

The Effects of Ambivalence on Information Preference and Choice

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy
in the Graduate School of The Ohio State University

By

Lifeng Yang

Graduate Program in Business Administration

The Ohio State University

2011

Dissertation Committee:

Professor H. Rao Unnava, Adviser

Professor Robert E. Burnkrant

Professor Richard E. Petty

Copyrighted by

Lifeng Yang

2011

Abstract

This dissertation research consists of two series of studies examining the effects of ambivalence on information preference and choice. In the first series of studies, we investigate the type of information that is preferred by high vs. low ambivalence individuals. We find that the motivation to reduce ambivalence renders individuals with high ambivalence to prefer exposing themselves to attitude-consistent rather than attitude-inconsistent information; low ambivalence individuals who are likely motivated to be accurate in judgment prefer exposure to information even if it contradicts their current attitude. Further, when high ambivalence individuals are primed to be accurate, they behave like low ambivalence individuals in their choice of information. Finally, ambivalent individuals show preference for information that negates thoughts causing ambivalence over information that adds to thoughts consistent with their attitude.

The second series of studies in the dissertation contains four experiments to search if making the dominant component of an ambivalent attitude accessible will increase attitude-behavior consistency. In studies 5A and 5B, mood was manipulated to enhance accessibility of either dominant or conflicting reactions to French fries, thus affecting

choice probabilities. Results consist with the accessibility hypotheses showing that mood affects the type of information that is retrieved about French fries, and the choice probability of French fries, for high ambivalent individuals. Specifically, happy mood enhances choice, while sad mood reduces choice of French fries. For low ambivalent attitudes, choice is not found to be affected by mood ($p > .10$ NS). In studies 6A and 6B, different priming procedures were used to increase accessibility of either dominant or conflicting reactions to an attitude object from a different product category (i.e.: credit cards). Results from both sets of studies provide consensus support for the accessibility hypotheses. Theoretical contributions and practical implications of these findings are discussed.

Dedicated to those who made a positive difference in me

Acknowledgments

Getting the dissertation completed is impossible without the help and support from a number of individuals. I am thankful to all of them.

I am indebted to my adviser, Rao Unnava, for taking me as his student in the PhD program. This dissertation would not have been in place without Rao's support and guidance. Looking back, I found that Rao's aptitude toward research excellence and his values toward events have greatly influenced my thinking, perspectives, and practices as a scholar and a person. I consider myself more than lucky to be able to learn from Rao in the last five years. His intelligence, kind temperament, and devotions to the students will be a life-long inspiration for me. I am truly grateful to him.

My appreciation also goes to Rich Petty, for the comments and insights that help improve this research tremendously. Special thanks to Rich for involving me in lab meetings since 2008, which enabled me to learn greatly from many intriguing discussions. Thanks to Patrick Vargas for introducing me to the studies of attitudes and persuasion. Thanks to Bob Burnkrant, for warmly receiving me when I was inquiring

about the PhD program at Fisher. Thanks to Terry Paul, for providing us invaluable support for data collection over the past years.

My gratitude also goes to the past and present Fisher PhD students in marketing (Sandeep Rao, Ling-Jing Kao, Jenny Stewart, Jeff Dotson, Karthik Easwar, Sanghak Lee, Tatiana Dyachenko, and John Howell). I will always treasure the time we spent together at Fisher Hall 500, 530, and 540. It was the friendship with you guys that made this journey so much more fun. Thank you guys.

To my family, for love and encouragement that carried me through all the ups and downs in this process of learning and research. Thanks to mom and dad, for teaching me the precious value of education and for showing me the virtue of perseverance during times when failures set in. Thanks to my husband and best friend Hehui, for support, understanding, and encouragement that make this journey not lonely as it otherwise might have been.

Finally, thank God, for His grace, patience, corrections, and love.

Vita

September 28, 1981..... Born – Hainan Island, China

2003..... B.A. English Education, South China
Normal University

2006..... M.A. TESL, University of Illinois

2006 to presentGraduate Research/Teaching Associate,
The Ohio State University

Publications

1. Yang, Lifeng and H. Rao Unnava (2009), “Attitude Consistent Behavior among High Ambivalence Individuals,” *Advances in Consumer Psychology*,1,pp.
2. Yang, Lifeng and Karthik Easwar (2010), “Matching the Words and the Features: The Effect of Matching Advertisement Language and Product Attributes on Attitude,” *Advances in Consumer Psychology*,2,pp.
3. Yang, Lifeng and H. Rao Unnava (2010), “When Ambivalence Increases Attitude Behavior Correspondence,” *Advances in Consumer Research*, 37,pp.

Fields of Study

Major Field: Business Administration

Table of Contents

Abstract.....	ii
Acknowledgements.....	iii
Vita.....	iv
List of Figures.....	vi
Chapters:	
1. Introduction.....	1
2. Examining the Effects of Ambivalence on Information Preference.....	4
2.1 Introduction	4
2.2 Theoretical Conceptualization.....	5
2.2.1 High Ambivalence and Information Selection.....	7
2.2.2 Low Ambivalence and Information Selection.....	10
2.3 Studies.....	11
2.3.1 Study 1.....	11
2.3.2 Study 2.....	23
2.3.3 Study 3.....	31

2.3.4 Study 4.....	37
2.4 Summary.....	42
3. When Ambivalent Attitudes are Predictive of Behavior: The Accessibility	
Hypotheses.....	45
3.1 Introduction.....	45
3.2 Studies.....	50
3.2.1 Pretest.....	50
3.2.2 Study 5A.....	52
3.2.3 Study 5B.....	60
3.2.4 Study 6A.....	65
3.2.5 Study 6B.....	
3.3 Summary.....	74
4. Concluding Remarks.....	78
4.1 Summary and Conclusions.....	78
4.2 Future Research.....	80
Appendices	
A. Materials Used for Chapter 2.....	82
A.1 Materials Used for Study 1.....	83
A.1.1 Manipulation Materials (Subjective) Used in High Ambivalence Positive Attitude Condition.....	84
A.1.2 Manipulation Materials (Subjective) Used in High Ambivalence Negative Attitude Condition.....	76
A.1.3 Manipulation Materials (Subjective) Used in Low Ambivalence Positive Attitude Condition.....	90
A.1.4 Manipulation Materials (Subjective) Used in Low Ambivalence Negative Attitude Condition.....	92
A.1.5 Choice Measure.....	94
A.2 Materials Used for Study 2.....	95
A.2.1 Manipulation Materials (Objective) Used in High	

Ambivalence Positive Attitude Condition.....	96
A.2.2 Manipulation Materials (Objective) Used in High	
Ambivalence Negative Attitude Condition.....	99
A.2.3 Manipulation Materials (Objective) Used in Low	
Ambivalence Positive Attitude Condition.....	102
A.2.4 Manipulation Materials (Objective) Used in Low	
Ambivalence Negative Attitude Condition.....	105
A.2.5 Choice Measure.....	108
A.3 Materials Used for Study.....	109
A.3.1 Additional Reviews Used in the Study.....	110
A.4 Materials Used for Study.....	112
A.4.1 Choice Measure.....	113
B. Materials Used for Chapter 3.....	114
B.1 Materials Used for Studies 5A and 5B.....	115
B.1.1 Mood Manipulation Materials Used in Happy Condition....	116
B.1.2 Mood Manipulation Materials Used in Sad Condition.....	120
B.1.3 Mood Manipulation Materials Used in Neutral Condition....	125
B.1.4 Choice Measure.....	129
B.1.5 Thought Listing Measure.....	130
B.2 Materials Used for Studies 6A and 6B.....	131
B.2.1 Materials Used in the Word Scramble Task: Positive Prime.	132
B.2.2 Materials Used in the Word Scramble Task: Negative Prime	133
B.2.3 Groups of Letters Used in the Word/Non-Word	134
B.2.3 Credit Card Ads Used in Studies 6A and	135
References.....	136

List of Figures

Figures:

2.1 Study 1 Choice Data for Consumers with Positive Dominant Attitudes.....	18
2.2 Study 1 Choice Data for Consumers with Negative Dominant Attitudes.....	18
2.3 Study 1 Mediation Analysis for Positive Attitude Conditions.....	21
2.4 Study 1 Mediation Analysis for Negative Attitude Conditions.....	21
2.5 Study 2 Additional Reviews Chosen Index When Objective Thinking Is Not Primed.....	25
2.6 Study 2 Additional Reviews Chosen Index When Objective Thinking Is Primed.....	26
2.7 Study 3 Thought Listings and Thought Evaluations.....	34
2.8 Study 4 Choice Data.....	39
2.9 Pretest Mood Manipulation Check.....	54
3.1 Study 5A Probabilities of Choosing French Fries Over Vegetable Side Salad.....	57
3.2 Study 5A Positive Thought Index Results.....	58
3.3 Study 5B Probabilities of Choosing French Fries Over Vegetable Side Salad.....	63
3.4 Study 5B Positive Thought Index Results.....	64
3.5 Study 6A Likelihood to Apply for GO® VISA Card.....	71
3.6 Study 6A Positive Thought Index Results.....	72
3.7 Study 6B Likelihood to Apply for GO® VISA Card.....	74

Chapter 1: Introduction

Very often, consumers' attitudes toward products, brands, services, firms, and experiences are mixed with both positive and negative reactions. For instance, consumers may love eating foods that are rich and tasty, but may hate these foods because they are fatty and unhealthy (Raghunathan, Naylor, and Hoyer 2006); similarly, consumers may like certain brands for their great quality, but they may not like these brands because they are much more expensive than other competitive brands. The objective of this research, therefore, is to study (1) how attitudes held with high ambivalence is going to affect individual's information preference; and (2) how ambivalent attitudes can be made predictive of consumer behavior.

In this dissertation research, two series of studies were conducted to examine how ambivalence impacts individual's information preference and choice. We consider it important to study the effect of ambivalence on information preference, because understanding how ambivalence mediates individual's preference to get exposure to certain information bears valuable implications for researchers and practitioners who are interested in persuasion. Further, since ambivalent attitudes are prevalent within individuals and across contexts, we conducted a series of new studies to examine if there

are situations where ambivalent attitudes may be made useful as univalent attitudes that guide behavior and behavior predictions. We consider investigations on how to make an ambivalent attitude predictive of behavior will make significant contributions for the ambivalence literature because past literature has been consensus in documenting how ambivalence undermines attitude-behavior consistency. Understanding how and when ambivalent attitudes predictive of behavior will also generate substantial managerial implications as well.

In the first series of studies in this dissertation, we investigate the type of information that is preferred by high vs. low ambivalence individuals. Across several studies, it is found that in an attitude formation stage, ambivalence renders individuals with high ambivalence to prefer exposing themselves to attitude-consistent rather than attitude-inconsistent information. In contrast, low ambivalence individuals are found to be more accuracy driven as they show more preference for balanced (thus counter-attitudinal) information if they are provided a chance to choose so. Although we do not measure motivations directly, we manipulate individual's motivation to examine if accuracy motive is primed, whether high ambivalence consumers will correct from the biased information preference for attitude congruent information. With the priming study, we find that while the high ambivalence individuals are primed to be accurate, they behave like low ambivalence individuals in their choice of information. Finally, ambivalent individuals show preference for information that negates thoughts causing ambivalence over information that adds to thoughts consistent with their attitude.

In the second series of studies in the dissertation, four experiments were conducted to search if making the dominant component of an ambivalent attitude accessible will increase attitude-behavior consistency. In studies 5A and 5B, mood was manipulated to enhance accessibility of either dominant or conflicting reactions to French fries, thus affecting choice probabilities. Results consist with the accessibility hypotheses showing that mood affects the type of information that is retrieved about French fries, and the choice probability of French fries, for high ambivalent individuals. Specifically, happy mood enhances choice, while sad mood reduces choice of French fries. For low ambivalent attitudes, choice is not found to be affected by mood ($p > .10$ NS). In studies 6A and 6B, different priming procedures were used to increase accessibility of either dominant or conflicting reactions to an attitude object from a different product category (i.e.: credit cards). Results from both sets of studies provide consensus support for the accessibility hypotheses. Theoretical contributions and practical implications of these findings are discussed.

Chapter 2: Examining the Effects of Ambivalence on Information Preference

2.1 Introduction

Imagine yourself considering the purchase of MacBook Air which you like because it is thin and light weight. You also heard from your friend that the Air has a limited number of USB ports which would affect your usage of the computer. You are now in an ambivalent state because you have both positive and negative reactions toward the product you are evaluating. Overall, you have a positive reaction to the Air (called the dominant reactions), but you also have conflicting thoughts about the product (called the conflicting reactions). At this point, you start searching for information about the Air on the Internet, and are exposed to reviews of MacBook Air by other users. Which reviews would you most likely choose to read? Would your state of ambivalence have any predictable effects on the type of reviews you choose to read?

The objective of this research is to examine how ambivalence about a certain attitude object will affect the type of information about the object that a consumer would

choose to be exposed to. Ambivalence has generally been shown to be associated with lower attitude-behavior consistency (Armitage and Conner 2000; Conner et al. 2002; Nowlis, Kahn, and Dhar 2002; Williams and Aaker 2002) and a feeling of tension (Bell and Esses 2002; Has et al. 1992; Nordgren, van Harreveld, and van der Pligt 2006). How ambivalence affects one's choice of information that one is exposed to, and how choosing that information affects the state of ambivalence are issues that have not been researched hitherto, and will be the focus of investigation in this paper.

There are three main contributions of this research to the literature on ambivalence. First, we show that ambivalent consumers exhibit systematic bias in the types of information they choose to expose themselves to. Second, we show that the bias is in favor of reducing ambivalence, and it often assumes the form of subduing one's conflicting reactions (i.e., the thoughts that are inconsistent with the overall feeling toward an object) rather than strengthening one's dominant reactions (i.e., the thoughts that are consistent with the overall feeling toward an object). Third, we show that by making these choices, individuals appear to reduce their ambivalence which is reflected in greater consistency between their attitudes and behavioral intentions. Finally, we show that certain situational and individual differences may moderate the effect of ambivalence on biased information evaluations and choice.

2.2 Theoretical Conceptualization

Attitude ambivalence has received increased attention from consumer researchers in recent years (Nowlis et al. 2002; Otnes, Lowrey, and Shrum 1997; Priester, Petty, and Park 2007; Sengupta and Johar 2002; Zembrain and Johar 2007). Ambivalence refers to a state in which an individual experiences both positive and negative thoughts and feelings about an attitude object. The ambivalent attitude one holds can be either positive dominant (i.e., have proportionately more positive thoughts or feelings about an object), negative dominant (i.e., have proportionately more negative thoughts or feelings about an object), or totally ambivalent (i.e., have equal positive and negative thoughts or feelings about an object). The overall attitude expressed by an individual is generally found to be consistent with their dominant reactions. For instance, a consumer who has more positive thoughts than negative thoughts toward running on a treadmill is very likely to indicate an overall positive attitude toward this exercise even though they also possess some conflicting reactions at the same time (e.g. boring exercise).

Ambivalent attitudes are found to be less reliable in their ability to predict behavior (Armitage and Conner 2000; Conner et al. 2002; Zembrain and Johar 2007). Thus, one well-accepted consequence of attitudinal ambivalence is its undermining impact on attitude-behavior consistency. That is, the more ambivalent one feels, the more inconsistent the attitude-behavior relationship would be. In this sense, attitude ambivalence is theoretically situated alongside other variables that are known to affect the ‘strength’ of one’s attitude (see Petty and Krosnick 1995 for a review), with the understanding that stronger attitudes are better predictors of behavior than weaker attitudes, and attitude ambivalence renders one’s attitude weaker.

In addition to the effect of ambivalence on attitude-behavior consistency, it has also been shown to cause a sense of discomfort in an individual. From a cognitive consistency perspective, just like dissonance (Festinger 1957), ambivalence has been shown to cause aversive feelings (Nordgren et al. 2006; Zemborain and Johar 2007), particularly in situations where the focal issue is of high relevance to the individual (Briñol, Petty and Wheeler 2006; Priester and Petty 2001). Similar to dissonance reduction being a motivator, researchers have suggested that ambivalent individuals too will be motivated to reduce (Zemborain and Johar 2007) or reconcile (Sengupta and Johar 2002) the inconsistent reactions that cause ambivalence. In a recent study on this issue, Clark, Wegener, and Fabrigar (2008) found that ambivalent individuals elaborated more on pro-attitudinal (supporting dominant reactions) arguments. This behavior appeared to be motivated by a desire to reduce a sense of subjective discomfort attributable to ambivalent attitudes.

2.2.1 High Ambivalence and Information Selection

While researchers seem to agree on the notion that ambivalence will affect one's information processing systematically, there seems to be less agreement on the direction of this effect. On one hand, some literature shows that the feeling of ambivalence is aversive and high ambivalence individuals would elaborate on given information *without* carefully pre-screening the counter-attitudinal nature (Briñol et al. 2006) or the source credibility (Maio et al. 1996; Zemborain and Johar, 2007) of the message. This

explanation expects elaboration by itself to be alleviating any discomfort that one experiences due to ambivalence. On the other hand, some research suggests that ambivalent individuals are more selective and more discriminating when processing information than those who do not have such conflicted reactions (e.g. Clark et al. 2008; Nordgren et al. 2006). Specifically, ambivalent individuals are expected to elaborate more when the arguments are pro-attitudinal than counter-attitudinal. All of these researchers express agreement with the notion that individuals view ambivalence as not a desirable state and seem to be motivated to reduce this aversive state.

The selective exposure literature also can shed light on how ambivalent individuals might behave when they are given a choice of attitude-consistent and attitude-inconsistent information. It has long been believed that people expose themselves to information that is consistent with their attitudes (e.g., Brock 1965). However, subsequent research produced mixed results regarding attitudes and selective exposure. In many cases, people were found to willingly expose themselves to counterattitudinal information (e.g., Sears and Freedman 1967). A review by Sears and Freedman (1967) concluded that selective exposure is not a reliable phenomenon, given the highly equivocal results reported in the literature.

More recently, Smith, Fabrigar, and Norris (2008) presented a review of the literature on selective exposure, focusing on the studies that have been published in the last twenty five years. Bemoaning the fact that there has been no organization of the moderators of selective exposure, they proposed two conditions under which selective exposure effects are most likely to be found. First, selective exposure effects are more

likely when individuals are unable or unwilling to process information completely. The inability could be due to time pressure, or lack of knowledge. Lack of motivation could be due to an unwillingness to engage in counterargumentation and protect one's attitude. The second factor that determines selective exposure is the goals of the individual at the time information is encountered. If the individual is interested in finding the truth, or in being accurate, then they will seek out information that will help them achieve this goal. Selective exposure may not happen then because in the interest of making the correct decision, individuals may choose to expose themselves to the 'other side of the coin.'

Notice that the first condition outlined by Smith et al. (2008) is similar to the conditions under which biased processing occurs (e.g., Ahluwalia 2000; Jain and Maheshwaran 2000). Biased processing typically occurs when an individual is more interested in protecting their attitude than subjecting it to attack. The second condition outlined by Smith et al. (2008) is consistent with studies that show people as truth seekers under some conditions. These conditions have also been discussed at length by other researchers in the domain of motivated reasoning (e.g., Kruglanski and Ajzen 1983; Kunda 1990). These studies suggest that ambivalent individuals, who are motivated to reduce their ambivalence may follow one type of information selection strategy while those who are low in ambivalence may follow another.

We take the perspective in this research that if ambivalence reduction is the motivator for information processing, then people should choose to process information that is effective in helping them do so. Consistent with the arguments of Clark et al. (2008), we propose that ambivalent individuals are more likely to prefer exposure to

information that will help them in reducing their ambivalence. One would expect that arguments consistent with one's dominant reactions should assist an individual in reducing the relative effect of the conflicting reactions¹. Thus:

H1: Given a choice, consumers experiencing ambivalence will prefer to receive information that is congruent rather than incongruent in valence with their current dominant reactions.

2.2.2 Low Ambivalence and Information Selection

For low ambivalence individuals, the absence of an ambivalence reduction motivation among consumers may give way to other possible motivations and needs, such as the need to be accurate when forming an attitude (Kruglanski 1989), the need to correct for possible bias in initial evaluations (Petty and Wegener 1993), the need to express defensive confidence for one's existing belief (Albarracin and Mitchell 2004), and the need to eliminate chances for aversive anticipated regret from possible inaccurate

¹ The notion that people process information in a biased manner has also been discussed in the literature on hypothesis testing (e.g., Hoch and Deighton 2000) and in studies on predecisional information distortion (e.g., Russo, Meloy, and Medvec 1998). Our research is different because only high ambivalent individuals are expected to show biased processing; their motivation to do so is not any hypothesis per se but reduction of ambivalence. Further, there is no distortion of information presented. Instead, our focus is on which type of information people choose to expose themselves to.

judgments (Zeelenberg et al. 1996). In all of these cases, individuals should be interested in knowing what the arguments are against their currently held position, so they could either adjust their position or counterargue, thus forming accurate impressions of an attitude object. Thus, we expect low ambivalence individuals to be either equally attentive to pro vs. counter attitudinal arguments or to even show a preference for arguments against their currently held position.

H2: Given a choice, low ambivalence consumers in an attitude formation stage will be either indifferent to the type of information they are exposed to or prefer to receive information input that is incongruent rather than congruent in valence with their dominant reactions.

2.3 Studies

2.3.1 Study 1

Method

Subjects and Design. Participants of the study were recruited from undergraduate marketing classes at a Midwestern university in the US. The study was portrayed as a “Product Evaluation Survey” where students were told that researchers were interested to

know their opinion toward a new product that had been launched in several test markets. One hundred and eighty one students participated in the study in exchange for course credit. Participants were randomly assigned to experimental conditions in a 2 (ambivalence: low vs. high) * 2 (attitude: positive vs. negative) factorial design.

Product Selection. A fictitious brand of running shoes was chosen to be the target product and information about the product was presented to participants in the form of consumer reviews. Our selection of the target stimulus was based on its equal relevance to both genders in the target population. Further, our studies were conducted in the context of online reviews which fit very well with the target product category. To avoid biased processing due to preexisting attitudes, we used a fictitious brand that participants had to form attitudes toward.

Dominant Attitude and Ambivalence Manipulation. Participants were presented a series of user reviews of the target brand of shoes. To manipulate dominant attitude (positive or negative), the valence of the reviews was varied. For positive dominant attitudes, the reviews presented were mostly positive while the reverse was true for negative dominant attitudes.

In addition, within each attitude condition ambivalence was manipulated by varying the number of conflicting reviews. Participants assigned to the high ambivalence conditions were given six consumer reviews to read (four positive and two negative, or four negative and two positive) in the order PNPNPP or NPNPNN depending on the attitude condition they were in (P=positive, N=negative); Participants in the low ambivalence conditions were given five consumer reviews presented in the order of

PPPPP if they were in the positive attitude condition; NNNNN if in the negative attitude condition.

The number of arguments presented in each condition was varied for a critical reason. Pretests showed that six positive reviews created significantly more positive attitudes in the low ambivalence condition as compared to the mixed reviews provided for high ambivalence condition. It is important that the two experimental conditions (high vs. low ambivalence) vary only in their ambivalence and not in attitudinal extremity to avoid alternative explanations for our findings. If the low ambivalence participants also had more positive attitudes, then we would not know whether the effects detected in this research were due to the attitudinal extremity or ambivalence differences between the participants. Thus, the number of positive arguments in the low ambivalence condition was reduced to five, which resulted in attitudes that were equivalent in the low and high ambivalence conditions. The only difference between the conditions was in their level of ambivalence, as described later.

Procedure. The study was conducted online. Participants who signed up to participate in the study were given a password to enter the study area on the web. The initial instructions informed each participant that the study was about how consumers evaluate products based on online reviews. They were asked to read through various online reviews that will be given to them, and then respond to questions about the target product.

After reading the first set of consumer reviews, participants completed a questionnaire that measured their attitude and ambivalence toward Jaguar shoes. These

measures helped us affirm that our manipulation of ambivalence was successful, and it did not affect individuals' attitudes. The critical question about information exposure was introduced at this point. Participants were told that they had an opportunity to read one more review about Jaguar shoes and were asked to choose one of the two reviews presented. The first review was described as one that is positive about Jaguar shoes and the second one was described as being negative about Jaguar shoes. Participants indicated their choice, indicated how informative and how helpful the additional review they chose would be in making their choice decision, and were thanked and dismissed. On average, each participant spent about 20 minutes finishing the study online.

Measures. Our overall attitude measure consisted of a 4-item semantic differential scale anchored by good-bad, unfavorable-favorable, beneficial-harmful, undesirable-desirable (7-point scale). These scales were averaged to develop a summary measure of each participant's attitude toward Jaguar shoes (Cronbach's $\alpha = .90$). Two types of ambivalence measures were used in our study. The first is an objective ambivalence measure using the procedure outlined by Kaplan (1972). Kaplan's ambivalence measure² is one of the methods that researchers frequently use to measure ambivalence (Bassili 1996; Newby-Clark, McGregor, and Zanna 2002; see also Thompson, Zanna, and Griffin 1995). Participants were asked to separately evaluate only the *positive* or only the

² In current research, statistical analysis revealed that the objective ambivalence scores produced using Kaplan's formula did not differ significantly from scores produced by using the Thompson et al.'s procedure. For consistency purpose, we use Kaplan's procedure to derive objective ambivalence scores throughout all studies in this dissertation.

negative aspects of the product on a 4-point scale where “1”= “not at all”, “2” = “slightly”, “3”= “quite”, or “4” = “extremely”. The positive aspect rating (P) and the negative aspect rating (N) were then used to calculate each respondent’s attitude ambivalence score toward Jaguar ($Ambivalence = (P+N) - \text{absolute value } (P-N)$, see Kaplan 1972). The final ambivalence scores for each individual could take any of four values, ranging from the minimum of “2” to the maximum of “8”.

In addition to the objective ambivalence check, we also adopted a felt ambivalence measure developed by Priester and Petty (1996) to capture how individuals felt after reading the different sets of consumer reviews. The felt ambivalence measure we used consisted of five items asking participants to rate how much they felt “mixed vs. one-sided; conflicted vs. not conflicted; indecisive vs. not indecisive; maximum tension vs. no tension; maximum ambivalent vs. no ambivalent” (11-point scale) toward Jaguar shoes.

The projected informativeness and helpfulness of the additional pieces of information were measured using multi-item scales (4-items, 7-point scale anchoring “1”= “Not at all” and “7”= “Very much so”) to capture participants’ projected information value of additional consumer reviews. Since the projected information informativeness and helpfulness are positively correlated with each other ($r = .73$; $p < .01$), we averaged the informativeness and helpfulness measures (for each type of the additional reviews) into an information value index in the later analysis.

Results

Attitude. In the positive attitude conditions, participants reported an overall positive attitude toward Jaguar shoes ($M = 5.49$, $SD = .98$, $N = 88$). There were no differences between high and low ambivalence conditions in their attitude extremity (5.32 vs. 5.66; $F(1, 86) = 2.717$, $p > .10$ NS). Similarly, participants in the negative attitude conditions reported negative attitude toward Jaguar shoes ($M = 2.78$, $SD = 1.06$, $N = 93$), and we did not find attitudes between low vs. high ambivalence conditions differ statistically ($M = 2.64$ vs. 2.96 ; $F(1, 91) = 2.09$, $p > .15$ NS). Thus the attitude manipulations in the study were successful.

Ambivalence. As expected, for both the objective ambivalence measure and the measure of felt ambivalence, participants were significantly more ambivalent toward Jaguar shoes in the high ambivalence conditions than the low ambivalence conditions. Specifically, participants in the high ambivalence positive attitude condition reported a higher level of ambivalence than those in the low ambivalence positive attitude condition (*Objective ambivalence*: 4.55 vs. 2.86; $F(1, 86) = 62.162$, $p < .001$; *Felt ambivalence*: 6.0 vs. 4.22; $F(1, 86) = 19.59$, $p < .001$). Similarly, participants in the high ambivalence negative attitude condition showed more ambivalence in their reactions than those in the low ambivalence negative attitude condition (*Objective ambivalence*: 5.38 vs. 4.24; $F(1, 92) = 20.068$, $p < .001$; *Felt ambivalence*: 6.17 vs. 4.36; $F(1, 92) = 21.1$, $p < .001$). The expression of small levels of ambivalence by participants even after being exposed to only positive comments is not surprising, and has been reported by Priester et al. (2007)

as well. It may be the result of not all arguments being strong enough to create only univalent thoughts. Thus, the manipulation of ambivalence was deemed successful.

Choice. The choice of the additional consumer review made by each participant in the low vs. high ambivalence conditions was subjected to binary logit regression analysis with the ambivalence level as the independent variable. We expected that as ambivalence increased, preference for information that was proattitudinal would increase. We also expected that participants in the ambivalent condition would be more likely than those in the low ambivalence condition to choose attitude-congruent vs. attitude-incongruent additional reviews. Results from the analysis supported our hypotheses that the more ambivalence one felt, the less likely they would choose additional information input that was incongruent in valence with their overall attitude ($(\beta = -1.202, p < .05)$ for the positive attitude conditions; $(\beta = -1.699, p < .001)$ for the negative attitude conditions). Moreover, Chi-square analysis was also performed on the choice data. A significant interaction between the levels of ambivalence and choice ($\chi^2 = 5.87, p < .05$ for the positive attitude conditions; $\chi^2 = 14.784, p < .001$ for the negative attitude conditions) provided support for our conceptualization that ambivalence increased consumers' preference for information input that was consistent in valence with one's dominant reactions.

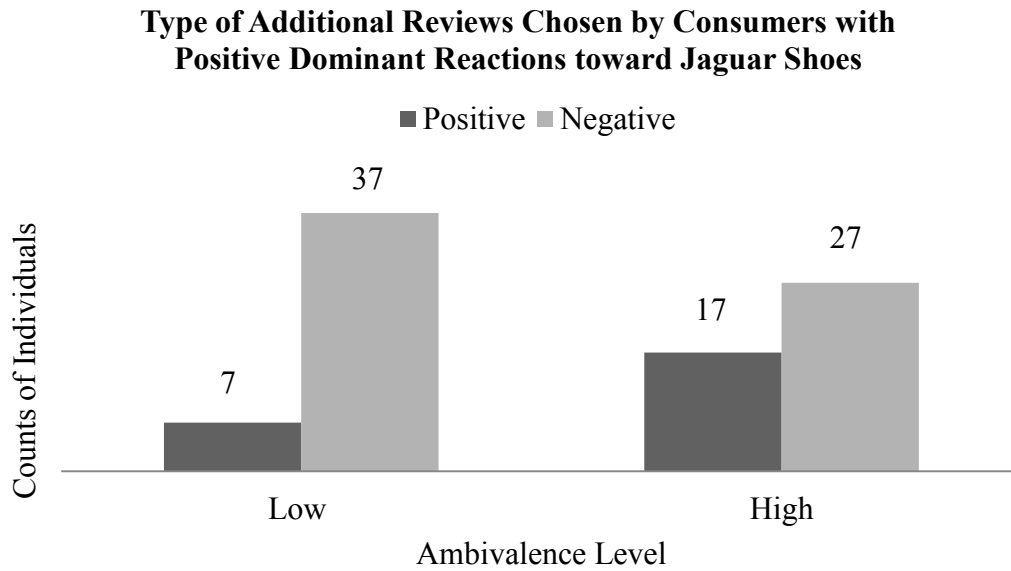


Figure 2.1: Study 1 Choice Data for Consumers with Positive Dominant Attitudes

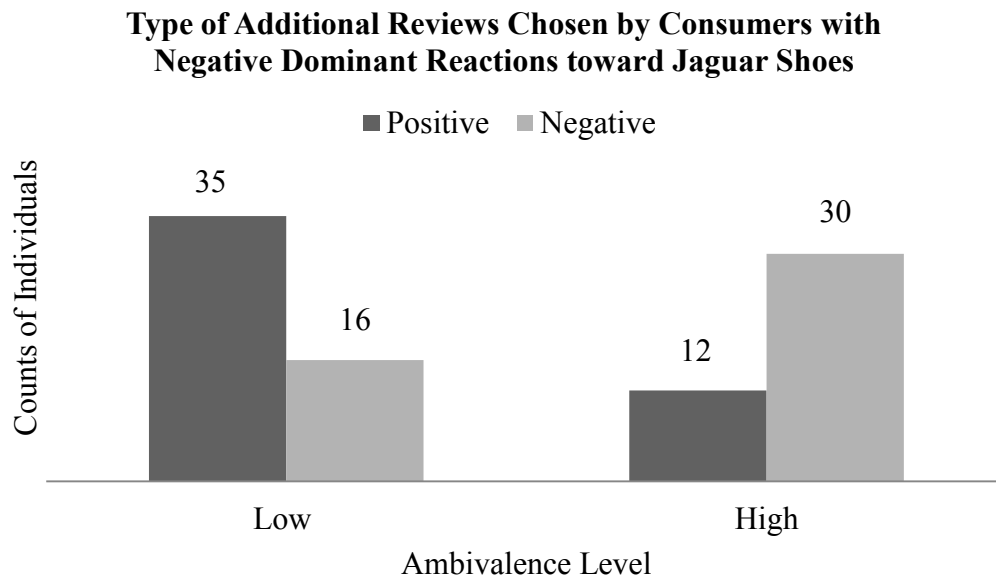


Figure 2.2: Study 1 Choice Data for Consumers with Negative Dominant Attitudes

Information Value. Consistent with the choice data, participants' responses to whether additional positive (negative) reviews would be more informative or more helpful than additional negative (positive) reviews showed that ambivalence served as a significant moderator for these evaluations. In positive attitude conditions, additional positive reviews were projected to be of greater information value to the high ambivalence participants than to those in the low ambivalence condition (3.67 vs. 3.02; $F(1, 86) = 4.50, p < .05$); in contrast, additional *negative* consumer reviews (thus counter-attitudinal in this case) were projected to be of more information value among participants who were low ambivalent in their attitude (4.80 vs. 5.67; $F(1, 86) = 11.61, p < .001$). Similarly, counter-attitudinal reviews (i.e. positive in this case) were projected to be more valuable by low vs. high ambivalent individuals in the negative attitude conditions (3.90 vs. 4.34; $F(1, 91) = 1.75, p < .05$), where low ambivalence individuals consider additional positive reviews to be more valuable than additional negative reviews (4.75 vs. 3.62; $F(1, 91) = 13.443, p < .001$). Mediation analysis showed that the projected information value completely (partially) mediated choice in the positive (negative) attitude conditions, suggesting that individuals chose attitude congruent vs. attitude incongruent information because of its perceived value.

Other Findings. Although the data confirm our expectation that ambivalence significantly moderates one's selection of additional attitude congruent vs. attitude incongruent information, among those in the positive attitude conditions, the majority of participants chose additional negative (thus counter-attitudinal) consumer reviews (64 out

of 88). Also, additional negative reviews were found to have more information value than additional positive reviews across both positive attitude conditions. One explanation for this result in the data could be found from the negativity bias literature which argues that negative information is generally perceived as more diagnostic (Herr, Kardes, and Kim 1991; Skowronski and Carlston 1989) than positive information. Further, while the ambivalence manipulation was successful for positive attitude conditions, the high ambivalence condition individuals' expressed levels of ambivalence that were closer to the mid-point of the ambivalence scale ($M_{Kaplan} = 4.55$, lower than the midpoint score of Kaplan's procedure which is 5; $M_{felt} = 6$, equal but not surpassing the midpoint of the felt ambivalence measure). Thus, we may have people with moderate levels of ambivalence contrasted with those with low levels of ambivalence, and both groups might be showing preference for negative information.

MEDIATION ANALYSIS

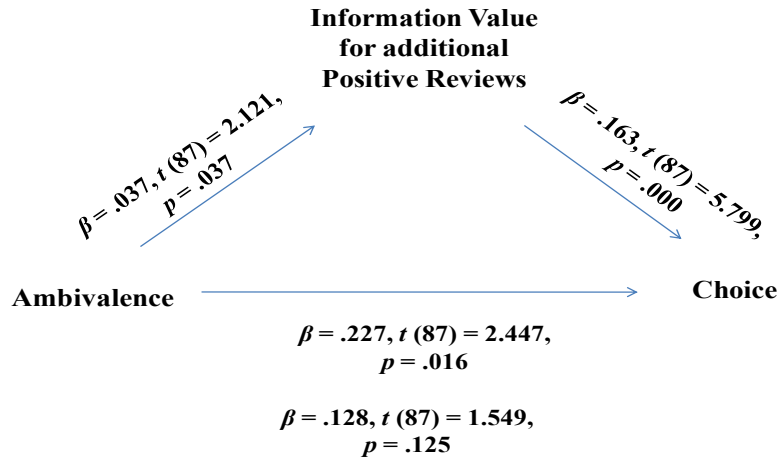


Figure 2.3: Study 1 Mediation Analysis for Positive Attitude Conditions

MEDIATION ANALYSIS

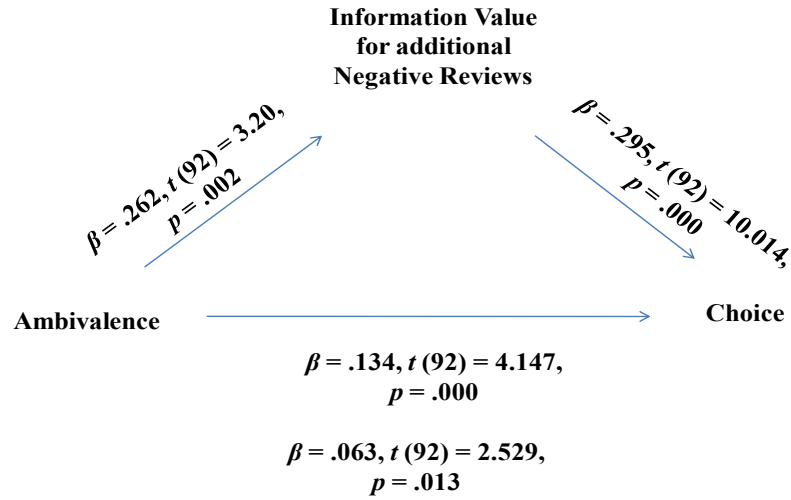


Figure 2.4: Study 1 Mediation Analysis for Negative Attitude Condition

Discussion

The findings from Study 1 provided empirical support to our conceptualization that ambivalence systematically affects an individual's preference for the type of information they choose to get exposed to. Specifically, we found that the more ambivalent one felt, the more they preferred to be exposed to attitude congruent information. The reason for this choice behavior is the motivation in ambivalent individuals to reduce their ambivalence, which is attainable by collecting information that supports their dominant attitude. Thus, an ambivalence reduction goal, which is naturally felt by ambivalent individuals, affects the type of information they are willing to expose themselves to.

These findings naturally lead to questions on the pervasiveness of this effect. Do ambivalent individuals always choose attitude-consistent information? Are there moderators, either situational or person-specific, that make ambivalent individuals behave differently? In the next two studies, we examine two moderators (one situational and one person-specific) of the effects found in study 1.

The information that was presented to the participants of study 1 was in the form of subjective reviews from users of the target product. Several times, though, product information is made available to consumers based on objective data (e.g., magazines known for expertise such as Consumer Reports, results of scientific tests, data from user surveys). Objective information is viewed as more accurate and reliable compared to subjective data (e.g., Gurmankin, Baron, Armstrong, 2004). Exposure to such objective

information should potentially prime an individual to be accurate, and thus override the motivation to be biased in information search (e.g., Hart et. al. 2009; Kim and Paek, 2009). Thus, upon exposure to a series of objective data, even high ambivalence individuals may choose the path to be accurate, and seek out information that may be inconsistent with their attitudes, more like low ambivalence individuals. This prediction is tested in Study 2.

2.3.2 Study 2

Method

A 2 (attitude: positive vs. negative) * 2 (ambivalence: low vs. high) * 2 (information objectivity: objective vs. subjective) between-subject study was conducted to test the notion that when consumers are primed to think objectively, their accuracy motive would be activated, resulting in a higher preference for conflicting information than for consistent information.

The study materials, procedure and dependent measures in study 2 were similar to those in study 1 with a few changes in the manipulation materials and the selective exposure measure. Because expert magazine reviews are considered more truthful than individual reviews or opinions in popular magazines (e.g., Xu and Wyer, 2008), we used expert magazines as the sources of information in the objective information condition, and individual opinions (identical to those in study 1) in the subjective information

condition. This manipulation ensured that the content of the information was unchanged between the two conditions. To measure selective exposure, we asked participants to choose up to four reviews from six additional reviews to read. This measure allowed us to present participants more than one opportunity to choose information as against the binary choice measure used in study 1. Three of the additional reviews were positive, and the other three were negative. Selective exposure was measured by dividing the difference between positive vs. negative reviews chosen by the total number of reviews chosen. All the other measures were identical to those used in Study 1.

Results

The preference for attitude consistent vs. attitude inconsistent information was tested via an ANCOVA, with attitude extremity as the covariate, ambivalence and valence of information as factors. When information was subjective, the results replicated our findings in study 1. In the positive attitude conditions, high ambivalence individuals chose negative reviews less than low ambivalence participants (selective exposure index was 46.27% vs. 58.29%, $p < .05$). The reverse was true in negative attitude condition – high ambivalence people chose negative reviews more than low ambivalence participants (53.6% vs. 43.2%, $p = .05$).

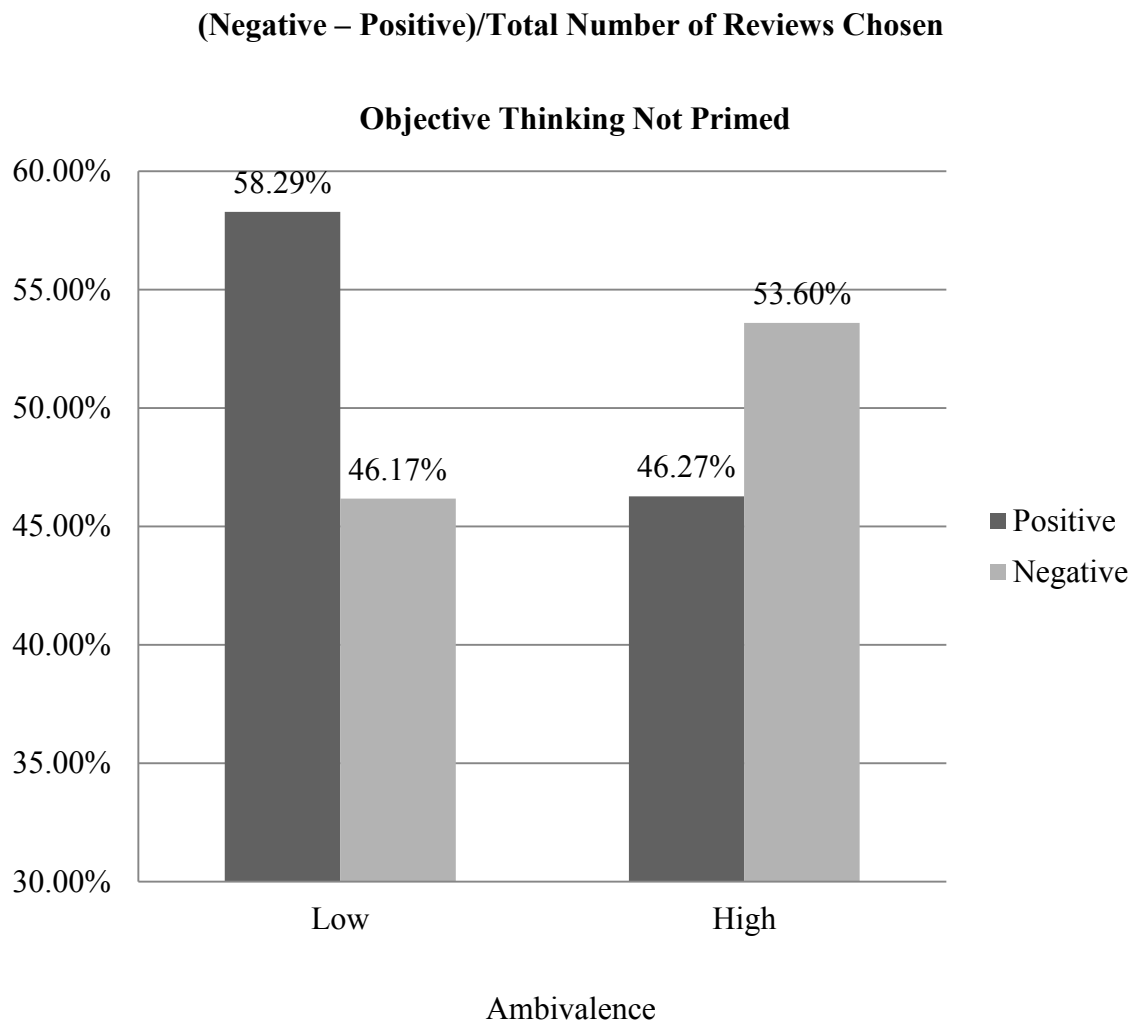


Figure 2.5: Study 2 Additional Reviews Chosen Index When Objective Thinking is Not Primed

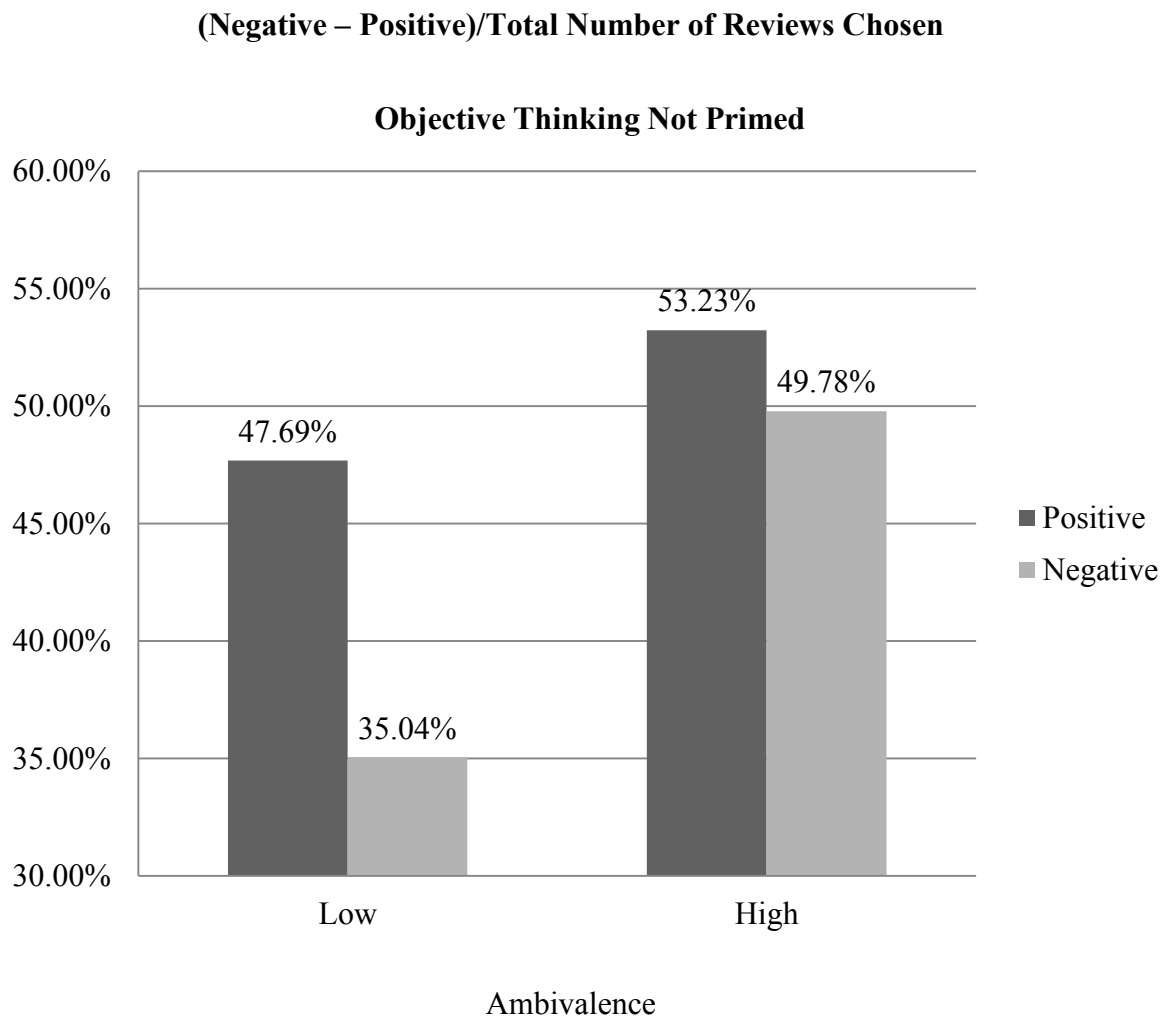


Figure 2.6: Study 2 Additional Reviews Chosen Index When Objective Thinking is Primed

Projected Information Value. Participants evaluated the projected information value of attitude consistent vs. attitude inconsistent information that was provided to them. As expected, when information presented to them was subjective (as in study 1), high ambivalence individuals in the positive attitude condition rated the positive information as more useful than low ambivalence individuals (1.69 vs. 0.25, $p < .05$). In contrast, in the negative attitude conditions, high ambivalence individuals rated the negative information as more useful than low ambivalence individuals (.9 vs. -0.63, $p < .05$).

The results were very different in the objective information condition. There was no interaction between ambivalence and attitude ($p > .05$). Instead, there was a main effect of attitude showing higher preference in both ambivalence conditions for attitude-inconsistent information (0.98 vs. 1.02; $p > .10$, NS.). Thus, the high ambivalence individuals behaved more like the low ambivalence individuals, showing a preference for information that will lead them to an unbiased evaluation of the product, rather than information that will help them preserve their initial dominant attitude. This finding supports our reasoning that high ambivalence individuals may be released from processing bias if they are primed to think accurately.

Discussion

Studies 1 and 2 show that ambivalence is associated with selective exposure to information. Ambivalence individuals prefer to be exposed to information that is consistent with their dominant attitude. This behavior is related to their quest to reduce their ambivalence which makes them feel uncomfortable. The discomfort felt by ambivalent individuals was evident in the felt ambivalence measure that was employed in this research. The bias of high ambivalence individuals was evident in their higher usefulness ratings of attitude consistent vs. attitude inconsistent information. These findings contrast with the preference shown for attitude inconsistent information by low ambivalence individuals, and their ratings of greater usefulness of such information.

Study 3

Studies 1 and 2 employed additional information choices that were either consistent with one's dominant attitude, or consistent with one's conflicting attitude. Neither selective exposure literature, nor ambivalence literature, has examined the effect of information that attacks the veracity of one's conflicting attitude. For example, at the outset of this paper, we described a consumer who is positive about MacBook Air because of its light weight and thinness, but is concerned about its limited number of USB ports. Thus far, we measured selective exposure in terms of additional positive or negative attribute information about MacBook. What if the additional information contradicted the current negative information about MacBook? In one sense, it may be

viewed as positive information about MacBook, but it helps undermine the conflicting attitude.

From a communication's point of view, it would be useful to know the type of information that would have the most effect on reducing ambivalence. Marketers are often faced with consumers who may hold positive attitudes toward their product but are ambivalent about the product. To reduce this ambivalence most effectively, what type of information should the marketer provide their consumers?

To address this question, we turn to a deeper analysis of Kaplan's view of ambivalence. Kaplan's ambivalence score is derived using the formula $(P+N) - \text{abs}(P-N)$, where P is the evaluation of an object by an individual based only on the positive aspects of the object and N the evaluation based only on the negative aspects of the object. For simplicity, let us assume that P represents the number of positive arguments about the product and N the number of negative arguments³. Let us also assume that an individual currently has 4 positive arguments and 2 negative arguments available so $P=4$ and $N=2$. The ambivalence felt by the individual, according to Kaplan, is $(4+2) - (4-2) = 4$. Because the individual has more positive than negative thoughts about the product, the overall attitude is expected to be positive as well.

Our first two studies indicate that people with ambivalent attitudes prefer to receive an additional piece of information that is consistent in valence with their overall

³ We assume that each argument translates to an increase in attitude score by 1 point if it is positive and a decrease in attitude by 1 point if it is negative. While such linearity may not exist, it helps in presenting our logic and developing our argument.

attitude. Is this the best way to deal with ambivalence? Let us first examine the effect of adding one positive piece of information to the existing information. This makes $P = 5$, and N remains at 2. Thus, the new ambivalence score of the consumer is $(5+2)-(5-2) = 4$. This suggests that addition of a new piece of attitude-consistent information may not reduce ambivalence. The notion that ambivalence is the same irrespective of the number of positive thoughts one holds about an object is often criticized by scholars researching ambivalence (e.g., Priester and Petty 1996). But, it is interesting that Kaplan's formula predicts little effect on one's ambivalence by being exposed to information that is congruent with the dominant reactions.

Now, assume that the consumer is instead exposed to one additional piece of negative information rather than the positive information. This will make $P=4$, and $N=3$. Thus, the new ambivalence score will be $(4+3) - (4-3) = 6$. Thus, when high ambivalence consumers express a preference for attitude consistent information (as they did in studies 1 and 2), they are doing the right thing in terms of not letting their ambivalence increase. However, the addition of a positive piece of information does not seem to reduce their ambivalence as much.

Now let us consider a strategy where the communicator does not simply provide additional positive information, but engages in discrediting the negative piece of information that is causing ambivalence in the consumer. Thus, the focus is not on adding one more P , but on reducing N by 1. In the case above, if a marketer can successfully attack one of the negative pieces of information and take it away, what would the effect be on the ambivalence of the consumer? The P now stays at 4, but the N is reduced to 1

from 2. Thus, Kaplan's ambivalence score is $(4+1) - (4-1) = 2$. Thus, addition of attitude congruent information is less effective in reducing ambivalence than elimination of attitude incongruent information, according to Kaplan's way of conceptualizing ambivalence.

In sum, although information that directly adds to the dominant reactions can proportionally increase dominant reactions, the conflicting reactions are still in existence rendering the attitude to be weaker and less directive of behavior; In comparison, information that addresses the conflicting reactions can not only work on reducing the conflicting reactions in absolute manner, attitudes would be less ambivalent and more predictive of behavior as a result.

In study 3, we are to test the above conceptualization empirically. Specifically, we are to test if information that adds directly to the dominant reactions is less effective in reducing ambivalence than information that addresses the conflicting reactions (when argument strength between the messages is controlled). When attitudes are less ambivalent, attitudes should be more predictive of behavior, as it is suggested by the ambivalence literature (i.e.: Conner and Armitage 2002).

2.3.3 Study 3

Subjects and Design. One hundred and seventeen students from introductory marketing classes participated in this study in exchange for course credit. Similar to the previous studies, participants first read a set of consumer reviews on Jaguar shoes. In this

study, all participants were given consumer reviews to read that were meant to form a positive dominant but ambivalent attitude toward Jaguar shoes. Participants responded to attitude and ambivalence checks (objective ambivalence measure only) after reading the first set of consumer reviews. They were then randomly assigned to read one of the two types of additional reviews that were consistent in valence with their existing dominant reactions. One type of the additional review provided additional positive information about Jaguar shoes, and the other type of review negated one of the previous negative comments about Jaguar shoes. Both types of additional reviews were pretested using other individuals from the same population to ensure that the reviews were equally informative and helpful if they were considering purchasing a new pair of running shoes. After reading the review, participants responded to a questionnaire, were thanked and dismissed.

Dependent Measures. The main purpose of this study was to show that reading information that negates conflicting thoughts about an object will reduce one's ambivalence more than reading information that adds to dominant thoughts about the object. Reduction of ambivalence can be directly measured using Kaplan's technique or the felt-ambivalence scale. In this study, we chose to measure ambivalence in terms of its consequences, i.e., post message thoughts and the correlation between attitude and purchase intention. If participants' ambivalence is reduced by the additional review they read, we would expect to see that their post message thoughts are less ambivalent and that the attitude-intention correlation is higher than those whose attitudes are more ambivalent. Thus, individuals' purchase intentions (7-point scale; 1=very unlikely to

purchase and 7=very likely to purchase) were measured. In addition, we measured participants' confidence in their purchase intention (7-point scale; 1= Not at all confident and 7= Very confident). Confidence was measured to argue against the alternative explanation that it is not reduced ambivalence, but increased confidence that will improve attitude-intention correlations and that our manipulations did not reduce ambivalence, but increased confidence. We also asked participants to evaluate how informative and helpful the additional comments they were assigned to read were (7-point scale; 1= Not at all informative/helpful; 7=Very informative/helpful). Finally, participants were asked to list up to 8 thoughts that they had toward Jaguar shoes, they then were asked to go back to the thoughts they just listed to label each thought as either "Positive", or "Negative", or "Neutral".

Results

Thoughts. The total number of thoughts listed did not differ between conditions (7.14 vs. 6.64; $F(1,115) = 2.30, p > .10$ NS). However, individuals who read the conflict reduction messages were found to list more positive thoughts (3.93 vs. 2.81; $F(1,115) = 7.21, p < .01$) and fewer negative thoughts (1.69 vs. 2.42; $F(1,115) = 5.75, p < .02$) than individuals who read the comments that add to their dominant reactions. In other words, after reading comments that negated their conflicting reactions, participants seemed to feel less ambivalent (more positive than negative thoughts) as compared to those who read comments that added to their dominant attitude (about equal number of positive and

negative thoughts). These data suggested that individuals were less conflicted thus less ambivalent in their reactions after reading the reviews that addressed their conflicting reactions.

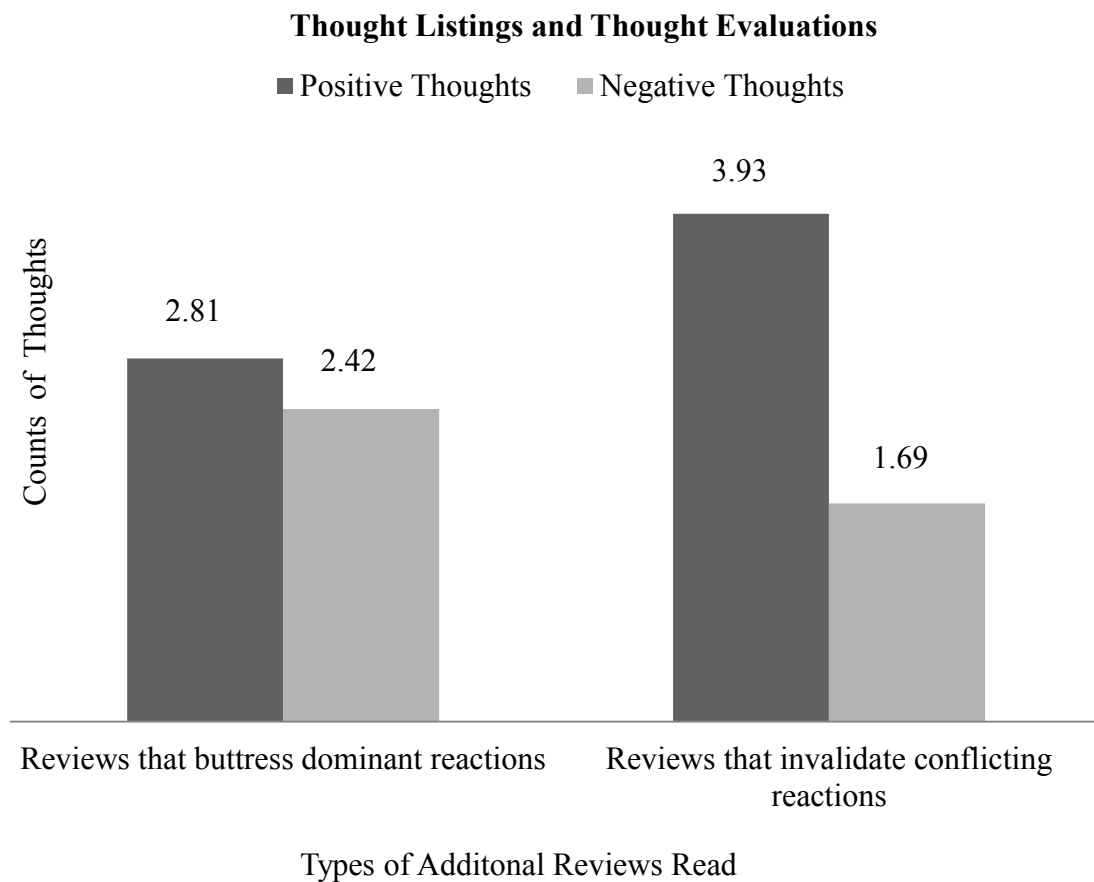


Figure 2.7: Study 3 Thought Listings and Thought Evaluations

Perceived Information Value and Purchase Intention. Consistent with our expectation, conflict reduction information were found to be more informative ($M = 5.21$ vs. $M = 3.50$, $F(1, 115) = 28.27$; $p < .001$) and more helpful (5.38 vs. 3.75 ; $F(1, 115) = 29.77$, $p < .001$) than reviews that added to one's existing dominant reactions. Participants who read the conflict reduction reviews reported higher purchase intention than those who read the additional reviews that buttressed their dominant reactions (5.08 vs. 4.39 ; $F(1, 115) = 5.11$, $p < .05$).

Attitude-Intention Correlation. One consequence of higher ambivalence, as noted in the beginning of this paper, is lower correlation between attitudes and purchase behaviors (or intentions). Thus, if a manipulation is argued to reduce one's ambivalence, it should result in a higher attitude-purchase intention correlation. In this study, we expected to find that participants who read arguments against their conflicting attitude showed higher attitude-intention correlations than those who read arguments that added to their dominant reactions. The data supported this reasoning. Participants who read arguments negating their conflicting reactions exhibited an attitude-intention correlation of .71, while those who read arguments that added to their dominant reactions showed a correlation of .42. The difference was statistically significant ($p < .05$).

Confidence. One potential alternative explanation is that the reduction of conflicting reactions should also affect participants' level of confidence, and it is this increased confidence that results in increased purchase intention. The data, however, show that confidence for one's purchase intention did not differ between conditions (4.42

vs. 4.85; $F(1, 115) = 2.615, p > .10$), suggesting that confidence is not the explanation for the between group difference in purchase intention. Interestingly, confidence was directionally greater in the condition in which participants read additional comments that were supportive of their dominant reactions as compared to those who read comments that negated their conflicting reactions. This finding is consistent with Priester and Petty (1996) who suggests that increasing dominant reactions may increase confidence in one's attitude, but decreasing conflicting reactions would reduce tension.

Discussion

Study 3 shows support to our theoretical conceptualization derived from the understanding of the ambivalence construct that when argument strength is controlled, conflict reduction information is more effective for ambivalence reduction than proattitudinal information that buttresses one's existing dominant reactions. We also find that when ambivalence is reduced effectively, one's thoughts will be less conflicted, and that the attitude-purchase intention correlation will be higher.

If conflict reduction messages are more effective in reducing ambivalence than messages that add directly to one's dominant reactions, will consumers naturally choose such information when given a choice? In study 3, we randomly assigned participants to read one or the other type of the reviews. We believe it is important to test whether ambivalent consumers are subconsciously aware of the relative effect of one vs. the other type of information being more effective in ambivalence reduction and whether they

would intentionally choose an argument that undermines the conflicting thoughts vs. an argument that adds to their dominant thoughts.

Further, another possibility is that inconsistent reactions may be more unbearable for those who prefer consistency vs. those who can live with some inconsistency. Cialdini et al. (1995) discuss an individual difference variable – preference for consistency – which classifies people according to their preference for cognitive consistency. Individuals who score high in PFC are motivated to keep their own responses consistent; to appear consistent to others; and they prefer others to be consistent as well. In our research context, two possibilities arise; individuals high in PFC may choose information that is consistent with their dominant attitude, or they may feel that the information attacking conflicting attitude will eventually make their attitudes more consistent and choose that information. Our understanding of the construct of PFC leads us to believe that there will be a preference for information that is consistent with dominant reactions because it is an easy judgment to make.

2.3.4 Study 4

Method

Subjects and Design. One hundred and forty eight students participated in the study for exchange of course credit. All participants were randomly assigned to read consumer reviews that were meant to induce either positive or negative dominant

reactions toward Jaguar shoes. Thus all participants were in the high ambivalence condition. We used the same material and procedures from study 1 for the manipulation of individuals' attitude (positive vs. negative) and ambivalence (high). The same measures of attitude and ambivalence as in the previous studies were completed after participants read a set of consumer reviews (PNPNPP or NPNPNN). All subjects then reported the perceived information value of additional consumer reviews that either would add to the dominant views they read or would disconfirm one of the previous conflicting views they read. They then proceeded to make their choice of one of the two types of reviews that they would like to read further. Before end, participants responded to a list of demographic questions with the preference for consistency measures embedded (18-item, 9-point scale; see Cialdini et al. 1995). After that, participants were thanked and dismissed from the study.

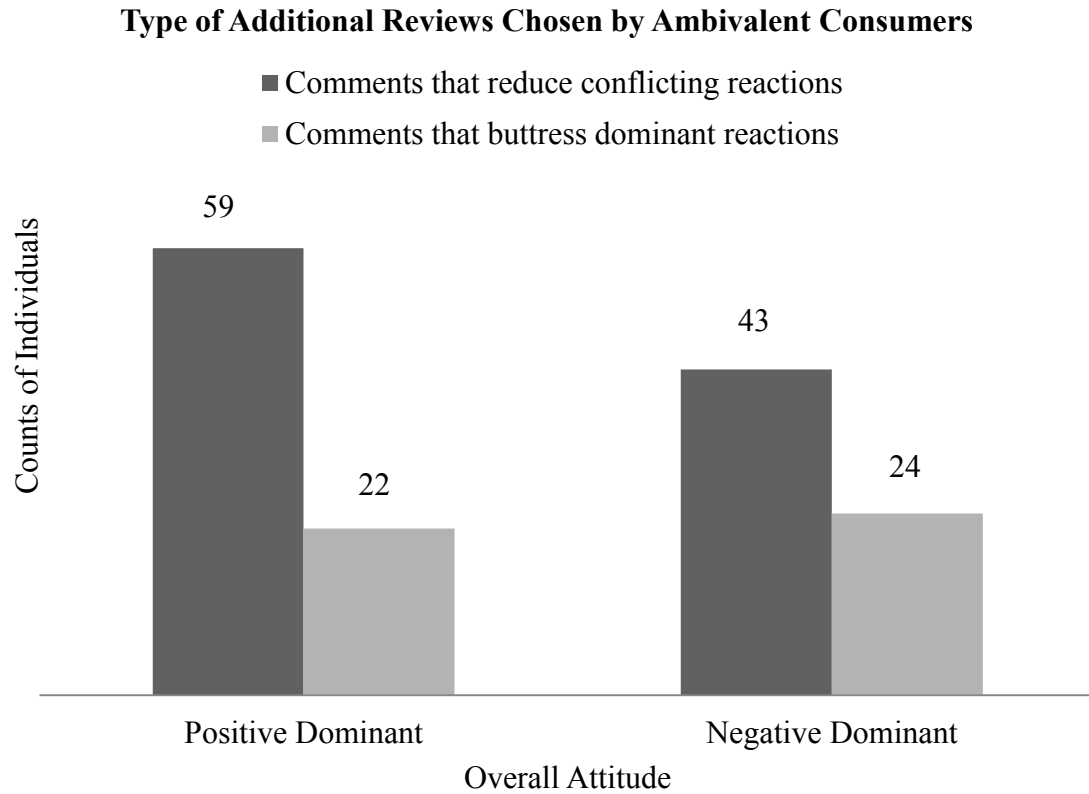


Figure 2.8: Study 4 Choice Data

Results

Attitude and Ambivalence. As expected, participants in the positive attitude condition were found to have an overall positive attitude toward Jaguar shoes ($M = 5.38$, $SD = .87$, $N = 81$), and those who were assigned to the negative attitude condition reported an overall negative attitude toward Jaguar shoes ($M = 2.85$, $SD = 1.03$, $N = 67$). All subjects reported to be comparatively ambivalent in their attitude toward Jaguar shoes

(Objective ambivalence: $M_{positive} = 5.46$, $SD = 1.37$; $M_{negative} = 5.22$, $SD = 1.04$; Felt ambivalence: $M_{positive} = 6.74$, $SD = 1.72$; $M_{negative} = 5.97$, $SD = 1.78$).

PFC. By averaging the 18 items in the preference for consistency measure (Cronbach's $\alpha = .855$), we obtained the PFC score for each individual (9-point scale with 1 = lowest and 9 = highest; $M = 5.92$, $SD = .942$; $N = 148$). Skewness test showed that the PFC scores across participants were unimodal and normally distributed ($Z = -.067$, $SD = .199$). Thus, with median split, we categorized seventy four participants into the high PFC group ($M = 6.673$, $SD = .549$); the other seventy four participants were categorized into the low PFC group ($M = 5.168$, $SD = .581$). Participants in the high PFC group had higher preference for consistency than those in the low PFC group ($t(147) = 16.180$, $p < .001$). In manipulation check, PFC was not found to predict one's attitude and ambivalence toward Jaguar shoes ($p > .5$. NS).

Choice. Replicating the results of study 3, we found that ambivalent individuals preferred to choose additional consumer reviews that would help them diminish their conflicting reactions over those that would add to their dominant reactions. That is, among those who had positive attitudes toward Jaguar shoes, 64% chose to read additional consumer reviews that disconfirmed the previous negative reviews they read ($\chi^2 = 62.72$, $p < .001$). Similarly, in the negative attitude condition, fifty-nine out of 81 participants in the chose additional reviews that disconfirmed the previous positive reviews they read ($\chi^2 = 76.02$, $p < .001$).

Preference for consistency. In both positive and negative attitude conditions, preference for consistency led the participants to show greater preference for information

that was consistent with their dominant reactions than information that promised to attack their conflicting attitude ($\beta = .77; p < .05$). Controlled for attitude ambivalence, low PFC individuals are found to be less likely to choose information that buttresses dominant reactions than high PFC individuals (choice probabilities 23% vs. 39%, $p > .05$). Thus, PFC is found to moderate ambivalence-induced preference for conflict reduction information.

Discussion

Results from Study 4 offered support to our argument that ambivalent consumers are generally motivated to reduce the conflicting reactions in their attitude (*probability* > 81% from the data), and they are more likely to choose to read information that addresses the conflicting reactions vs. information that buttresses the dominant reactions especially if individual's PFC is lower. Prior research has hinted at the possibility of ambivalence reduction by gathering information that is attitude consistent (e.g., Graduation Threshold Model, Priester and Petty 1996). Our study 3 shows that while gathering attitude consistent information may be better than being exposed to attitude-inconsistent information in their effect on ambivalence, information that attacks conflicting reactions is superior in its ability to reduce ambivalence. Further, study 4 found that consumers seemed to be sensitive to this difference, and overwhelmingly chose information attacking their conflicting attitude over information that buttresses their dominant attitude.

2.4 Summary

Across a series of studies, we found support for our argument that ambivalent consumers in their attitude formation stage are motivated to seek information that has the potential to help them reduce ambivalence. In the first two studies, we found that as ambivalence increased, consumers' preference and evaluation for attitude congruent information also increased. In the last two studies, we found that consumers instinctively choose information that attacks their conflicting reactions to a product rather than information that adds to their dominant reactions. Further, through an analysis of Kaplan's formula, and through an analysis of cognitive responses and attitude-intention correlations, we found that reducing conflicting reactions is a more effective way of reducing ambivalence than increasing dominant reactions.

A question that comes up is why low ambivalence individuals chose information that is incongruent with their dominant reactions. As discussed earlier in the paper, their motivation is not to reduce ambivalence (which is already low), but to find the truth about the product so they can form and maintain a useful attitude. This motivation for accuracy might have prompted them to investigate claims that are contrary to what they believe about the product rather than process one more piece that supports what they already believe.

The behavior of low ambivalence individuals may change if the attitudes are already formed and some type of commitment to those attitudes has already been

established. In those cases, it is possible that defensive motivation may lead to biased processing (e.g., Jain and Maheshwaran 2000) and preference for attitude-consistent information, just like the behavior exhibited by high ambivalence individuals. The motivation for the latter group, however, is different; one of ambivalence reduction rather than defending one's attitude. It will be interesting to study differences between low and high ambivalence individuals when their attitudes are already formed, in terms of their preference for various types of information.

One contribution of this research is the empirical examination of the effect of two types of information – consistent with dominant thoughts vs. inconsistent with conflicting thoughts – on ambivalence reduction. Priester and Petty (1996) suggest that ambivalence may be reduced by both mechanisms. However, confidence is increased by addition of dominant thoughts and tension is reduced by suppressing conflicting thoughts. We found some support for the increased confidence and reduced tension, consistent with their theorizing. However, we found that reduction of conflicting thoughts is a better way to reduce ambivalence than adding dominant thoughts.

The notion that ambivalence can be reduced better by attacking one's conflicting reactions has profound implications for practitioners of persuasion. For example, our results suggest that a political candidate who inspires positive and negative reactions in people, thus making them ambivalent, is better off attacking the negative reactions. The reduced ambivalence will result in increased correspondence between attitude and intention of the target audience.

Another question that arises from this research is its relationship to attitude strength literature. Ambivalence has been viewed as one of the dimensions affecting attitude strength, whose reduction makes attitudes stronger. Is this effect limited to ambivalence, or is it more generalizable to other dimensions of attitude strength as well? For example, if an individual has a positive attitude toward a product, but lacks in confidence in that attitude, will the individual gravitate selectively to information that is most likely to build attitudinal confidence? Future research should examine this issue further.

Chapter 3: When Ambivalent Attitudes are Predictive of Behavior: The Accessibility Hypotheses

3.1 Introduction

Ambivalent attitudes are those that consist of an individual's simultaneous positive and negative reactions to an object (Priester and Petty 1996; Thompson, Zanna, and Griffins 1995). For example, an individual may experience positive feelings about the taste of French fries, but negative reactions to their high fat content; the individual may therefore like and dislike French fries at the same time. Such individuals may still be able to express an attitude toward the object, based on which of the valenced feelings dominate (called the dominant reactions), but also experience conflicting reactions simultaneously due to opposing feelings (called the conflicting reactions). Two commonly reported effects of ambivalent attitudes are their weaker relation to behaviors, and their pliability (or susceptibility to change). Attitudes high in ambivalence are generally found to be less predictive of behavior than those that are low in ambivalence

(e.g., Cavazza and Butera 2008; see also Jonas, Diehl, and Brömer 1997; Sengupta and Johar 2002). In one of the studies of Conner et al. (2002), subjects received a questionnaire that measured their attitude and attitude ambivalence toward either eating a low-fat diet or eating five portions of fruit and vegetable per day. A month later, participants received another questionnaire asking about their subjective perception of what their current diet has been (e.g., “very low” – “very high” in fat), the content of one’s diet (e.g., “how much fruit and vegetable did you eat each day”), and one’s actual food consumption. Higher levels of ambivalence about fat and fruits were associated with significantly weaker attitude-behavior relationships. Individuals who scored lower in the attitude ambivalence measures tended to be more consistent in their behavior. Greater instability between voting intention and voting behavior has also been linked to ambivalence (Fournier 2005). In a similar vein, ambivalent attitude towards exercise reduces the likelihood an individual will work out (Sparks, Harris and Lockwood 2004).

The reason for low predictability is often attributed to the uncertainty about which of the two components of the attitude – the dominant one or the conflicting one – that is invoked at the time of behavior. In one relevant study, Petty et al. (2006) studied the effect of an existing attitude after it has been changed with persuasive communication. Traditionally, it has been assumed that the old attitude is replaced by the new attitude. Arguing that the old attitude may remain in memory, and expresses itself under certain conditions, Petty et al. (2006) show that when an old attitude clashes with a new attitude, people experience ambivalence. When the old attitude was not retrieved from memory,

study participants expressed lower ambivalence. Thus, memory may play a critical role in how ambivalence is felt and how it affects decisions.

Bassili (1998) studied how people who are conflicted and ambivalent about affirmative action respond to situations that demand their attitude expression. He found that when people were able to access both the dominant and conflicting reactions to affirmative actions in their memory, they were much slower in responding to questions, presumably as they were trying to resolve the conflict between the two inconsistent attitudes they had toward affirmative action.

Another study by Newby-Clark et al. (2002) examined the discomfort felt by individuals due to experiencing ambivalence. Their prediction was that ambivalence is felt and creates discomfort only when people have access to inconsistent information. When access to inconsistent information in memory is low, people do not feel as ambivalent, and therefore will not experience the discomfort associated with ambivalence. The results of three studies supported their predictions. In a study that is directly relevant to the focus of this paper, de Liver, Van der Pligt, and Wigboldus (2007) examined the structure of ambivalent attitudes and their expression using response latency task and priming. The finding of interest to this research is that when positive primes were used, study participants who were ambivalent expressed prime-consistent attitudes, and expressed them faster than non-primed participants. Similar results were obtained with negative primes; participants expressed prime-consistent attitudes and did so faster than non-primed participants. The prime had no effect on neutral attitudes.

In summary, attitudinal ambivalence is characterized by the simultaneous existence of positive and negative feelings toward an attitude object. People experience ambivalence when these inconsistent feelings are retrieved at the point of decision-making. Ambivalence retards speed of decision making (as people resolve their inconsistent feelings), and the expressed attitude or behavior is likely to be consistent with the feeling that is retrieved. Finally, priming, or otherwise making a certain valence of an ambivalent attitude salient, will produce attitudes that are more consistent with the valence that has been activated.

While researchers have studied ambivalence and its effects on attitude expression or behavior, and how memory might play a role in which of the ‘attitudes’ is retrieved by people with ambivalent attitudes, the link between the memory of ambivalent individuals and how it affects their behavior has not been studied. In this research, we study the simple idea that for people with ambivalent attitudes, making a certain valence salient will result in behaviors that are consistent with the valence that is salient. That is, making one of the two attitudes of ambivalent individuals more salient will result in behaviors that are consistent with the attitude that is made salient. For people with univalent attitudes, the effect of such manipulations should be minimal because the valence of the prime can only be consistent with the valence of the attitude, and not inconsistent.

We conducted two studies to test the idea that making one of the two attitudes of ambivalent individuals more salient will result in behaviors that are consistent with the attitude that is made salient. The first study uses French Fries as the target product, and

the second study uses credit cards as the target product. The procedures for the two studies and their results are reported next.

Study 1

Past literature on mood states and their effects on memory suggests that a person's mood can affect the type of information that is retrieved by the person (e.g. Bower 1981; Isen et al. 1978; Worth and Mackie 1987). According to Bower (1981), mood facilitates the retrieval of affect congruent information because mood itself is a unit that is stored in a memory network. Activation of this emotion unit aids retrieval of events associated with it. In Bower's studies (1981), individuals put in pleasant mood were found to be able to recall more pleasant experiences than unpleasant experiences; similarly, individuals in unpleasant mood were able to recall more unpleasant events than those in the pleasant mood condition.

If mood facilitates recall of a certain type of information stored in memory and if that information is perceived as diagnostic to making a decision, the retrieved information would affect the decision (Lynch, Marmorstein, and Weigold 1988). Thus, if a person in a good mood finds positive aspects of an ambivalent attitude to be more retrievable, those aspects will affect the person's behavior more than the unretrieved negative aspects. Similarly, negative mood may facilitate the retrieval of negative aspects about an attitude object, thus suppressing the effects of positive thoughts about the object

on behavior. Therefore, by using mood to prime certain valenced thoughts in memory, we can affect an ambivalent person's behavior.

Based on the mood literature reviewed, our first study uses mood to make either the positive or negative feelings of ambivalent individuals salient. We expect that positive mood will make the positive feelings toward French Fries more salient, and result in behaviors more consistent with the retrieval of those positive feelings. A similar effect is expected by making negative feelings toward French Fries salient by using negative mood. Further, the effect of mood manipulation should only be felt by ambivalent individuals because univalent individuals have only one type of feeling toward French Fries.

3.2 Studies

3.2.1 Pretest

For all the studies reported in this paper, the same procedures were adopted for stimulus and participant selection. At the beginning of a semester, we distributed online pretest surveys to students enrolled in introductory marketing classes at a large university in the US. In the survey, students were asked to rate how much they personally liked about products such as ice cream, French fries, hamburgers, credit cards, and events such as visiting dentists, running on a treadmill, and going to the gym every day. Responses

were collected on 9-point four- item scales anchored by good-bad, negative-positive, favorable-unfavorable, awful-nice. The good-bad, favorable-unfavorable measures were later reversed coded. These four items for each product/event were later averaged to form a summary attitude score indicating how much each individual liked about certain product/event (1”= “Extremely Negative” and “9”= “Extremely Positive”). Attitude scores that fell below the midpoint of the summary measure are coded as negative dominant attitudes; attitude scores that fell above the midpoint of the summary measure are coded as positive dominant attitudes. This attitude direction coding was used later to determine which priming condition participants should be assigned to in the main studies.

In addition to measuring attitudes, we asked students to separately evaluate only the positive or only the negative aspects of each product/event using on a 4 point scale with “1” = “Not at all Positive (Negative) and “4” = “Extremely Positive (Negative) (Kaplan 1972). Based on the responses, we calculated individual’s ambivalence score toward each product/event by taking the sum of their positive and negative ratings then subtract it with the absolute value of the difference between the two ratings. With these procedures, we obtain ambivalence scores as “2”, or “4”, or “6”, or “8” for each of the participants to each of the products/events. Scores that are equal to “2” or “4” are coded as low ambivalence, scores that are equal to “6” or “8” are coded as high ambivalence. Ambivalence was coded as low vs. high so that researchers may determine which condition subjects may be assigned to in the main studies.

Among the different products and events we surveyed , French fries (studies 5A and 5B) and credit cards (study 2) were found to have more balanced distributions of

individuals in both high vs. low ambivalence categories which would enable us to generate adequate sample size for the main studies. Therefore, students who indicated being high vs. low ambivalence in their attitudes toward French fries and credit cards were invited back to participate in subsequent studies. Care was taken to ensure that later studies were not connected with the pretests that participants were part of.

3.2.1 Study 5A

Method

Subjects and Design. One hundred and ten students who indicated holding positive dominant attitude toward French fries were invited to participate in the study in exchange for course credit. A 2 (ambivalence: low vs. high) X 3 (mood: positive vs. neutral vs. negative) factorial design with choice for French fries as the key dependent variable was employed. Our theoretical conceptualization calls for the expectation that choice probabilities for French fries would differ among high ambivalence individuals depending on what thoughts are made accessible at the time of choice, which in this study will depend on the mood the individual is in. Low ambivalence individuals, in contrast, should be less affected by mood because they only have one direction of thoughts (positive or negative) associated with French fries. Since we chose individuals whose attitudes are positive toward French fries, we expected positive mood to increase the access of positive feelings over neutral mood, and amplify the choice probability of

French fries for high ambivalence individuals. Similarly, we expected the choice of French fries to be depressed in the negative mood condition for high ambivalence individuals compared to the neutral mood condition because of the greater access to negative thoughts about French fries. For low ambivalence individuals, we expected small effects of mood (as reported in earlier literature on mood and choice), but not as pronounced as for high ambivalence individuals.

Mood Induction Materials. Two mood induction procedures were used to ensure proper mood induction: one was a reading task, and the other was a writing task. These two procedures were pretested with a different sample of students from the same population to avoid making the purpose of mood induction salient to subjects in the target studies. In the pretest, mood manipulation checks were administered right after the mood induction procedures. Items in the checks included two 9-point questions measuring how “happy-sad”, “elated-depressed” individuals felt after mood induction. We reverse coded the “elated-depressed” responses then averaged them with the “happy-sad” responses for forming the mood check index anchoring “- 4” = “Very Sad”, “0” = “Neutral”, and “+ 4” = “Very Happy”. Results from the pretest showed that the mood induction procedures were successful in creating the expected levels of mood ($F(2,131) = 50.08, p < .001$); As shown in figure 1, individuals in the happy mood condition reported feeling happier and more elated ($M_{happy} = 2.21$) than those in the neutral mood condition ($M_{neutral} = 1.03$); and that those in the sad mood condition reported feeling the least happy/elated among all ($M_{sad} = -1.47$).

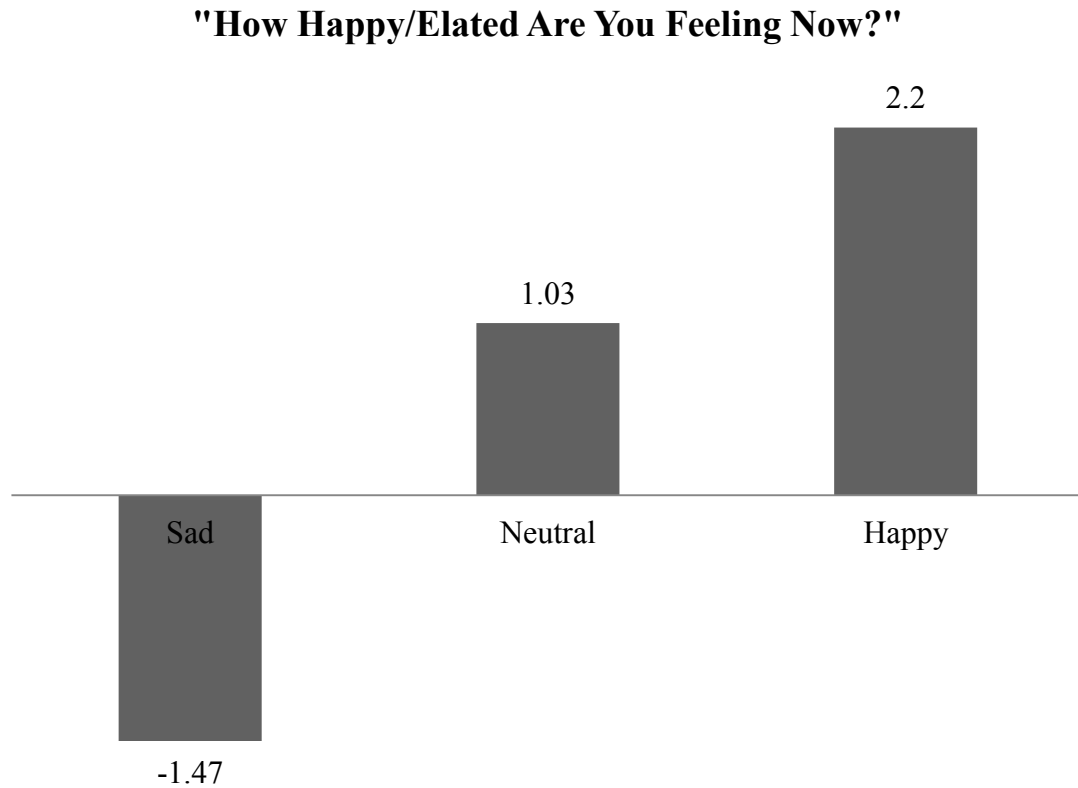


Figure 3.1: Pretest Mood Manipulation Check

Procedure. Participants were told that the study consisted of two unrelated parts. In the first part, participants were given an article to read which was said to have appeared recently in a locally published magazine. The article was meant to induce either happy, or sad, or neutral mood depending on which mood condition one was assigned to be in. To justify reading of the article, we asked participants to indicate whether they had read the article before ("1" = "Yes", "2" = "No"), and if the reading was informative, enlightening, interesting, or inspiring ("1" = "Yes", "2" = "No", and "3" = "Somewhat").

After reading and evaluating the article, participants in the happy and sad mood conditions were asked to recall and write a detailed description of a happy or sad event that happened to them recently. For individuals in the neutral mood condition, instead of describing an event, they were asked to write down a description of the business school layout to a student studying in Europe. After the writing task, we asked participants to indicate whether they had done similar writing task before (“1” = “Yes”; “2” = “No”) and whether they would usually keep a diary for themselves (“1” = “Yes”; “2” = “No”). These filler questions thus concluded the first part of the study.

The critical dependent measure was administered between the first and second parts of the study. Before participants started the second part of the study, they read a note in the survey which said *“As a token of thanks for your participation in this research, you will get to choose a coupon for a side dish from a popular dining place near campus. You can choose either a coupon for a free order of French fries, OR a coupon for a free order of vegetable side salad as our reward for your participation. Coupons for these side dishes are of equal value”*. This question directly measured each participant’s choice of French fries, which formed the measure of behavior in this study. Vegetable side salad was provided as an alternative because it is commonly perceived as a healthy food item, and ambivalence about French fries was driven by the perception that it was not a healthy food. Thus, the expectation was that depending on the thoughts about French fries that are accessible, people will either choose French fries or vegetable side salad. If people evoke positive thoughts about French fries, they will choose them over vegetable side salad, and if they evoke negative thoughts about French fries, then

they will choose vegetable side salad over fries. Participants indicated their choice then moved forward to the next part of the study.

The second part of the study included a few filler questions about campus life and then an open ended question asking one to write down up to five thoughts that came to their mind when they were making the choice between French fries and vegetable side salad coupon. Participants were then thanked, debriefed, dismissed, and credited for their participation in the study.

Results

Choice. Among the 110 individuals who participated in this study, about seventy percent of the individuals (76 out of 110) indicated their choice to be the free order of French fries, which is not a surprising percentage since all participants in this study indicated that their attitudes toward French fries are positive dominant.

ANCOVA RESULTS HEREAn analysis within the high ambivalence group revealed a significant mood effect ($\beta = -.152, p < .05$) on choice probabilities for French fries. Individuals put in the happy mood condition were significantly more likely to choose coupon for French fries than those put in the sad mood condition (52.53% vs. 81.16%, $p < .05$). As expected, high ambivalence individuals in the neutral mood condition chose French fries with about the same frequency as those who were put in the same mood but lower in ambivalence (70.52% vs. 79.33%, $p > .10$ NS). This finding is consistent with our expectation that when the dominant (conflicting) reactions in an

attitude are made accessible, behavior will consist with the salient reactions more likely for attitudes that are of high ambivalence.

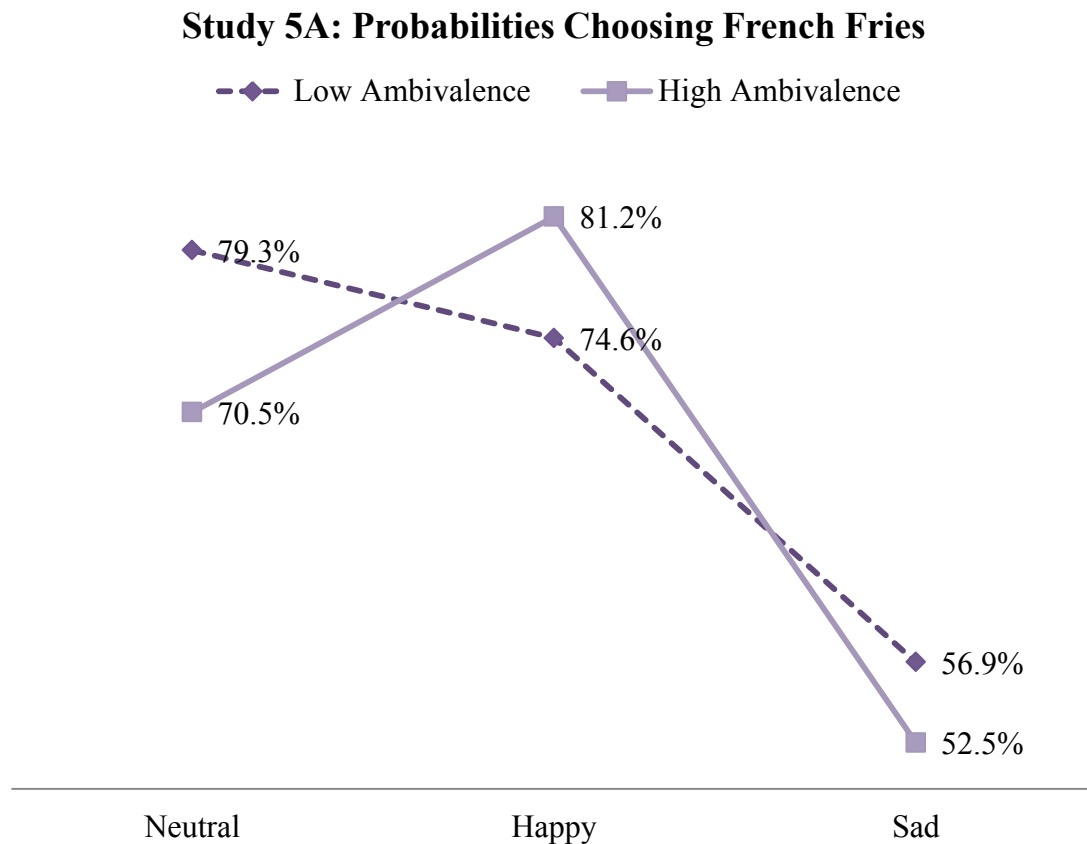


Figure 3.2: Study 5A Probabilities of Choosing French Fries over Vegetable Side Salad

Low ambivalence individuals, in contrast, showed stability in the likelihood of choosing French fries across different mood conditions ($\beta = -.079, p = .367$). This finding consists with our hypotheses and prior literature which suggests that low ambivalent attitudes are more stable, more persistent, thus more predictive of behavior across different contexts and situations.

To verify the hypotheses that the choice behavior of low and high ambivalence individuals is affected by mood by making salient thoughts that are congruent with one's mood, we conducted a thought analysis next.

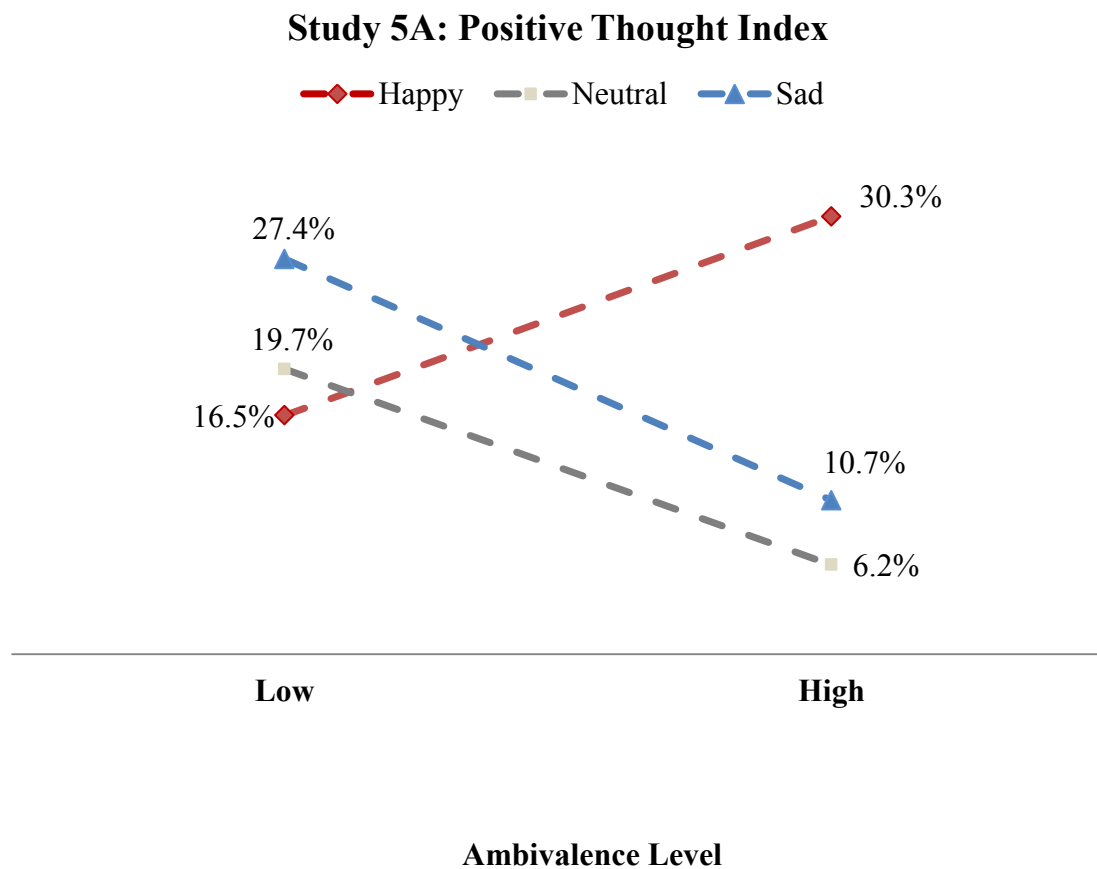


Figure 3.3: Study 5A Positive Thought Index Results

Thoughts. Thoughts listed in this study were coded by two research assistants who were blind to the purpose of the study. Since participants were asked to list thoughts that

came to their mind when they were making the decision for the given products of choice, thoughts listed were not all pertinent to the products of choice. Thus, research assistants were instructed to first identify thoughts that are relevant to French fries or relevant to vegetable side salad. Thoughts relevant to each product were then coded as favorable, unfavorable, or neutral. The two research assistants coded the data independently. Differences in coding were later reconciled after discussion.

The positive thought indexes which equal to the ratio of positive minus negative thoughts relevant to each object of choice to total thoughts listed were formed. Higher values of this index would signify relatively higher proportion of positive thoughts listed about the objects of choice. Since attitude toward French fries is the major focus of the study, our analysis and discussion will focus on the positive thought index on French fries.

Controlled for attitude extremity, a 2 (ambivalence: low vs. high) by 3 (mood: happy vs. neutral vs. sad) ANCOVA was run on the data with the positive thought index for French fries as the dependent variable. The proportions of positive minus negative thoughts did not differ among individuals with low ambivalence attitude toward French fries across different mood conditions (27.36% vs. 19.74% vs. 16.54%; $ps > .10$, NS). High ambivalence individuals, in contrast, listed more proportion of positive thoughts on French fries in the happy mood condition than those in the sad mood condition (30.31% vs. 10.65%, $p < .05$). Mediation analysis confirms that the indirect effect of mood through positive thought index on choice for French fries was significant ($z = -2.13$, $p < .05$).

Discussion

Study 5A demonstrates that the attitude-behavior consistency of ambivalent individuals can be influenced by enhancing access to their dominant attitude in memory. When ambivalent individuals with positive dominant attitude were put in a positive mood, their choice reflected their dominant attitude. The choice did not reflect their dominant attitude when they were put in negative mood. The thoughts generated by these individuals reflected greater access to mood-consistent information, and mediated their relationship between mood and choice. Low ambivalence individuals were not affected by the mood manipulation as much.

Study 5A focused on individuals with positive dominant attitude. In Study 5B, we examine effects of mood on individuals who have a negative dominant attitude toward French fries. We expect to find, similar to study 5A, a stronger effect of mood on choice of French fries for high ambivalence individuals, and smaller effects for low ambivalence individuals.

3.2.3 Study 5B

Method

Subject and Design. One hundred and ninety students from introductory marketing courses were invited to participate in the study after screening them for their

initial attitude and ambivalence. All procedures and materials used were identical to those used in Study 5A.

Results

Since participants all held negative dominant attitudes toward French fries ($M_{attitude} = 3.30$), it is not surprising that only 38.9% of participants (74 out of 190) chose coupon for French fries vs. coupon for vegetable side salad as their reward. We then further analyzed the data within each ambivalence groups and different mood conditions.

For low ambivalence individuals, mood did not affect the choice probability for French fries ($\beta = -.079$, $t = -.913$, $p > .10$ NS). In contrast, mood has a significant impact on choice for high ambivalence individuals ($\beta = -.230$, $t = -2.356$, $p < .05$). Specifically, high ambivalence individuals in the happy mood condition showed higher probability choosing French fries than those in the sad mood condition (62.9% vs. 37.0%, $p = .058$); high ambivalence individuals in neutral mood condition chose French fries with about the same frequency as those who were put in the same mood but relatively lower in ambivalence (48.0% vs. 37.0%, $p > .10$ NS); low ambivalence individuals were not significantly more or less likely to choose for French fries coupon in happy vs. sad mood condition ($p > .30$ NS). In sum, choice data revealed that mood affected choice among high ambivalence individuals in a predictable manner while it had little impact on the choice behavior of low ambivalence individuals.

Thoughts. Consistent with choice, positive thought index on French fries showed that for the low ambivalence groups, mood did not provoke more proportion of positive thoughts in the happy mood condition (-12.20%) vs. the sad mood (-7.20%, $p = .614$) or the neutral mood (-10.18%, $p > .80$ NS) conditions. For the high ambivalence groups, in contrast, individuals in happy mood condition listed more proportion of positive thoughts than those in the sad mood (3.85% vs. -24.15%, $p < .05$) condition. Sobel test again found that positive thought index mediates ambivalence and choice for French fries coupon ($Z = -2.263$, $p < .05$).

Study 5B: Probabilities Choosing French Fries

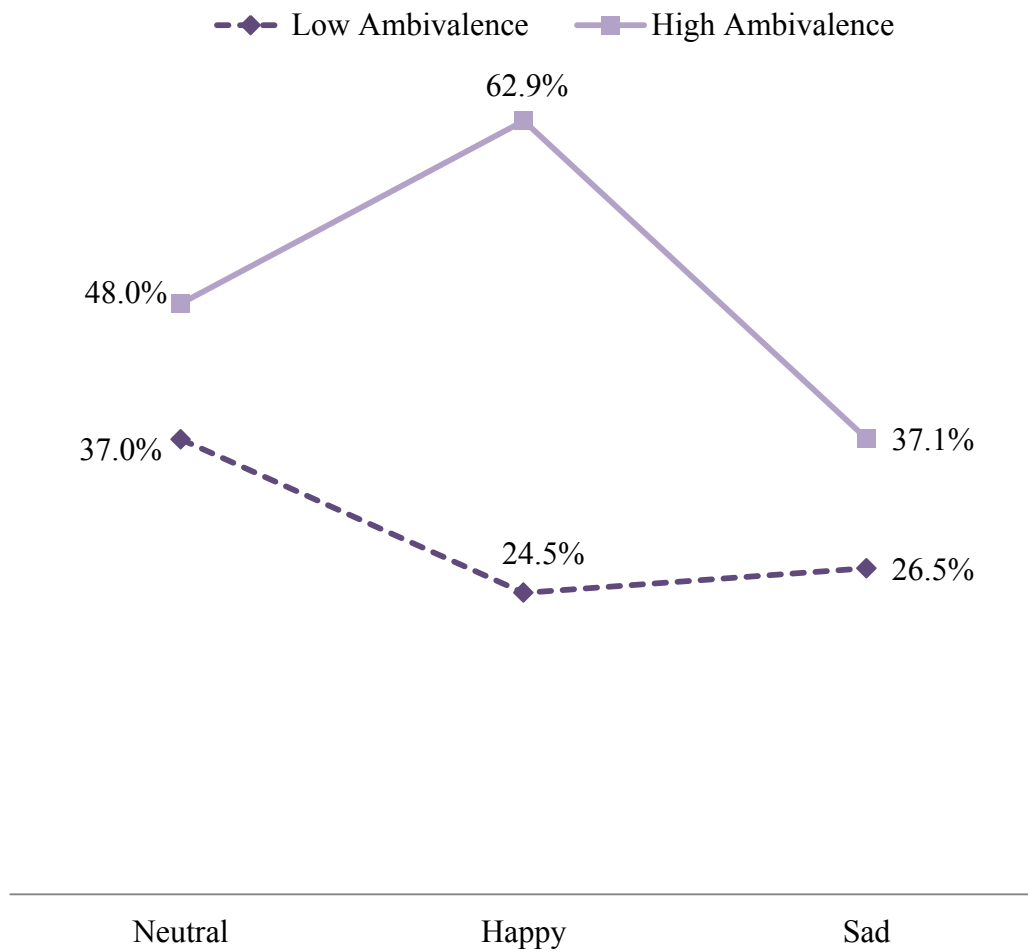


Figure 3.4: Study 5B Probabilities of Choosing French Fries Over Vegetable Side Salad

Study 5B: Positive Thought Index

—◆— Happy —■— Neutral —▲— Sad

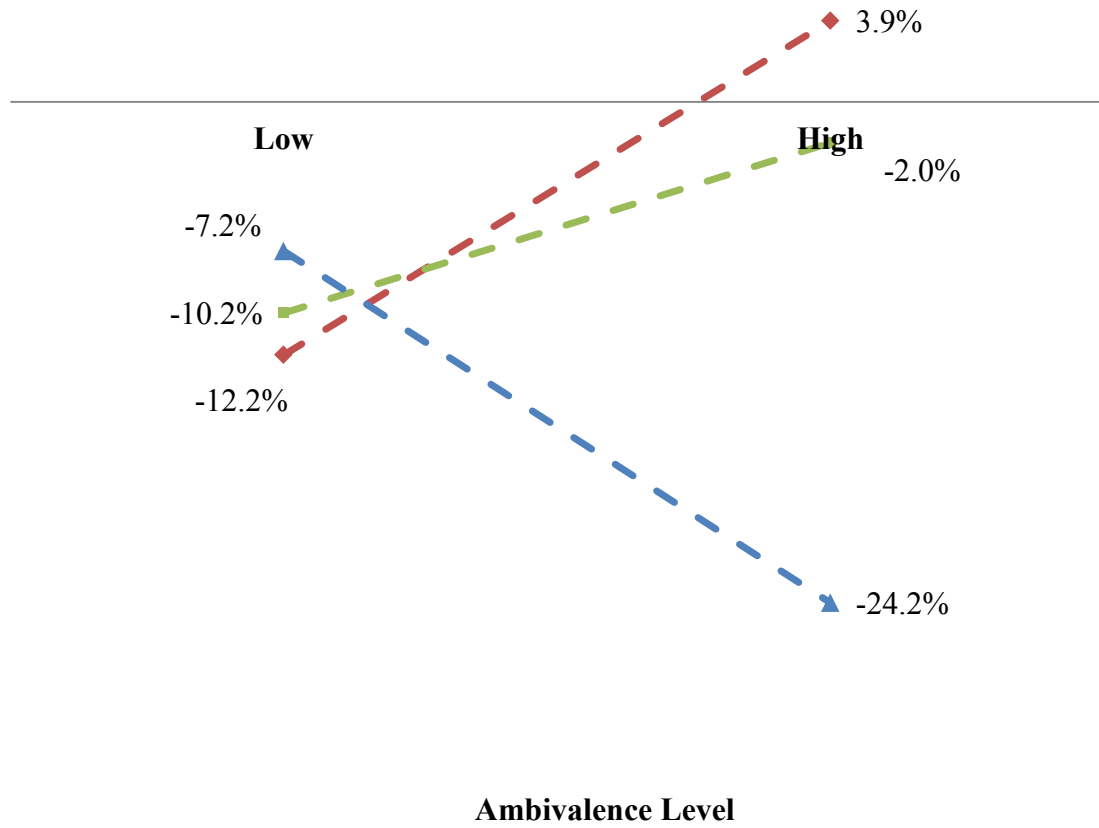


Figure 3.5: Study 5B Positive Thought Index

Discussion

Studies 5A and 5B, together, show that when feelings consistent with one's dominant attitude are made salient, then the behavior of ambivalent individuals is consistent with their dominant attitude. When feelings consistent with one's conflicting attitude are made salient, then the behavior of ambivalent individuals is consistent with their conflicting attitude. These effects were shown for both positive and negative dominant attitude individuals. Further, mood effects on low ambivalence individuals were relatively smaller when compared to those on high ambivalence individuals.

The studies indicate that attitude-behavior consistency, which is lower for ambivalent individuals, can be made higher by having them selectively access information about dominant or conflicting attitude in memory. Mood was employed for this purpose. In the next two studies (6A and 6B), we turn to priming as the technique that would increase selective access to information in memory. Our prediction is that priming will affect high ambivalence individuals more than low ambivalence individuals. We also change the product category from French fries to credit cards in the next two studies for enhanced generalizability.

3.3.4 Study 6A

Subjects and Design. A total of eighty seven students who were positive in their attitudes toward credit cards (using procedures identical to those in studies 5A and 5B) were invited to participate in the study in exchange for extra course credit. Students were told that this extra credit opportunity consisted of three independent parts that were conducted by researchers from different disciplines. Specifically, studies 1 and 2 were said to be conducted by researchers from communications who are interested in student performance on various language tasks; study 3 was said to be conducted by researchers from the business school where students would be evaluating a few newly developed products that would be launched to the student population in the new school year. A 2 (low vs. high ambivalence) X 2 (positive vs. negative prime) factorial design was used to test our expectations.

Procedure. Based on their initial attitudes and ambivalence scores, participants were randomly assigned to conditions where positive or negative associations with credit cards were primed. Among all participants, forty-seven were from the low ambivalence category; the other forty were from the high ambivalence category. With random assignment, forty seven of the participants received positive prime in the study, and the rest of the students received negative prime in the study. Controlled for attitude extremity, it is expected that for high ambivalence participants, priming will increase intention to apply for the advertised credit card if the prime was positive vs. negative. Contrasting the high ambivalence individuals, low ambivalence individuals should be less affected by the priming procedures because they have a more homogeneous and

more stable attitude structure which enables the attitude congruent thoughts to be constantly and equally accessible to them.

The study was administered via an online survey system so participants all completed the study at their self-selected natural settings. In the first part of the experiment (ostensibly known as “Study 1”), participants were asked to find words in a word jumble and then note the order in which each word was found (see Appendix A). A total of eight words were given to participants to find, with four valenced words that could be closely associated with credit cards and four neutral words which were independent of credit cards. As shown in Appendix A, the four valenced words in the positive prime condition were “rewards”, “convenience”, “easy”, and “good”; we replaced these words with “debt”, “bankruptcy”, “risk”, and “fraud” in the negative prime condition (see appendix B). The four neutral words in both positive and negative prime conditions are “bottle”, “paper”, “pen”, and “electronic”. To minimize primacy and recency effects that may cause suspicion within participants, each valenced word was placed between two neutral words. Participants were told that researchers were interested in the order in which participants found the words so a common pattern of search could be discerned.

After the first part of the experiment, participants proceeded to the second part of the study (portrayed as “Study 2: Word/Non-Word Study”) where they were told that on the screens that followed, a group of letters would show up on each screen which may or may not form an English word. Participants were instructed to categorize the letter groups as word or non-words in English. If the letter group appeared on the screen

formed an English word, participants should press “Q” using the keyboard; if the letter group on the screen did not form an English word, they should press “P” using the keyboard to indicate so.

A total of forty one groups of letters were displayed on the screen one group each time. In order to balance the frequencies of pressing “Q” and “P” on the keyboard, twenty groups of letters presented were real words, and twenty-one groups of letters were non-words (see Appendix B). Among the twenty real words, eleven were valenced words that could be closely associated with either the positive or negative aspects of credit cards; the rest of the real words were filler words neutral in meaning to this task. There were slightly more valenced words than neutral words in each of the conditions (11 vs. 10) so that the valenced words were not diluted by the neutral words. After categorizing all the letter groups, participants proceeded to the product evaluation study (“Study 3”) that was said to be conducted by researchers from the college of business.

In “study 3”, participants were told that researchers would like to know what they would think about some new products that were to be launched to the student population in Fall. Participants were not informed how many new products they would be asked to evaluate, thus that minimized the possibility that they would link the previous studies to the current one. The first product participants read about was the GO® VISA card (see appendix C), follow by a few other filler products such as the Pritt glue stick that were said to be available to in the new school year.

Dependent Variables

Interest to Apply. After reading about the GO® VISA card, participants indicated whether they would be interested to apply for the card when it becomes available to students in the new school year. Interest to apply for the GO® VISA card was measured with a 7-point scale anchoring “1” = “Absolutely No” and “7” = “Absolutely Yes”. We used a continuous vs. a binary choice measure for this key dependent variable in the study because we wanted to show generalizability of our conceptualization.

Thoughts. Following that the choice measure, participants were asked to share their thoughts on credit cards in general. They were asked to fit in one thought per blank for up to eight thoughts in total. Instead of having research assistants code the thoughts, participants were asked to evaluate each thought they listed as “positive thought”, or “negative thought”, or “neutral thought”. Similar to studies 5A and 5B, a positive thought index was formed.. Higher positive thought index indicates that a greater proportion of positive thoughts (than negative thoughts) was listed on credit cards.

Mood and Suspicion Check. To control for possible covariates to the study such as mood and suspicion, we had participants evaluate how they felt on a 5-item 7-point bipolar scale anchoring “sad-happy”, “bad-good”, “irritable-pleased”, “depressed-cheerful”, “mad-glad”. In addition, participants were asked to write down what they thought researchers’ purpose was for conducting the studies. The suspicion check assumed the form of an open-ended question, responses from participants who guessed the objective of the research correctly would be excluded from the data analysis.

Results

Four participants indicated that they thought the objective of the study was to see how one's reactions toward credit cards would change after the word scramble and word categorization tasks. Responses from these four participants thus were excluded from the data analysis. Since mood data did not reveal a difference in mood across the positive vs. negative priming conditions, we ruled out the possible covariate that the priming tasks might have changed mood thus affect application intention for the offered credit card.

Consistent with our expectation, high ambivalence individuals were more interested to apply for the GO® VISA card after they received the positive primes. Controlled for attitude extremity, high ambivalence individuals were found to be more interested in applying for the GO® VISA card in the positive prime condition than those in the negative prime condition (3.48 vs. 2.55, $p = .054$); low ambivalence individuals, however, were not significantly different in their interest to apply between the two priming conditions (3.16 vs. 2.98, $p > .70$ NS). Further thought analysis revealed high ambivalence individuals in the positive prime condition listed more proportion of positive thoughts on credit cards than those in the negative prime condition (41.56% vs. 7.64%, $p < .05$); positive thought indexes were not found to differ between positive and negative prime conditions for low ambivalence individuals (14.73% vs. 14.50%, $p > .90$ NS). These findings consist with our expectations from the accessibility hypotheses.

Study 6A: Likelihood to Apply for the GO® VISA Card

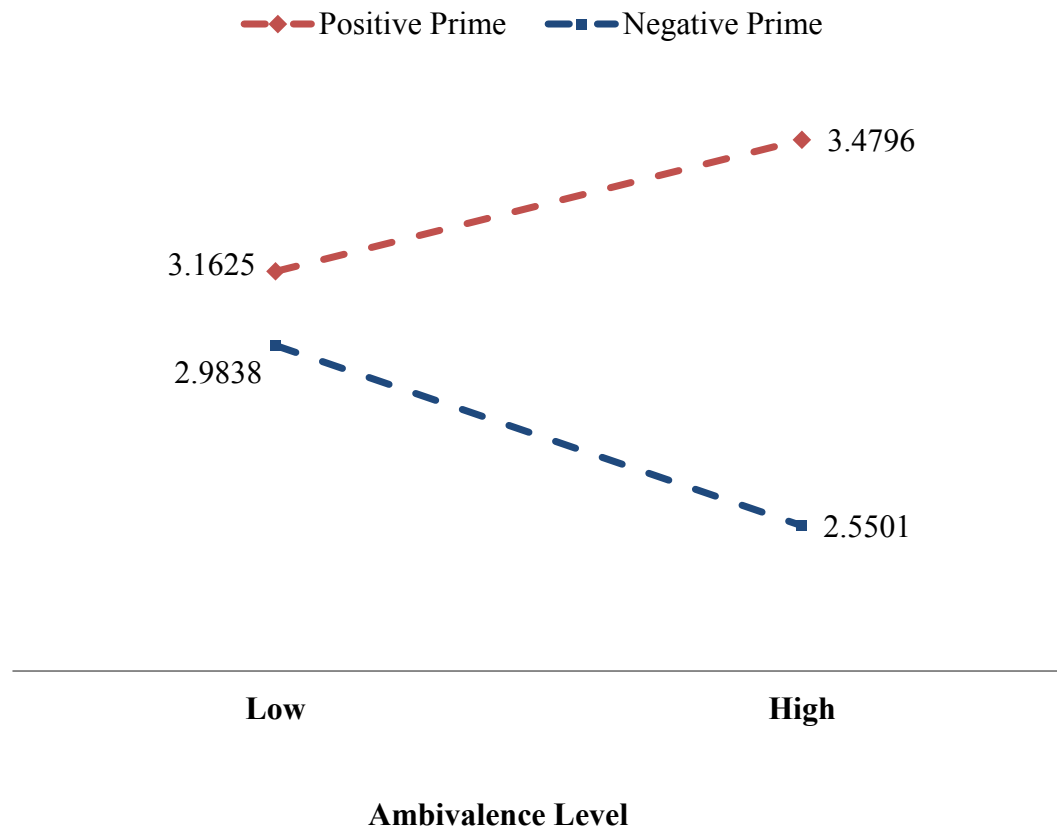


Figure 3.6: Study 6A Likelihood to Apply for GO® VISA Card

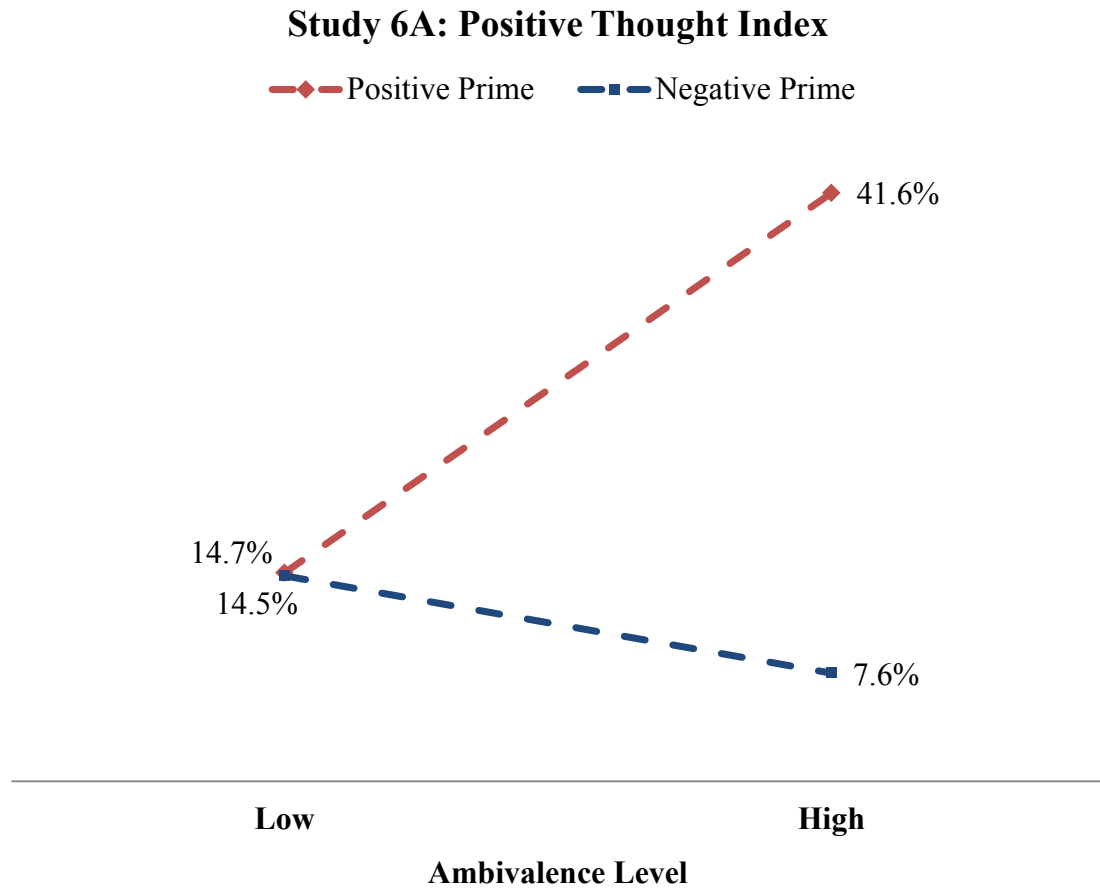


Figure 3.7: Study 6A Positive Thought Index

3.2.5 Study 6B

To test if results from study 6A may be generalized to negative dominant attitudes, we ran the same study with individuals who held negative dominant attitudes toward credit cards to test if the findings here are independent of attitude direction/valence.

Method

After prescreening, fifty one students from the same subject population as those in study 6A participated in this study. All participants in study 6B indicated their attitude toward credit cards were negative dominant. Except for subjects, all materials and procedures used in study 6B are identical to those in study 6A.

Study 6B: Likelihood to Apply for the GO® VISA Card

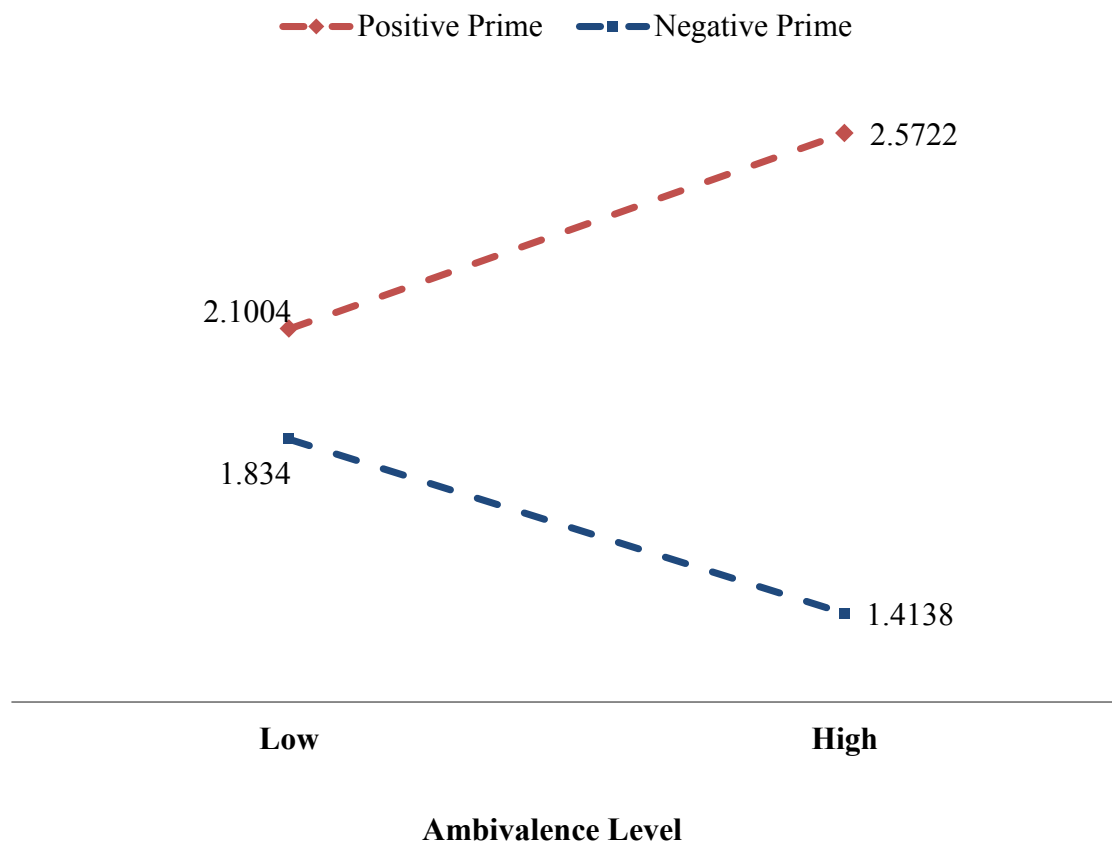


Figure 3.8: Study 6B Likelihood to Apply for GO® VISA Card

Results

Controlled for attitude extremity, high ambivalence individuals from the positive priming condition showed significantly more interest in applying for the GO® VISA card than those in the negative priming condition (2.57 vs. 1.41, $p < .05$); This difference is found to be less pronounced among low ambivalence individuals (2.10 vs. 1.83, $p > .50$ NS). Similarly, positive thought index reveals that high ambivalence individuals in the positive priming condition have listed higher proportion of positive thoughts on credit cards than those in the negative priming condition (-18.96% vs. -49.31%, $p < .05$); Priming does not show to elicit more proportion of positive thoughts among low ambivalence individuals in either conditions (-40.63% vs. -47.60%, $p > .30$, NS), which is consistent with our argument that low ambivalent attitudes have a more stable structure that is less sensitive to situational changes.

3.3 Summary

Researchers generally agree that one of the negative consequences of ambivalence is that it undermines attitude-behavior consistency, thus reducing the value of attitude as a predictor of behavior. However, since ambivalent attitudes are so prevalent in consumer's everyday life experience, it would be important for researchers and marketing

practitioners to understand when and how behavior can be predicted even when attitudes are highly ambivalent.

Based on the perspective that many attitudes are memory-based, and that the positive and negative components of an ambivalent attitude often compete for retrieval once the attitude object is activated in memory (de Liver et al. 2007), we propose the accessibility hypotheses arguing that by priming the dominant reactions of an ambivalent attitude to be more accessible, we can make this attitude equally predictive of behavior as an attitude that is univalent in nature that has equal direction and extremity.

With two sets of studies using two different categories of attitude objects and different types of priming procedures, we are able to demonstrate that even ambivalent attitudes can be made predictive of behavior. We argued that ambivalence undermines attitude-behavior correlation because of the unpredictability of which aspect of one's ambivalent attitude will be more accessible in a given choice situation. Thus, if we can create conditions in which the likelihood of certain types of thoughts is higher than other types of thoughts, we can then predict the choice behavior of ambivalent people. In studies set 1, by using mood as a mechanism to activate positive vs. negative thoughts about an object in ambivalent individuals, we were able to affect their choice in the predicted direction. We show that mood effects are minimal for individuals whose attitudes are held with low ambivalence, contrasting those whose attitudes are held with high ambivalence. In studies set 2, by using a different set of priming procedures, we replicated the findings of studies set 1 but with an attitude object from a different product

category. Data from both sets of studies show convergent support to the accessibility hypotheses.

The theoretical contributions of this research are at least two –folded. First, as one of the first works that examine when and how mixed reactions can be made predictive of behavior, we contribute to the literature of ambivalence research showing that ambivalent attitudes can be made predictive of behavior when the dominant reactions are made accessible. Second, our research contributes to the understanding of when priming procedures would be less effective in affecting the accessibility of thoughts and behavior. Specifically, we find that low ambivalent attitudes are much less sensitive to priming effects than high ambivalent attitudes. We contest that low ambivalent attitudes are insensitivity to priming because they are univalent in structure, so that the activation of an attitude only activates univalent thoughts thus behavior should not deviate in valence across different time and contexts.

Managerial Implications

From a practitioner view point, the results of our studies suggest that communication strategies should be aimed at highlighting the desired side of an issue just before a choice is made by ambivalent individuals. By making salient those thoughts that would drive behavior in a desired direction, one can affect the behavior of ambivalent individuals predictably. Most important is the timing of intervention – just before choice

is made. Thus, for consumer goods, point of purchase appears to be the place where behaviors of ambivalent individuals may be change.

Chapter 4: Concluding Remarks

4.1 Summary and Conclusions

In this dissertation, we study how ambivalence in attitudes affects individual's information preference; how ambivalent attitudes can be made useful in predicting behavior.

From the first series of studies, we find that consumers holding high ambivalent attitudes toward a newly-encountered product prefer to receive additional information that is congruent in valence with their attitudes; while consumers whose attitudes are not (or low) ambivalent are found to show preference for information that is incongruent in valence with their attitudes. However, when consumers are put in the mindset of objective thinking, the effect of ambivalence on preference for attitude congruent (incongruent) information is found to be dampened, rendering information preference to be less biased and more balanced regardless of how ambivalent one's attitude is.

This finding that ambivalence in attitudes is able to cause preference for attitude congruent vs. attitude incongruent information is intriguing. Questions remain as whether

attitude congruent information is really able to help ambivalent attitudes be less ambivalent thus less aversive. Further, will consumers continue to be discriminative and selective in information exposure when they are given attitude congruent information to read?

We conducted two studies to examine these questions, finding that consumers show more preference for attitude congruent information that is more but not less capable in helping them reduce ambivalence. Specifically, ambivalent consumers (especially those who score high in the preference for consistency measure) show more preference for additional attitude congruent information that addresses the conflicting reactions in an attitude vs. attitude congruent information that buttresses the dominant reactions in the attitude. In conclusion, we find that ambivalence affects individuals' information preference in a systematic way, which usually assumes a preference for information that is more capable in helping one reduce the conflicting reactions in attitudes.

After studying how ambivalence may affect information preference, we proceed to investigate the effect of ambivalence on attitude behavior consistency. Although past literature has offered plenty of evidence showing that ambivalent attitudes are less stable thus are less reliable to predict behavior, questions remain as whether ambivalent attitudes can be made useful in predicting behavior and if so, how.

With these questions in mind, we conducted the second set of studies to identify when and how ambivalent attitudes can be made predictive of behavior. Results from our studies show that behavior will be consistent in valence with the reactions that are made more accessible, particularly for attitudes that are ambivalent. Univalent attitudes, in

contrast, are less affected by the accessibility procedures, which renders the attitude-behavior relation to be more stable across different conditions.

4.2 Future Research

In current research, we propose and find that ambivalence has an important and systematic influence on information preference and choice. To enrich the theoretical framework built in this dissertation, future research is needed to understand how important situational/individual difference variables may act to the current theory.

In the first set of our studies, we use athletic shoes from a fictitious brand to test our hypotheses that ambivalence is able to activate biased information preference. Will the same information preference pattern be observed if we use products from the reality as the attitude object? How may ambivalence interact with other product related variables such as the category and the brand of the product? Will consumers *always* prefer receiving information that reduces the conflicting reactions in their attitudes? For ambivalent individuals, is information that addresses the conflicting conflicting reactions in an attitude always be perceived as more useful and more informative than information that buttresses the dominant reactions in one's attitude? How may consumer heterogeneity moderate the findings we have on ambivalence motivated information preference? For instance, will individuals who are high vs. low in the propensity to accept duality (Basseches 1980) be more vs. less likely to show preference for attitude incongruent vs. attitude incongruent information?

In the second set of our studies, ambivalent attitudes are found to be more pliable to be made predictive of behavior compared to univalent attitudes. The methodology used in the studies show support for the accessibility hypotheses. An interesting question for is whether changing the weighting of the positive vs. negative component of an ambivalent attitude can also make the attitude more predictive of behavior; and how we may have consumers change weightings using implicit methods so that we can minimize unnecessary reactance. These are all important issues for future research.

Appendix A
Materials Used for Chapter 2

A.1 Materials Used for Study 1

A.1.1 Manipulation Materials (Subjective) Used in High Ambivalence Positive

Attitude Condition

Consumer Reviews:

R. G. from Evanston, IL: I love these Jaguar shoes! These shoes have definitely shaped my views of the brand and I ended up buying two pairs! They are so very comfortable for any work out I do. I highly recommend this shoe to anyone if your feet need the side to side support for movement. Absolutely good shoes for comfy fit.

D. H. from Denver, CO: I don't know what the problem with these shoes is, but they get dirty sooner than anything I have worn before. I had these shoes for three months, and I have already washed them six times. I had to buy one of those sneaker-cleaners too. The top mesh seems to collect dirt, and collect it quicker than many other shoes. The shoes may be good in other ways, but I would not recommend anyone to buy these unless this nuisance is taken care of.

H.W. from St. Paul, MN: I really like the style of Jaguar shoes. The color looks great and the style goes with any type of running you do. I know that many running shoes sacrifice their look for functionality, and I would say that Jaguar does the best job in bringing both style and functionality together. Highly recommended!

K.E. from Long Beach, CA: I got these shoes a couple of months' ago. They don't always fit and running them on the sand feels very different from running them on the hard road. It almost feels like jogging on different shoes in just one single trip. I don't like this variation of feeling when jogging.

J.J. from Asheville, NC: I am amazed at the protection the shoes give my feet. I live in a hilly area and am often trudging through rough terrain, thus I need shoes that provide excellent protection to my feet when I run. Jaguar has something called Response Motion air-cushion technology. I don't know what that is, but it gives me great support and stability as I run on unpaved ground, often several miles a day.

P. O. from Miami, FL: I would recommend these shoes to anyone, especially if you are concerned about the durability of shoes. The air here is high in salt and humid all year round, and I find the other brands tearing apart within eight to nine months of wear. Jaguar uses Climate Pro technology (something that is patented by them) which seems to make my shoes last longer. I have been wearing these Jaguar shoes for six months now, and there is not even a wrinkle on them!

A.1.2 Manipulation Materials (Subjective) Used in High Ambivalence Negative Attitude Condition

Consumer Reviews:

R. G. from Evanston, IL: I dislike these Jaguar shoes! I bought them taking a chance since I had never had this brand of shoes before. These shoes have definitely shaped my views of the brand and I ended up returning them after all! They are so uncomfortable for any work out I do. I highly suggest you not to purchase them if you have a regular foot and needs the side to side support for movement. Absolutely bad shoes if you are looking for comfort fit.

H.W. from St. Paul, MN: I really like the style of Jaguar shoes. The color looks great and the style goes with any type of running you do. I know that many running shoes sacrifice their look for functionality, and I would say that Jaguar does the best job in bringing both style and functionality together. Highly recommended!

D.H. from Denver, CO: I don't know what the problem with these shoes is, but they get dirty sooner than anything I have worn before. I had these shoes for three months, and I have already washed them six times. I had to buy one of those sneaker-cleaners too. The top mesh seems to collect dirt, and collect it quicker than many other

shoes. The shoes may be good in other ways, but I would not recommend anyone to buy these unless this nuisance is taken care of.

S.L. from Charleston, SC: This is a very comfortable true to size running shoe. It also has great support for lateral movements. I really use the shoe as I jog a lot on various grounds, both sand and hard road. It feels different when you run on them on different grounds, but these shoes provide me exceptional feet protection because they automatically adjust their abrasion resistance level to the ground that I run on. I love Jaguar; they are the smartest shoes you can ever get to help you stay balanced when running.

J.J. from Asheville, NC: I am disappointed by the protection the shoes give my feet. I live in a hilly area and am often trudging through rough terrain, thus I need shoes that provide excellent protection to my feet when I run. Jaguar has something called Response Motion air-cushion technology. I don't know what that is, but it doesn't seem to give me enough support or stability as I run on unpaved ground, often several miles a day.

P. O. from Miami, FL: I would not recommend these shoes to anyone, especially if you are concerned about the durability of shoes. The air here is high in salt and humid all year round. Jaguar is not doing any better job compared to other shoes. I have been wearing these Jaguar shoes for only a few months, and they torn up terribly

A.1.3 Manipulation Materials (Subjective) Used in Low Ambivalence Positive

Attitude Condition

Consumer Reviews:

R.G. from Evanston, IL: I love these Jaguar shoes! These shoes have definitely shaped my views of the brand and I ended up buying two pairs! They are so very comfortable for any work out I do. In addition to running, I wear them for kick-boxing, skipping elliptical training and plyometrics, I highly recommend this shoe to anyone if your feet need the side to side support for movement. Absolutely good shoes for comfy fit.

H.W. from St. Paul, MN: I really like the style of Jaguar shoes. The color looks great and the style goes with any type of running you do. I know that many running shoes sacrifice their look for functionality, and I would say that Jaguar does the best job in bringing both style and functionality together. Highly recommended!

D. H. from Denver, CO: I really love these shoes because they never seem to get dirty at all! I had these shoes for three months, and I never need to worry about spending extra effort cleaning them. There must be some new technology put into this because the top mesh never seems to collect dirt. Love these shoes! Highly recommend them to you if you want a great pair of running shoes without worrying about cleaning them.

J.J. from Asheville, NC: I am amazed at the protection the shoes give my feet. I live in a hilly area and am often trudging through rough terrain, thus I need shoes that provide excellent protection to my feet when I run. Jaguar has something called Response Motion air-cushion technology. I don't know what that is, but it gives me great support and stability as I run on unpaved ground, often several miles a day.

P.O. from Miami, FL: I would recommend these shoes to anyone, especially if you are concerned about the durability of shoes. The air here is high in salt and humid all year round, and I find the other brands tearing apart within eight to nine months of wear. Jaguar uses Climate Pro technology (something that is patented by them) which seems to make my shoes last longer. I have been wearing these Jaguar shoes for six months now, and there is not even a wrinkle on them!

A.1.4 Manipulation Materials (Subjective) Used in Low Ambivalence Negative Attitude Condition

Consumer Reviews:

R. G. from Evanston, IL: I dislike these Jaguar shoes! I bought them taking a chance since I had never had this brand of shoes before. These shoes have definitely shaped my views of the brand and I ended up returning them after all! They are so uncomfortable for any work out I do. I highly suggest you not to purchase them if you have a regular foot and needs the side to side support for movement. Absolutely bad shoes if you are looking for comfort fit.

H.W. from St. Paul, MN: I really hate the style of Jaguar shoes. The color looks awful and the style was ugly. I know that many running shoes sacrifice their look for functionality, but this one suffers from both poor look and poor functions. I can't imagine if these shoes would sell anywhere. Definitely NOT recommend these shoes.

D.H. from Denver, CO: I don't know what the problem with these shoes is, but they get dirty sooner than anything I have worn before. I had these shoes for three months, and I have already washed them six times. I had to buy one of those

sneaker-cleaners too. The top mesh seems to collect dirt, and collect it quicker than many other shoes. The shoes may be good in other ways, but I would not recommend anyone to buy these unless this nuisance is taken care of.

J.J. from Asheville, NC: I am disappointed by the protection the shoes give my feet. I live in a hilly area and am often trudging through rough terrain, thus I need shoes that provide excellent protection to my feet when I run. Jaguar has something called Response Motion air-cushion technology. I don't know what that is, but it doesn't seem to give me enough support or stability as I run on unpaved ground, often several miles a day.

P. O. from Miami, FL: I would not recommend these shoes to anyone, especially if you are concerned about the durability of shoes. The air here is high in salt and humid all year round. Jaguar is not doing any better job compared to other shoes. I have been wearing these Jaguar shoes for only a few months, and they torn up terribly!

A.1.5 Choice Measure

“Suppose you are given a choice to read other people’s comments about Jaguar shoes, what type of comments would you choose to read? (You can just choose one of the following)

____ I would like to read the POSITIVE things people commented on Jaguar.

____ I would like to read the NEGATIVE things people commented on Jaguar.

A.2 Materials Used for Study 2

**A.2.1 Manipulation Materials (Objective) Used in High Ambivalence Positive
Attitude Condition**

*“You will now be able to read some excerpts of reviews of Jaguar shoes.
These are all reviews that have appeared in various reputable magazines. Please
read through them carefully as you form your opinion of Jaguar shoes.”*

Expert Reviews:

Jaguar shoes are new to the market and they pass our test. Their main strength is that they are comfortable to wear. If you rely on your shoes to adjust to the slight side-to-side movement of your foot when you walk, these shoes work well for you.

Consumers Digest

These shoes are not very stylish. They come in colors that do not go with any outfit. We have seen many shoes that do well in balancing looks with functionality, but Jaguar has not managed to put them both together. Not recommended.

Consumer Reports

We never thought we would bring this type of a complaint about shoes to you – they seem to get dirtier than any other shoe we have tested. Our folks wore them for a few months, but complained that they had to wash them many times for clean looks. We think there is some flaw with the top mesh that collects dirt and it is a nuisance.

Outdoor Living

This is a comfortable, true-to-size athletic shoe. It has great support for lateral movements and works well on any surface – dirt or hard road. We felt the shoe adjusting to the type of ground we were running on and gave us the support we needed. They are smart shoes!

Runner's World

We were pleased with the protection these shoes gave our feet. We felt it most on rough terrain, when Jaguar's Response Motion air cushion technology works as advertised. Great on smooth ground, exceptional for rougher terrain.

Sneakerfreaker.com

We ran on the coast with Jaguar shoes and they held together perfectly. It may be the salt in the air or the humidity, many other brands of athletic shoes show significant wear within a few months. If you are looking for something that will last

you awhile, this is the shoe for you.

Shuz.com

A.2.2 Manipulation Materials (Objective) Used in High Ambivalence Negative

Attitude Condition

“You will now be able to read some excerpts of reviews of Jaguar shoes. These are all reviews that have appeared in various reputable magazines. Please read through them carefully as you form your opinion of Jaguar shoes.”

Expert Reviews:

Jaguar shoes are new to the market and need some more work before they pass our test. Their main problem is that they are uncomfortable to wear. If you rely on your shoes to adjust to the slight side-to-side movement of your foot when you walk, these shoes don't work for you.

Consumers Digest

These shoes are really stylish! They come in nice colors that go with almost any outfit. We have seen many shoes that struggle to balance looks with functionality, but Jaguar has managed to put them both together. Highly recommended.

Consumer Reports

We think we should bring this type of a compliment about shoes to you – Jaguar shoes don't seem to get dirty compared to any other shoe we have tested. Our folks wore them for a few months, and they never had to wash them at all for clean looks. We think there is some innovation with the top mesh that resists dirt and we like that!

Outdoor Living

This is not a comfortable nor true-to-size athletic shoe. It has no support for lateral movements and doesn't work well on any surface – dirt or hard road. We felt the shoe did not adjust to the type of ground we were running on nor did it give us the support we needed. They are not smart shoes!

Runner's World

We were disappointed with the protection these shoes gave our feet. We felt it most on rough terrain, when Jaguar's so-called Response Motion air cushion technology did not seem to work as advertised. Okay on smooth ground, but not for rougher terrain.

Sneakerfreaker.com

We ran on the coast with these shoes and they started falling apart. It may be the salt in the air or the humidity, but they started showing significant wear within a few months. If you are looking for something that will last you awhile, this is not

the shoe for you.

Shuz.com

A.2.3 Manipulation Materials (Objective) Used in Low Ambivalence Positive Attitude Condition

“You will now be able to read some excerpts of reviews of Jaguar shoes. These are all reviews that have appeared in various reputable magazines. Please read through them carefully as you form your opinion of Jaguar shoes.”

Expert Reviews:

Jaguar shoes are new to the market and they pass our test. Their main strength is that they are comfortable to wear. If you rely on your shoes to adjust to the slight side-to-side movement of your foot when you walk, these shoes work well for you.

Consumers Digest

These shoes are really stylish! They come in nice colors that go with almost any outfit. We have seen many shoes that struggle to balance looks with functionality, but Jaguar has managed to put them both together. Highly recommended.

Consumer Reports

We think we should bring this type of a compliment about shoes to you – Jaguar shoes don't seem to get dirty compared to any other shoe we have tested. Our folks wore them for a few months, and they never had to wash them at all for clean looks. We think there is some innovation with the top mesh that resists dirt and we like that!

Outdoor Living

Good running shoes should be comfortable and true-to-size. They should also have great support for lateral movements and should work well on any surface – dirt or hard road. We are yet to test Jaguar for its ability to adjust to the type of ground people run on so we do not know whether or not it would give the support runners need. Will comment on this when the data become available.

Runner's World

We were pleased with the protection these shoes gave our feet. We felt it most on rough terrain, when Jaguar's Response Motion air cushion technology works as advertised. Great on smooth ground, exceptional for rougher terrain.

Sneakerfreaker.com

We ran on the coast with Jaguar shoes and they held together perfectly. It may be the salt in the air or the humidity, many other brands of athletic shoes show significant wear within a few months. If you are looking for something that will last

you awhile, this is the brand of shoes for you.

Shuz.com

A.2.4 Manipulation Materials (Objective) Used in Low Ambivalence Negative

Attitude Condition

“You will now be able to read some excerpts of reviews of Jaguar shoes. These are all reviews that have appeared in various reputable magazines. Please read through them carefully as you form your opinion of Jaguar shoes.”

Expert Reviews:

Jaguar shoes are new to the market and need some more work before they pass our test. Their main problem is that they are uncomfortable to wear. If you rely on your shoes to adjust to the slight side-to-side movement of your foot when you walk, these shoes don't work for you.

Consumers Digest

These shoes are not very stylish. They come in colors that do not go with any outfit. We have seen many shoes that do well in balancing looks with functionality, but Jaguar has not managed to put them both together. Not recommended.

Consumer Reports

We never thought we would bring this type of a complaint about shoes to you – they seem to get dirtier than any other shoe we have tested. Our folks wore them for a few months, but complained that they had to wash them many times for clean looks. We think there is some flaw with the top mesh that collects dirt and it is a nuisance.

Outdoor Living

Good running shoes should be comfortable and true-to-size. They should also have great support for lateral movements and should work well on any surface – dirt or hard road. We are yet to test Jaguar for its ability to adjust to the type of ground people run on so we do not know whether or not it would give the support runners need. Will comment on this when the data become available.

Runner's World

We were disappointed with the protection these shoes gave our feet. We felt it most on rough terrain, when Jaguar's so-called Response Motion air cushion technology did not seem to work as advertised. Okay on smooth ground, but not for rougher terrain.

Sneakerfreaker.com

We ran on the coast with these shoes and they started falling apart. It may be the salt in the air or the humidity, but they started showing significant wear within a

few months. If you are looking for something that will last you awhile, this is not the shoe for you.

Shuz.com

A.2.5 Choice Measure

“Suppose you can choose from 1 up to 4 out of the 6 additional reviews on Jaguar shoes, what are the reviews you will choose to read? (*Minimum 1 choice, Maximum 4 choices*).”

___ Additional Positive Review #1

___ Additional Positive Review #2

___ Additional Positive Review #3

___ Additional Negative Review #1

___ Additional Negative Review #2

___ Additional Negative Review #3

A.3 Materials Used for Study 3

A.3.1 Additional Reviews Used in Study 3

Reviews that buttress one's dominant reactions toward Jaguar shoes

G. A. from Big Spring, TX: Adding to everybody's love for the shoes, I would say you would definitely love the fact that they are so affordable as well. Compared to other running shoes by big brand names such as Nike and Addidas who "charge" their consumers for huge expense on advertising, Jaguar stands out differently—they have absolutely the best shoes at cheaper price because they do not waste their customer's money. All my friends love it!

T.P. from Grove City, PA: The customer service for Jaguar shoes is fantastic! I ordered a self-designed pair of Jaguar shoes from their website last week but kind of change my mind for the colors I want... I know it is unreasonable to cancel the order or exchange them since I submitted the design for it but... I still tried calling the customer service and guess what, Jaguar shoes offer 100% customer satisfaction guarantee so I can just send back the shoes and order another pair without additional costs!! Love it love it love it!

Reviews that invalidate one's conflicting reactions toward Jaguar shoes

G.A. from Big Spring, TX: One of the previous negative comment (saying that it is annoying that the shoes can easily pick up dirt) about Jaguar is just WRONG! All other running shoes pick up dirt too when you run them on the road and Jaguar is simply the LEAST likely shoes to pick up "much" dirt. As someone who loves to run, I do a lot of trail running all year round under various weathers conditions. Jaguar is definitely one of the best running shoes that resist odor and dirt. Absolutely no need to worry about their "easily pick up dirt" aspect because that was just a wrong comment on these shoes.

T.P. from Grove City, PA: Responding to a previous comment complaining the fit of the shoes, I think it is important to know if we have picked up the right size/width shoes before blaming them don't fit. Jaguar shoes are the best in terms of fitting if you know your right size and get the right sizes. If running these shoes on sand feels different from running them on hard road, I would say it is unfair to blame the shoes for that! I wonder how someone would NOT feel different when they run on different grounds with just any types of shoes.

A.4 Materials Used for Study 4

A.4.1 Choice Measure

“Suppose you are given a choice to read other people’s comments about Jaguar shoes, what type of comments would you choose to read?”

Please indicate your choice by checking on 1 of the following 2 options below:

☐ *Set 1: Comments by two other users that provide positive (negative) views on Jaguar shoes.*

☐ *Set 2: Comments by two other users that disconfirm the previous negative (positive) comments I read about Jaguar shoes.*

Appendix B
Materials Used for Chapter 3

B.1 Materials Used for Studies 5A and 5B

B.1.1 Mood Manipulation Materials Used in Happy Mood Condition

Part I:

In the next page of the screen, you will be reading an article that appeared in a recent issue of Miami Herald. Please read the article then answer the questions that follow.

Male Fragrance Hype Flunks Reality Tests

Most American guys are reluctant to use fragrances, on the theory that if you start wearing perfume, you're heading down a slope that inevitably will lead to rouge, leotards, watching Oprah, etc. So most guys prefer to emit only natural male aromas such as B.O. and ketchup.

To change this attitude, the fragrance industry keeps running ad campaigns based on the theme that a fragrance-wearing guy will need a cattle prod to fend off women.

When I hear real women talk about what they find attractive in a man, they never mention fragrance. Women don't care about shallow, superficial qualities. Women care about spiritual issues, such as: does the man have cute buns?

Take my research department, Judi Smith. I want to stress that Judi is happily married to her husband, Tim. But sometimes, for research purposes, Judi puts

photographs of male models on the office wall, and these photographs tend to be bun-oriented.

So the question is: Do male fragrances really attract women? I conducted a scientific test of two fragrances for men, starting with: Giorgio Cologne for Men.

I selected Giorgio because it met my stringent criterion, namely, I got a free sample in the mail. I used the standard scientific test procedure of (1) sneaking up behind the males in my office, (2) firing a burst of cologne at their heads and (3) sprinting off to a safe distance. The results were as follows:

- The males reacted to Giorgio in exactly the same way that a cockroach reacts to Raid. If there had been a giant refrigerator nearby, they would have scurried under it.
- Females in the vicinity definitely experienced a passionate emotion. "What is the sell?" was how they expressed it.

I had higher hopes for the next fragrance product: Liquid Magnet.

I found out about this thanks to alert reader Robert T. Germaux, who sent me an email advertisement advertisement that begins: "Would you like to turn beautiful women on instantly? Would you like beautiful girls to ignore your face and stare at your pants?"

Frankly, no, because of the ravioli stains. But anyway, according to the ad, Liquid Magnet contains a "rare distilled Swiss pheromone formula": that is irresistible to women. If you wear it, the ad claims, "Salesgirls, dental hygienists

and other women will try to touch you!"

I, personally, would not be thrilled if I were having my teeth cleaned, and a dental hygienist wearing gloves and a mask suddenly longed for me. Especially if she were holding a sharp instrument. But I felt it was important to test this product, so I generously sent off \$39.95 of the Miami Herald's money.

Weeks later I received an oozing brown package that looked as though it had been delivered by Edward Scissorhands. Inside was a leaking plastic spray bottle containing a yellowish fluid that you might mistake for public-restroom deodorant if you didn't know it was a rare distilled Swiss pheromone formula. I sprayed some on myself and a colleague, John Dorschner; then we walked into the Herald newsroom.

The results were striking. We walked by at least two dozen women, engaged in their normal work routines, and the instant we got close, every single one of these women continued to engage in her normal work routine. We were forced to lean close to some of them, so they could become crazed with lust.

"Notice anything?" we said, arching our eyebrows.

"Yuck," they said, moving away.

"That's even worse than Giorgio," announced Judi, who refused to remain in the room with Liquid Magnet.

We are forced to conclude that either (1) these particular pheromones work only on Swiss people, or (2) Liquid Magnet is a scam.

Maybe fragrance is not the way to a woman's heart after all. Maybe we men,

instead of using superficial tricks, should concentrate on becoming more sensitive and loving and caring. Although I personally would recommend surgical bun augmentation.

Part II:

In this part of the study, we would like for you to share with us a detailed description of a happy event that happened to you recently.

Take a minute to think about and recall the happy event from your memory.

Try to recall the situation as vividly as you can.

Experience all the details of the situation.

Think through the thoughts that occurred to you.

Feel the same feelings you felt.

When you are ready to write about it, you can start writing in the next page.

Now, in the space below, describe this happy event as vividly as you can, including all the important details. Do not worry about grammatical issues when you write.

Please write as much as you can (Max. 200 words).

B.1.2 Mood Manipulation Materials Used in Sad Mood Condition

Part I:

In the next page of the screen, you will be reading an article that appeared in a recent issue of Miami Herald. Please read the article then answer the questions that follow.

You Could Advise, But Sometimes It's Best Not To

He said she told him she needed some time to herself, time to sort things out. I got the news when I called to invite the two to an end-of-summer party. She said little, took less. He was devastated.

Sometimes all you can do is listen. In this age, who among us has not had the opportunity to practice unlicensed telephone therapy when the hour is late and the room crowds in and everything our "patient" sees reminds him of what may be irreparably sundered? We're cheaper than analysis or Jack Daniels, and too many of us know the feeling of being on the other end of the phone line.

Three years ago, almost to the day, I had their wedding reception in my back yard. It was an afternoon filled with the bright ring of banjo and fiddle, good company and sentimental toasts. After garter and bouquet had been lofted over the

deck rail, the couple set out full of fresh hope and lasagna for their honeymoon. I watched their shiny red pickup sprint past the pines as they departed, if not to conquer the world, at least to beat the odds against marriage.

He said there are songs that make him cry. I know his musical preferences. Don't listen to country, I told him, until it is final or unless you have someone around to hide the razor blades. Listen to classical. There are no slamming doors or waiting taxis in the Brandenburg Concerto. Black humor is the only humor that offers momentary comic relief from such murky despair.

He shares this humor at times, having conceded to writing a song titled She Left Me One Knickknack at a Time. It has a great line about velvet Elvis painting and is full of humor as dry as a leather washer in a Death Valley water pump. Yet it offers him but brief surcease from the morass of uncertainty in which he flounders. "I didn't know who else to call," he apologized jokingly when last we spoke. "Dad's dead."

There are middle-of-the-night phone calls that make the heart skip a beat and some that make it only hurt. Sometimes, all you can do is listen.

"Maybe I'll sell the house," he ventured. "Get an apartment in town." I know he has been counting rosebuds on the wallpaper, husbanding grief as if it were the dwindling rations on a lifeboat adrift.

“A change of scenery wouldn’t hurt,” I told him, though on reflection it seems an insipidly cheery concurrence.

Mostly I try to measure my words.

“Maybe things will work out after all” has the ring of “Well, at least he’s at peace now.”

I want to joke with him, to laugh, to remind him that in his innocent pre-pubescence he had once asked Mom whether he could have my typewriter if I didn’t make it back from Vietnam.

But these are brooding hours, moments when the clock runs too fast during their tentative meetings and too slow afterward. And sometimes all you can do is listen.

I have a friend who survives matrimony’s dark incidents by recalling that his father once told him that marriage’s low spots are best endured by simply reciting, “There is a river in China.”

The advice stems from paternal knowledge of the routine flooding of the Yangtze and the inevitable ability of that river to restore itself to a true and natural course after the casualties and the flotsam have been removed.

But right now, his life is filled with floating houses and trees, roosters perched on the prows of eaves singing mournfully for their lives.

“It will work out,” I could tell him with an optimism that time might mock. “Maybe it won’t work out,” I could counsel, thus aiding and abetting his misery.

“There is a river,” I really want to tell him.

But sometimes all you can do is listen.

Part II:

In this part of the study, we would like for you to share with us a detailed description of a sad event that happened to you recently.

Take a minute to think about and recall the sad event from your memory.

Try to recall the situation as vividly as you can.

Experience all the details of the situation.

Think through the thoughts that occurred to you.

Feel the same feelings you felt.

When you are ready to write about it, you can start writing in the next page.

Now, in the space below, describe this sad event as vividly as you can, including all the important details. Do not worry about grammatical issues when you write. Please write as much as you can (Max. 200 words).

B.1.3 Mood Manipulation Materials Used in Neutral Mood Condition

Part I:

In the next page of the screen, you will be reading an article that appeared in a recent issue of Science Herald. Please read the article then answer the questions that follow.

The IBM Review

In projects that are developing computing systems for business solutions, it is generally recognized that the use of predefined, reusable assets in the form of architectural, analysis, and design patterns can enable large reductions in project cost, time scale, and risk. However, effective large-scale deployment of architectural patterns is dependent on key concepts, terms, and notations being used consistently, and being understood and accepted across a broad community of information technology (IT) architects and systems integrators. Without a common language, deployment is likely to be patchy, inefficient, and error-prone and to require huge support resources. Lack of consistency seriously inhibits scalability.

In 1996 and 1997, IBM's Global Industries business unit, which has the mission of developing and supporting packaged industry solutions, recognized the need to adopt an improved, asset-based approach to its product development. At the same time, IBM's Global Services business unit had independently concluded that IBM and its customers, and IBM's services professionals worldwide, would benefit

greatly from an asset-based approach to solutions development in which architectural and design assets would be gathered from completed projects and redeployed on many other, similar projects. Both business units agreed that the increased emphasis on assets and work products for development and for services engagements necessitated a comprehensive metamodel that would underpin the description of those assets and work products more precisely and effectively.

Independently of the Architecture Description Standard (ADS) project, the Enterprise Solutions Structure (ESS) project had already developed a specific metamodel used to document the (mostly technical) frameworks that it was developing. This metamodel, in a simplified form, was implemented in a Lotus Notes**-based tool, which was used to distribute these assets to users of ESS.

The Architecture Description Standard project was created to develop a more wide-ranging version of this metamodel and the semantic descriptions to support it. The output from this project, ADS, provides a common language through the definition of a formal metamodel, a glossary (see the Appendix), and a detailed semantic specification.

The primary audience for the standard consists of IT architects working on solution development and deployment projects. Such work might be either in the context of a client engagement or a development project within an IBM solution development organization. In the former context, assets in the form of work products conforming to the standard may be selected, customized, and used to build IT systems for the customer. In the latter context, developers will create work

products conforming to the standard which can then be widely deployed.

Such work products will typically contain descriptions of groups of entities from the metamodel, documented in the form prescribed by ADS. Thus, both providers and consumers of work products will benefit from a common, unambiguous definition. Within a single project, ADS will enable more precise, unambiguous, and semantically rich communication among project personnel.

The standard is intended to be used for solution development and deployment across the IBM Corporation worldwide. It is the foundation for the Systems Integration/Application Development (SI/AD) method and its associated work products. It will be initially deployed to all SI/AD architects via SI/AD education classes. It will also be deployed to a wider range of architects via classes that are currently under development. It is also the foundation for the structure and terminology of asset libraries (for example, ESS).

Part II:

Assume your friend, who is at a different business school in Europe, has asked you to describe the layout of Fisher College of Business, and how the classrooms are arranged. They are trying to construct a building in Europe and your friend is trying to get information from the other business schools on how they are put together. You can always send pictures, but we are more interested in how you would describe the buildings we have there.

In the space below, please write a description of the various buildings, the classrooms, and other spaces at Fisher College so your friend gets an idea of our building space.

You may start writing in the space below here (Please limit yourself to write not more than 200 words).

B.1.4 Choice Measure

Now that you have finished the first part of this survey. As a token of thanks for your participation in this research, you will get to choose between a coupon for a side dish from a popular dinning place near campus. **You can choose either a coupon for a free order of French fries, OR a coupon for a free order of vegetable side salad. Coupons for these side dishes are of equal value.**

Please indicate your choice before you proceed to the next part of this research.

I would like a coupon for:

☐ **Free order of French fries**

☐ **Free order of vegetable side salad**

B.1.5 Thought Listing Measure

On the previous page, you might have selected either French fries or vegetable side salad as your reward. In the blanks below, please list the thoughts that went through your mind when you made the choice. Please fit your thoughts into the blanks, one thought per blank. You can list up to 5 thoughts in total. Do not worry about grammar or spelling.

Thought 1: _____

Thought 2: _____

Thought 3: _____

Thought 4: _____

Thought 5: _____

B.2 Materials Used for Studies 6A and 6B

B.2.1 Materials Used in the Word Scramble Task: Positive Prime

Please find the words below in the jumble. Please note the order in which you found each word by placing a number next to the word. For example, the first word found would have a “1” next to it and the second a “2” and so forth.

I	C	J	J	Y	T	B	G	V	O
G	I	F	G	Y	P	B	B	B	C
H	X	W	Z	Y	E	E	A	I	Y
B	O	T	T	L	E	H	N	V	C
Z	P	Q	I	L	T	O	K	C	F
T	A	M	Y	U	R	P	R	D	R
N	P	L	N	T	V	O	U	E	A
I	E	V	C	R	H	F	P	B	U
L	R	E	J	W	G	O	T	T	D
W	L	G	X	L	M	I	C	H	F
E	J	R	I	S	K	Z	Y	E	L
P	X	Y	S	O	T	C	G	D	A

Bottle
Risk

Debt
Pen

Paper
Fraud

Bankruptcy
Electronic

B.2.2 Materials Used in the Word Scramble Task: Negative Prime

Please find the words below in the jumble. Please note the order in which you found each word by placing a number next to the word. For example, the first word found would have a “1” next to it and the second a “2” and so forth.

X	S	O	J	E	V	U	E	D	C
D	A	R	A	C	E	F	L	V	C
K	A	E	M	I	A	N	E	Z	O
B	L	W	H	L	S	B	C	G	N
O	E	A	X	Z	Y	B	T	O	V
T	O	R	L	O	T	W	R	O	E
T	T	D	G	U	S	Y	O	D	N
L	Z	S	N	C	I	R	N	F	I
E	W	N	M	Q	H	N	I	A	E
J	E	R	B	I	K	K	C	R	N
P	A	P	E	R	E	C	C	W	C
U	D	T	K	Q	W	D	T	I	E

Bottle
Easy

Rewards
Pen

Paper
Good

Convenience
Electronic

B.2.3 Groups of Letters Used in the Word/Non-Word Task

1. POSITIVE WORDS (n=11)

Clean, protection, easy, advance, good, helpful, credit, beneficial, convenient, rewards, bonus.

2. NEGATIVE WORDS (n=11)

Cost, fee, exceed, theft, bankruptcy, fraud, loss, risk, broke, debt, detrimental.

3. NEUTRAL WORDS (n=10)

Bottle, pen, resources, type, door, frame, open, electronic, paper, data

4. NON-WORDS (n=20)

Ngpetfin, pypttf, qaabd, oennght, orrmf, mnfrein, ssinea, looryf, chadules, oormg, adr, asmineej, inttomnc, uildineline, arpepl, aelfzyg, eefg, gtlto, aintyp, mroupt.

B.2.4 Credit Card Ad Used in Studies 6A and 6B

Introducing the GO® Visa Card to Ohio State students:



Let's face it, as an individual living in the 21st century, you need:

- ✓ The capabilities to place orders and make purchases electronically;
- ✓ The convenience to go places and pay as you go without worrying about cash or quarters or dimes;
- ✓ The freedom to enjoy whatever purchases you make without worrying about unrecoverable costs such as lost or stolen money;
- ✓ The opportunity to earn substantial rewards and cash back as you spend more.

The GO® VISA Card.
Designed to meet your needs.*
Designed for you.



* GO® VISA Card offers competitive benefits and rates. Details can be obtained upon request.

References

- Aaker, Jennifer and Patti Williams (2002), "Can Mixed Emotions Peacefully Co-Exist?" *Journal of Consumer Research*, 28 (March), 636-49.
- Ahluwalia, Rohini (2000), "Examination of Psychological Processes Underlying Resistance to Persuasion," *Journal of Consumer Research*, September, 217-32.
- Albarracin, Dolores and Amy L. Mitchell (2004), "The Role of Defensive Confidence in Preference for Proattitudinal Information: How Believing that One is Strong can Sometimes Be a Defensive Weakness," *Personality and Social Psychology Bulletin*, 30 (December), 1565-84.
- Armitage, Christopher J. and Mark Conner (2000), "Attitudinal Ambivalence: A Test of Three Key Hypotheses," *Personality and Social Psychology Bulletin*, 26 (November), 1421-32.
- Basseches, Michael (1980), "Dialectical Schemata: A Framework for the Empirical Study of the Development of Dialectical Thinking," *Human Development*, 23 (November-December), 400-21.

- Bassili, John N. (1996), "Meta-Judgmental Versus Operative Indexes of Psychological Attributes: The Case of measures of Attitude Strength," *Journal of Personality and Social Psychology*, 71 (4), 637-53.
- Bell, David W. and Victoria M. Esses (1997), "Ambivalence and Response Amplification Toward Native Peoples," *Journal of Applied Social Psychology*, 27, 1063-84.
- Bell, David W. and Victoria M. Esses (2002), "Ambivalence and Response Amplification: A Motivational Perspective," *Personality and Social Psychology Bulletin*, 28 (August), 1143-52.
- Berger, Ida E. and Andrew A. Mitchell (1989), "The effect of Advertising on Attitude Accessibility, Attitude Confidence, and the Attitude-Behavior Relationship," *Journal of Consumer Research*, 16, 269-79.
- Bless, Herbert, Gerd Bohner, Norbert Schwarz, and Fritz Strack (1990), "Mood and Persuasion: A Cognitive Response Analysis," *Personality and Social Psychology Bulletin*, 16 (2), 331-45.
- Bower, Gordon H. (1981), "Mood and Memory," *American Psychologist*, 36(2), 129-148.
- Briñol, Pablo, Richard E. Petty, and S. Christian Wheeler (2006), "Discrepancies between Explicit and Implicit Self-concepts: Consequences for Information Processing," *Journal of Personality and Social Psychology Bulletin*, 91 (1), 154-70.
- Cavazza, Nicoletta and Fabrizio Butera (2008), "Bending Without Breaking: Examining the Role of Attitudinal Ambivalence in Resisting Persuasive Communication," *European Journal of Social Psychology*, 38, 1-15.

- Chaiken, Shelly, Eva M. Pomerantz, and Roger Giner-Sorolla (1995), "Structural Consistency and Attitude Strength," in *Attitude Strength: Antecedents and Consequences*, ed. Richard E. Petty and Jon A. Krosnick, NJ: Lawrence Erlbaum Associates, 387-412.
- Clark, Jason K., Duane T. Wegener, and Leandre R. Fabrigar (2008), "Attitudinal Ambivalence and Message-based Persuasion: Motivated Processing of Proattitudinal Information and Avoidance of Counterattitudinal Information," *Personality and Social Psychology Bulletin*, 34 (April), 565-77.
- Cialdini, Robert B., Melanie R. Trost, and Jason T. Newsom (1995), "Preference for Consistency: The Development of a Valid Measure and the Discovery of Surprising Behavioral Implications," *Journal of Personality and Social Psychology*, 69 (2), 318-38.
- Conner, Mark and Christopher J. Armitage (2008), "Attitude Ambivalence", in *Attitudes and Persuasion*, ed. William D. Crano and Radmila Prislin, Psychology Press, Taylor & Francis Group, New York, London, 261-86.
- Conner, Mark, Paul Sparks, Rachel Povey, Rhiannon James, Richard Shepherd, and Christopher J. Armitage (2002), "Moderator Effects of Attitude Ambivalence on Attitude-Behaviour Relationships," *European Journal of Social Psychology*, 32 (July), 705-18.
- de Liver, Yaël, Joop van der Pligt, and Daniël Wigboldus (2007), "Positive and Negative Associations Underlying Ambivalent Attitudes," *Journal of Experimental Social Psychology*, 43, 319-26.

- Fazio, Russell H., Martha C. Powell, and Carol J. Williams (1989), "The Role of Attitude Accessibility in the Attitude-to-Behavior Process," *Journal of Consumer Research*, 16, 280-88.
- Festinger, Leon (1957), *A Theory of Cognitive Dissonance*, Stanford, CA: Stanford University Press.
- Gurmarkin, A.D., J. Baron, and K. Armstrong (2004), "The Effect of Numerical Statements of Risk on Trust and Comfort with Hypothetical Physician Risk Communication," *Medical Decision Making*, 24 (May-June), p.265.
- Has, Glen R., Irwin Katz, Nina Rizzo, Joan Bailey, and Lynn Moore (1992), "When Racial Ambivalence Evokes Negative Affect, using a Disguised Measure of Mood," *Personality and Social Psychology Bulletin*, 18 (6), 786-97.
- Hart, William, Dolores Albaracn, Alice H. Eagly, Inge Brechan, Matthew J. Lindberg, and Lisa Merrill (2009), "Feeling Validated vs. Being Correct: A Meta-Analysis of Selective Exposure to Information," *Psychological Bulletin* 135 (July), 555-588.
- Herr, Paul M., Frank R. Kardes, and John Kim (1991), "Effects of Word-of-Mouth and Product-Attribute Information on Persuasion: An Accessiblity-Diagnosticity Perspective," *Journal of Consumer Research*, 17 (March), 454-62.
- Hoch, Stephen J. and John Deighton (1989), "Managing What Consumers Learn from Experience," *Journal of Marketing*, 53 (April), 1-20.
- Isen, Alice M., Thomas E. Shalker, Margaret Clark, and Lynn Karp (1978), "Affect, Accessibility of Maerial in Memory, and Behavior: A Cognitive Loop?" *Journal of Personality and Social Psychology*, 36, 1-12.

- Jain, Shailendra P. and Durairaj Maheswaran (2000), "Motivated Reasoning: A Depth-of-Processing Perspective," *Journal of Consumer Research*, 27 (4), 358-71.
- Jonas, Klaus, Michael Diel, and Philip Brömer (1997), "Effects of Attitudinal Ambivalence on Information Processing and Attitude-Intention Consistency," *Journal of Experimental Social Psychology*, 33, 190-10.
- Kaplan, Kalman J. (1972), "On the Ambivalence-Indifference Problem in Attitude Theory and Measurement: A Suggested Modification of the Semantic Differential Technique," *Psychological Bulletin*, 77 (5), 361-72.
- Kim, Jooyoung and Hae Jin Paek (2009), "Information processing of genetically modified food messages under different motives: An adaptation of the multiple-motive heuristic-systematic model," *Risk Analysis*, 29 (December), 1793-1806.
- Kruglanski, Arie W. (1989), "The Psychology of Being "Right": On the Problem of Accuracy in Social Perception and Cognition," *Psychological Bulletin*, 106 (3), 395-409.
- Kunda, Ziva (1990), "The Case for Motivated Reasoning," *Psychological Bulletin*, 108 (3), 480-98.
- Lavine, Howard, Cynthia J. Thomsen, Mark P. Zanna, and Eugene Borgida (1998), "On the Primacy of Affect in the Determination of Attitudes and Behavior: The Moderating Role of Affective-Cognitive Ambivalence," *Journal of Experimental Social Psychology*, 34, 398-421.

- Lynch, John G. Jr., Howard Marmorstein, Michael F. Weigold (1988), "Choices from Sets Including Remembered Brands: Use of Recalled Attributes and Prior Overall Evaluations," *Journal of Consumer Research*, 15, 169-84.
- MacDonald, Tara K., Mark P. Zanna (1998), "Cross-Dimension Ambivalence Toward Social Groups: Can Ambivalence Affect Intentions to Hire Feminists?" *Personality and Social Psychology Bulletin*, 24, 427-41.
- Maio, Gregory R., David W. Bell, and Victoria M. Esses (1996), "Ambivalence and Persuasion: The Processing of Messages about Immigrant Groups," *Journal of Experimental Social Psychology*, 32, 513-36.
- Newby-Clark, Ian R., Ian McGregor, and Mark P. Zanna (2002), "Thinking and Caring about Cognitive Inconsistency: When and for Whom does Attitudinal Ambivalence Feel Uncomfortable?" *Journal of Personality and Social Psychology*, 82, 157-66.
- Nordgren, Loran F., Frenk van Harreveld, and Joop van der Pligt (2006), "Ambivalence, Discomfort, and Motivated Information Processing," *Journal of Experimental Social Psychology*, 42, 252-8.
- Nowlis, Stephen M., Barbara E. Kahn, and Ravi Dhar (2002), "Coping with Ambivalence: The Effect of Removing a Neutral Option on Consumer Attitude and Preference Judgments," *Journal of Consumer Research*, 29 (December), 319-34.
- Otnes, Cele, Tina M. Lowrey, and L. J. Shrum (1997), "Toward an Understanding of Consumer Ambivalence," *Journal of Consumer Research*, 24 (June), 80-93.

- Petty, Richard E. and Pablo Briñol (2009), "Implicit Ambivalence: A Meta-cognitive Approach," in *Attitudes: Insights from the New Implicit Measure*, ed R. E. Petty, R. H. Fazio, and P. Briñol (Eds.), (pp.119-161), New York, NY: Psychology Press.
- Petty, Richard E. and Duane T. Wegener (1993), "Flexible Correction Processes in Social Judgment: Correcting for Context Induced Contrast," *Journal of Experimental Social Psychology*, 29, 137-65.
- Petty, Richard E. and Jon A. Krosnick (1995), *Attitude Strength: Antecedents and Consequences*, Mahwah, NJ: Lawrence Erlbaum Associates.
- Priester, Joseph R. and Richard E. Petty (1996), "The Gradual Threshold Model of Ambivalence: Relating the Positive and Negative Bases of Attitudes to Subjective Ambivalence," *Journal of Personality and Social Psychology*, 71 (3), 431-49.
- _____ (2001), "Extending the basis of subjective attitudinal ambivalence: Interpersonal and intrapersonal antecedents of evaluative tension," *Journal of Personality and Social Psychology*, 80 (1), 19-34.
- Priester, Joseph R., Richard E. Petty, and Kiwan Park (2007), "Whence univalent ambivalence? From the anticipation of conflicting reactions," *Journal of Consumer Research*, 34 (June), 11-21.
- Russo, Edward J., Margaret Meloy, and Victoria Medvec (1998), "Predecisional Distortion of Product Information," *Journal of Marketing Research*, 35 (November), 438-52.
- Sears, David O. and Jonathan L. Freedman (1967), "Selective Exposure to Information: A Critical Review," *Public Opinion Quarterly*, 31(June), 194-213.

- Sekar Raju, H. Rao Unnava, and Nicole Votolato Montgomery (2009), "The Effect of Brand Commitment on the Evaluation of Non-Preferred Brands: A Disconfirmation Process." *Journal of Consumer Research*, 35 (February), 851-63.
- Sengupta, Jaideep and Gita Venkataramani Johar (2002), "Effects of Inconsistent Attribute Information on the predictive Value of Product Attitudes: Toward a Resolution of Opposing Perspectives," *Journal of Consumer Research*, 29 (June), 39-56.
- Skowronski, John J. and Donal E. Carlston (1989), "Negativity and Extremity Biases in Impression Formation: A Review of Explanations," *Psychological Bulletin*, 105 (1), 131-42.
- Sobel, Michael E. (1982), "Asymptotic Confidence Intervals for Indirect Effects in Structural Equation Models," In S. Leinhardt (Eds.), *Sociological Methodology*, (pp. 290-312). San Francisco, CA: Jossey-Bass.
- Smith, Steven M., Leandre R. Fabrigar, and Meghan E. Norris (2008), "Reflecting on Six Decades of Selective Exposure Research: Progress, Challenges, and Opportunities," *Social and Personality Psychology Compass*, 2 (January), 464-93.
- Sparks, Paul, Duncan Hedderley, and Richard Shepherd (1992), "An Investigation Into the Relationship Between Perceived Control, Attitude Variability and the Consumption of Two Common Foods," *European Journal of Social Psychology*, 22, 55-71.

- Thompson, Megan M., Mark P. Zanna, and Dale W. Griffin (1995), "Let's Not Be Indifferent about (Attitudinal) Ambivalence," in *Attitude Strength: Antecedents and Consequences*, ed. Richard E. Petty and Jon A. Krosnick, Mahwah, NJ: Erlbaum, 361-86.
- Wood, Wendy and David T. Neal (2009), "The Habitual Consumer," *Journal of Consumer Psychology*, 579-92.
- Worth, Leila T. and Diane M. Mackie (1987), "Cognitive Mediation of Positive Affect in Persuasion," *Social cognition*, 5, 76-94.
- Xu, Alison Jing, and Robert S. Wyer Jr., (2008), "The Effect of Communication Norms on the Interpretation of Meaningless Information," *Advances in Consumer Research: North American Conference Proceedings*, 35, 717-718.
- Zeelenberg, Marcel, Jane Beattie, Joop van der Pligt, and Nanne K. de Vries (1996), "Consequences of Regret Aversion: Effects of Expected Feedback on Risky Decision Making," *Organizational Behavior and Human Decision Processes*, 65 (2), 148-58.
- Zemboirain, Martin R. and Gita Venkataramani Johar (2007), "Attitudinal ambivalence and openness to persuasion: A framework for Interpersonal Influence," *Journal of Consumer Research*, 33 (March), 506-14.