mean perceptions of value for the subjects receiving the seeking consonant information manipulation are not significantly lower than the control condition. The mean Insert Figure 2 and 3
perceptions of value score for the subjects receiving the seeking consonant information manipulation is 3.17. The mean perceptions of value score for the subjects receiving the control condition is 2.98 (alpha = .32).

Hypothesis 2c – Supported

As hypothesized, when presented with a salient product at a higher than expected price, the reported mean perceptions of value for the subjects receiving the trivialization manipulation are not significantly different than the control condition. The mean perceptions of value score for the subjects receiving the trivialization manipulation is 3.25. The mean perceptions of value score for the subjects receiving the control condition is 2.98 (alpha = .25).

Hypothesis 3a – Not Supported

When presented with a non-salient product at a higher than expected price, the reported mean perceptions of value for the subjects receiving the attitude change manipulation are significantly lower than the control condition. The mean perceptions of value score for the subjects receiving the attitude change manipulation is 3.21. The mean perceptions of value score for the subjects receiving the control condition is 3.65 (alpha = .11).

Hypothesis 3b – Not Supported

When presented with a non-salient product at a higher than expected price, the reported mean perceptions of value for the subjects receiving the seeking consonant information manipulation are not significantly higher than the control condition. The mean perceptions of value score for the subjects receiving the seeking consonant information
manipulation is 3.57. The mean perceptions of value score for the subjects receiving the control condition is 3.65 (alpha = .43).

Hypothesis 3c – Directional Support

When presented with a non-salient product at a higher than expected price, the reported mean perceptions of value for the subjects receiving the trivialization manipulation are not significantly higher than the control condition. The mean perceptions of value score for the subjects receiving the seeking consonant information manipulation is 3.93. The mean perceptions of value score for the subjects receiving the control condition is 3.65 (alpha = .23).

DISSONANCE REDUCTION AND CONSUMERS’ PERCEPTIONS OF VALUE WHEN ACTUAL PRICE IS LESS THAN EXPECTED

Hypothesis 4a – Not Supported

When presented with a salient product at a lower than expected price, the reported mean perceptions of value for the subjects receiving the attitude change manipulation are not significantly higher than the control condition. The mean perceptions of value score for the subjects receiving the attitude change manipulation is 6.07. The mean perceptions of value score for the subjects receiving the control condition is 5.67 (alpha = .081).

Hypothesis 4b – Directional Support

When presented with a salient product at a lower than expected price, the reported mean perceptions of value for the subjects receiving the seeking consonant information manipulation are not significantly higher than the control condition. The mean perceptions of value score for the subjects receiving the seeking consonant information manipulation is
5.76. The mean perceptions of value score for the subjects receiving the control condition is 5.67 (alpha = .38).

Hypothesis 4c – Not Supported

When presented with a salient product at a lower than expected price, the reported mean perceptions of value for the subjects receiving the trivialization manipulation are not significantly higher than the control condition at. The mean perceptions of value score for the subjects receiving the trivialization manipulation is 5.65. The mean perceptions of value score for the subjects receiving the control condition is 5.67 (alpha = .47).

Hypothesis 5a – Not Supported

When presented with a non-salient product at a lower than expected price, the reported mean perceptions of value for the subjects receiving the attitude change manipulation are not significantly higher than the control condition. The mean perceptions of value score for the subjects receiving the attitude change manipulation is 5.28. The mean perceptions of value score for the subjects receiving the control condition is 4.66 (alpha = .07).

Hypothesis 5b – Directional Support

When presented with a non-salient product at a lower than expected price, the reported mean perceptions of value for the subjects receiving the seeking consonant information manipulation are not significantly higher than the control condition. The mean perceptions of value score for the subjects receiving the seeking consonant information manipulation is 5.01. The mean perceptions of value score for the subjects receiving the control condition is 4.66 (alpha = .21).
Hypothesis 5c – Supported

When presented with a non-salient product at a lower than expected price, the reported mean perceptions of value for the subjects receiving the trivialization manipulation are not significantly higher than the control condition. The mean perceptions of value score for the subjects receiving the trivialization manipulation is 5.34. The mean perceptions of value score for the subjects receiving the control condition is 4.66 (alpha = .06).

PURCHASE INTENTIONS FOR ACTUAL PRICE GREATER THAN PRICE EXPECTATIONS

Following are the results for purchase intentions. The information that the results provide offer evidence as to whether there is an effect of the dissonance reduction treatment on the buy or not buy decision that is different than the control group that did not receive the treatment. The cross tabulation results are presented in Table 3. The significance levels for the Chi-square analysis are provided for each hypothesis. The hypotheses are presented in order by (1) whether the subject was presented with an actual price that was greater than or less than their initial expectations and by (2) whether the subject was presented with a stimulus that is salient/familiar or a stimulus that is non-salient/unfamiliar.
Table 3 - Cross Tabulations for Buy/Not Analysis

<table>
<thead>
<tr>
<th>SALIENT</th>
<th>Buy</th>
<th>Not Buy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actual Price &gt; Price Expectations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude Change</td>
<td>n = 9</td>
<td>n = 5</td>
</tr>
<tr>
<td>%</td>
<td>% = 64</td>
<td>% = 36</td>
</tr>
<tr>
<td>Control</td>
<td>n = 9</td>
<td>n = 5</td>
</tr>
<tr>
<td>%</td>
<td>% = 64</td>
<td>% = 36</td>
</tr>
<tr>
<td>Seeking Consonant Information</td>
<td>n = 9</td>
<td>n = 5</td>
</tr>
<tr>
<td>%</td>
<td>% = 64</td>
<td>% = 36</td>
</tr>
<tr>
<td>Control</td>
<td>n = 9</td>
<td>n = 6</td>
</tr>
<tr>
<td>%</td>
<td>% = 64</td>
<td>% = 36</td>
</tr>
<tr>
<td>Trivialization</td>
<td>n = 7</td>
<td>n = 7</td>
</tr>
<tr>
<td>%</td>
<td>% = 50</td>
<td>% = 50</td>
</tr>
<tr>
<td>Control</td>
<td>n = 9</td>
<td>n = 6</td>
</tr>
<tr>
<td>%</td>
<td>% = 64</td>
<td>% = 36</td>
</tr>
</tbody>
</table>

| **Actual Price < Price Expectations** |              |               |
| Attitude Change                | n = 14       | n = 1         |
| %                              | % = 93       | % = 7         |
| Control                        | n = 14       | n = 0         |
| %                              | % = 100      | % = 0         |
| Seeking Consonant Information  | n = 15       | n = 0         |
| %                              | % = 100      | % = 0         |
| Control                        | n = 14       | n = 0         |
| %                              | % = 100      | % = 0         |
| Trivialization                 | n = 13       | n = 1         |
| %                              | % = 83       | % = 7         |
| Control                        | n = 14       | n = 0         |
| %                              | % = 100      | % = 0         |
Table 3 - Cross Tabulations for Buy/Not Analysis

<table>
<thead>
<tr>
<th>NON-SALIENT</th>
<th>Buy</th>
<th>Not Buy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actual Price &gt; Price Expectations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude Change</td>
<td>n = 8</td>
<td>n = 6</td>
</tr>
<tr>
<td>%</td>
<td>% = 57</td>
<td>% = 43</td>
</tr>
<tr>
<td>Control</td>
<td>n = 9</td>
<td>n = 6</td>
</tr>
<tr>
<td>%</td>
<td>% = 60</td>
<td>% = 40</td>
</tr>
<tr>
<td>Seeking Consonant Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>n = 9</td>
<td>n = 5</td>
</tr>
<tr>
<td>Control</td>
<td>n = 9</td>
<td>n = 6</td>
</tr>
<tr>
<td>%</td>
<td>% = 60</td>
<td>% = 40</td>
</tr>
<tr>
<td><strong>Trivialization</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>n = 7</td>
<td>n = 7</td>
</tr>
<tr>
<td>Control</td>
<td>n = 9</td>
<td>n = 6</td>
</tr>
<tr>
<td>%</td>
<td>% = 60</td>
<td>% = 40</td>
</tr>
</tbody>
</table>

| **Actual Price < Price Expectations** |     |         |
| Attitude Change | n = 11 | n = 3 |
| % | % = 79 | % = 21 |
| Control | n = 7 | n = 4 |
| % | % = 64 | % = 36 |
| Seeking Consonant Information |     |         |
| % | n = 13 | n = 2 |
| Control | n = 7 | n = 4 |
| % | % = 87 | % = 13 |
| **Trivialization** |     |         |
| % | n = 12 | n = 2 |
| Control | n = 7 | n = 4 |
| % | % = 86 | % = 14 |
SALIENT

Hypothesis 6a – Attitude Change – Not Supported

When presented with a salient product at a higher than expected price, the attempt to change the attitude tends to have no impact on purchase intentions compared to the control group. That is, 64% chose to buy when we attempt to change their reference price versus the 64% who buy in the control (alpha = .5).

Hypothesis 6b – Seek Consonant Information – Not Supported

When presented with a salient product at a higher than expected price, the attempt to increase seeking behaviors tends to have no impact on purchase intentions compared to the control group. That is, 64% chose to buy when we attempt to increase seeking behavior versus the 64% who buy in the control (alpha = .5).

Hypothesis 6c – Trivialization – Not Supported

When presented with a salient product at a higher than expected price, the attempt to change decrease the importance of price tends to have a negative impact on purchase intentions compared to the control group. That is, 50% chose to buy when we attempt to decrease the importance of price versus the 64% who did buy in the control (alpha = .22).

NON-SALIENT

Hypothesis 7a – Attitude Change – Not Supported

When presented with a non-salient product at a higher than expected price, the attempt to change the attitude tends to have a negative impact on purchase intentions compared to the control group. That is, 57% chose to buy when we attempt to change their reference price versus the 60% who did buy in the control (alpha = .44).
Hypothesis 7b – Seek Consonant Information – Directional Support

When presented with a non-salient product at a higher than expected price, the attempt to increase seeking behavior tends to have a positive impact on purchase intentions compared to the control group. That is, 64% chose to buy when we attempt to increase seeking behavior versus the 60% who did buy in the control (alpha = .41).

Hypothesis 7c – Trivialization – Not Supported

When presented with a non-salient product at a higher than expected price, the attempt to reduce the importance of price tends to have a negative impact on purchase intentions compared to the control group. That is, 50% chose to buy when we attempt to reduce the importance of price versus the 60% who did buy in the control (alpha = .29).

PURCHASE INTENTIONS FOR ACTUAL PRICE LESS THAN PRICE EXPECTATIONS

SALIENT

Hypotheses 8a – 8c

The results for Hypotheses 8a – 8c are not presented. These subjects were presented with a lower than expected price for a product they are quite familiar with, thus, it is intuitive that these consumers would make a purchase.

NON-SALIENT

Hypothesis 9a – Attitude Change – Not Supported

When presented with a non-salient product at a lower than expected price, the attempt to change the attitude tends to have a positive impact on purchase intentions...
compared to the control group. That is, 79% chose to buy when we attempt to change their reference price versus the 64% who did buy in the control (alpha = .20).

Hypothesis 9b – Seek Consonant Information – Supported

When presented with a non-salient product at a lower than expected price, the attempt to increase seeking behaviors tends to have a positive impact on purchase intentions compared to the control group. That is, 87% chose to buy when we attempt to increase seeking behaviors versus the 64% who did buy in the control (alpha = .08).

Hypothesis 9c – Trivialization – Directional Support

When presented with a non-salient product at a lower than expected price, the attempt to reduce the importance of price tends to have a positive impact on purchase intentions compared to the control group. That is, 86% chose to buy when we attempt to reduce the importance of price versus the 64% who did buy in the control (alpha = .09).
IX. DISCUSSION AND CONCLUSIONS

IMPLICATIONS

Managers try to address consumer's concerns regarding price in their communications. Consumer researchers try to understand how consumers' reactions to encountered prices. It has been shown that consumers are not accurate estimators of price, therefore it is important to understand the consumer encounter with discrepant prices. This research provides a better understanding of consumers' reactions to price encounters and, thus, may provide marketing managers with improved methods for price setting and for developing price communications. Marketers will have knowledge to effectively make dissonance reduction modes available to their consumers. This same information provides public policy officials with the leverage necessary to insure that consumers receive maximum value from their purchase decisions. The questions addressed in this study are of particular interest to marketers, consumer researchers, and public policy makers and include: (1) Can a particular mode of dissonance reduction (i.e., one of the three posited by Festinger) be induced through marketing tactics? (2) Does the mode of dissonance reduction impact the consumer's purchase decision? (3) Does the mode of dissonance reduction impact the consumer's perception of value regarding the product or service purchased? In most of the conditions presented in this study, the dissonance reduction modes were induced in a consumer-shopping context. See Table 2 for more specific information regarding the manipulation checks for the individual mode manipulations. As to whether a particular dissonance reduction mode affects a purchase decision remains inconclusive due to inadequate sample size. In
addition, the results are inconclusive as to whether a particular dissonance reduction mode impacts consumers’ perceptions of value.

POTENTIAL EXPLANATIONS OF THE STUDY RESULTS

The results from the analysis of the non-salient conditions may be explained by the fact that the consumers have less knowledge about the product and its price, and may be less involved with the product/service. Dissonance is harder to invoke in conditions where the individual has low levels of involvement with the situation.

Hypothesis 4C was not supported. In Hypothesis 4C, the consumer is presented with a less than expected price and is told about a liberal return policy in an effort to reduce the importance of price (trivialization manipulation). The consumer being quite familiar with the standard price (salient condition) may attribute the lower price and assurances of a liberal return policy as a signal of sub-optimal product quality, therefore, resulting in a lower perception of value.

ADDRESSING THE LIMITATIONS OF THE STUDY

While this research is based upon with the current theory on dissonance (see THE EVOLUTION OF DISSONANCE THEORY in Section V) and the evidence for the existence of reference price, there was minimal support for the dissertation hypotheses. However, this research is breaking new ground for both consumer research and social psychology research. And, as with any innovative undertaking, the first steps in the process may be difficult.

Innovations demonstrated in the research include: 1) The first study to attempt to induce all three of Festinger’s (1957) modes of dissonance reduction. 2) The first use of
the three modes of dissonance reduction in a consumer context. 3) The first attempt to
induce the modes of dissonance reduction within a consumer behavior context and to
attain an understanding of the subsequent impact on consumers’ perceptions of value. 4)
The second investigation of trivialization as a mode of dissonance reduction. 5) The first
investigation of decision reversibility as a method of trivialization. Decision reversibility
in the context of consumers’ evaluation of price can take many forms. Decision
reversibility in this study has been operationalized as a liberal return policy. 6) The first
investigation of the impact that the modes of dissonance reduction have on consumers’
perceptions of value.

FUTURE RESEARCH - PLANNED ADAPTATIONS OF THE STUDY DESIGN

Since this research has such strong theoretical backing, and due to the strength of
the potential contribution posed by this research, it is worthwhile to continue to try to
answer the research questions that have been raised. The operationalization of the
dissonance reduction modes may be possible reasons for such unsupported hypotheses.
Redesign of the dissonance reduction mode manipulations may be warranted. The choice
of experimental stimuli (products, prices, scenarios, etc.) may have also contributed to the
unexpected study results and pretests on these aspects of the study is also warranted.

In future research to avoid confounds with product/service categories, it may be
useful to test the hypotheses proposed with both products and services. This study only
included services. It may also be useful to compare products and services that vary
similarly in the level of quality variations found in the product/service category. One
condition for highly variable quality and another condition for constant levels of quality
would be useful for ruling out variable product quality expectations as a rationale for differences in the reported ratings of perceptions of value.

FUTURE RESEARCH – BEYOND THE CURRENT RESEARCH

Pre and Post Commitment Activities in Purchase Decisions

Several interesting empirical and theoretical issues arose during this study. Pretests were performed very early in the study to confirm whether a discrepant price was capable of producing dissonance with the magnitude to motivate action by the consumer. This notion was confirmed as expected. Not expected, however, was evidence in the data analysis that the magnitude of dissonance arose to the point of upsetting the consumer. There seemed to be situations where the consumers' reactions to unmet price expectations actually resulted in an extremely dissonant state or the consumer experiencing frustration. This situation seemed to be after the consumer had participated in a commitment to a purchase. Therefore it appears that future research is warranted to examine the pre-commitment dissonance versus the post-commitment dissonance. Examples of commitment activities being referred to here are: telling your children that you will buy a pair of Nike shoes only to find they cost $130, or when waiting in line for tickets for a long time to find there are hidden service charges that were unexpected. The purchase commitment activity is the consumer's promise to a child, and in the second example, the time involved in waiting in lines to purchase tickets. The study of consumer commitment activity in making price evaluations may reveal important timing issues. The understanding of consumer commitment activities ultimately may impact the
consumers' perceptions of value, their image of the marketer, and their intentions to repurchase.

Framing Effects in Price Evaluation

Another area of interest for future research involves framing effects. Framing effects, especially extensions of prospect theory (Kahneman and Tversky 1979) are frequently used in studies of pricing and consumer behavior. Puto (1987) found reference points to influence choice consistent with prospect theory. Grewal, Gotlieb, and Marmorstein (1994) found that negative message framing increased consumers' perceptions of financial risk. Heath, Chatterjee, and France (1995) demonstrated that perceptions of price changes are affected by whether or not the price change is framed as an explicit proportional price change.

Within the context of a framing effect, the process of comparing a price to an important value (civil rights, family safety, etc.) may minimize the importance of price that would otherwise result in dissonance. This may be the theoretical explanation for the process used by marketers when they minimize the importance of high priced automobiles, for example, when compared to the importance of some other value such as the physical safety of their children (Volvo). This proposition for future research closely resembles Study 3 and Study 4 of Simon et al. (1995) where the importance of comprehensive exams are compared to values such as human rights.

Shopping Constraints and the Evaluation of Price

The following proposition is related to attitude change as a mode of dissonance reduction. The induced compliance paradigm (commonly seen in
dissonance research) is drawn upon and is replicated in a consumer buying situation by creating a situation where the consumer is presented with purchase constraints in terms of time, budget, and shopping options. Consumers with little perceived choice in making purchases due to constraints regarding time to shop, places available to shop, proximity to shopping areas, will change their expectations regarding price more than consumers not confronted with these shopping constraints.

The Importance of the Magnitude of Price Discrepancy

It may be found that there is a relationship between the percentage of the price discrepancy and the degree of dissonance and thus the subsequent ability to trivialize, seek consonant information, and to change attitude. The multiple levels of discrepancies are not proposed in the research design at this time.

CLOSING

Festinger's three modes of dissonance reduction provide an interesting framework from which to evaluate consumers' reactions to unmet price expectations. It is intuitive to assume that consumers react to unexpected price encounters in a manner consistent with the three modes of dissonance reduction. That is, consumers will change their price expectations (attitude change), seek out more pricing information (seek consonant information), and will reduce the importance of price (trivialization), as a reaction to unexpected prices. This study's intuitive appeal, close alignment with current theory, and initial empirical support provide motivation for future investigation.
X. APPENDICES
APPENDIX A

Human Subjects Approval
Human Subjects Research Statement
Projects Exempt From Human Subjects Committee Review

"Human Subjects Committee Manual of Procedures,"
University of Arizona, Tucson, Arizona

Research activities in which the only involvement of human subjects will be one or more of
the following categories are exempt from these regulations unless the research is covered
by other subparts:

(3) Research involving survey or interview procedures. Note: This research does not
involve human subjects that can be identified or linked to the subjects. The subject’s
response could not place the subject at risk of criminal or civil liability. The research does
not deal with sensitive aspects of the subject’s own behavior.
Appendix B

Pretest 1 – Study of Consumer Buying Habits
Study of Consumer Buying Habits

We are interested in learning about how people use price information when making purchasing decisions. Listed below are several frequently purchased products and services. For each item, please write in a price that you would typically expect to pay if you were purchasing that item. Then, please circle the number that corresponds to how confident you are that your estimate is accurate. By "accurate," we mean how confident are you that this is the price you would see when you typically shop for these items. Since prices vary from store to store, there often is no truly "correct" price for an item. We just want your best estimate.

<table>
<thead>
<tr>
<th>Product/Service</th>
<th>Price You Expect to Pay</th>
<th>How confident are you that your estimate is accurate (circle one number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-mas Tree (example)</td>
<td>$25.00</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>Levis 5 Pocket Blue Jeans</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>a bank ATM use fee</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>a first-run movie ticket</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>Preston brand dress shoes</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>a new release music CD</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>large pizza with everything</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>no appointment haircut</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>a bicycle helmet</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>8 ounce non-fat yogurt</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>6-pack of Coke (cans)</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>New battery for your car</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>Oil change and lube</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>Monthly fee for credit card</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>hard bound accounting text</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>haircut at a styling salon</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>hamburger fries &amp; drink at a fast food restaurant</td>
<td>$</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

Please continue on the next page, but do not turn back to this one.
Study of Consumer Buying Habits – Part 2

Please give us some more information about the products you listed on the other side of the page, but do not look back to see your earlier answers. For each listed product or service, please indicate the most you would be willing to pay for it, and then tell us whether you personally have actually purchased this product or service and if so, the date of your last purchase.

<table>
<thead>
<tr>
<th>Product/Service</th>
<th>Most You would Pay</th>
<th>Have you ever purchased this product/service? (Circle “Y” or “N”)</th>
<th>If “yes” what is the approximate month and year of your last purchase?</th>
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<tr>
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<td>Dec, 1997</td>
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<td>Levis 5 Pocket Blue Jeans</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>a bank ATM use fee</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>a first-run movie ticket</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Preston brand dress shoes</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>a new release music CD</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>large pizza with everything</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>no appointment haircut</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>a bicycle helmet</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>8 ounce non-fat yogurt</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>6-pack of Coke (cans)</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>New battery for your car</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Oil change and lube</td>
<td>$</td>
<td>Y</td>
<td>N</td>
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<td>Monthly fee for credit card</td>
<td>$</td>
<td>Y</td>
<td>N</td>
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<tr>
<td>hard bound accounting text</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>haircut at a styling salon</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>hamburger fries &amp; drink at fast food restaurant</td>
<td>$</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Please place a check mark on the line before your gender:

[ ] Male  [ ] Female

Thank you for helping with this survey!
Appendix C

Text of the Experimental Scenario – Movie
Form 1:

Please enter the 4 digit # assigned to you on your instruction sheet. Please check the number carefully.

We are interested in learning how consumers evaluate the products that they purchase. For the following products, please type in the price that you would expect to pay for that item. Since prices vary from store to store, there is often no correct price for an item. We would just like your best estimate.

Form 2:

What is the price you would expect to pay for a pair of Levi’s 5-pocket Blue Jeans in a clothing store? $ __________

Form 3:

How confident are you about your price estimate? Please type in the number that best reflects your response.

Not at all Confident 1 2 3 4 5 6 7 Extremely Confident

Form 4:

When was the last time you purchased a pair of 5-Pocket Levi’s Jeans?

Form 5:

What is the price that you would expect to pay for a new-release music CD?

Form 6:

How confident are you about your price estimate? Please type in the number that best reflects your response.

Not at all Confident 1 2 3 4 5 6 7 Extremely Confident

Form 7:

When was the last time you purchased a new-release music CD?
Form 8:

What is the price that you would expect to pay for a ticket to a first-run movie in a cinema?

Form 9:

How confident are you about your price estimate? Please type in the number that best reflects your response.

Not at all Confident 1 2 3 4 5 6 7 Extremely Confident

Form 10:

When was the last time you went to a first-run movie in a cinema?

Form 11:

How often do you go to the movies?

Never 1 2 3 4 5 6 7 More than once a week

Form 12:

What is the price that you would expect to pay for a no-appointment haircut?

Form 13:

How confident are you about your price estimate? Please type in the number that best reflects your response?

Not at all Confident 1 2 3 4 5 6 7 Extremely Confident

Form 14 - blank

Form 15 - blank

Form 16:

How long has it been since you had a no-appointment haircut?
Form 17:
What is the price you would expect to pay for a large thin crust pizza with everything?

Form 18:
How confident are you about your price estimate? Please type in the number that best reflects your response.

Not at all Confident 1 2 3 4 5 6 7 Extremely Confident

Form 19:
When was the last time you ordered a large pizza with everything? Please type in your response below.

Form 20:
In the next screen you will see a description of a situation similar to one you might experience before you graduate.

Please read the information carefully and try to imagine yourself in that situation. Please respond as you normally would if you encountered a similar situation in your everyday life.

Form 21
Imagine that you are in your car driving home from school. The two DJs on the radio start raving about a great new movie that one of them saw last night. It turns out that two of your favorite actors are in the movie and that it has been playing for about a week.

Since your evening is completely free, you decide to see the new movie even though it is only playing at a theater that is a 45-minute drive from where you live.

Form 22:
After dinner you drive to the theater complex, and when you get to the ticket window, there is a sign indicating that the ticket price for the movie is:

$_____.

Form 24:
You mention to the cashier that you had expected the movie to cost $____.
Form 25:

The ticket-window cashier responds,

“Oh, no, a movie like this one normally costs even ______.

At other theaters it might cost 25 percent ______.

Form 26:

The cashier responds, “theaters in town charge a variety of prices, but we charge $ ________.

You could check the prices at the other theaters. There are usually newspapers in the coffee shop next door. The newspaper should have the prices for the other theaters.

Form 27:

The ticket-window cashier responds, “you can always get a full refund on your ticket. If you are not completely satisfied just bring your ticket stub back to this window and we will give you a full refund - no questions asked!”

Form 28 - blank

Form 32:

In the grand scheme of things, how significant of an event would it be to pay ______ ______ you expect to pay for a movie?

Not at all significant 1 2 3 4 5 6 7 Extremely significant

How important is it to see a movie with your two favorite actors?

Not at all important 1 2 3 4 5 6 7 Very important

Form 33:

How important is it that you decide to make a purchase for MORE than you expect to pay? Please choose one.

Not at all important 1 2 3 4 5 6 7 Very Important
In the grand scheme of things, how significant is it to make a purchase for LESS than you expect to pay.

Not at all significant  1  2  3  4  5  6  7  Extremely significant

Form 34:
I would make a special effort to verify prices at other theaters before making this purchase. Please type in the number that represents your response.

Strongly disagree  1  2  3  4  5  6  7  Strongly agree

Form 35:
People who shop around before buying always get the best price. Please choose one.

Strongly disagree  1  2  3  4  5  6  7  Strongly agree

If I have a specific price in mind for an item, I would check several places before I pay something different. Please choose one.

Strongly disagree  1  2  3  4  5  6  7  Strongly agree

Form 38:
Having gone through this study, please respond to the following question:

What would you expect to pay for a first-run movie ticket in a cinema? $ ______

Form 29:
Now we would like for you to indicate your reaction to this movie-ticket purchase experience. Please type the number that best reflects how you feel about the situation described above.

Bad  1  2  3  4  6  7  Good
Unfair  1  2  3  4  6  7  Fair
Low value  1  2  3  4  6  7  High value
Unlikely to go there again  1  2  3  4  6  7  Likely to go there again
Low quality purchase  1  2  3  4  6  7  High quality purchase
Form 30:

My attitude toward this movie deal is:

Unfavorable 1 2 3 4 6 7 Favorable

Bad 1 2 3 4 6 7 Good

Unattractive 1 2 3 4 6 7 Attractive

Form 31:

The movie ticket is:

A bad buy 1 2 3 4 6 7 An excellent buy

No savings at all 1 2 3 4 6 7 An extremely large savings

An extremely unfair price 1 2 3 4 6 7 An extremely fair price

Form 23:

You can buy the ticket and see the movie or you can do something else for the rest of the evening. Which will you do? Please click one of the following.

I would buy the ticket.

I would not buy the ticket.

Form 36:

How much choice do you feel you had in terms of purchasing the movie ticket? Please choose one.

Low Choice 1 2 3 4 6 7 High choice

Form 37:

Do you think that this scenario is similar to one you might reasonably expect to encounter in the future? Please choose one.

Not at all similar 1 2 3 4 6 7 Very Similar
Having gone through this study, please respond to the following questions:

What would you expect to pay for a pair of 5-Pocket Levi's Jeans? $ ____

What would you expect to pay for a large pizza with everything? $ ______

What is the price that you would expect to pay for a no-appointment haircut? $ ______

What is the price that you would expect to pay for a new-release music CD? $ ______

Please indicate your gender.

Please indicate your age.

In your opinion, what is the purpose of this study?

Thank you for participating in this research study. Please do not discuss this study with anyone. The resulting quality of the research will depend on your confidentiality.

Please see the monitor to receive credit for your participation.

Thank you!

Please leave this screen.
Appendix D

Text of the Experimental Scenario – Haircut
Form 1:

Please enter the 4 digit # assigned to you on your instruction sheet. Please check the number carefully.

We are interested in learning how consumers evaluate the products that they purchase. For the following products, please type in the price that you would expect to pay for that item. Since prices vary from store to store, there is really no correct price for an item. We would just like your best estimate.

Form 2:

What is the price you would expect to pay for a pair of Levi's 5-pocket Blue Jeans in a clothing store?

Form 3:

How confident are you about your price estimate? Please type in the number that best reflects your response.

Not at all
Confident 1 2 3 4 5 6 7 Extremely Confident

Form 4:

When was the last time you purchased a pair of 5-Pocket Levi's Jeans?

Form 5:

What is the price that you would expect to pay for a new-release music CD?

Form 6:

How confident are you about your price estimate? Please type in the number that best reflects your response.

Not at all
Confident 1 2 3 4 5 6 7 Extremely Confident

Form 7:

When was the last time you purchased a new-release music CD? ______
Form 8:

What is the price that you would expect to pay for a ticket to a first-run movie in a cinema? $_________

Form 9:

How confident are you about your estimate? Please type in the number that best reflects your response.

Not at all
Confident 1 2 3 4 5 6 7 Extremely Confident

Form 10:

When was the last time you went to a first-run movie in a cinema?

Form 11:

How often do you go to the movies?

Never 1 2 3 4 5 6 7 More than once a week

Form 12:

What is the price that you would expect to pay for a no-appointment haircut?

Form 13:

How confident are you about your price estimate? Please type in the number that best reflects your response?

Not at all
Confident 1 2 3 4 5 6 7 Extremely Confident

Form 14 - blank

Form 15 - blank

Form 16:

How long has it been since you had a no-appointment haircut?
Form 17:
What is the price you would expect to pay for a large thin-crust pizza with everything?

Form 18:
How confident are you about your price estimate? Please type in the number that best reflects your response.

Not at all
Confident 1 2 3 4 5 6 7 Extremely Confident

Form 19:
When was the last time you ordered a large pizza with everything? Please type in your response below.

Form 20:
In the next screen you will see a description of a situation similar to one you might experience before you graduate.

Please read the information carefully and try to imagine yourself in that situation. Please respond as you normally would if you encountered a similar situation in your everyday life.

Form 21
Imagine that you are visiting your roommate’s family in another state for a week. Even though you and your roommate are good friends, you have never met your hosts before this visit.

Before you get to their house, you catch a glimpse of yourself in the rear view mirror and realize that you are ready for a haircut. While your hair is not a total mess, you always look better when it has been cut.

Form 22:
You are arriving ahead of schedule and you have time to visit the “no-appointment” hair salon you notice in a shopping center near their home. It is very similar to the no-appointment hair salon that you use at home.

The receptionist tells you that they can take you right away, and you see their price list which says regular haircuts are: $__________.
Form 24:

You mention to the receptionist that you had expected the haircut to cost $_____.

Form 25:

The receptionist responds,

"Oh no, a haircut like this one normally costs _______.

At other no-appointment salons it might cost 25 percent _______.

Form 26:

The receptionist responds, "The no-appointment salons in town charge a variety of prices, but we charge $______.

"You could verify this by calling the other shops or visiting them."

Form 27:

The receptionist responds, "you can always get a full refund for your haircut. The shop manager will fix your hair, too, for no charge. If you are not completely satisfied just bring your receipt back to this desk, and we will give you a full refund with no questions asked!"

Form 28 - blank

Form 32:

In the grand scheme of things, how significant of an event would it be to pay _________ ________ (more than or less than) you expect to pay for a haircut?

Not at all significant 1 2 3 4 5 6 7 8 9 Extremely significant

How important is it to get a haircut when you are ready for one?

Not at all important 1 2 3 4 5 6 7 8 9 Very important
Form 33:

How important is it that you decide to make a purchase for MORE than you expect to pay? Please choose one.

Not at all important 1 2 3 4 5 6 7 8 9 Very important

In the grand scheme of things, how significant is it to make a purchase for LESS than you expect to pay.

Not at all significant 1 2 3 4 5 6 7 8 9 Extremely significant

Form 34:

I would make a special effort to verify prices at other no-appointment salons before making this purchase. Please type in the number that represents your response.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Form 35:

People who shop around before buying always get the best price. Please choose one.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

If I have a specific price in mind for an item, I would check several places before I pay something different. Please choose one.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Form 38:

Having gone through this study, please answer the following:

What is the price that you would expect to pay for a no-appointment haircut? $ _____

Form 29:

Now we would like for you to indicate your reaction to this haircut purchase experience. Please type the number that best reflects how you feel about the situation described above.

Bad 1 2 3 4 6 7 Good
Unfair 1 2 3 4 6 7 Fair
Low value 1 2 3 4 6 7
Unlikely to go there again 1 2 3 4 6 7
Low quality purchase 1 2 3 4 6 7

High value
Likely to go there again
High quality purchase

Form 30:

My attitude toward this haircut deal is:

Unfavorable 1 2 3 4 6 7 Favorable
Bad 1 2 3 4 6 7 Good
Unattractive 1 2 3 4 6 7 Attractive

Form 31:

The haircut is:

A bad buy 1 2 3 4 5 6 7 An excellent buy
No savings at all 1 2 3 4 5 6 7 An extremely large savings
An extremely unfair price 1 2 3 4 5 6 7 An extremely fair price

Form 23:

You can get the haircut or you can just leave the salon. Which will you do? Please click one of the following:

I would get the haircut.
I would not get the haircut.

Form 36:

How much choice do you feel you had in terms of purchasing a haircut at this no appointment salon? Please choose one.

Low Choice 1 2 3 4 5 6 7 High Choice
Form 37:
Do you think that this scenario is similar to one you might reasonably expect to encounter in the future? Please choose one.

Not at all similar  1  2  3  4  5  6  7  Very Similar

Form 39
Having gone through this study, please respond to the following questions:

What would you expect to pay for a pair of 5-Pocket Levi's Jeans? $ _____

What would you expect to pay for a large pizza with everything? $ ______

What would you expect to pay for a first-run movie ticket in a cinema? $ ______

What is the price that you would expect to pay for a new-release music CD? $ ______

Please indicate your gender. _______

Please indicate your age. _______

In your opinion, what is the purpose of this study? ____________

Form 40:
Thank you for participating in this research study. Please do not discuss this study with anyone. The resulting quality of the research will depend on your confidentiality.

Please see the monitor to receive credit for your participation.

Thank you!

Please leave this screen.
APPENDIX E

Experimental Validity
VALIDITY

Each of the threats to external and internal validity addressed by Campbell and Stanley (1966) are identified below in order to provide a framework by which the current experimental study can be evaluated. A discussion how the proposed research has been designed to minimize these threats is provided. In order to secure adequate and proper data (Campbell and Stanley 1966) in which to analyze, the subjects need to be presented with a scenario in which they experience dissonance due to an encountered price. Dissonance results from inconsistent cognitions. The inconsistent cognitions provided to the subjects will be the presentation of an actual price that is discrepant with the price expectations that the subject initially reports.

Threats to Internal Validity

In order to minimize confounding with the effects of the experimental stimuli and to ensure that the experimental stimuli indeed made a difference, the effects of the extraneous variables will have to be considered. (Campbell and Stanley 1966) identify eight different classes of extraneous variables that propose a threat to internal validity: history, maturation, testing, instrumentation, statistical regression, biases, mortality, and selection-maturation interaction. A between-subjects design is proposed to eliminate several of the threats: maturation and selection-maturation interaction. A computer-controlled experiment is proposed which minimizes threats to the experimental instrumentation. Subjects advance through the program by themselves and are asked to input their responses onto a computer screen - this format minimizes changes in the measuring instruments and minimizes the impact of the facilitator variations. In the
experimental, the subjects are randomly assigned to a particular condition based upon their order of arrival into the computer laboratory, which minimizes threats of experimental mortality and selection bias. History is defined as those events that impact the experimental results other than the experimental manipulation. Not addressed by the proposed research design is the internal validity issue of testing. Testing refers to the effects that occur by taking a repeated measurement. The proposed experiment occurs within a 15 minute time frame, a very short time frame from which to gather two subsequent measurements of the same price. The short duration of the experimental exercise and the corresponding threat to the internal validity of the study could be addressed in two ways: (1) through the careful selection of experimental stimuli, scenario and manipulations, and (2) through the use of a quasi-experimental design. Story-telling survey instruments were given a priori to the experiment in order to establish the types of pricing encounters that actually result in dissonance for consumers. It is proposed that consumers will experience dissonance when highly discrepant prices are encountered in the product category for which they claim to have significant experience. Prices that are higher than expected will result in dissonance regarding the fairness of the price offering. Prices that are lower than expected may result in dissonance regarding the quality, authenticity, or legal attributes (stolen merchandise) of the product.

Threats to External Validity

External validity refers to the generalizability of the effects found from the experimental data. Campbell and Stanley (1966) identify four threats to external validity. The four threats are: (1) the reactive or interaction effects of testing, (2) the selection
biases, (3) reactive effects of experimental arrangements, and (4) the multiple treatment inference. The reaction or interactive effects of testing is a threat to the study being proposed. It is the opinion of the author that the threats encountered by using a between-subjects design which will require a duplicate measure of the same attitude (or price) are counter balanced by the decrease in the threats to internal validity that would be encountered in a within-subjects design, i.e., maturation and mortality. Selection bias is minimized by the random assignment of subjects to the manipulations based upon their order of arrival to the computer laboratory (subject 1 does manipulation 1, ………, subject 5 does manipulation 1). The reactive effects to the experiment are also a threat to the generalizability of this study. The careful development of a realistic experimental scenario that is relevant and salient to the subjects will be used to minimize this problem. Pretests have been conducted to determine what products are relevant to college students and their degree of experience with the products. Multiple treatment effects are not an issue in this study since each subject will only be receiving one treatment.
APPENDIX F

Stimuli Selection Pretests Results
**Stimuli Selection Pretest:** Pretests to Determine Salient Versus Nonsalient Products/Services

<table>
<thead>
<tr>
<th>Description</th>
<th>Average</th>
<th>Std Dev</th>
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<th>Min</th>
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<td>100</td>
<td>15</td>
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<td>9.12</td>
<td>50</td>
<td>9</td>
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Stimuli Selection Pretest: Pretests to Determine Salient Versus Nonsalient Products/Services

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<th>STD DEV</th>
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<table>
<thead>
<tr>
<th>Most you would pay</th>
<th>AVE</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levis 5 Pocket Blue Jeans</td>
<td>36.00</td>
<td>6.91</td>
</tr>
<tr>
<td>a bank ATM use fee</td>
<td>1.59</td>
<td>1.12</td>
</tr>
<tr>
<td>a first-run movie ticket</td>
<td>7.87</td>
<td>2.11</td>
</tr>
<tr>
<td>Preston Brand dress shoes</td>
<td>46.35</td>
<td>32.13</td>
</tr>
</tbody>
</table>
**Stimuli Selection Pretest: Pretests to Determine Salient Versus Nonsalient Products/Services**

<table>
<thead>
<tr>
<th>Product/Service</th>
<th>n=</th>
<th>Yes</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a new release music CD</td>
<td>15.75</td>
<td>2.32</td>
<td></td>
</tr>
<tr>
<td>large pizza with everything</td>
<td>14.05</td>
<td>3.05</td>
<td></td>
</tr>
<tr>
<td>no appointment haircut</td>
<td>11.79</td>
<td>4.93</td>
<td></td>
</tr>
<tr>
<td>a bicycle helmet</td>
<td>40.18</td>
<td>26.40</td>
<td></td>
</tr>
<tr>
<td>8 ounce non-fat yogurt</td>
<td>4.77</td>
<td>19.53</td>
<td></td>
</tr>
<tr>
<td>6-pack of Coke (cans)</td>
<td>2.50</td>
<td>0.86</td>
<td></td>
</tr>
<tr>
<td>New battery for your car</td>
<td>60.37</td>
<td>24.08</td>
<td></td>
</tr>
<tr>
<td>Oil change and lube</td>
<td>22.27</td>
<td>8.33</td>
<td></td>
</tr>
<tr>
<td>Monthly fee for credit card</td>
<td>4.53</td>
<td>6.34</td>
<td></td>
</tr>
<tr>
<td>Hard Bound Accounting Text</td>
<td>80.05</td>
<td>32.82</td>
<td></td>
</tr>
<tr>
<td>haircut at styling salon</td>
<td>28.46</td>
<td>13.28</td>
<td></td>
</tr>
<tr>
<td>hamburger fries &amp; drink at a fr</td>
<td>5.98</td>
<td>8.88</td>
<td></td>
</tr>
</tbody>
</table>

**Ever purchased**

<table>
<thead>
<tr>
<th>Product/Service</th>
<th>n=</th>
<th>Yes</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levis 5 Pocket Blue Jeans</td>
<td>29</td>
<td>0.707</td>
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</tr>
<tr>
<td>a bank ATM use fee</td>
<td>36</td>
<td>0.878</td>
<td></td>
</tr>
<tr>
<td>a first-run movie ticket</td>
<td>37</td>
<td>0.925</td>
<td></td>
</tr>
<tr>
<td>Preston Brand dress shoes</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>a new release music CD</td>
<td>40</td>
<td>0.976</td>
<td></td>
</tr>
<tr>
<td>large pizza with everything</td>
<td>30</td>
<td>0.732</td>
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</tr>
<tr>
<td>no appointment haircut</td>
<td>28</td>
<td>0.683</td>
<td></td>
</tr>
<tr>
<td>a bicycle helmet</td>
<td>9</td>
<td>0.2195</td>
<td></td>
</tr>
<tr>
<td>8 ounce non-fat yogurt</td>
<td>25</td>
<td>0.61</td>
<td></td>
</tr>
<tr>
<td>6-pack of Coke (cans)</td>
<td>34</td>
<td>0.83</td>
<td></td>
</tr>
</tbody>
</table>
Stimuli Selection Pretest: Pretests to Determine Saliency Versus Nonsalient Products/Services

<table>
<thead>
<tr>
<th>Item</th>
<th>Rating</th>
<th>Salience</th>
</tr>
</thead>
<tbody>
<tr>
<td>New battery for your car</td>
<td>28</td>
<td>0.693</td>
</tr>
<tr>
<td>Oil change and lube</td>
<td>32</td>
<td>0.78</td>
</tr>
<tr>
<td>Monthly fee for credit card</td>
<td>9</td>
<td>0.2195</td>
</tr>
<tr>
<td>Hard Bound Accounting Text</td>
<td>34</td>
<td>0.85</td>
</tr>
<tr>
<td>Haircut at styling salon</td>
<td>24</td>
<td>0.583</td>
</tr>
<tr>
<td>Hamburger fries &amp; drink at a ffr</td>
<td>37</td>
<td>0.925</td>
</tr>
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</table>

n = 41
REFERENCES


IMAGE EVALUATION
TEST TARGET (QA-3)

1.0
1.1
1.25
1.4
1.6

1.0
1.1
1.25
1.4
1.6

150mm

6"

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1653 East Main Street
Rochester, NY 14609 USA
Phone: 716/482-0300
Fax: 716/288-9889

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