

PERSPECTIVES ON CHILDHOOD CONSUMPTION MEMORIES

by

Paul M. Connell

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## DEDICATION

This dissertation is dedicated to the memory of my parents, Dennis Michael Connell and Toni Rebecca Connell.

TABLE OF CONTENTS

LIST OF TABLES.....12

LIST OF FIGURES.....13

ABSTRACT.....16

CHAPTER 1: DISSERTATION OVERVIEW.....17

    INTRODUCTION.....

    ESSAY 1.....18

    ESSAY 2.....20

CHAPTER 2: ESSAY 1.....25

    ABSTRACT.....27

    INTRODUCTION.....28

    CONCEPTUAL FOUNDATIONS.....30

        Childhood Friendships.....31

        Autobiographical Memory.....31

*The Self-Memory System*.....32

*Psychosocial Goals and Childhood Memories*.....33

*Nostalgia*.....35

    CONCEPTUAL MODEL.....36

    METHOD.....37

        Research Context: Cereals with Animated Spokescharacters.....38

## TABLE OF CONTENTS—Continued

Data.....	41
<i>Personal Websites</i> .....	41
<i>Depth Interviews</i> .....	43
Analysis.....	44
EMERGENT RESEARCH THEMES.....	45
Industry Goals.....	45
Identity Goals.....	51
Generativity Goals.....	55
DISCUSSION.....	62
FUTURE RESEARCH DIRECTIONS.....	65
CONCLUSION.....	66
CHAPTER 3: ESSAY 2, PILOT STUDIES.....	78
ABSTRACT.....	80
INTRODUCTION.....	81
CONSUMER-BRAND RELATIONSHIPS.....	81
DEVELOPMENT OF PERSUASION KNOWLEDGE.....	82
AUTOBIOGRAPHICAL MEMORY, THE SELF, AND AFFECTIVE STATES.....	84
POSSIBLE POLICY INTERVENTIONS.....	87

## TABLE OF CONTENTS—Continued

EXPERIMENT 1.....	87
Method.....	88
Results.....	89
Discussion.....	93
EXPERIMENT 2.....	93
Method.....	94
Results.....	97
Discussion.....	97
EXPERIMENT 3.....	100
Method.....	101
Results.....	103
Discussion.....	109
EXPERIMENT 4.....	109
Method.....	110
Results.....	112
Data.....	113
Hypothesis Tests.....	114
Exploratory Results.....	122
Discussion.....	127

## TABLE OF CONTENTS—Continued

CHAPTER 4: ESSAY 2, FOCAL EXPERIMENTS.....	136
ABSTRACT.....	138
INTRODUCTION.....	139
CONSUMER-BRAND RELATIONSHIPS.....	139
DEVELOPMENT OF PERSUASION KNOWLEDGE.....	140
AUTOBIOGRAPHICAL MEMORY, THE SELF, AND AFFECTIVE STATES.....	141
POSSIBLE POLICY INTERVENTIONS.....	144
UNEXPECTED RESULTS FROM PREVIOUS EXPERIMENTS.....	145
SUMMARY OF RESEARCH OBJECTIVES.....	146
EXPERIMENT 5.....	147
Pilot Study.....	148
Method.....	149
Results.....	125
Data.....	153
Hypothesis Test, 3-Way Interaction.....	155
Hypothesis Test, Image and Emotion.....	156
Prime and Emotion.....	159
Exploratory Hypothesis Tests.....	162
Discussion.....	163

## TABLE OF CONTENTS—Continued

EXPERIMENT 6.....	166
Pre-Test.....	168
Method.....	170
Results.....	173
Data.....	173
Control Variable.....	175
Hypothesis Test, Image and Emotion, Judgment.....	176
Cognitive Defense Manipulation, Judgment.....	178
Exploratory Analysis, Seminar Topic Choice—What Does It Mean?.....	187
Hypothesis Tests, Choice.....	192
Discussion.....	195
Future Research Directions.....	198
Political Ideology	
Self-Esteem	
GENERAL DISCUSSION.....	201
CONCLUSION.....	203
APPENDIX A: EXPERIMENT 1 STIMULUS.....	211
APPENDIX B: PREFERENCE RATINGS MEASURE FOR EXPERIMENTS 1-6....	212
APPENDIX C: MOOD MEASURE 1 FROM EXPERIMENT 2.....	213

## TABLE OF CONTENTS—Continued

APPENDIX D: WORD SEARCH EXERCISE FOR NEUTRAL PRIME, PILOT STUDY.....	214
APPENDIX E: WORD SEARCH EXERCISE FOR POSITIVE FRAME HEALTH PRIME, PILOT STUDY.....	215
APPENDIX F: WORD SEARCH EXERCISE FOR NEGATIVE FRAME HEALTH PRIME, PILOT STUDY.....	216
APPENDIX G: HEALTHY BEHAVIORS QUESTIONNAIRE.....	217
APPENDIX H: NUTRITION PRE-MEASURES FOR EXPERIMENT 5.....	222
APPENDIX I: MARKETING POLICY TOPICS FOR COGNITIVE DEFENSE MANIPULATION.....	226
REFERENCES.....	227

## LIST OF TABLES

Table 1: Informant Table—Netnography.....	73
Table 2: Informant Table—Depth Interviews.....	74
Table 3: Interview Excerpts Related to Industry.....	75
Table 4: Interview Excerpts Related to Identity.....	76
Table 5: Interview Excerpts Related to Generativity.....	77

## LIST OF FIGURES

## ESSAY 1

Figure 1: Accessibility of Autobiographical Memories Across the Lifespan.....	33
Figure 2: Proposed Conceptual Model.....	37
Figure 3: Product Attribute Ratings.....	40
Figure 4: Factor Analysis Results.....	40

## ESSAY 2, PILOT STUDIES

Figure 1: Ratings of Selected Attributes per Brand from Experiment 1.....	90
Figure 2: Factor Analysis Results from Experiment 1.....	91
Figure 3: Product Clusters from Experiment 1.....	92
Figure 4: Unexpected Results from Experiment 3; IV prime, DV Frosted Flakes Hedonic Scale.....	106
Figure 5: Unexpected Results from Experiment 3; IV prime, DV Froot Loops Hedonic Scale.....	107
Figure 6: Unexpected Results from Experiment 3; IV prime, DV Trix Hedonic Scale.....	108
Figure 7: Results from Experiment 4, Interaction of Positive Emotion Scale * Image Condition on Health Scale.....	115

## LIST OF FIGURES--Continued

Figure 8: Results from Experiment 4, Interaction of Positive Emotion Scale * Prime on Health Scale.....	117
Figure 9: Results from Experiment 4, 3-Way Interaction of Feeling Thermometer * Prime Condition * Image Condition on Health Scale.....	120
Figure 10: Unexpected Results from Experiment 4; Main Effect of Prime on Product Hedonic Scale.....	123
Figure 11: Unexpected Results; Mediation Analysis from Experiment 4.....	126
 ESSAY 2, FOCAL EXPERIMENTS	
Figure 1: Image * Feeling Thermometer Interaction, Judgment, Experiment 5.....	157
Figure 2: Image * Feeling Thermometer Interaction, Choice, Experiment 5.....	158
Figure 3: Prime * Emotion Interaction, Judgment, Experiment 5.....	160
Figure 4: Prime * Emotion Interaction, Choice, Experiment 5.....	162
Figure 5: Image * Feeling Thermometer Interaction, Experiment 6.....	177
Figure 6: Image * Feeling Thermometer * Cognitive Defense * Vulnerable Consumers 4-way Interaction, Judgment, Experiment 6.....	179
Figure 7: Image * Feeling Thermometer X Cognitive Defense Interaction within Participants who Choose Vulnerable Groups, Judgment, Experiment 6.....	182
Figure 8: Image * Cognitive Defense within Participants Who Chose Shelf Space, Judgment, Experiment 6.....	184

## LIST OF FIGURES—Continued

Figure 9: Image * Cognitive Defense * Vulnerable Consumers Choice Interaction, Experiment 6.....	186
Figure 10: Mediation Analysis, Experiment 6.....	190
Figure 11: Image * Feeling Thermometer Interaction, Choice, Experiment 6.....	192
Figure 12: Image * Feeling Thermometer * Defense Activation within Participants Who Chose Vulnerable Consumers, Choice, Experiment 6.....	195

## ABSTRACT

The armchair social scientist will notice that individuals frequently refer to consumption that occurred in childhood. Books, toys, movies, cartoon characters, and even favorite foods are just a few examples of these childhood consumption referents. In her now well-cited and classic study on 15 different consumer-brand relationships, Fournier (1998) identified individual's relationships with childhood consumption referents and called them childhood friendships. Nevertheless, there is a relative dearth of consumer research exploring effects of marketing that begin in childhood and extend into adulthood, what functions childhood friendships might serve, and what consequences there might be to these relationships. In my dissertation, I aim to contribute to the consumer psychology literature with two separate essays pertinent to childhood friendships. In the first essay, I explore the meaning of these relationships and the functions they serve in consumer identity throughout the life cycle. In the second essay, I examine effects of early childhood brand relationships on biased judgments and decision-making.

## CHAPTER 1: DISSERTATION OVERVIEW

## INTRODUCTION

In her now well-cited and classic study on 15 different consumer-brand relationships, Fournier (1998) identified individual's relationships with childhood consumption referents and called them childhood friendships. Nevertheless, there is a relative dearth of consumer research exploring effects of marketing that begin in childhood and extend into adulthood, what functions childhood friendships might serve, and what consequences there might be to these relationships. In my dissertation, I aim to contribute to the consumer psychology literature with two separate essays pertinent to childhood friendships. In the first essay, I explore the meaning of these relationships and the functions they serve in consumer identity throughout the life cycle. In the second essay, I examine effects of early childhood brand relationships on biased judgments and decision-making that persist into adulthood.

## ESSAY 1

The first essay is titled "Childhood Friendships: The Strategic Use of Preadolescent Consumption Referents in Constructing and Maintaining Identity across Consumers' Lifetimes." Data has been collected, analyzed, and has been submitted to the *Journal of Consumer Research*. The submission draft, which I have written under Hope Schau's supervision, is featured in essay 1. In this paper, I seek to gain greater understanding of childhood friendships, and conduct a multi-method qualitative inquiry into the

phenomenon. I begin with a ethnographic study of personal web sites and blogs (a methodology coined “netnography” by Kozinets 2002) featuring animated spokescharacters from children’s breakfast cereals as their subject matter. This context is useful for exploring this phenomenon, because (1) sugared breakfast cereals have comprised nearly half of the food advertisements that children see since the 1970s (Brownell and Horgen 2004), and (2) the vast majority of advertised characters have been in continuous use since the 1960s. From this pool of Internet users, I recruited and interviewed eleven informants for in-depth interviews. The interviews were loosely structured and, while the discussion began with animated spokescharacters, informants described a host of other childhood friendships that included toys, books, movies, and television shows.

After analyzing the data collected from both the netnography and the interviews, I found that these individuals engaged in active presentation of self based upon autobiographical memories. For these informants, memories of their childhood friendships are readily accessible because they intersect with psychosocial goals that are highly self-relevant (Singer and Salovey 1993).

Identity, while having its peak in adolescence, remains a persistent goal for individuals throughout their lifetimes (Conway and Pleydell-Pearce 2000; Erikson 1959). That is, individuals seek to define who they are, and to communicate it to others. Because the great majority of animated spokescharacters have been frequently and actively advertised for over 40 years, and carry with them commonly understood meaning within the popular culture, they provide a convenient meaning repository for conveying meaning

in an international medium with a broad audience (i.e., the Internet). I find that childhood friendships can facilitate fulfillment of identity goals as they intersect with goals of industry and, when individuals reach middle adulthood, goals of generativity.

Goals of industry (working and having fun simultaneously) are highly self-relevant in the elementary school age years of childhood (Conway and Pleydell-Pearce 2000; Erikson 1959). These goals remain highly self-relevant to the informants in this study. For example, informants take pleasure in knowing that people enjoy reading about their childhood friendships on their personal webspace. Furthermore, informants have successfully negotiated the delicate balance of making a living while pursuing their passions, or they have aspirations to do so. I argue that because childhood friendships were formed when industry goals were highly self-relevant, and because industry goals remain highly self-relevant to the informants in this study, that accessibility of childhood friendships remains high.

Finally, as individuals approach middle adulthood, goals of generativity (producing something of import during one's lifetime) become highly self-relevant. These life projects help to expand the individual's identity beyond his or her lifetime. For many, having children facilitates satisfying this goal (Conway and Pleydell-Pearce 2000; Erikson 1959). However, siring children only guarantees extending the genetic part of one's self into the next generation. I find that sharing childhood friendships with one's children and encouraging the development of these childhood friendships can be a useful means of extending one's identity into subsequent generations. In the event that the individual does not have children, childhood friendships can help fulfill generativity

goals through the construction of life projects that are built upon the foundation of the childhood friendship.

## ESSAY 2

While essay 1 explores mostly positive aspects of childhood friendships, in essay 2, I investigate potentially adverse effects of these relationships on consumer health and well-being. “Long-Term Effects of Advertising to Children on Judgment and Decision Making in Adulthood,” which I have written under the direction of Merrie Brucks, is comprised of experimental studies on effects of childhood friendships on adult consumers’ judgments and decisions. I am particularly interested in public policy implications that may be related to consumer judgments of the nutritional value of products and decisions related to them, and, in the long run, how this might have an effect on choices that people make for their own children’s consumption.

In this research, I argue that childhood friendships have unique properties that make them especially prone to create attitudinal biases that favor them. This is because they were first experienced when the individual had limited ability to effectively defend against advertisements. That is, children do not understand advertisements in the same way that adults do. Rather, they incrementally gain knowledge about advertising as they age (John 1999). As children age and develop the ability to take the perspective of others, they typically recognize the advertiser’s intent to persuade them by age seven or eight (Ward, Wackman, and Wartella 1977).

In their persuasion knowledge model, Friestad and Wright (1994) argue that as individuals age and gain persuasive knowledge, they spontaneously correct for previous bias through what the authors call a “change of meaning.” However, this argument was conceptual, discussed rather briefly, and was not supported with empirical evidence. Petty and colleagues (2007) assert that bias correction is best facilitated when individuals elaborate more on messages (i.e., when motivation and ability to think are high). Based on this position, I challenge the change of meaning assumption in the persuasion knowledge model. That is, individuals may not be aware of their previous biases (i.e., favorable attitudes toward a brand that were developed before the development of persuasion knowledge), and subsequently do not correct bias. Similarly, individuals may not be sufficiently motivated to correct bias.

Because childhood friendships are situated in the past, I argue that they are housed in the autobiographical memory store. Autobiographical memories are those memories that comprise one’s life story, and are believed to be of fundamental significance to the self (Conway and Pleydell-Pearce 1999). As a consequence of their importance to the self, autobiographical memories tend to be affect laden (Conway 2005). Previous consumer research on autobiographical memory has found that cuing autobiographical memories can lead to attenuation in information processing, due to their affective nature (Sujan, Bettman, and Baumgartner 1993).

Given that such attitudinal bias in judgments may occur from childhood friendships, I investigate possible public policy interventions to facilitate bias correction. Previous research has found that motivational primes can lead to behavior congruent with

the prime (Bargh et al 1992). Therefore, I explore the potential effectiveness of such primes. I also investigate whether manipulating the individual's ability and motivation to defend against advertisements can provide support to Petty and his colleagues' (2007) assertion that doing so can facilitate metacognitive bias correction.

Results from this research indicate that affective associations with childhood friendships can lead to inflated judgments of health in adult consumers. As the results indicate that a "change in meaning" does not always spontaneously occur as people age and develop persuasion knowledge, I also investigate ways to provide consumers with the knowledge and motivation needed to correct bias. This essay includes six experiments that explore the effect of cuing autobiographical memory of childhood friendships on consumer choice and nutrition judgments. The first four experiments make up Chapter 3. These experiments, while failing to support their research hypotheses, nevertheless provided insights into manipulations and measures for later studies. The last two experiments make up Chapter 4. As these studies garnered support for their research hypotheses, I am referring to these as the focal experiments of essay 2.

CHAPTER 2: ESSAY 1

Childhood Friendships: The Strategic Use of Preadolescent Consumption Referents in  
Constructing and Maintaining Identity across Consumers' Lifetimes

## ABSTRACT

In her seminal work on consumer-brand relationships, Fournier (1998) identified childhood friendships, those consumer relationships with consumption artifacts from childhood. The purpose of this article is to extend Fournier's (1998) research by conducting an in-depth empirical investigation of childhood friendships. As the context for this study, we chose personal webspace content that includes animated spokescharacters targeted toward children, because they are heavily advertised and have permeated popular culture, thus providing bloggers with a commonly understood meaning repository for public presentation of the self in cyberspace. Using a multi-method inquiry of depth interviews and netnography, we find that childhood friendships do not merely provide comforting, affect-laden bridges to the past self (Fournier 1998). Rather, childhood friendships can serve important functions for building and sustaining identity throughout the course of a consumer's lifetime. We find that our informants encoded memories of childhood friendships at a time when they were highly relevant to goals of industry (being productive and enjoying it), and childhood friendships remain highly accessible to our informants because these memories are decoded when goals of industry are still highly self-relevant. When informants reach the lifestage when concerns about what one has produced in life become increasingly self-relevant, goals of identity and industry further intersect with goals of generativity in the context of their childhood friendships. Our data demonstrate that consumers use childhood friendships in different ways as their goals change or evolve over time.

Popular culture abounds with references to childhood consumption referents in television shows, in books, and on the Internet. While there is a rich and continually evolving literature on children and consumption (cf., Brucks, Armstrong, and Goldberg 1998; Chaplin and John 2005; John 1999), the question of how consumption memories from childhood affect individuals into adulthood has only recently begun to be explored (Braun-LaTour, LaTour, and Zinkhan 2007), and the question of how consumers draw on symbolic meanings (Holbrook and Hirschman 1982; Levy 1959) of childhood consumption referents as adults has been largely unexplored.

Consumers build relationships with brands in much the same way they would with other people (Fournier 1998). When developing her typology of consumer-brand relationships, Fournier (1998) briefly described one type of relationship that she called the childhood friendship. Childhood friendships are consumer-brand relationships that begin in childhood and are accessed later in life by adult consumers. The purpose of this article is to extend Fournier's (1998) research by conducting an in-depth empirical investigation of childhood friendships. We aim to answer the following research questions about the presence of childhood friendships in adult consumers: (1) why are childhood friendships accessible and relevant to consumers in adulthood, even when the associated products may be rarely or no longer consumed; and (2) what functions do childhood friendships serve for consumers? In addition to Fournier's (1998) assertion that childhood friendships provide affective associations to the past self, emergent themes from our data indicate that enduring childhood friendships can play an important role in building and maintaining current identity as well.

We believe symbolic meaning is created through what Conway and Pleydell-Pearce (2000) describe as the self-memory system. The self and the autobiographical memory store interact with one another in a cyclical relationship. That is, the lens through which one sees the world is filtered through the self-concept; this affects perception, encoding of autobiographical memory, and later retrieval of autobiographical memory. In turn, autobiographical memory plays a major role in defining the self-concept for all of the individual's possible selves, including the actual self, the ideal self, the ought self, and the past self (Conway and Pleydell-Pearce 2000). Erikson (1959) posited that individuals' goal states change over their life spans. The most highly accessible memories are those that were highly goal relevant when they were encoded and are highly goal relevant when they are retrieved (Conway and Holmes 2004; Singer and Salovey 1993). Our data support this assertion, and we suggest that consumers use childhood friendships in different ways as their goals change or evolve over time.

## CONCEPTUAL FOUNDATIONS

### Childhood Friendships

Fournier (1998) argues for the metaphor of a personal relationship between consumers and brands. She provides a typology of fifteen different consumer-brand relationships. However, it was beyond the scope of her research to thickly describe the nuances of each one of these fifteen relationships; doing so could easily create a tome of

epic proportions. One of the relationships described by Fournier (1998) is the childhood friendship. Childhood friendships represent those consumer-brand relationships that are rooted in childhood and follow an individual throughout the course of his or her lifetime. Fournier (1998) argues that people preserve these childhood friendships because they are emotionally rewarding, and asserts that they are infrequently engaged and provide feelings of comfort and security of the past self. Childhood friendships can be formed with products that are marketed specifically to children (e.g., Nestlé Quick for Vicki in Fournier's sample), or products that are not necessarily child-related, but remind one of childhood (e.g., Jean's use of Estée Lauder to evoke memories of her mother in Fournier's sample). We assert that childhood friendships are based on autobiographical memory by definition. In the next section, we explore the process by which childhood friendships are formed, and how they remain accessible throughout an individual's lifetime.

### Autobiographical Memory

The Self-Memory System. Conway and Pleydell-Pearce (2000) suggest that autobiographical memory is comprised of knowledge at varying degrees of specificity. The least specific are those memories associated with lifetime periods, such as "when I was in graduate school," or "during my second marriage." The next level of specificity involves memories associated with general events, such as listening to conference presentations, reading journal articles, or eating Thanksgiving dinners. The most granular

level is event-specific knowledge, which comprises unambiguously episodic memories according to Tulving's (1985) classification of episodic and semantic memory, such as "the time I broke my nose while playing basketball," or "the time I broke up with Pat."

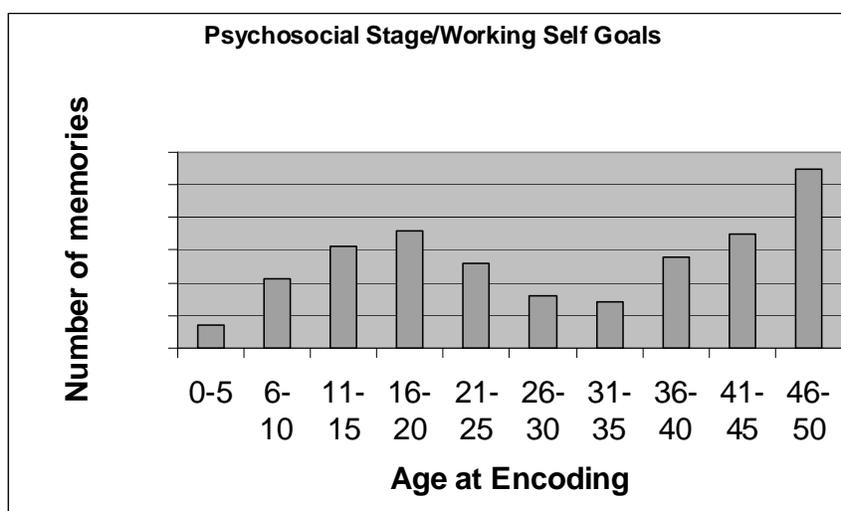
Autobiographical memory is thought to be of fundamental significance to the self-concept (Conway and Pleydell-Pearce 2000; Wilson and Ross 2003). Conway (2005) describes autobiographical memory as, along with the self-concept, one of two interacting components in a self-memory system. In this cyclical model, autobiographical memory plays a major role in developing the self-concept, and the self-concept has an effect on how the individual perceives information, encodes information, and retrieves autobiographical memories. Conway (2005) states that this dynamic construction is the working self, which is made up of the panoply of the individual's possible selves, including the actual self, the ideal self, the ought self, and the past self (Aaker 1997; Conway and Pleydell-Pearce 2000; Markus and Nurius 1986; Schouten 1991).

The memories that are the most accessible are those that are most recent, but goal states also play a major role in the accessibility of autobiographical memory (Conway and Pleydell-Pearce 2000). Because goals of industry are highly relevant to experiences encoded between the age of about six and adolescence, and may remain highly goal relevant in the present when they are retrieved (Singer and Salovey 1993), memories associated with childhood friendships are particularly accessible.

**Psychosocial Goals and Childhood Memories.** Goals of the self change over the life span (Conway and Holmes 2004; Erikson 1959). As this process unfolds over time, it

leaves sets of highly accessible memories that were once highly goal relevant (Singer and Salovey 1993). Highly accessible autobiographical memories are those that had high self-relevance when originally encoded, and the most accessible are those that retain this high level of self-relevance at retrieval (Conway and Holmes 2004). For example, goals of identity are particularly important in the teen years (Erikson 1959). These memories remain relevant throughout the life cycle and consequently remain highly accessible, second only to the most recent memories. This phenomenon is known as the reminiscence bump (Conway and Pleydell-Pearce 2000). A typical distribution of the content of autobiographical memories across the life cycle (Conway 2005) can be seen in figure 1.

Figure 1: Accessibility of Autobiographical Memories Across the Lifespan (Conway and Holmes 2004)



In several studies, individuals were asked to write down which autobiographical memories they could remember and their age when the memory was encoded (Conway 2005; Conway and Holmes 2004; Conway and Pleydell-Pearce 2000). Coders then determined which psychosocial goals were associated with each memory. In individuals over 30, the resulting curve is S-shaped, where the most recent memories are the most accessible, with older memories becoming less accessible with the exception of the reminiscence bump, where there is a spike in accessibility. In the context of childhood friendships, we are most interested in those memories that are encoded prior to adolescence. Children move through several psychosocial stages in this timeframe. Goals of trust, autonomy, and initiative all occur prior to age six (Erikson 1959). However, these are the least accessible of all autobiographical memories, and are not likely to play a large role in the memories associated with childhood friendships. This phenomenon is known as childhood amnesia (Conway and Pleydell-Pearce 2000). While childhood amnesia is well established in the literature, there are many conflicting explanations as to why it occurs. Freud (1915) argued that the individual seeks to repress emotional trauma due to Oedipal conflict, whereas Fivush and colleagues (2003) and Nelson (2003) assert that language acquisition plays a key role in the development of autobiographical memory due to enhanced recall resulting from recounting experiences with others. Other researchers claim that development of autobiographical memory is more directly tied to cognitive development, and that young children simply lack the ability to encode and retain long-term memories (Conway 2005).

Goals of industry (that is, being productive and enjoying it) become important at around the age of six and remain highly self-relevant until adolescence commences (Conway and Holmes 2004; Erikson 1959). We propose that memories encoded in this stage remain highly accessible in the future if goals of industry are self-relevant. Since the memories associated with their childhood friendships were encoded when goals of industry are self-relevant, and are retrieved at a time when goals of industry are again self-relevant, we assert that these memories are among the most accessible in our informants' autobiographical memory stores.

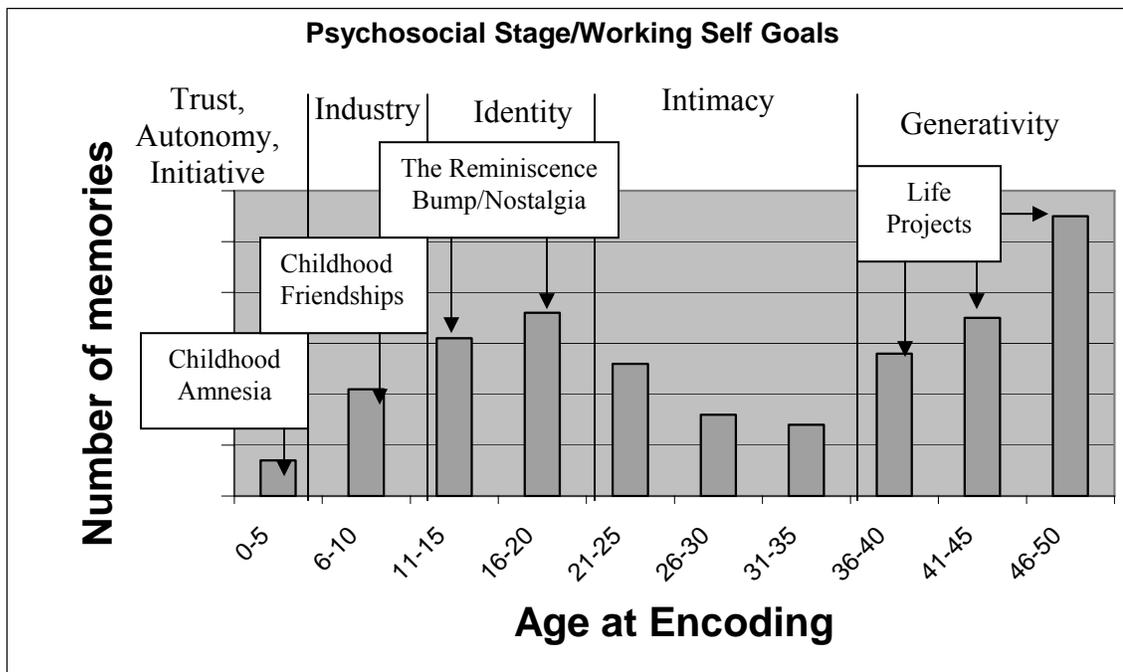
Nostalgia. While, at first glance, it may appear that nostalgia is the primary operating influence, nostalgia entails a decided preference for the past over the present (Davis 1979; Holbrook 1993; Holbrook and Schindler 1994). Our dataset does not support the preference and longing for bygone eras and consumption that are associated with nostalgia. Instead, our informants use the symbolic meanings of childhood friendships to actively develop identity. Hence, we assert that childhood friendships are formed through the interaction between the autobiographical memory store and the self-concept rather than simply through nostalgia.

## CONCEPTUAL MODEL

Childhood friendships are initiated in the life stage where goals of industry are important. According to Erikson (1959), the critical time period where the psychosocial

goal of industry is highly self-relevant is approximately between the age of six and the onset of adolescence. Prior to the age of six, few memories are retained in due to childhood amnesia (Conway and Pleydell-Pearce 2000). Goals associated with these memories might remain important throughout an individual's lifetime, but are particularly self-relevant at this age (Erikson 1959). Therefore, while many children begin watching television at a very young age, we argue that prior to the critical age of about six, so few memories are retained that they are not typically where childhood friendships take root. Similarly, after adolescence commences, when goals of identity become important, children decrease consumption of childhood-related objects (Chaplin and John 2005) and begin to show skepticism toward advertising (Brucks et al 1988), making it an unlikely time to form childhood friendships. However, goals of identity remain important throughout the lifespan, and therefore result in a set of highly accessible memories called the reminiscence bump (Conway and Pleydell-Pearce 2000). Figure 2 represents our conceptualization of when most childhood friendships form, and how childhood friendships are used later in life as identity projects based on the intersection of the goals of industry, identity, and generativity.

Figure 2: Proposed Conceptual Model



## METHOD

We performed a multi-method inquiry comprised of a netnography (Kozinets 2002) and depth interviews (McCracken 1988) in order to examine childhood friendships. The following describes the research context, the data (blogs and interviews) and details of our analysis.

### Research Context: Cereals with Animated Spokescharacters

In order to examine childhood friendships, we narrowed our focus to cereals with animated spokescharacters. There are several reasons that we chose to research this

particular context rather than another childhood commercial referent (e.g., toys). First, we hoped to reduce the gender bias expected in toys that are largely marketed by age and gender (e.g., dolls versus action figures). Sugary breakfast cereals are generally marketed by age but not by gender, and cereal marketers usually target children in general rather than boys or girls specifically. Second, we wanted a context in which children frequently engaged in consumption activities that might act as gateway consumption contexts, triggering discussion of other childhood friendships. While we are not interested in animated spokescharacters per se, we see them as an opportune context to explore childhood friendships with animated spokescharacters and their associated products, as well as a way to enter into a dialogue with informants about relationships they might have with other childhood consumption referents.

Breakfast cereals featuring animated spokescharacters provide a useful context in exploring this phenomenon because they have been intentionally marketed both heavily and continuously to children since the early 1960s, and because they make up a large percentage of advertising expenditures directed toward children (Brownell and Horgen 2004). In addition, breakfast is a pervasive act and many children make daily decisions on what to eat in the morning. Finally, the vast majority of animated spokescharacters for cereals that are currently in use have been consistently used in related product advertising for more than 30 years. Therefore, breakfast cereal characters appear to be more stable childhood referents than toys, which are usually highly susceptible to current trends.

Within the breakfast cereal context, webspace is a particularly rich medium for studying childhood friendships, since posters engage in self-presentation when creating

their personal webspace (Schau and Gilly 2003) and directly reference consumer-brand relationships that began in childhood. Furthermore, cereal spokescharacters have become shorthand for creating complex meanings based on their symbolic properties, which are widely known and easily recognized by potential audiences (Levy 1959; Schau and Gilly 2003).

A pre-study revealed that the use of an animated character on the product's package and in its advertising is tightly intertwined with evocation of memories. One hundred and sixty four undergraduate business students from a large Southwestern university were asked to rate 17 different breakfast cereals on 14 different product attributes (see figure 2). Seven of the 17 products rated have consistently featured the same character in their packaging and advertising for more than twenty years. For the product attributes "Has a fun character," "Has a fun personality," and "Brings back fond memories," all products with characters associated with them were scored significantly higher than the mean combined values for all cereals rated, whereas all products without characters associated with them were not.<sup>1</sup> Exploratory factor analysis on these same data revealed that memory loaded into a hedonic factor, along with prize, personality, and character variables (see figure 3). This factor explains 20.4% of the variance in the data. Since the personality and character variables loaded with the memory variable, this provides further evidence that the use of animated spokescharacters makes an appropriate context for studying childhood friendships.

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<sup>1</sup> P-values for all products with advertised characters were less than .001, with the exception of Honey Nut Cheerios on the "Has a fun personality" attribute ( $p > .25$ ). P-values for all products without advertised characters exceeded .25 with the exception of Cheerios on the "Brings back fond memories" attribute ( $p < .10$ ).

Figure 3: Product Attribute Ratings

Advertised Character	Product Name	Fond Memories*			Fun Character*			Fun Personality*		
		Mean	t	p	Mean	t	p	Mean	t	p
Yes	Cinnamon Toast Crunch	3.15	6.25	<.001	3.13	4.24	<.001	3.36	13.03	<.001
Yes	Cocoa Puffs	3.15	6.56	<.001	3.62	19.13	<.001	3.64	22.83	<.001
Yes	Froot Loops	3.15	6.84	<.001	4.10	41.46	<.001	3.82	31.68	<.001
Yes	Frosted Flakes	3.41	14.88	<.001	3.56	18.91	<.001	3.59	24.74	<.001
Yes	Honey Nut Cheerios	3.05	3.85	<.001	3.18	5.53	<.001	2.95	-1.12	>.25
Yes	Lucky Charms	3.88	27.36	<.001	4.33	65.64	<.001	4.12	47.08	<.001
Yes	Rice Krispies	3.31	41.10	<.001	3.45	49.06	<.001	3.24	30.33	<.001
Yes	Trix	3.50	17.96	<.001	4.12	42.62	<.001	4.25	56.46	<.001
No	Cheerios	2.95	1.39	<.10	2.21	-33.26	>.25	2.48	-20.64	>.25
No	Corn Flakes	2.12	-27.57	>.25	2.17	-36.84	>.25	2.26	-26.45	>.25
No	Corn Pops	2.68	-6.15	>.25	2.29	-27.76	>.25	2.56	-17.57	>.25
No	Crispix	2.12	-25.25	>.25	2.02	-42.73	>.25	2.07	-37.87	>.25
No	Frosted Cheerios	2.07	-31.78	>.25	2.64	-11.82	>.25	2.59	-16.27	>.25
No	Frosted Mini Wheats	2.50	-13.37	>.25	2.38	-22.44	>.25	2.40	-20.46	>.25
No	Golden Grahams	2.76	-4.20	>.25	2.68	-9.44	>.25	2.56	-13.00	>.25
No	Raisin Bran	2.65	-7.98	>.25	2.10	-33.64	>.25	2.15	-33.92	>.25
No	Special K	1.82	-38.00	>.25	1.82	-41.47	>.25	1.87	-52.16	>.25
GRAND MEAN		2.91			3.00			2.98		

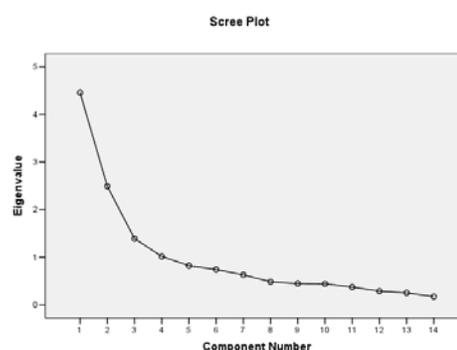
\*Rated on 5-point Likert scales

Figure 4: Factor Analysis Results

Rotated Component Matrix				
	Health	Hedonic	Sensory	Price
Memories	0.03	<b>0.63</b>	0.36	-0.09
High in Fiber	<b>0.74</b>	-0.09	0.02	-0.06
Prizes	-0.22	<b>0.76</b>	-0.01	0.04
Personality	-0.20	<b>0.86</b>	0.11	0.01
Healthy	<b>0.91</b>	-0.12	0.00	0.01
Inexpensive	0.09	0.04	0.02	<b>0.94</b>
Added Sugar	-0.59	0.17	0.36	-0.13
Low Calorie	<b>0.83</b>	-0.11	-0.08	0.14
Flavor	-0.02	0.17	<b>0.72</b>	-0.23
Crunchy	0.01	-0.12	<b>0.68</b>	0.25
Color	-0.19	0.30	<b>0.72</b>	0.02
Character	-0.18	<b>0.84</b>	0.10	0.02
Nutritious	<b>0.90</b>	-0.11	0.04	-0.01
Shape	0.08	0.48	<b>0.52</b>	0.00

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization  
 Rotation converged in 5 iterations.

Rotation Sums of Squared Loadings		
Eigenvalue	% of Variance	Cumulative %
3.40	24.30	24.30
2.85	20.36	44.66
2.07	14.76	59.43
1.04	7.45	66.87



## Data

Personal Websites. We used theoretical sampling (Glaser and Strauss 1967) to locate adults with conspicuous and active consumer-brand relationships nascent in childhood, or what Fournier (1998) refers to as childhood friendships. Netnographic inquiry (Kozinets 2002) was employed in order to unobtrusively observe the personal web space of 65 individuals, including personal websites and blogs. Blogs are a type of self-presentation in the form of personal web pages where the creators typically write a personal diary of thoughts on a regular basis (Schau and Gilly 2003). We chose adult-authored blogs featuring content that specifically referenced breakfast cereals with animated spokescharacters, where the blogger either consumed the product or was

exposed to its advertising in childhood. Our informant set includes artists, writers, musicians, and a college professor. These individuals have chosen the Internet as the medium for self-presentation because it complements their writing and artistic skills.

We deliberately chose extreme behavior (i.e., blogging about childhood friendships) in order to illuminate the self-character connections seen in more typical consumers. While the behavior itself might be perceived as extreme, the meaning conveyed by the blogger is often readily understood by large numbers of consumers. For example, while going to the effort to create a high quality online cartoon featuring a panoply of breakfast cereal characters lobbying for the Trix Rabbit to be allowed to eat a bowl of his namesake product may seem out of the ordinary, the website that hosts the cartoon, at the time this article was written, had logged an excess of 100,000 viewings and nearly 700 comments. Another website that hosts an online petition calling on General Mills to allow the Trix Rabbit to eat a bowl of the cereal has been signed by over 2000 people. Leveraging this consumer initiative, General Mills has waged several advertising campaigns featuring a vote on whether the Trix Rabbit ought to be allowed to eat one bowl of Trix, resulting in wins for the rabbit each time. Nonetheless, the company immediately reverts to its “Silly Rabbit, Trix are for kids” campaign immediately after allowing the rabbit a token bowl of Trix.

The majority of blogs were located using the search engines Google and Blogspot and punching in the names of breakfast cereal spokescharacters or cereal product names. Some sites were located via links from other sites and web rings (two or more personal websites connected by prominent links between sites sharing a common interest or

theme). An advantage of naturalistically collecting in situ data in an anonymous fashion is that the researcher does not produce demand effects, and there is no social compulsion on the observed individuals' part to give socially desirable responses or to distort responses to the researcher.

The sites were not usually centered on cereal consumption; rather, bloggers wrote often in their online journals on many different topics. Politics and popular culture references were common overarching themes to many of the sites. Nevertheless, postings about cereal spokescharacters yielded more than 400 printed web pages. See table 1 for a representation of the array of personal webspaces we observed in our netnography.

Depth Interviews. Depth interviews allow us to gain emic understanding through detailed discussion and probing the informant about complex inspirations and experiences (McCracken 1988) of childhood friendships. Eleven informants that created web postings related to animated cereal spokescharacters were recruited from the pool of 65 personal web sites and blogs in order to participate in depth interviews (see table 2). Consistent with recent demographics of bloggers, the informants are well educated, live in urban or suburban areas, and hold upper middle class occupations (Lenhart and Fox 2006).

Interview questions were initially kept broad with grand tour questions, and were structured loosely so that informants could discuss topics in a way that would seem natural to them in order to facilitate interviewer-interviewee rapport (McCracken 1988). Prompted questions were used to probe informant responses more deeply in order to

explore research themes. Because we are interested in childhood consumption referents in general, the interviews focused not only on cereal characters, but also on other past and present consumption. Informants frequently mentioned media consumption such as music, film, television shows, and books. In order to accommodate the geographic dispersion of our informants, we conducted eight interviews over the telephone and three via instant messaging, according to the preference of the interviewee. While the instant messaging interviews yielded fewer pages of data on average, the same themes emerged across both types of interviews. After data collection was complete, telephone interviews were transcribed into text. This process was not necessary with the instant messaging interviews, as the interview transcript could simply be copied from the instant messaging software and pasted into a text document. Overall, these 11 interviews ultimately yielded 144 pages of single-spaced transcribed data.

## Analysis

We performed axial coding of the interview transcripts and blog content, noting relationships between the codes (Miles and Huberman 1994). In the spirit of phenomenological inquiry, patterns of experiences were sought and identified within individual interviews (idiographic analysis), across informants' interviews (nomothetic analysis) (Mick and Buhl 1992; Thompson, Pollio, and Locander 1994) as well as across data sources (blogs, depth interviews). Consistent agreement was met after discussion of themes and patterns of themes between the authors (Wallendorf and Belk 1989). Next,

the transcripts and personal web pages were reread and iterative coding progressed as we sought to extract thematic relationships (Spiggle 1994). Toward assuring emic validity, member checks were conducted, where the interpretation of text was submitted to key informants to read and make comments (Wallendorf and Belk 1989). Feedback from our member checks indicated that these key informants concurred with our interpretation. The goal of this analysis process is to bring the researcher closer to perceiving the signs consumers offer in the manner in which the consumers themselves do (Grayson 1998).

## EMERGENT RESEARCH THEMES

We present our findings, which are organized by how self-presentation is centered on relevant psychosocial goals and how self-presentation of childhood friendships contributes to the active construction and maintenance of identity. Persistent goals of identity intersect with goals of industry that are associated with childhood friendships. When informants reach the point when concerns about what one has produced in life becomes relevant, goals of identity and industry further intersect with goals of generativity.

### Industry Goals

Goals of industry become highly self-relevant between the age of about six and adolescence (Conway and Holmes 2004; see figure 2). In the pursuit of satisfying

industry goals, individuals make an attempt to have fun while being productive (Erikson 1959). Our informants universally referenced being studious, imaginative children (see table 3), such as Eli does below:

One of my gifted and talented teachers wrote on my report card that I was bright, but quiet. During my spare time, I did what most kids did, watch cartoons and play with the other kids in the neighborhood, which usually involved sports or messing around in the stream behind the house. I spent countless hours in that stream, building dams, playing splash war with the other kids, catching frogs and tadpoles, and making rafts out of reeds and racing them.

In adulthood, most of the informants in our sample have found a way to bring their passions into their careers (see table 3). For example, Frank is opening a music store and Bill is a sportswriter. Regardless of their occupation, all of our informants take pleasure in their blogs and websites by writing about politics, musing about popular culture, writing short stories or poetry, and a variety of other activities. For example, Ian composes poetry and posts it on his blog. One of the hundreds of poems he has posted features three obscure and functionally obsolete cereal spokescharacters from the late 1960s. Quisp was featured in advertisements for the Quaker Oats product of the same, loosely onomatopoeic name from 1965 until the early 1970s. He was a propeller-headed alien that was often pitted against another Quaker cereal character, Quake, in advertisements. Quisp was small, brainy, and “quazy,” while Quake was big, strong, and masculine. However, the ingredients in the Quisp and Quake cereals were virtually identical. The feud between the characters culminated in an election where children could

vote for which product would be discontinued. Quisp won the vote, but was nonetheless also discontinued a few years later due to sagging sales. Ian also makes reference to Quangaroos, another short-lived Quaker product that was sometimes featured in advertisements alongside Quisp and Quake in cross-country races. For Ian and our other bloggers, the relevance of industry goals is heightened when engaged in the creative process, and therefore the accessibility of memories of their childhood friendships is heightened, since these memories are highly goal-relevant at both encoding and at retrieval (Singer and Salovey 1993). Ian describes the process behind the selection of these characters as subject matter:

The site is structured so that I am constantly writing about subjects. I work my way through the alphabet. So I just happened to be writing subjects starting with the letter Q. That's how he (Quisp) came up. I guess, when thinking about things that began with Q, that's what would come up from your childhood memories.

These characters were not active, passionate childhood friendships for Ian. Rather, these childhood friendships became more accessible when the goal of industry was highly self-relevant. That is, because Ian aimed to create a poem featuring subject matter beginning with the letter Q, memories of Quisp, Quake, and Quangaroos became highly accessible because they were encoded when goals of industry were self-relevant in mid-childhood, and because they were goal relevant during retrieval, when Ian was composing his poem (Conway and Holmes 2004).

Childhood friendships can provide ample fodder for engaging in creative self-presentation. Many researchers have converged on the finding that engaging in creativity

enhances a positive sense of self (Belk 1988; Csikszentmihalyi 1996; Runco 2004). Many of our bloggers exercised creativity with spokescharacter narratives by altering story lines (Jenkins 1992): creating “grudge match” battles between different sets of characters, writing stories about characters becoming “cereal killers,” creating stories about washed-up spokescharacters entering rehabilitation centers, and a host of other alternate narratives. Fred provides a background setup for his “grudge match” between the Trix Rabbit and Lucky the Leprechaun, who serves as a spokescharacter for Lucky Charms cereal. Fred cleverly fuses General Mills’ commercial scripts of the constantly pursued Lucky Leprechaun and the constantly pursuing Trix Rabbit into one narrative. While creating a narrative about grudge matches, relevant to goals of industry while being written, the accessibility of memories of Fred’s childhood friendships is enhanced because they were encoded when goals of industry were highly self-relevant in childhood.

While Fred makes playful alterations to the advertiser’s narrative, Clay uses the narrative of the now obsolete brands of Quisp and Quake for a more serious purpose. He uses his memories of the advertising campaign featuring the vote to save one of the products in order to construct a tongue-in-cheek allegory for the two-party political system in the United States. The first part of Clay’s essay speaks to the original Quaker advertising message from his childhood that was geared toward providing a simple and entertaining message to children. However, the second part of the narrative shifts to a sophisticated back story built around the adult theme of politics. Clay pokes fun at the

two-party system in the United States by comparing them to Quisp and Quake. That is, the two products were represented by different “people,” but were in essence identical.

Jenkins (1992) refers to this type of narrative alteration as textual poaching. This behavior was not limited to written form; many bloggers also created graphic representations of altered story lines. Among them are images of the spokescharacter Booberry sitting in a bar cleverly called Boozeberry’s with a martini and a cigar, a doctored “Turnin’ Trix” box featuring images of Barbie prostitutes, and a book cover for the make-believe gothic romance novel *The Bride of Count Chocula*. The semiotics of childhood friendships becomes goal relevant to our informants, who as adults commit to text or graphics their imaginings of the symbolic meaning of their childhood friendships. Consequently, textual poaching engages the blogger in a creative process that enhances his sense of self (Belk 1988; Csikszentmihalyi 1996).

### Identity Goals

Goals of identity become important in adolescence and remain highly self-relevant across the lifespan (Conway and Pleydell-Pearce 2000; see figure 2). In the pursuit of fulfilling identity goals, individuals try to sort out who they are and how they fit into the world (Erikson 1959). This sense of self is constantly evolving. Therefore, the symbolic meaning of childhood friendships evolves along with the individual. Our informants engage in creative self-presentation on the Internet, a public space. Since

creativity enhances a positive sense of self (Csikszentmihalyi 1996; Runco 2004), a positive identity is nurtured and maintained.

By virtue of the fact that our informants posted websites or blogs, all of them were engaging in self-presentation. Identical behaviors have greater impact on the self-concept when performed publicly rather than privately (Tice 1992). The Internet represents the ultimate in public presentation, but the individual can do so anonymously and has the freedom of choosing which self to present. Commercial referents can serve as cultural shorthand for public expression of the self (Schau and Gilly 2003). That is, since cereal spokescharacters have been ascribed symbolic meaning in popular culture, the blogger can be reasonably certain that potential audience members will understand what he is trying to communicate.

Previous consumer research has also found that individuals use the symbolic meaning of consumption in order to construct the identities of their multiple selves (Aaker 1999; Belk 1988; Schouten 1991). Several of our informants used cereal spokescharacters from childhood as a way of expressing self-narratives. They expressed how characters are similar to themselves or to their former selves in childhood (see table 4). Two of the most frequently mentioned characters among the informants born in the 1960s were Quisp and The Freakies. The Freakies were featured on the short-lived product of the same name from 1971 to 1974, and were six unusual looking creatures with distinct misfit personalities. The brains versus brawn theme of Quisp and the outsider theme of The Freakies advertisements meshes well with how informants describe their former selves in childhood. For example, Hal describes himself as a child:

I was kind of a brainy kid. I wasn't necessarily like a straight A student, but I think in high school I was number 10 on the grade point average or something. You know, the top ten kids, but I was number 10. I enjoyed math and science. I enjoyed reading science fiction. A little nerdy.

Hal later spoke of a particular fondness for The Freakies. Just as he describes himself as nerdy, he notes that The Freakies were also awkward and a bit out of place:

The Freakies were, you know, this crazy cereal that came out around 1974 and it was kind of this, I don't know how to describe it. A lot of kids had real personal relationships with The Freakies cereal. And so it was, for whatever reason it was a thing, I was at the age where, by walking in the grocery store and discovering it, I kind of made it my own. It became kind of a personal relationship or whatever. I was partial to Snorkledorf, who was kind of like a blue character with this kind of nose that was kind of shy. So as a kid, I kind of felt affiliated with that one character, but I really liked them all because they were all kind of visually appealing, and they were all different. They all seemed unique and kind of out of synch with the world, and kind of special and different.

Ian also describes himself as a quiet, intelligent, and non-athletic outsider when he was a young boy:

Quiet. Friendly. Smart. I don't know. I was like the kid that kind of was picked last for the sports teams. That was always like a big deal when we were kids. You know, playing sports. I guess they would describe me as not being very useful in that arena.

As mentioned previously, Ian wrote a haiku about the Quisp-Quake conflict, which he posted to his blog. In our interview, he declares a decided preference for the Quisp character, who was small and intelligent. Likewise, he shuns the more masculine and athletic Quake character:

Certainly in terms of who I identified with in that particular dichotomy of Quisp versus Quake. No question. No question where I came down.

Jack was also an intelligent boy with little interest in sports:

When I was a kid, mostly I read. When I was little, I wasn't really that interested in sports or outdoor kind of activities. Mostly I just read and watched TV. Spent time with friends but not doing anything in particular. When I was a kid, in some ways I was kind of a loner. On the other hand, I was also at the center of a, kind of a certain little social group. I guess the small social group of the nerdy kids.

Like Ian, Jack also remembers Quake as being the big, strong, athletic type.

I remembered that Quisp was the little space Martian and I remembered that Quake was like a big, I think that kind of, and until I saw it again recently, I thought that we would have remembered him as more of a Hercules type, but like I remember, a big strong man. A big, strong man type.

Since the informants typically described themselves as intelligent, not very athletic, and a bit nerdy, it comes as no surprise that Quisp and The Freakies were mentioned by all of the informants who experienced these characters in their childhoods during their interviews, even if they did not specifically write about these characters on their webpage. The well-developed personalities of these characters struck a chord with these

informants that lasted well after the associated products became difficult to find or obsolete. In addition, the characters provide a conduit for self-presentation that relates intangibly to the self, which the blogger believes potential audience members will understand. However, the blogger provides a referent that only has meaning to similar others who would have also been exposed to these spokescharacters (i.e., those of approximately the same age), thus restricting the symbolic meaning of web postings with deep personal meaning to a smaller, more defined audience.

### Generativity Goals

In the pursuit of fulfilling generativity goals, individuals become concerned with what they have produced in life (Erikson 1959). For many, bearing and raising children is a way to satisfy these goals. Our informants described how childhood friendships are manifested in self-other overlap with their own children (see table 5). In close relationships, cognitive representations of the distinction between the self and the close other often become fuzzy (Aron et al 1991; Belk 1988; Cialdini et al 1997). One of the ways that self-other overlap revealed itself in our sample was through intergenerational influence on consumer preferences (Moore, Wilkie, and Lutz 2002). Moore and her colleagues (2002) based their study on intergenerational influence between mothers and daughters because previous research had indicated that maternal influence on preference for packaged goods exceeded paternal influence, and that women tend to exhibit stronger brand preferences than men. We witnessed ample evidence of intergenerational influence

on consumption preferences in our all-male sample. However, the objects of consumption tended not to be packaged goods. Rather, they were experience-related; for example, baseball games and media (e.g., films and television shows) figured prominently. In addition to acknowledging the influence of their fathers on their own consumption, informants noted that they in turn have influences on their children's consumption. Ian illustrates this when describing an updated version of Warner Brothers cartoons featuring the traditional, familiar characters as robots, which he and his six-year old son watch together:

I watched the one with, whatever the character is, this Bugs Bunny, just because it's sort of familiar characters, but none of them really grab me the way they do him.

While Ian isn't particularly fond of the updated version of Bugs Bunny, he acquiesces because it is a familiar character from his own childhood. In another example of an intergenerational influence on consumption, Jack describes how he and his wife are building a library for their toddler son:

I think we are both kind of obsessed with the books that we had when we were kids. When we went out and got, or even now if we pick them out, we sort of almost got a baby library of all the books that we remembered as the best children's books, so like Babar and Goodnight Moon and Curious George and Mike Mulligan and the Steam Shovel and all those.

While Ian and Jack make subtle influences on their sons' consumption, Charlie dictates unabashed consumption mandates toward his children:

I try to interest them in stuff I was interested in as well when I was younger. Baseball card collecting. We have an Atari in the house. We have an Atari 2600. I try to keep it old school. I want them to know the past before they know the present. Where things came from. We also have an Xbox in the house, but I was like, “Before you know this, you’ve got to know this.” This is where it came from. This is where it all started.

Charlie talks of requiring his children know the origins of their objects of consumption, but only as far back as Charlie’s own childhood. For example, he does not require that they learn truly ancient games--such as mancala, chess, or pachisi--or that they learn the basics of computer programming prior to playing with the Atari.

Bearing children is not the only means by which our informants satisfy goals of generativity (see table 5). Hal, for example, has no children. Rather, he has taken his collection of advertising memorabilia from his childhood and has made it a life project:

So, what a lot of the collection is about is kind of just forming like a library or a storehouse of this knowledge, which wouldn’t necessarily be protected in any other way. You know, for future people to study and enjoy and care about.

Hal describes the collection as on par with revered cultural institutions such as museums or libraries, showcasing how important it is to him. Hal and a friend have even published a picture book showcasing pieces of their collections:

You know, any time you put together a big collection of stuff that other people seem pretty interested in, you feel like you want to share it. With my friend, (name), who did the book with me, we tracked down (name) as a publisher and

got them interested and just went forward with the book. The book also gives you a chance to look at your entire collection and go through it and see what's truly important to you. It brings into focus what a collection means and how it should be presented and how you want to pitch it towards the future.

Preserving this memorabilia for posterity gives Hal a sense of creating something that will continue to exist beyond his lifetime, giving him a sort of immortality. He refers to preserving this collection as protecting it, much as one would protect their child.

Nevertheless, our informants described some of these childhood friendships as worth passing down and others as unworthy. Individuals are motivated to view the current self favorably (Higgins 1996). One way to achieve a favorable view of the self is to create the sense that one has improved over time. Consequently, as actual time passes, individuals tend to become more critical of their past selves (Wilson and Ross 2003). As mentioned previously, most of our informants described themselves as brainy, somewhat nerdy children. However, the perceived growth does not appear to manifest itself in a more socially adept adult. Rather, our informants have embraced their intelligence and quirks, and denigrate the previous self for feeling awkward and in caring so much about peer acceptance. These individuals have in effect created their own in-crowd on the Internet, where other parties with similar interests can read, enjoy, and comment on their blogs.

The perceived growth also comes in increased sophistication of thought and in more refined tastes. Because our informants' tastes have changed and have become more

discerning, some of their childhood friendships no longer work for them. Hal describes one of these childhood friendships that has lost its functionality:

The one I always think back on, it's kind of a horrendous cartoon, Hong Kong Phooey, which was about this dog which does karate, which was of course kind of this hot 70s thing in the early 70s and, I don't know, I just remember that was a show that was important to me as a kid. Looking back on it now, I don't have a lot of fond memories of it. I've seen some of the cartoons a few years ago and they're just unwatchable to an adult. So, as an adult viewing cartoons, I view them with kind of a different attitude. Like, Spongebob, I enjoy, because the art is good, the writing is good, the timing is good, the humor is good. But you turn on a lot of other shows and you just find them disappointing even if they're big hits, like Dora the Explorer. It's for very young kids so, as an adult, it doesn't do anything for me. The design is not that interesting, blah blah blah, but it's almost as big as Spongebob. So, different cartoons are pitched toward different ages and for different sensibilities.

Similarly, Ian describes some of the shows he watched when he was a child as silly and a waste of time:

Yeah, in the afternoons there was like a set of shows that were on. All those classic sort of 70s shows like Gilligan's Island and The Brady Bunch, I Dream of Jeannie. Those are the ones I remember. A lot of, you know, those shows that later in life you sort of regret having spent so much time watching because they were really pretty lame.

Both Hal and Ian are in their forties, and make statements that are critical of the earlier selves. This behavior was typical of the informants on the older end of the age spectrum in our sample, and was not seen readily in the younger informants. In fact, our youngest informant, at 23 years old, declined to talk about his childhood at all except in the most abstract ways. Perhaps there was not enough distance between the childhood self and the current self in order to provide the perception of self-improvement, making these memories more arduous to recount.

Informants also showed little interest in sharing consumption of the cereal products with their own children, despite their acknowledged enjoyment of consuming the products in childhood. Most informants spoke of growing up in fairly permissive households where they were free to engage in consuming sugary foods, such as Bill describes below:

Oh, (we ate) every crappy, sugary cereal. We'd go on kicks, my brother and I, we'd fall in love with a cereal and a month later fall in love with a different cereal. A bunch were the ones that I mentioned on that blog post, like Trix and Lucky Charms and Corn Pops. I used to love those. Cookie Crisp. Very crappy, short-lived cereals like Pac-Man cereal I think existed at one point. Off the top of my head, that's what I remember.

Ian, who is 13 years older, describes growing up in a similar household:

I think we all ate Quisp. That was what was bought in the house. We never bought the competing brand (Quake), but we all ate those kind of sugary cereals, bad-for-you stuff. A lot of junk food.

The presence of children in the household, however, tended to heighten skepticism toward marketing, especially in regard to products intended for children. Ian, like most of the fathers in our sample, is not merely indifferent to his child eating the sugary cereals he himself ate as a child. Rather, he is opposed to it:

I definitely don't eat that kind of cereal any more. I don't think I would buy it for my son, either, because it's just so sugary and it kind of sticks to your teeth.

On the other hand, informants on the younger end of the spectrum in our sample did not have children yet. When asked about allowing their hypothetical future children to consume sugared cereals, they were noticeably more open to the idea, such as Bill describes below:

Obviously, in a more health-conscious society that we have, you want to try to find things that aren't terrible, but kids have been eating sugary breakfast cereals since God knows when, so I'm sure it's not going to kill them. So if the kids say, "Let's go get some Cocoa Puffs," I'm not going to be, "No, we're going to get Rice Chex." There's no reason, if they have a generally healthy diet, there's no reason you can't enjoy something like that.

This relationship between lifestage and criticism of childhood consumption was extant across most of the sample. Because parents wish to protect their children, their presence makes the effect even more pronounced due to the underlying generativity goal state.

Unlike how consumers seek to build bridges to loved ones in hanging onto objects of inalienable wealth (Curasi, Price, and Arnould 2004), our informants seek to extend their identity into future generations (Curasi, Arnould, and Price 2003). Sharing the

experience of childhood friendships, such as Jack's collection of his favorite books in childhood for his son or Charlie's mandate that his children learn to play on the 1970s Atari ("where it all started") before playing on more advanced gaming systems, helps the individual see a part of himself in the child. Our informants are aware that childhood friendships can be a key component of emerging identity, and share their childhood friendships with their own children in the hope of instilling the same childhood friendships. Shaping their own child's identity helps to ensure that the identity component, and not just the genetic component, of the self extends into future generations. If the individual chooses not to have children, then childhood friendships can serve as the subject of a meaningful life project, such as publishing a book featuring one's childhood friendships (such as Hal's book on images of childhood advertising memorabilia), which gives the individual a sense of immortality that helps to extend the self beyond his lifetime and preserves the knowledge of the individual's childhood friendships for future generations.

## DISCUSSION

Our findings intersect with theories of consumer-brand relationships and provide empirical evidence of childhood friendships (Fournier 1998). Our informants discuss products that were consumed mostly or entirely in childhood, such as breakfast cereals and their associated characters, as well as products that they continue to enjoy in adulthood and subsequently share with their own children, such as books and movies. Fournier (1998) argues that people hold onto childhood friendships because they are

emotionally rewarding, that they are infrequently engaged, and that they provide feelings of comfort and security of the past self. Our data reveal, however, that childhood friendships can play a more central role in a person's self-concept than Fournier (1998) suggests. We find that childhood friendships do not merely provide feelings of comfort and security of the past self, but can also be an important vehicle for building and maintaining the evolving sense of self, and the symbolic meanings of childhood friendships evolve along with the consumer's evolving sense of self. Furthermore, we demonstrate that childhood friendships need not be continuously maintained. That is, they can go dormant for perhaps long periods of time, only to resurface later in life, such as in the case where Ian recalled the Quisp character when writing his haiku.

Our data reveal that our informants retrieve childhood friendships from their autobiographical memory stores during depth interviews. Furthermore, we posit that these memories are actively drawn upon in adulthood to construct and reconstruct the working self (Conway 2005). For example, our informants relate their childhood friendships to themselves in their online narratives. We find that consumers' self-concepts demonstrate a tendency to highlight self-improvement (Higgins 1996; Wilson and Ross 2003).

With respect to psychosocial goals and childhood memories, we find themes in our sample related to the functions that childhood friendships serve based upon the informants' current life stage. This finding is universal across our sample. Our data reveal specific childhood friendships that are based on memories related to goals of industry. In our sample, these memories were encoded when highly self-relevant and remain highly

self-relevant, thus resulting in enhanced accessibility of these memories (Singer and Salovey 1993). When the individual enters adolescence, psychosocial goals of identity (i.e., who one is and how he or she fits in with society) become integral to the individual and remain important throughout his or her lifetime. Goals of identity intersect with goals of industry that are associated with childhood friendships. Our informants use their childhood friendships to actively construct and maintain identity related to their industrious self on their webspace. As the individual approaches midlife, goals of generativity, or what one has produced in life, become highly self-relevant (Erikson 1959). Goals of identity and industry further intersect with goals of generativity at this stage. Our informants in this stage of life attempt to pass along their childhood friendships to future generations, either by wielding influence on the development of childhood friendships in their own children or by creating a meaningful life project that will perpetuate beyond the individual's lifetime.

By using cereals with animated spokescharacters as a gateway to other childhood friendships, our findings also support previous literature related to consumption and self-presentation. As Belk (1988) found evidence that consumers extend themselves with and through material objects, we find that our informants interact with cereals and their animated spokescharacters as extensions of their own autobiographical stories. Like Schau and Gilly (2003), our informants actively and self-consciously used commercial referents as shorthand to communicate complicated messages in their self-narratives. Using cereals and their related spokescharacters as symbolic referents in posted blogs, our informants were able to situate themselves and their personal perspectives within the

larger popular culture framework. Specifically, our informants engaged in textual poaching (Jenkins 1992) where they referenced the cereal spokecharacters while also writing over and around the corporately conceived narratives, intertwining personal life stories with the commercial narratives. Our informants overlaid their own identity and creativity over the official brand narratives in creative and often humorous ways, enriching both the personal and commercial meanings in the process.

### FUTURE RESEARCH DIRECTIONS

We believe that this research can be built upon with further data collection and interpretation in order to make further contributions to consumer research. For example, our informants appeared to ascribe to a belief that certain rules of engagement and reciprocity govern their childhood friendships. Specifically, our informants freely altered advertiser narratives in order to playfully produce self-presentations. Several of our informants described childhood friendships as being special and sacred, and ought not to be subject to tinkering (Belk, Wallendorf, and Sherry 1989). They forgave previous profane uses of their childhood friendships, but expressed distaste for current or potential profane uses of them. The marketer carries the onus of maintaining a coherent symbolic meaning of the childhood friendship. If the advertiser changes the symbolic meaning of the commercial referent, then the individual loses his fodder for self-presentation. This can result in confusion and anger. Additionally, our informants showed a great degree of skepticism and distrust of marketing in general. This pessimism toward marketing is

interesting because it provides them with the very material they use for self-presentation. Future research could examine the rules of engagement and reciprocity, and how marketers should manage this potentially volatile boundary.

An additional future direction is in examining the many childhood friendship contexts that we did not observe in this study. For example, exploring childhood friendships with beloved toys might yield evidence of affect-laden nostalgic influence. Furthermore, researchers could also examine potential public policy implications for childhood friendships, as advertising toward children is currently a hotly debated topic (Brownell and Horgen 2002; Institute of Medicine 2005).

## CONCLUSION

We assert that childhood friendships are not merely affective associations with the past self; rather, childhood friendships can play an important role in the construction and maintenance of current identity. We show how childhood friendships are built on autobiographical memories, meaning that consumers intertwine their personal stories with commercial narratives in order to provide important building blocks for developing of a positive self-concept. Our informants universally engaged in creative self-presentation on the Internet (Schau and Gilly 2003), which enhances a positive sense of self (Belk 1998; Csikszentmihalyi 1996; Runco 2004). We observed differing strategies across informants in different life stages. Childhood friendships remain highly accessible to our informants because they were relevant to goals of industry when encoded; these

goals of industry remain highly goal-relevant to many adult consumers; consequently the accessibility of goal-relevant memories is enhanced (Singer and Salovey 1993).

Consequently, the highly self-relevant goals of industry intersect with goals of identity, which are persistent throughout adulthood. When informants reach the life stage when concerns about what one has produced in life becomes relevant, goals of identity and industry further intersect with goals of generativity. Perhaps the following quote best captures our assertion that childhood friendships not only evoke warm, fuzzy memories of the past, but also provide ample fodder for building and maintaining the current self:

The past is never dead, it is not even past.

--William Faulkner, *Requiem for a Nun*

Table 1: Informant Table--Netnography

Pseudonym	Sex	Character(s) featured in webspace	Primary content of webspace
Anna	Female	Quisp and Quake	Bicycling
Betty	Female	Quisp and Quake	Popular culture, personal diary
Carla	Female	Trix Rabbit	Online petitions
Daisy	Female	Count Chocula	Popular culture
Eleanor	Female	Count Chocula	Books, satire
Frances	Female	Many	Popular culture
Gioia	Female	Count Chocula	Books, personal diary
Hester	Female	Lucky Leprechaun	Personal diary
Adam	Male	Lucky Leprechaun	Parodies of song lyrics
Alex	Male	Quisp and Quake	Restaurant reviews
Angus	Male	Quisp and Quake	Cereal product reviews
Barney	Male	Quisp and Quake	Music, personal diary
Bill	Male	Cookie Crook, Lucky Leprechaun, Trix Rabbit	Personal diary
Blaine	Male	Quisp and Quake	Popular culture, art
Charlie	Male	Many--all obsolete	Political
Clark	Male	Quisp and Quake	Popular culture, personal diary
Clay	Male	Quisp and Quake	Political, popular culture, personal diary
Dale	Male	Tony the Tiger	Popular culture
Donald	Male	Many	Popular culture
Dustin	Male	Quisp and Quake	Popular culture
Edward	Male	Quisp and Quake	Popular culture, personal diary
Egan	Male	Quisp and Quake	Art
Eli	Male	Toucan Sam, Sonny Cuckoo	Product reviews
Frank	Male	Tony the Tiger	Art
Fred	Male	Lucky Leprechaun, Trix Rabbit	Grudge matches between characters
Fritz	Male	Trix Rabbit	Short films made for the Internet
Gary	Male	Freakies	Popular culture
Gilbert	Male	Lucky Leprechaun	Popular culture
Glen	Male	Lucky Leprechaun	Satire
Hal	Male	Trix Rabbit	Art
Horace	Male	Count Chocula	Politics, art, popular culture
Howard	Male	Lucky Leprechaun	Popular culture
Ian	Male	Quisp and Quake	Poetry
Ira	Male	Count Chocula	Popular culture
Isaac	Male	Count Chocula	Popular culture
Jack	Male	King Vitamin, Quisp and Quake, Freakies	Politics, personal diary
Jason	Male	Toucan Sam	Games
Jeff	Male	Many	Writing
Keith	Male	Dig'em (Honey Smacks)	Popular culture
Ken	Male	Dig'em (Honey Smacks)	Politics, popular culture
Kevin	Male	Many--obsolete and current	Character guides for cereals, films, and books
Larry	Male	Sugar Bear (Golden Crisp)	Popular culture
Lars	Male	Tony the Tiger	Cooking, personal diary, popular culture
Mark	Male	Captain Crunch	Popular culture
Mike	Male	Many	Defecation
Ned	Male	Captain Crunch	Promote Captain Crunch to Admiral
Norm	Male	Captain Crunch	Personal diary
Olaf	Male	Trix Rabbit	Personal diary
Oscar	Male	Many	Personal diary
Perry	Male	Many	Personal diary
Pete	Male	Count Chocula	Popular culture, personal diary
Quentin	Male	Count Chocula, Frankenberry, Booberry	Personal diary
Ralph	Male	Frankenberry, Fruit Brute, Booberry, Count	Popular culture, personal diary
Ron	Male	Fruit Brute, Fruity Yummy Mummy	Popular culture
Taylor	Male	Lucky Leprechaun, Tony the Tiger, Toucan Sam, Snap, Crackle and Pop	Comedy
Avery	Unknown	Many	Online surveys and polls
Bailey	Unknown	Trix Rabbit	Popular culture
Casey	Unknown	Trix Rabbit	How to instructions
Drew	Unknown	Trix Rabbit	Popular culture
Hayden	Unknown	Trix Rabbit	Jokes
Jamie	Unknown	Trix Rabbit	Online polls
Madison	Unknown	Trix Rabbit	Satire
Parker	Unknown	Count Chocula	Film, satire
Reese	Unknown	Toucan Sam	Drink recipes
Shea	Unknown	Many	Grudge matches between characters

Table 2: Informant Table—Depth Interviews

Informant	Birth year	Character blogged	Other characters referenced	Other kid cereals referenced	Degree(s)	Current Locale	Childhood Locale	Father occupation	Mother occupation	Marital Status	Children	Employment
Adam	1983	Lucky Leprechaun	Trix rabbit, Cookie Crook	Honeycomb	BA History	Long Island, NY	Long Island, NY			Single	None	Contractual
Bill	1978	Cookie Crook, Lucky Leprechaun, Trix Rabbit	Toucan Sam, Tony the Tiger, Dig Em, Wally the Bear	Corn Pops, Pac Man	BA Journalism	Chapel Hill, NC	Long Island, NY	Principal	Teacher	Single	None	Sports Writer
Charlie	1978	Many—all obsolete	N/A		N/A	Sarasota, FL	Sarasota, FL	Engineer	Teacher	Married	Boys, 4 and 7, Girl 18 mos	Consultant
Dale	1977	Tony the Tiger	Trix rabbit, Captain Crunch	Rice Krispies	BS Computer Engineering, working on Master's	New Jersey	Detroit, MI	Engineer	Teacher	Married	None	Computer Engineer
Eli	1976	Toucan Sam, Sonny Cuckoo	Captain Crunch, Count Chocula	Fruity Pebbles, Cocoa Pebbles, Golden Grahams, Lucky Charms, Trix, Cookie Crisp	BA English	Hawaii	Hawaii	Teacher	Teacher			Public Relations
Frank	1975	Tony the Tiger	Toucan Sam, Count Chocula, Booberry, Frankberry	Honeycomb	BA Film, Physics	Sault Ste Marie, Canada	Sault Ste Marie, Canada			Single	None	Fisherman
Gary	est. 1966-1971	Freakies	DigEm, King Vitamin, Tony the Tiger, Toucan Sam, Lucky Leprechaun, Frankberry, Booberry, Count Chocula, Cookie Crook, Kaboom			Minneapolis, MN	Not disclosed					
Hal	1965	Trix Rabbit	Freakies, Quisp, Quake, Count Chocula, Frankberry, Captain Crunch	Cheerios, Crispix, Rice Chex, Alpha Bits	BFA, Art	Los Angeles, CA	Los Angeles, CA			Married	None	Artist, Entrepreneur
Ian	1965	Quisp and Quake	Tony the Tiger, Captain Crunch, Lucky Leprechaun		BA, English	Denver, CO	Denver, CO	Psychiatrist	Homemaker	Married	1 boy, 6; 1 girl, 2	Database Administrator
Jack	1962	King Vitamin, Quisp and Quake, Freakies	Captain Crunch, Lucky Leprechaun		BA, JD, MA, work toward PHD Sociology	San Francisco, CA	New York, NY	Entrepreneur	Homemaker	Married	1 boy, 18 mos.	Attorney
Kevin	est. 1960-1965	Many--obsolete and current	N/A		BS, Marketing	Charlotte, NC	Mary	Marketing	Homemaker	Married	1 boy 18, 1 girl 14	Business

Table 3: Interview Excerpts Related to Industry

	Active industry goal in childhood	Active industry goal in adulthood
<b>Adam</b>	I don't really want to say (anything) about my childhood. But, what could I say? I did read a lot when I was younger. I probably wasn't into TV as much as most.	I started out a 100-page book as I was finishing up college. It was supposed to be a novel. I ended up writing it as a poem.
<b>Bill</b>	Well, I was always pretty good in school, so I'm sure they would have thought I was pretty smart. Usually fun and kind of alternated between shy and very outgoing, if that makes any sense. A life of the party attention whore kind of thing, but then other times a little reserved. I'm a Gemini, I can't help it.	All right, well I'm a sports writer. I live in North Carolina in Chapel Hill. I'm originally from New York. I'm 28 years old. A musician as well.
<b>Charlie</b>	Grade school? Smart, creative, nice. Middle school: smart, not so nice any more, doesn't apply himself, creative. High school: very creative, jackass, definitely doesn't apply himself, who's he?	(The character in my short stories) is kind of a time traveling spy. He never speaks. There's never any dialogue from him in any of the stories that I write for this character. Never. He never speaks, but he has emotions. You know, he thinks things, but he doesn't speak. Essentially, I pick time periods, places; some of them are historical events where he's there. Some of them are just fiction. There's always some sort of espionage or trick to the story. Many of them have penguins in them. I can't explain that, but they do.
<b>Dale</b>	I always kept busy. I watched a bit of TV, but no where close to kids today. I think I had a pretty good imagination. I didn't mind playing alone. The problem when I was really young was that all the kids were my sister's age.	(I am in) a band consisting of me. I do the vocals and play keyboards. Once in awhile I'll bring out the guitar.
<b>Eli</b>	One of my gifted and talented teachers wrote on my report card that I was "bright, but quiet." During my spare time, I did what most kids did, watch cartoons and play with the other kids in the neighborhood, which usually involved sports or messing around in the stream behind the house. I spent countless hours in that stream, building dams, playing splash war with the other kids, catching frogs and tadpoles, and making rafts out of reeds and racing them.	Currently, I'm working in the public relations department at a non-profit organization. I'm also the only writer of a humor product review blog.
<b>Frank</b>	Small. Nerdy. But I never really took much shit from anybody. I'd stand up for myself, even though I was two years younger than everybody. I got picked on quite a bit, but I never really let it get to me. If someone pushed me, I'd push them back. If I got beat up, then I'd mastermind some scheme to get him beat up.	Actually, I'm publishing a book. I just found out last week. It's just a book of postcards (of my cartoons). You can just tear it out of the book kind of thing, and a little company in Montreal is going to publish them.
<b>Gary</b>	I don't remember the cereal - and as a kid - I liked the toys in the box - they seemed more imaginative than others.	Well it was a product that was completely bizarre in their advertising etc., and it disappeared so quickly, that no one quite knew if it actually existed, or if they were making it up. For years I had asked people if they remembered it and no one knew what I was talking about. So I think I posted it in an attitude of vindication I guess. See, it did exist.
<b>Hal</b>	When I was a kid I was into a lot of science stuff, we did a lot of model rocketry... I was kind of a brainy kid. You know, I wasn't necessarily like a straight A student, but you know I think in high school I was like number 10 on the grade point average or something. You know, the top ten kids, but I was number 10. So describe me, I don't know, I was into, I enjoyed math and science, I enjoyed reading science fiction. I don't know. I don't know how they'd describe me. A little nerdy.	In addition to being a collector, I'm also an artist.
<b>Ian</b>	My siblings liked me and I liked them and my parents, I was generally always on good terms with them. I think they thought I was a pretty smart kid with a pretty good memory. I was the one who would remember details from family trips and events and stuff and I guess maybe they thought I was sort of a creative person. My parents both thought I was going to grow up to be a writer, which I sort of do now.	Haiku, the one blog that's entirely haiku was, interesting that the thing about haikus that is appealing for the writer is that they're very digestible, you know, they're like these little discrete pieces, and you don't have to invest a lot of emotional energy into, you know, bringing them around to the correct conclusion, it's just a little moment in time, usually. And that's very entertaining to be able to just rattle those off. I started writing them because I was just playing around with them one day and started writing some haikus that I thought were sort of funny and so I decided to try to go at it and start posting them on a blog. In the process, I've even gotten into writing even more, even smaller units of writing. I've started another blog that's all proverbs, so it's all made-up proverbs. And those are usually a sentence long.
<b>Jack</b>	I was a very high strung, you know, a very talkative, a very kind of loud kid, but also kind of studious, kind of bookwormy, which was a funny combination.	I went to undergrad at Johns Hopkins. I went to graduate school for a Master's Degree in England at the London School of Economics, and then I also went to graduate school for Sociology at the University of Chicago, but did not, I left before doing my dissertation, and then I went to law school at NYU.
<b>Kevin</b>	Lots of board games, lots of card games, chess. I'd play chess with the older kids and cards with teachers and older kids. Constantly looking for sources of income. I had all sorts of jobs. I had a paper route when I was nine. All sorts of stuff. Sold crap door to door. Back in the day, I remember, they had seeds. If you sold enough seeds you could get some plastic doodad of some sort. There was a catalog full of stuff you could choose from. I remember doing that. I remember selling all sorts of stuff for the Boy Scouts and other things like that.	I enjoy doing the website. That's probably where you found me. Topher's Breakfast Cereal Character Guide. I'm working on a book that goes along with it. That's my hobby, any way.

Table 4: Interview Excerpts Related to Identity

	Memory from childhood	Strategic use in adulthood
Adam	(Lucky Leprechaun is) a little antsy, I guess. He's always on his guard to make sure his product doesn't get stolen from him. It seems like he would be a lot happier if he didn't have, if he never had the Lucky Chams. If he didn't know about them. But now he's got the Lucky Chams and he doesn't know what to do without them. So now I think he needs them to be happy, but as long as people are always after them, he's never going to be happy. He's going to be on his guard the whole time. He doesn't have any time to enjoy them.	(On writing a parody of the song "When I'm Gone" by Three Doors Down) I might not have actually intended to write a Lucky Chams parody, but just the original song. "Love me when I'm gone" and "Lucky Leprechaun" sounded so much alike that I tried to do it. And then the memories came back for Lucky Chams commercials.
Bill	I love some stuff that's kind of semi-cheesy, like <i>Back to the Future</i> movies and, let's think here. And a lot of random 80s movies. I said like <i>Back to the Future</i> , <i>Ghostbusters</i> , things like that.	Although I know everyone says <i>Back to the Future III</i> sucks, but I still stand by the trilogy as a whole. My friends and I actually, this is just going to sound like the biggest loser thing ever, but on November 12 <sup>th</sup> of this past year, we got together and had a little party thing for the 50 <sup>th</sup> anniversary of the Enchantment Under the Sea dance, because it was November 12 <sup>th</sup> , 1955. We were vindicated slightly by seeing other people doing that online, and I was like, "Oh good, it's not a crazy idea." But we had it like a year earlier, we were like "Oh yeah, it's got to be coming up. Let's do that." So we went out, hung out and had a little mini party at my place, then went out to this bar and someone was playing, there was a guy playing a guitar and we got him to play <i>Earth Angel</i> for us because it's at the end of the movie. It was either that, or I guess the Huey Lewis song <i>The Power of Love</i> . But yeah, I guess it was kind of pop culture nerdiness on my part. So I love stuff like that. I've never met anyone that doesn't love <i>Back to the Future</i> , so that was kind of an easy sell. Yeah, like I said, it is kind of a generational thing.
Charlie	Now those (Nintendo Cereal System) I remember. Those were great. Them and Nerds cereal were freaking great. They were like Trix, and Trix is good. But the only thing I don't like about Trix and this stuff is that it gets soggy too quick, but if you ate it quick enough it didn't matter. They were very much like Trix, of course the two colors was cool, but I do remember those, getting those a lot. Those were great.	Everyone likes to get in touch with their childhood, and the things that they liked as a child, but didn't recognize the value of when they were kids of course. Like Star Wars figures. As you get older, and when you remember things, and that's a memory that feels good in my head, and I'd like to experience it again.
Dale	Tony was kind of cool because he looked tough. He even sounded tough.	I think sometimes with us, it's a case of do you remember this character or this product? Well, lets take it and put in today's context or in an adult situation. For instance we did a write up on Gloworm and how it looks like an adult toy. I think part of the fascinating thing about Tony the Tiger or some of these things is that they have a back story just waiting to be written.
Eli	I ate probably every sugary cereal available to me. Frosted Flakes, Cap'n Crunch, Fruity Pebbles, Cocoa Pebbles, Golden Grahams, Cookie Crisp, Lucky Chams, Cocoa Puffs, Trix, and I'm sure many others. My favorite out of all of them was Count Chocula, because I loved the chocolate marshmallows and the chocolate milk after I ate the cereal.	I think the thing that sparks my creativity the most with these cereals is the insane variety of them and how crazy the cereal companies get with variations. These variations are slight. For example, Lucky Chams. This past year they came out with a Halloween Lucky Chams and a Winter Lucky Chams. They all taste the same, but their marshmallows are different. Also, limited edition cereals, which always happen with movie-related cereals, are kind of getting out of hand. For example, the Limited Edition Spider-Man cereal tastes just like the Limited Edition Spider-Man 2 cereal. I guess the Limited Edition Spider-Man cereal wasn't so limited edition.
Frank	We were a household that got the sugary cereals. We weren't condemned to Shredded Wheat or lame Cheerios. We got the Lucky Chams and we got the Count Chocula and we got Honeycomb and Frosted Flakes. We ate all the good, sugary, really bad-for-you cereals. I remember that he (Tony the Tiger) never really used to be into sports, and then all of a sudden he started playing sports.	Twenty-five years ago, Tony the Tiger never rode a skateboard and nowadays he's Tony Hawk. I remember he had his little kid, Tony Jr., from the Frosted Flakes. I don't know whatever happened to him. I think they just killed him off, or he got married, moved to Wyoming. I don't know, but there's no more Tony Jr. I don't know, maybe it's because people were kind of freaked out about Tony being a single father. You never know.
Gary	They (The Freakies) lived in a tree and they sort of co-existed but didn't seem to overly get along. And they always had strange prizes inside.	(On the intellectual nature of the Freakies) I still have a Hanhose (from the Freakies) magnet. The character existed on a plane I didn't understand as a kid, and I thought it was valuable to keep that mindset.
Hal	The Freakies were, you know, this crazy cereal that came out around 1974 and it was kind of this, I don't know how to describe it. A lot of kids had real personal relationships with The Freakies cereal. Mainly because the first box that came out, the first premium, was these little plastic figures of the characters. So I remember trying to assemble the whole set of The Freakies characters.	There were seven different (figures), and I had saved one of those characters, a little Boss Moss plastic figure, since I was a kid. I still have it today. And so it was, for whatever reason it was a thing, I was at the age where, by walking in the grocery store and discovering it, I kind of made it my own. It became kind of a personal relationship or whatever.
Ian	Yeah, in the afternoons there was like a set of shows that were on. All those classic sort of 70s shows like Gilligan's Island and The Brady Bunch, I Dream of Jeannie. Those are the ones I remember. A lot of, you know, those shows that later in life you sort of regret having spent so much time watching because they were really pretty lame.	(In reference to self-improvement, current preferences) I really like complex drama shows. You know, <i>The Sopranos</i> , I've always like that, and I was really into <i>The West Wing</i> . There's not a lot on network television that I really sort of go out of my way to watch any more.
Jack	So, I don't remember much about the characters. I remembered that Quisp was the little space Martian and I remembered that Quake was like a big, I think that kind of, and until I saw it again recently, I thought that we would have remembered him as more of a Hercules type, but like I remember, a big strong man. A big, strong man type. But that's all I really remember. I don't remember any of the plots of the commercials or anything like that. I just remember the characters pretty distinctly. And the names, since they both started with Qs, that definitely stuck in my head. I definitely voted (in the Quaker Quisp versus Quake campaign). My friends and I all voted. I probably voted early and often. I don't even remember how you voted. I guess you sent in a postcard or something. I don't remember. I remember being like really into this. I mean, obviously I didn't think it was, in a sense I thought it was funny but on the other hand, I think there was a sense that we thought it was really important to save our cereal.	(On blogging about Quisp) Oh yeah, the cereal, and it's funny, because I hadn't thought of the Quisp and Quake commercials in years and I don't even remember what brought them to mind. I guess someone had referred me to this site that had all the pictures of cereal boxes and such, and that brought that back and I distinctly remember, I specifically remembered when they had their ad campaign about whether to get rid of and which cereal should remain and people should vote, and I remember that me and my friends all took this quite seriously. I don't even remember which one I voted for. I think I voted for Quisp, but I can't be sure. But I totally remember that.
Kevin	I thoroughly enjoyed the Winnie the Pooh characters, absolutely.	For the whole site, the breakfast cereal character guide itself is probably only 25% of the traffic. The whole site includes a Pooh character, a <i>Winnie the Pooh</i> character guide and miscellaneous pages for kid, and an incredibly useful information section. I call it incredibly useful information because when you get there, if it's information on a particular topic that you're looking for, you can't find more concise information anywhere else.

Table 5: Interview Excerpts Related to Generativity

<b>Adam</b>	Theme not apparent--informant may have not reached this life stage (age 23, no children)
<b>Bill</b>	Theme not apparent--informant may have not reached this life stage (age 28, no children)
<b>Charlie</b>	I try to interest them (my children) in stuff that I was interested in as well when I was younger. Baseball card collecting, pop stuff. We have an Atari in the house. We have an Atari 2600. We try to keep it old school. I want them to know the past before they know the present. Where things came from. You know, we also have an X-box in the house, but it's like, before you know this, you've got to know this. This is where it came from. This is where it all started (age 28, two children).
<b>Dale</b>	Theme not apparent--informant may have not reached this life stage (age 30, no children)
<b>Eli</b>	Theme not apparent--informant may not have reached this life stage (age 31, no children)
<b>Frank</b>	Theme not apparent—informant may not have reached this life stage (age 31, no children)
<b>Gary</b>	Theme not apparent--informant may not have reached this life stage (age not disclosed but estimated to be around 40 based on popular cultural references on blog and during interview, presence of children not disclosed)
<b>Hal</b>	What a lot of the collection is about is kind of just forming like a library or a storehouse of this knowledge, which wouldn't necessarily be protected in any other way. You know, for future people to study and enjoy and care about (age 42, no children)
<b>Ian</b>	(On watching cartoons with his son) They even have an updated version of Looney Tunes in which Bugs Bunny and Daffy Duck and the Coyote and the Roadrunner, they're all sort of superheroes with specific superpowers. I watched the one with, whatever the character is, this Bugs Bunny, just because it's sort of familiar characters, but none of them really are grab me the way they do him (Age 42, one child).
<b>Jack</b>	I think the two of us (my wife and I) are both kind of obsessed with the books that we had when we were kids. When we went out and got, or even now if we pick them out, we sort of almost got a baby library of all the books that we remembered as the best children's books, so like <i>Babar</i> and <i>Goodnight Moon</i> and <i>Curious George</i> and <i>Mike Mulligan and the Steam Shovel</i> and all those.
<b>Kevin</b>	For the whole site, the breakfast cereal character guide itself is probably only 25% of the traffic. The whole site includes a Pooh character, a <i>Winnie the Pooh</i> character guide and miscellaneous pages for kid, and an incredibly useful information section. I call it incredibly useful information because when you get there, if it's information on a particular topic that you're looking for, you can't find more concise information anywhere else.

CHAPTER 3: ESSAY 2, PILOT STUDIES

Exploratory Studies of Long-Term Effects of Advertising to Children on Judgment and  
Decision Making in Adulthood

## ABSTRACT

This research attempts to explain long-term effects of advertising to children on consumer judgment and decision-making that persist into adulthood, and what can increase effectiveness of public policy initiatives aimed at undoing some of those effects. Breakfast cereals are used as the stimulus because the majority of products and their associated spokescharacters have been marketed heavily and continuously to children for over 40 years. The four experiments in this chapter failed to yield significant results for hypothesis tests, but nevertheless provided valuable insights into manipulations and measures and provided the basis for dependent measure scale development for the focal experiments of this study.

Take a walk down the cereal aisle of your local grocery store, and prepare to be overwhelmed with a plethora of options. Smiling cartoon faces beckon you to try their flakes, rings, or squares, mesmerizing you with a dazzling array of colors and flavors. Sugared cereals are heavily advertised toward children, comprising more than 50% of the approximately 10,000 food advertisements seen by American children on television each year (Brownell and Horgen, 2002). While the effects of high sugar diets on childhood obesity and the effects of advertising such sugary foods to children has received a great deal of attention (Brownell and Horgen 2002; Institute of Medicine 2005), the long-term effects of childhood advertising on adults have been virtually ignored. Because sugared breakfast cereals comprise such a large portion of the food advertisements that children see, and because the vast majority of spokescharacters associated with these cereals have been continuously advertised for more than 40 years or more, they provide a useful context for studying effects of advertising that begin in childhood and persist into adulthood. This research attempts to explain long-term effects of childhood memories of advertising on consumer perceptions of the nutritional and hedonic value of related products, and whether health motivation primes can increase effectiveness of public policy initiatives.

## CONSUMER-BRAND RELATIONSHIPS

In what is now widely considered to be a seminal article on the topic, Fournier (1998) asserted that consumers build relationships with brands in much the same way they

would with other people. The brand builds relationships with consumers through the use of marketing communication channels, and the consumer reciprocates with purchases and loyalty. Fournier (1998) observed and catalogued fifteen different types of brand relationships with the informants in her study. She called one of these childhood friendships, which are those consumer-brand relationships that begin in childhood and are accessed later in life by adult consumers. These relationships are described as affective associations with the past that provide feelings of comfort and security to the past self. Because these relationships are situated in childhood, I assert that these relationships have unique properties that make them especially prone to create biased judgments in favor of the brand that could persist into adulthood. These biased judgments are most likely due to a halo effect (Nisbett and Wilson 1977), whereby the perception of a particular trait (e.g., healthiness) is influenced by the perception of former traits (e.g., positive affect toward advertising spokescharacters). In this research, when I refer to bias, I specifically am referring to inflated judgments of healthfulness. I believe biased judgments persist into adulthood because (1) the relationships were initially developed at a time when the individual lacked knowledge of advertising's persuasive intent, and (2) because the relationships are affective in nature, they create positive biases toward brands.

#### DEVELOPMENT OF PERSUASION KNOWLEDGE

Children move through three primary stages of development in how they view and evaluate advertisements (John 1999). From when they are toddlers until they reach about the age of seven, children perceive things in literal, simple ways. In this so-called perceptual stage, evaluations are generally made on spatial observations, such as size. Children begin to understand that advertisements are separate from programming at this age, but do not recognize the persuasive intent of advertisements. Rather, they see advertisements as entertainment, but shorter in duration than television programs (Ward, Reale, and Levinson 1972). Not until the analytical stage, from approximately ages seven to eleven, do children begin to understand the persuasive intent of advertisements (Ward, Wackman, and Wartella 1977). Children of this age also begin to distinguish fantasy from reality—for example, this is the stage where most children stop believing in Santa Claus and the Tooth Fairy (Dorr 1983). It is also at this stage that children begin to form cognitive defenses against advertising (Brucks, Armstrong, and Goldberg 1988; Moore and Lutz 2000). Around preadolescence, children begin to reflect on advertisements, observe whether they are relevant to their lives, and become skeptical of claims (John 1999). This evidence has important public policy implications. If parasocial attachment to spokescharacters can develop at a time when children are vulnerable and either do not know the difference between advertising and programming, do not recognize the persuasive intent of advertising, and/or cannot adequately defend against advertisements, then the spokescharacters might be perceived in much the same way as other cartoon characters in adulthood when the individual retrieves autobiographical memories.

Friestad and Wright (1994) assert, however, that through a “change of meaning,” individuals recognize their previous biases and metacognitively correct for them as they age and gain persuasive knowledge. I challenge this position by empirically testing Friestad and Wright’s (1994) conceptual argument on the grounds that bias correction is best facilitated when motivation and ability to think are high (Petty et al 2008). That is, because the consumer relationship originated in childhood, when the individual lacked knowledge of persuasive intent, he or she may not realize that biases are extant. Furthermore, the individual, perhaps due to high attachment to his or her childhood consumer relationships, might not exhibit sufficient motivation to think about their biases and subsequently correct for them.

#### AUTOBIOGRAPHICAL MEMORY, THE SELF, AND AFFECTIVE STATES

Because childhood friendships are seeded in the past, I argue that they are housed within the autobiographical memory store. Tulving (1985) described three distinct components of long-term memory: episodic, semantic, and procedural memory. Procedural memory is not consciously accessible and contains much of the knowledge that is generally considered tacit. These include schemas, scripts, and knowledge about how to perform certain tasks, such as swimming or riding a bicycle. Semantic and episodic memories, however, are consciously accessible. Semantic memory is defined as knowledge of language rules and concepts, whereas episodic memory refers to specific experiences from the past in a definite place in space and time.

Autobiographical memories are generally referred to as those memories that make up one's life story. Kihlstrom, Beer, and Klein (2003) state that since the perceptual lens of the individual cannot be extracted when episodic memories are encoded, that all episodic memories are autobiographical by definition. Conway and Pleydell-Pearce (2000), however, suggest that autobiographical memory is comprised of knowledge at varying degrees of specificity, some of which is episodic in nature and some of which is semantic. The least specific are those memories associated with lifetime periods, such as "when I was in graduate school," or "during my second marriage." The next level of specificity involves memories associated with general events, such as listening to conference presentations, reading journal articles, or eating Thanksgiving dinners. The most granular level is event-specific knowledge, which comprises unambiguously episodic memories according to Tulving's (1985) classification, such as "the time I broke my nose while playing basketball," or "the time I broke up with Pat."

Autobiographical memory is thought to be of fundamental significance to the self-concept and self-esteem (Conway and Pleydell-Pearce 2000; Fivush and Reese 1992; Wilson and Ross 2003). Because autobiographical memory plays an important role to the self, it tends to be affect-laden (Conway 2003). The term affect generally refers to a valenced feeling state with some form of arousal. Affect can either operate consciously, semi-consciously, or non-consciously. A non-conscious form of affect is the mere exposure effect, in which positive affect toward an object is developed over time with repeated exposure (Zajonc 1968). Mood and emotion are the most researched affective states. While the terms are problematic within the psychology literature and are

sometimes used interchangeably, the prevailing view is that moods are longer lasting, general, and non-directive or directed toward multiple objects, whereas emotions are shorter in duration and specifically directed toward a single object or idea (Siemer 2005). Emotions are generally perceived to be conscious, whereas mood can operate at either a conscious or non-conscious level (Beedie, Terry, and Lane 2005). Emotions and moods can alternate, cause one another, and even co-occur (Beedie et al 2005; Siemer 2005). Both mood and emotion appear to play a role in autobiographical memory. Research of the effects of mood on autobiographical memory tends to treat it as a source of information for the individual's inner motivational state of maintaining a positive mood (Schwarz and Clore 1983).

Research in consumer psychology indicates that affective states that result from cued autobiographical memory can lead to biased judgments in favor of brands, devaluation of alternatives, and product attribute biases. In one study within the consumer research domain, Sujan, Bettman, and Baumgartner (1993) argued that the bias they observed was due to affect transfer from the memory to the brand. However, the authors' argument was made conceptually, without empirically demonstrating that affect transfer indeed takes place. Consequently, there are several alternative explanations for this bias. For example, spontaneously-invoked affective reactions sometimes have a greater impact on choice than cognitions have, resulting in a greater likelihood of selecting choices that are superior on affective dimensions and inferior on cognitive dimensions (Shiv and Fedorikhin 1999). Positive mood states can bias evaluations in a mood-congruent direction (Isen et al 1978; Isen and Shalcker 1982; Schwarz and Clore 1983); and positive

mood can decrease elaboration, thus resulting in a peripheral route to persuasion (Batra and Stayman 1990; Petty and Cacioppo 1986). Finally, affect could serve as a distracter where the strength of arguments is not taken into account (Mackie and Worth 1989).

### POSSIBLE POLICY INTERVENTIONS

Given the hypothesized result of bias in product judgments, I explore potential ways of providing individuals with the resources to correct such bias. Bargh and his colleagues (1992) found that nonconscious motivational primes resulted in behavior congruent with the primes. Furthermore, the drive to satisfy the primed motivation grows until it is indeed fulfilled. Therefore, one of the objectives of this research is to investigate the potential effectiveness of using a nonconscious prime, with the real-life analog being perhaps a billboard near a grocery store, as a potential policy intervention to facilitate bias correction.

In sum, in this research I examine the effects of cuing childhood consumption memories on adult consumers, and the affective mechanism that drives potential bias. This is important because, while the advertisements are directed toward children themselves, adults often make final purchase decisions for their children. If the adult's perceptions of the nutritional value of the product are biased because affect-laden autobiographical memory inhibits critical information processing, then the adult could either make inferior nutrition judgments and eating decisions for themselves or their children, or could be more easily swayed by a child's attempt to influence the purchase

decision. Finally, I explore the potential of using motivational primes as a policy intervention to facilitate bias correction.

## EXPERIMENT 1

The purpose of experiment 1 is to determine whether cuing autobiographical memory of an childhood advertising leads to biased judgments, with the effect of more positive health judgments for less healthy options (in this context, sugared breakfast cereals) among participants who are cued for autobiographical memory when compared with participants who are not cued for autobiographical memory.

### Method

Participants were 164 undergraduates at University of Arizona who earned course credit in their introduction to marketing class for taking part in the study, and were assigned to one of five conditions. All participants first provided basic demographic information (age, sex, and whether they grew up in the United States) and breakfast consumption information (whether and how often breakfast is eaten now, whether cereal is eaten now, current favorite brands, whether cereal was eaten as a child, and favorite childhood brands). Participants were then shown a statement that instructed them to think of a cereal consumption episode and write it down, including as many details as they could, including who persons involved, taste sensations, the appearance of the box, and so on. It was thought that such probing would prompt participants to include elements of

the advertising, such as the packaging or the character, in the consumption episode. There were five consumption episode conditions. Two of these conditions asked about the participant's own memories: (1) a time in childhood when cereal was eaten, and (2) the last time cereal was eaten. The objective in creating these two conditions was to compare participants' health judgments of cereal products, based upon whether they were accessing a childhood autobiographical memory or a recent memory. The other three conditions asked for scenarios involving other people: (1) a typical child, (2) a fellow student, or (3) an ambiguous other, "someone." After a distracter task, participants were asked to rate the importance of 14 different product attributes on 5-point Likert scales. These attributes included health, price, and hedonic attributes (see Appendix B). After this exercise, participants were asked to rate Kellogg's Rice Krispies as well as an additional four cereal brands on the same attributes, which included cereals that were low in sugar, with and without spokescharacters, as well as cereals that were high in sugar, with and without spokescharacters. Seven of the 17 products rated have consistently featured the same spokescharacter in their packaging and advertising for more than twenty years. It was expected that participants in the childhood memory condition would have biased health-related judgments of the cereals that were high and sugar and were associated with a spokescharacter, with the effect of perceiving these products as healthier than participants in the other conditions. Participants were then debriefed and thanked for their participation.

## Results

There was no significant difference in health-related judgments between conditions. Therefore, the research hypothesis was not supported. However, valuable exploratory information about overall perceptions of these brands was gained that has been useful in designing later experiments. For the product attributes “has a fun character,” “has a fun personality,” and “brings back fond memories,” all products with characters associated with them were scored significantly higher than the mean combined values for all cereals rated, whereas all products without characters associated with them were not (see Figure 1).<sup>2</sup>

Figure 1: Ratings of Selected Attributes per Brand

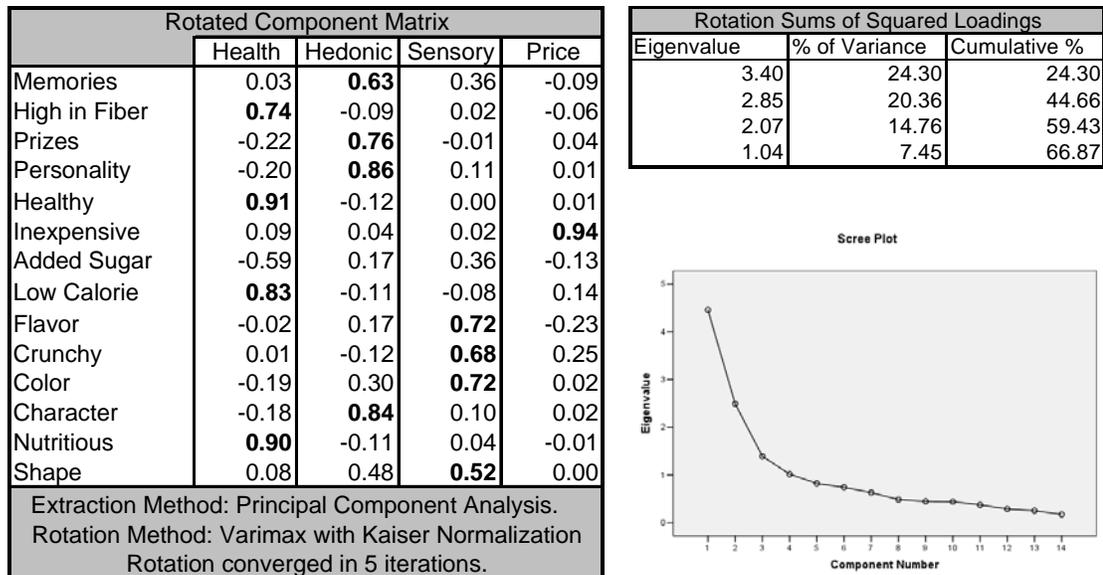
Advertised Character	Product Name	Fond Memories*			Fun Character*			Fun Personality*		
		Mean	t	p	Mean	t	p	Mean	t	p
Yes	Cinnamon Toast Crunch	3.15	6.25	<.001	3.13	4.24	<.001	3.36	13.03	<.001
Yes	Cocoa Puffs	3.15	6.56	<.001	3.62	19.13	<.001	3.64	22.83	<.001
Yes	Froot Loops	3.15	6.84	<.001	4.10	41.46	<.001	3.82	31.68	<.001
Yes	Frosted Flakes	3.41	14.88	<.001	3.56	18.91	<.001	3.59	24.74	<.001
Yes	Honey Nut Cheerios	3.05	3.85	<.001	3.18	5.53	<.001	2.95	-1.12	>.25
Yes	Lucky Charms	3.88	27.36	<.001	4.33	65.64	<.001	4.12	47.08	<.001
Yes	Rice Krispies	3.31	41.10	<.001	3.45	49.06	<.001	3.24	30.33	<.001
Yes	Trix	3.50	17.96	<.001	4.12	42.62	<.001	4.25	56.46	<.001
No	Cheerios	2.95	1.39	<.10	2.21	-33.26	>.25	2.48	-20.64	>.25
No	Corn Flakes	2.12	-27.57	>.25	2.17	-36.84	>.25	2.26	-26.45	>.25
No	Corn Pops	2.68	-6.15	>.25	2.29	-27.76	>.25	2.56	-17.57	>.25
No	Crispix	2.12	-25.25	>.25	2.02	-42.73	>.25	2.07	-37.87	>.25
No	Frosted Cheerios	2.07	-31.78	>.25	2.64	-11.82	>.25	2.59	-16.27	>.25
No	Frosted Mini Wheats	2.50	-13.37	>.25	2.38	-22.44	>.25	2.40	-20.46	>.25
No	Golden Grahams	2.76	-4.20	>.25	2.68	-9.44	>.25	2.56	-13.00	>.25
No	Raisin Bran	2.65	-7.98	>.25	2.10	-33.64	>.25	2.15	-33.92	>.25
No	Special K	1.82	-38.00	>.25	1.82	-41.47	>.25	1.87	-52.16	>.25
GRAND MEAN		2.91			3.00			2.98		

\*Rated on 5-point Likert scales

<sup>2</sup> P-values for all products with advertised characters were less than .001, with the exception of Honey Nut Cheerios on the “Has a fun personality” attribute ( $p > .25$ ). P-values for all products without advertised characters exceeded .25 with the exception of Cheerios on the “Brings back fond memories” attribute ( $p < .10$ ).

Exploratory factor analysis with varimax rotation revealed that four principal components explained 66.9% of the variance in the data (see Figure 2). The high fiber, low calorie, healthy, and nutrition items loaded at .5 or greater in the first (health) factor, which explains 24.3% of the variance. Memory loaded into the second (hedonic) factor, along with the prize, personality, and character items. This factor explains 20.4% of the variance in the data. The flavor, crunchy, color, and shape items loaded into the third (sensory) factor, which explains 14.8% of the variance in the data. Finally, the price item loaded into the fourth factor and explains 7.5% of the variance in the data.

Figure 2: Factor Analysis Results



Additionally, two-step cluster analysis produced three clusters of products (see Figure 3). The brands Cocoa Puffs, Froot Loops, Frosted Flakes, Lucky Charms, and Trix are in the first (hedonic) cluster. This cluster scored higher than the other two clusters on

the color, character, added sugar, shape, personality, prize and memory attributes. The brands Cheerios, Corn Flakes, Crispix, Frosted Mini Wheats, Honey Nut Cheerios, Raisin Bran, and Special K are in the second (health) cluster. This cluster scored higher on the nutritious, low calorie, health, and fiber attributes, even though several of these cereals are low in fiber and/or not particularly low in calorie count. The remaining products fell into an intermediate ambiguous cluster that represented a mid-point between the other two clusters on the ratings for most product attributes.

Figure 3: Product Clusters

Means for each value are based on 5-point Likert scales				
Cluster	Hedonic	Health	Intermediate	Combined
Crunchy	3.27	3.23	2.69	3.05
Color	3.69	2.63	2.47	2.90
Character	3.91	2.26	2.94	3.01
Nutritious	2.12	4.01	2.83	3.01
Shape	3.25	2.83	2.68	2.91
Flavor	4.05	3.63	3.38	3.67
Low Cal	2.14	3.60	2.80	2.87
Added Sugar	4.29	2.79	3.10	3.36
Inexpensive	2.86	2.95	2.85	2.89
Healthy	2.07	3.91	2.87	2.98
Personality	3.88	2.30	2.86	2.98
Prizes	3.10	1.73	2.38	2.38
High Fiber	2.18	3.68	2.44	2.78
Memories	3.46	2.51	2.82	2.92
% of Total	30.8	33.9	35.3	100.00
Products in cluster	Cocoa Puffs Froot Loops Frosted Flakes Lucky Charms Trix	Cheerios Corn Flakes Crispix Frosted Mini Wheats Honey Nut Cheerios Raisin Bran Special K	Cinnamon Toast Crunch Corn Pops Frosted Cheerios Golden Grahams Rice Krispies	

These results indicate that while autobiographical episodes were not successfully invoked, that the character is intertwined with the hedonic value of the product in

memory, making it a good context to study this phenomenon. In addition, cluster analysis revealed that participants had the perception that some products were unambiguously healthy, some were unambiguously sugar-laden and hedonic in nature, and some were ambiguous. It is presumed that products with unambiguous associations will provide the best measures of healthy versus hedonic choices in future studies.

## Discussion

In addition to the conclusions drawn from data reduction techniques, valuable lessons were learned from this experiment. Verbal protocols indicated that cuing either a memory of a consumption episode or a hypothetical consumption situation was rarely sufficient in eliciting memory retrieval of childhood advertising. Therefore, future studies should use elements of the advertising itself, rather than the consumption situation, as the stimulus. Cuing memory of the brand could lead to automatic attitude activations that are held in memory (Bargh et al 1992; Fazio et al 1986), resulting in the biased evaluations that are hypothesized. An additional limitation of this study is that it did not explore which affective process might operate in biased perception. In experiment two, the research objectives are: (1) to improve the manipulation so that elements of the advertising, rather than the consumption episode, become the stimulus, (2) to determine whether emotion toward the brand and/or a mood effect mediates or moderates health-related judgments for the related product, and (3) to measure the effect of cuing

autobiographical memory of a childhood brand on consumer judgment and choice in adulthood.

## EXPERIMENT 2

The objective of experiment 2 was to improve the manipulation so that the advertising, rather than the consumption episode, would become the stimulus in order to determine whether emotion toward the brand and/or a mood effect mediate or moderate health-related judgments for the related product, and to measure the effect of cuing autobiographical memory of a brand on consumer choice. Exposure to spokescharacters, which in this context represent brands, was expected to create a positive bias in the health-related judgments of the endorsed product and result in choices that favored sugar-laden options. This effect was expected to be mediated or moderated by (1) a mood effect that resulted from exposure to the character and/or (2) positive emotion felt toward the character, with the effect of more felt positive affect resulting in a positive bias in the health-related judgments of the endorsed product, resulting in choices that favored sugar-laden options.

### Method

Participants were 120 undergraduates at University of Arizona who earned course credit in their introduction to marketing class for taking part in the study, and were

randomly assigned to conditions in a 2 (exposed to spokes/control character) X 2 (exposed to bird/cat character animal type) X 2 (mood measured/not) X 2 (alphabetical/categorical choice presentation) mixed design. Participants were first asked to provide basic demographic information: age, sex, and whether they grew up in the United States. Participants were then directed to color an image a character with crayons. The character conditions were comprised of two spokescharacters (Tony the Tiger from Frosted Flakes and Toucan Sam from Froot Loops) that were pre-tested for recognition, and two control character conditions (a cat and a bird) that were obtained from a children's coloring book. The control characters were selected to serve as similar animal form comparisons to the spokescharacter conditions, and were stylistically similar to the spokescharacters. The control characters were also pre-tested to make sure that they were not falsely recognized as either the spokescharacters or other cartoon characters. All characters were superimposed in the same size and position on a landscape background featuring a tree and the sun. The purpose of the coloring exercise was to cue autobiographical memory in a non-obvious manner. It was expected that individuals in the spokescharacter conditions would judge sugared breakfast cereals as healthier than participants in the control character conditions, and would favor sugared cereal choice options when compared to participants in the control conditions. Behavior between the two spokescharacters and the two control characters was expected to be similar.

After the coloring exercise, half of the participants were measured for mood with two measures. Since evaluation of ambiguous images has previously been used by social psychologists in measuring mood (Isen and Shalcker 1982), the first measure was an

evaluation of a pre-tested neutral landscape stimulus on a 7-point Likert scale (see Appendix C); In addition, participants also completed the Positive and Negative Affect Scale (PANAS) about their general feeling state as a mood measure (Watson, Tellegen, and Clark 1988). Only half of the participants were measured for mood in order to determine whether measuring mood prior to emotion interfered with the emotion measure. All participants were asked to indicate the degree to which they felt 10 emotions toward the character by completing Izard and colleagues' (1993) third version of the Differential Emotions Scale (DES-III).

After completing the mood and emotion measures, participants were offered a thank-you gift for taking part in the study as a dependent measure. This choice set consisted of three options perceived to be healthy (Cheerios, Crispix, and Special K) and three options featuring spokescharacters that were considered to be hedonic (Cocoa Puffs, Lucky Charms, and Trix), based upon the cluster analysis results from experiment 1. The products represented by Tony the Tiger (Frosted Flakes) and Toucan Sam (Froot Loops) were not included in the choice set in the attempt to reduce demand effects. Choices were presented in one of two ways in order to prevent order effects: either alphabetically in two rows, or categorically in two rows. The categorical presentation featured the adult-oriented, "healthy" cereals in the top row and the child-oriented, "hedonic" cereals in the bottom row, similar to what would be encountered in a grocery store. Participants were then directed to write down the thoughts and feelings they experienced as they made their choices.

Participants then completed a distracter task, which comprised of an unrelated study, and then completed the attribute importance and product judgment measures used in experiment 1 (see Appendices A and B) as dependent measures, except with 7-point scales in order to increase variance in response. At the end of the study, participants were probed for suspicion, thanked, given their gift, and were later debriefed in a follow-up e-mail.

## Results

There were no significant main effects or interactions on the dependent measures of attribute importance, judgment, or choice. There was no difference between groups on the mood measure consisting of evaluating the neutral landscape image, or on the PANAS mood measure. While this indicated that a mood effect did not appear to be extant, results were not conclusive because the positive and negative items from the PANAS measure did not reliably load onto positive and negative mood scales during factor analysis. There were similarly inconsistent results with the DES-III measure. Furthermore, one of the items from the DES-III appeared to be misunderstood by some of the participants. The term “contempt” loaded along with the other negative emotion measures as well as with the positive emotions during factor analysis. A possible explanation is that this item was misread as “content” by some of the participants. Furthermore, there was a great deal of variance on a post-procedure measure on enjoyment of the coloring exercise, with several participants even providing unsolicited

editorial comments such as “I loved this!” or “I felt stupid doing this.” Consequently, the manipulation itself could have interfered with the mood and emotion measures.

## Discussion

While significant results were not obtained, various limitations of the study again proved to be valuable lessons. Verbal protocols indicated that participants grappled with the trade-offs between hedonic and health-related product attributes, supporting the assumption that consumers indeed perceive a trade-off. As the procedure did not involve a direct manipulation of memory, it is difficult to ascertain whether memory was indeed cued at all. Furthermore, had results been significant, it would have been impossible to rule out the explanation of improved accessibility of existing attitudes in resisting counterattitudinal information located in the public domain (Fazio, Powell, and Williams 1989) rather than biased response resulting from an autobiographical memory manipulation (Sujan et al 1993). Since empirical studies of autobiographical memory typically involve direct manipulation of the memory (Libby, Eibach, and Gilovich 2005; Robinson and Clore 2002; Sujan et al 1993), then it is reasonable to conduct a similar approach in future experiments. While such a manipulation would still not rule out the possibility that improved accessibility plays a role in resisting counterattitudinal information (Bargh et al 1992; Fazio et al 1986), it at least provides unambiguous evidence that memory was indeed manipulated. Furthermore, a task that could be viewed by some participants as enjoyable but by others as crafty and infantile should be avoided.

One encouraging result is that measuring mood prior to emotion did not produce statistically significant different results from the control condition where mood was measured. This supports the argument that mood can be measured prior to emotion in future studies without fear of affecting results on the emotion measure. However, the evaluation of the neutral stimulus appeared to be an ineffective measure of mood and will be dropped from future experiments. In addition, the problematic item of “contempt” on the DES-III measure will be dropped from future studies. While the PANAS and DES-III measures yielded unreliable results in this study, it is quite possible that the inconsistencies are idiosyncratic to this study, as these measures have been used consistently for many years in a large number of psychological studies. Nonetheless, it is also possible that the DES-III does not produce sufficient variance and results in a floor effect. Consequently, an alternate measure such as a feeling thermometer used by Greenwald, McGhee, and Schwartz (1998) may yield more variance in the measurement of emotional response to the character. Finally, another limitation of this study is that a persistent health goal was assumed and not primed. Therefore, in future studies, health motivation will be manipulated.

The objectives of experiment 3 are (1) to explore the effect of self-brand connections with spokescharacters on health-related judgments for the endorsed products, with the expected effect of stronger self-brand connections resulting in more favorable health-related judgments of the endorsed products, when compared with individuals with weak self-brand connections, (2) to explore the effect of a primed motivation of health on health-related judgments, with the expectation that a health prime will cause participants

to be more critical in their judgments of health-related product attributes, and (3) to determine whether these variables interact with one another.

Meanwhile, the objectives in experiment 4 are to include more direct manipulations of memory and improve the affect measures in order to test the same hypotheses in experiment two. In order to simplify the design, choice measures were eliminated. A health prime will also be added in this study, with the expectation that a health prime will cause participants to be more critical in their evaluations of health-related product attributes. Finally, I will explore whether the health prime interacts with either the memory manipulation or the affect felt toward the character.

### EXPERIMENT 3

The objectives of experiment 3 were: (1) to understand the types of associations consumers have with the animated spokescharacters that were used as stimuli in experiments to date, (2) to explore the effect of self-brand connections with spokescharacters on health-related judgments for the associated endorsed products, with the expected effect of participants with stronger self-brand connections having more favorable health-related judgments of the endorsed products when compared with participants with weak self-brand connections, and (3) to explore the effect of a primed motivation of health on judgment, with the expectation that a health prime will cause participants to be more critical in their health-related judgments and (4) whether these variables interact with one another.

## Method

Participants were 97 undergraduates at University of Arizona who earned course credit in their introduction to marketing class for taking part in the study. Twelve of these participants took part in a depth interview where I attempted to better understand the associations and symbolic meanings of the spokescharacters that I have used in previous experiments. Participants were recruited and interviewed until convergence on theoretical themes was reached (McCracken 1988). During the interviews, I first recorded the informant's sex, and asked them for the year they were born and whether they grew up in the United States. After that, I showed informants images of nineteen different media characters and asked them: (1) what comes to mind when they see the character, (2) what memories they have of the character, and (3) if they lived in an alternate reality where the character was one of their neighbors, what kind of neighbor would the character be? The purpose of the third question is to use a projective technique to draw out meanings from participants who might not be stated in more direct questioning (McGrath, Sherry, and Levy 1993). After completing the interview, participants were thanked and debriefed later in a follow-up e-mail.

Because children begin consuming adult programming at an early age (Paik 2001), characters that are targeted to both children and adults were included. Nevertheless, the images selected were all chosen because they likely would have been first encountered in the participant's childhood, based upon the age range of business

undergraduates at the University of Arizona. The selection also included characters that were likely to elicit positive associations, whereas others would be likely to yield neutral, ambiguous, or negative associations. Three images were of animated spokescharacters that are targeted to children: Tony the Tiger (Frosted Flakes), Toucan Sam (Froot Loops), and the Trix Rabbit (Trix). Two of the images were animated spokescharacters that are primarily targeted to adults: the Pillsbury Doughboy and the Green Giant. The selection also included one cartoon image from children's books (Dr. Seuss's *The Cat in the Hat*), one live action costumed character from a children's television show (Big Bird, "Sesame Street"), one live action costumed character from a popular theme park (Mickey Mouse, Disneyland), one popular boy's toy (GI Joe), one popular girl's toy (Barbie), two characters from popular cartoons commonly watched by children (Daffy Duck, "Looney Tunes"; Freddy, "Scooby Doo"), one character from a prime time cartoon (Montgomery Burns, "The Simpsons"), two character personas (Mr. T, Elvira), and three movie and television characters (Austin Powers; Princess Leia, "Star Wars"; Batman).

The other 85 participants engaged in a collage study. In this study, participants first provided basic demographic information (age, sex, whether born in the United States) and filled out a questionnaire on romantic attachment style in order to obfuscate the research questions of the study. Participants then completed a word search puzzle where they were randomly assigned to either a health prime of five health-related words (calories, exercise, fitness, health, nutrition), or a control prime of five neutral words (although, because, fasten, however, prefix). After the participant completed this portion of the study in private, I joined the participant and proceeded with the collage exercise.

During this exercise, I told participants that I was going to show them a series of images of media characters, which were the same characters used in the depth interviews. If participants knew the name of the character, they recorded it on a post-it note. If they did not know the name of the character but knew where they remembered the character from (e.g., the name of the movie or television show), then where the character was remembered from was written on a post-it note. Finally, if they did not recognize the character at all, then participants wrote a physical description of the character. After writing the information about the characters on post-it notes, participants then took one more post-it note and wrote the word “me” on it. Participants then were asked to imagine that they lived in an alternate reality where the characters were their neighbors, and to imagine which how close a relationship the participant would have with each of the characters. Participants then placed the post-it with the word “me” in the center of a horizontally arranged 11” X 17” piece of white paper and arranged the characters around the “me” post-it, with the distance between the character and the “me” post-it symbolizing the closeness of the relationship. The “craftiness” of the task was kept to a minimum in order to avoid the variance in task enjoyment that was experienced in experiment 2. The distance between the character and the “me” post it was later measured in order to serve as a proxy for the self-brand connection.

After completing the collage exercise, I left the participant in private once again to complete the judgment dependent measures of the three childhood brands represented by animated characters (Froot Loops, Frosted Flakes, Trix) as well as the two adult brands represented by spokescharacters (Green Giant, Pillsbury) to serve as filler items

on 7-point Likert scales. The dependent measure was the same used in the previous two experiments (see Appendix B), with the exception of the removal of the items “stays crunchy in milk” and “has fun prizes,” because these were not relevant to the filler brands Green Giant and Pillsbury. After completing the dependent measures, participants were probed for suspicion, thanked for their participation, and were later debriefed in a follow-up email.

## Results

The vast majority of participants were able to recognize or name all but two or three of the characters. Seven foreign participants were excluded from analysis of the collage study because (1) two participants from Korea and Japan did not recognize enough of the characters to complete the exercise, (2) two participants from Vietnam and Bolivia recognized the characters at a similar level to U.S. participants, but stated that they recognized them from recent television viewing and not from childhood, and (3) two participants from Mexico and one from Hong Kong recognized only about half of the characters. Consequently, the final number of participants in the analysis for the collage study was 78.

The interview data revealed that participants generally had positive associations toward the childhood spokescharacters in general, with particular affection toward Tony the Tiger. He was seen as an aspiration model, embodying athleticism and extraversion. Participants frequently uttered, “He’s grrrrreat,” mimicking the well-known and now

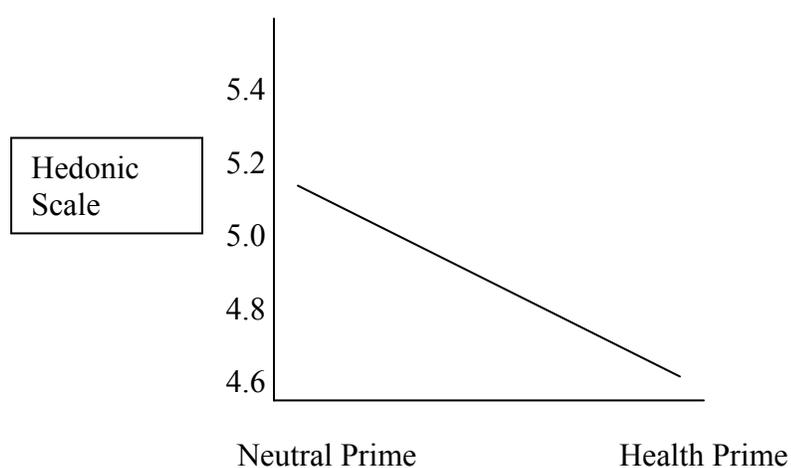
timeless advertising slogan. While the associations toward the other two characters were also generally positive, the associations held more of a mildly positive childhood theme. The collage data was consistent with these results. The distance between the “me” post-it and the Tony the Tiger post it was closer only for two other characters (Batman and Mickey Mouse, respectively), whereas the distances between the Toucan Sam and the Trix Rabbit post-its fell toward the median distance for all of the characters.

The results of the hypothesis tests were less encouraging. No significant main effects for either distance or the prime condition emerged on health scales for the products, which were derived from the items “is nutritious,” “is low in calories,” and “is healthy” ( $\alpha=.894$  for Tony the Tiger,  $.903$  for Froot Loops, and  $.888$  for Trix). Similarly, there were no significant interactions between these variables on the health scale.

Because the hypothesis tests failed, I conducted exploratory analysis in order to gain potential insights from the data. There was an unexpected main effect of prime on hedonic evaluations of the product, with the effect of the health prime causing participants to rate the product lower on hedonic scales for the products, which were derived from the items “the color is appealing,” “has a fun character,” “the shape is interesting,” “has a good flavor,” “has a fun personality,” and “brings back fond memories” ( $\alpha=.825$  for Frosted Flakes,  $.833$  for Froot Loops, and  $.864$  for Trix). One-way ANOVAs revealed that the main effect of prime was significant for all three hedonic scales ( $F_1=27.008$  for Frosted Flakes,  $F_1=17.2$  for Froot Loops, and  $F_1=75.542$  for Trix, all  $p$ -values  $<.001$ ; see figures 4, 5, and 6), with the effect of lower hedonic ratings in the health prime condition than in the neutral prime condition. While this effect at first

glance seems counterintuitive, it is consistent with Brendl, Markman, and Messner's (2003) finding that activating a motivational state (in this case, health) can result in the devaluation of an unrelated object (or in this case, an attribute such as the hedonic value).

Figure 4: Unexpected Results, IV Prime, DV Frosted Flakes Hedonic Scale



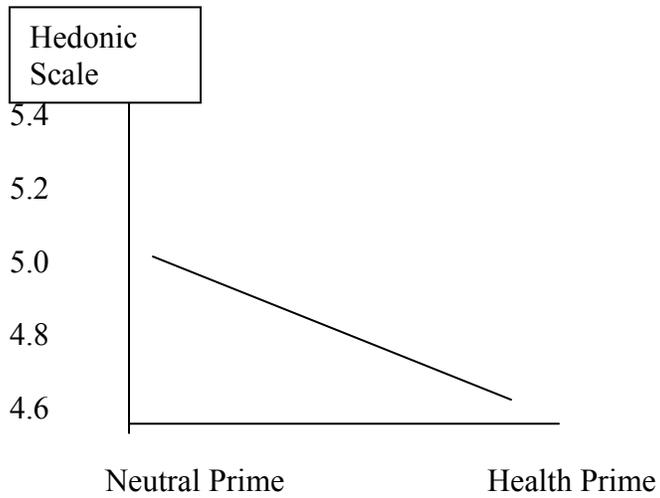
#### Tests of Between-Subjects Effects

Dependent Variable: TonyHedScale

Source	Type I Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	29.851(a)	1	29.851	27.008	.000
Intercept	11293.592	1	11293.592	10217.927	.000
Prime	29.851	1	29.851	27.008	.000
Error	515.057	466	1.105		
Total	11838.500	468			
Corrected Total	544.908	467			

a R Squared = .055 (Adjusted R Squared = .053)

Figure 5: Unexpected Results, IV Prime, DV Froot Loops Hedonic Scale



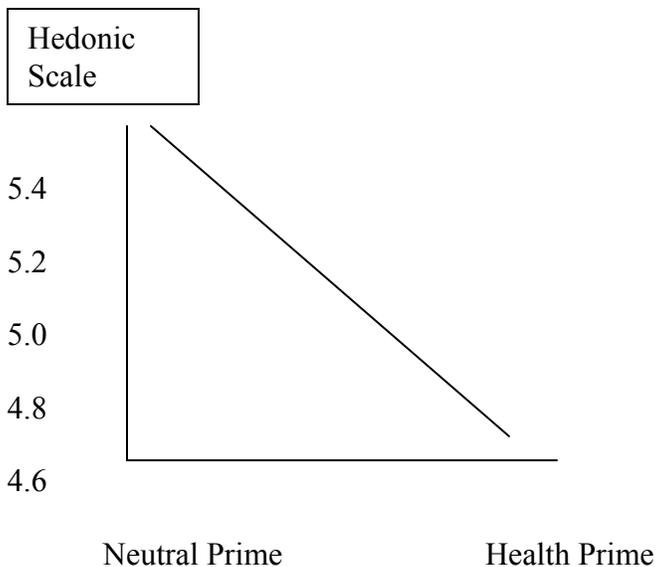
#### Tests of Between-Subjects Effects

Dependent Variable: SamHedScl

Source	Type I Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	18.038(a)	1	18.038	17.120	.000
Intercept	10677.145	1	10677.145	10134.073	.000
Prime	18.038	1	18.038	17.120	.000
Error	484.651	460	1.054		
Total	11179.833	462			
Corrected Total	502.688	461			

a. R Squared = .036 (Adjusted R Squared = .034)

Figure 6: Unexpected Results, IV Prime, DV Trix Hedonic Scale



**Tests of Between-Subjects Effects**

Dependent Variable: TrixHedSci

Source	Type I Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	84.937(a)	1	84.937	75.542	.000
Intercept	11580.019	1	11580.019	10299.116	.000
Prime	84.937	1	84.937	75.542	.000
Error	517.210	460	1.124		
Total	12182.167	462			
Corrected Total	602.147	461			

a R Squared = .141 (Adjusted R Squared = .139)

**Discussion**

While the lack of significant results on nutrition ratings in this study was discouraging, several lessons were learned. The interview and collage data converge on

the finding that consumers indeed have strong connections with the animated spokescharacters that were the subject of this study, particularly for Tony the Tiger. Perhaps, however, the measure used is not ideal, and another measure of self-brand connection might be better. In addition, the manipulation for the health prime could be improved in order to state with more confidence that the desired motivational state was indeed activated. Future word search puzzles should include more words, and the words should be more difficult to find so that participants concentrate on the word longer, resulting in confident activation of the motivational state. Furthermore, in the health prime, health-related words should be embedded within a set of neutral words. Finally, the unexpected results of the health prime's attenuation of participant judgments of the endorsed products' hedonic value are interesting and worthy of further exploration. This effect appears to reveal a targeted devaluation, since the primary decision inputs into selecting a sugary cereal can be presumed to be primarily hedonic. This effect is expected to replicate in future experiments, and provides an interesting basis for future research.

#### EXPERIMENT 4

The objectives in experiment 4 are to include a more direct manipulation of memory, and to improve the affect measures in order to test the same hypotheses in experiment 2. As hypothesized in experiment 2, exposure to childhood brands was expected to create a positive bias in health-related judgments of the endorsed product and result in choices that favored sugar-laden options. This effect was expected to be mediated or moderated by a mood effect that results from exposure to the character,

and/or positive emotion felt toward the character, with the effect of more felt positive affect resulting in a positive bias in health-related judgments of the endorsed product. A health prime was also added to this study, with the expectation that the health prime would cause participants to be more critical in their health-related judgments. In addition, whether the health prime interacts with either the memory manipulation or the affect felt toward the character will be explored.

## Method

Participants were 216 undergraduates at University of Arizona who earned course credit in their introduction to marketing class for taking part in the study, and were randomly assigned to conditions in a 2 (health/neutral prime) X 3 (childhood spokescharacter/childhood toy/recently famous person image memory cue) between subjects design. Participants began completing the word search puzzle used in experiment 3 with either health-related words or neutral words, which served as a manipulation of a health motivational state. After completing the word search, participants reviewed one of three images: a spokescharacter for a sugared breakfast cereal targeted to children (Tony the Tiger); a popular, classic, gender-neutral toy (Play-doh); and a recently famous and well-recognized person (Simon Cowell from the television show *American Idol*). The Tony the Tiger image served as the critical measure of the effect of cuing an autobiographical memory for a brand on nutrition ratings. The Play-doh and Simon Cowell conditions were controls. The purpose of the Play-doh condition was to serve as a comparison to demonstrate that potential effects in the Tony the Tiger condition were not

simply due to positive associations with childhood. Play-doh was selected because it is a gender neutral toy and has the same potential for long-term effects as Tony the Tiger, as it has been an enduring, consistently popular toy since its introduction in 1956 (Tony the Tiger was introduced as the spokescharacter for Frosted Flakes in 1951). The purpose of the Simon Cowell condition was to serve as a comparison to demonstrate, in the effect that there was no difference between the Tony the Tiger and Play-doh conditions due to affective childhood associations, that potential effects in these conditions were in fact due to the childhood associations and not simply resulting from a familiarity or fame cue. Simon Cowell was chosen because he is well known and highly recognized, but has only recently become famous; therefore, our participants would not associate him with childhood. Participants were asked to take a few moments to visualize a memory involving the character/toy/person in the image, and then to write down their memory with as much detail as possible.

After participants completed the memory exercise, they completed the PANAS (Watson et al 1988) measure that was used in experiment 2 about their general feeling state as a mood measure. In addition, all participants were given a feeling thermometer measure in order to measure emotion felt toward the object in the image. Participants were instructed to envision a feeling thermometer (as per Greenwald et al 1998), where a temperature of 0 would indicate very cold feelings toward the character and a temperature of 100 would indicate very warm feelings toward the character, and to record the “temperature” they felt toward the character. In addition to the feeling thermometer, participants completed the DES-III measure (Izard et al 1993) that was used in

experiment 2 as another measure of emotion felt toward the object in the image. The item for “contempt” that was problematic in experiment 2 was not included in the DES-III in this experiment.

After completing mood and emotion measures, participants were asked to judge Frosted Flakes on the product attribute measure used in the previous experiments (see appendix b) on a 7-point Likert scale as the dependent measure. Participants then provided basic demographic information (age, sex, and whether they grew up in the United States), information on breakfast cereal consumption during childhood (whether and how often it was eaten as well as a free-response measure about favorite childhood brands), and information on current breakfast cereal consumption (whether and how often it is currently eaten as well as a free-response measure about favorite current brands). At the end of the study, participants were probed for suspicion, thanked for their participation, and debriefed later in a follow-up e-mail.

## Results

This section will begin with a discussion of the data, median splits, and scales. It will continue with a discussion of hypothesis tests. Finally, results from exploratory analysis will be presented, followed by a discussion of the results in this experiment.

Data. Data from one participant were eliminated from analysis because both the health and neutral prime manipulations were inadvertently given to the participant. In

addition, based on results from experiment 3, data from 18 additional participants were excluded because they did not grow up in the United States. The dependent measure of judgment was derived from the same three items as in experiment 3 into a Frosted Flakes health scale: “is nutritious,” “is low in calories,” and “is healthy” ( $\alpha=.883$ ).

The problems that were experienced with the mood and emotion measures in experiment 2 were not experienced in this experiment; the PANAS and DES-III measures reliably loaded in positive and negative factors. However, the condition with Simon Cowell proved to be problematic: intense negative affect toward this celebrity was observed in the procedure, which was not anticipated. Consequently, the median value on the feeling thermometer measure was 45 degrees, versus 80 degrees in both the Play-doh and Tony the Tiger conditions. Similarly, the median on the positive emotions scale was 3.0/7.0 for the Simon Cowell condition, versus 4.33/7.0 in both the Play-doh and Tony the Tiger conditions. The positive emotions scale was derived from the positively valenced emotions felt toward the character as recorded on the DES-III measure: enjoyment, interest, and surprise ( $\alpha=.795$ ). Due to the negative affect associated with Simon Cowell, it was determined that the associated condition did not serve as a good comparison to the other two conditions, and the 76 participants in this condition were eliminated from the analysis, leaving 139 net participants. Fortunately, the control condition of greater interest was the Play-doh condition, as the Simon Cowell condition was included as a sort of insurance policy in the event there was no difference in judgment between the childhood conditions. Since participants experienced similar levels of positive affect toward both Play-doh and Tony the Tiger, and both images evoked

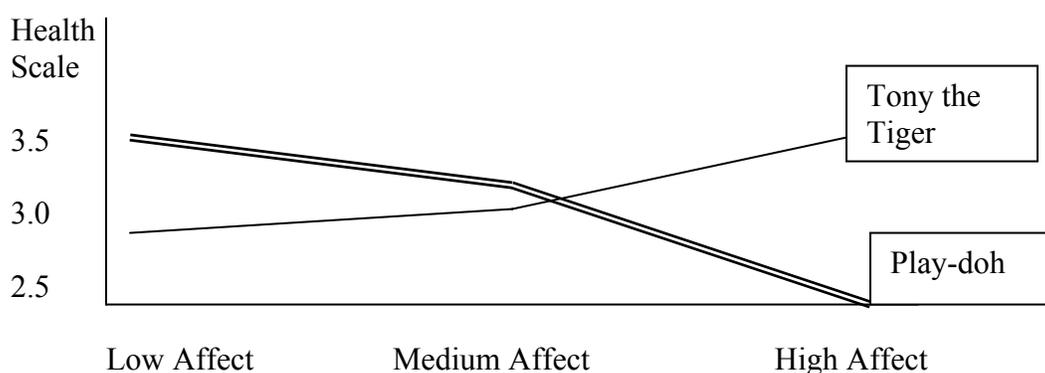
positive, affective childhood memories in verbal protocols from the memory exercise, the two conditions make a good comparison.

Groups were trichotomized into high, medium, and low affect for both the feeling thermometer (means are 45.9/100 for low, 80.3/100 for medium, and 92.0/100 for high affect participants) and the DES-III measures (means are 2.88/7.0 for low, 4.64/7.0 for medium, and 5.71/7.0 for high affect participants). For the feeling thermometer measure, scores of 68.50 degrees or less were designated as low affect, scores between 70 and 85 were designated as medium affect, and scores of 86 degrees or greater were designated as high affect. In a similar fashion, scores on the positive emotions scale derived from the DES-III of 3.67/7.0 or less were designated as low affect, scores between 4.0/7.0 and 5.0/7.0 were designated as medium affect, and scores of 5.33/7.0 or greater were designated as high affect.

*Hypothesis Tests.* Two-way ANOVAs were run on both tertiary splits of the emotion measures with prime and condition. The hypothesis that the image condition would interact with emotion has mixed support. It was expected that those cued for the relevant image (Tony the Tiger) would have more positive health judgments when affect toward the image was higher, but there would be no difference between groups in the irrelevant image memory cue (Play-doh) condition. There was a significant interaction on the health scale between image condition and the positive emotion measure derived from the DES-III ( $F_{2, 125}=3.03, p=.052$ , see figure 7). In the Tony the Tiger condition, participants who were high in affect judged Frosted Flakes at 3.34/7.0 on the health scale,

whereas medium affect participants judged Frosted Flakes 3.08/7.0 and low affect participants judged Frosted Flakes 2.86/7.0 on the health scale. While this effect was hypothesized, none of the simple contrasts were statistically significant. For participants in the Play-doh condition, low affect participants judged Frosted Flakes as 3.44/7.0 on the health scale, whereas medium and high affect participants judged it as 3.19/7.0 and 2.51/7.0, respectively. The contrast between low and high affect participants was statistically significant ( $p=.023$ ). No other contrasts were significant. While the contrast between low and high affect participants in the Play-doh image condition was significant, this effect was not hypothesized and is difficult to interpret. Furthermore, post hoc tests of the model are not significant. When the analysis is repeated with the feeling thermometer measure, results are not significant ( $p=.503$ ).

Figure 7: Interaction of Positive Emotion Scale\*Image Condition on Health Scale



### Tests of Between-Subjects Effects

Dependent Variable: HlthSci

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	11.044(a)	5	2.209	1.318	.261
Intercept	1154.850	1	1154.850	689.288	.000
Condition	.135	1	.135	.080	.777
PosEmotTriPDT	.885	2	.443	.264	.768
Condition * PosEmotTriPDT	10.154	2	5.077	3.030	.052
Error	201.051	120	1.675		
Total	1406.889	126			
Corrected Total	212.095	125			

a. R Squared = .052 (Adjusted R Squared = .013)

### Condition \* PosEmotTriPDT

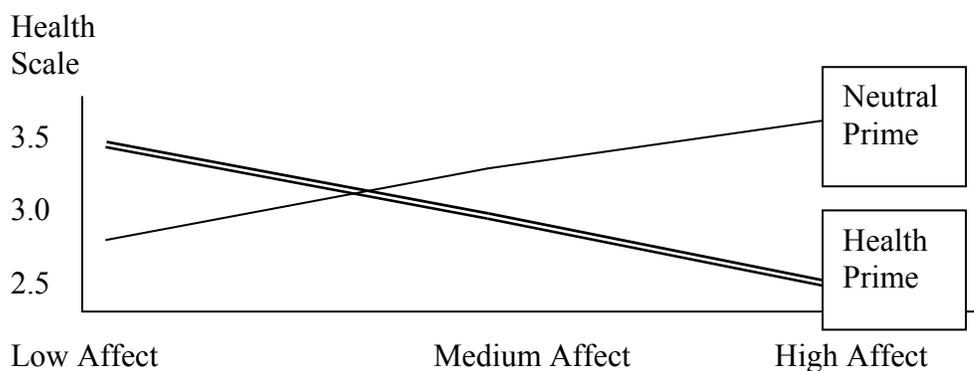
Dependent Variable: HlthSci

Condition	PosEmotTriPDT	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
PlayDoh	1.00	3.439	.297	2.851	4.027
	2.00	3.192	.254	2.690	3.695
	3.00	2.510	.314	1.888	3.131
Tony	1.00	2.861	.264	2.338	3.384
	2.00	3.083	.264	2.560	3.606
	3.00	3.396	.324	2.755	4.037

The hypothesis that image condition would interact with the prime was not supported. It was expected that those cued for the relevant (Tony the Tiger) image would have less favorable health judgments when primed for health, while those in the irrelevant (Play-doh) memory cue condition would not. However, there is an unhypothesized but statistically significant interaction on the health scale between prime condition and the positive emotion scale derived from the DES-III ( $F_{2, 125}=2.945$ ,  $p=.056$ , see figure 8). This result indicates that there may be an effect resultant from merely cuing

childhood. Within the health prime, lower affect participants rated Frosted Flakes at 2.85/7.0 on the health scale, medium affect participants rated it as 3.17/7.0, and higher affect participants rated it as 3.50/7.0. While this effect is intuitive, none of the contrasts is significant. For participants in the neutral prime condition, lower affect participants rated Frosted Flakes as 3.46/7.0 on the health scale, whereas medium and higher affect participants rated it as 3.10/7.0 and 2.62/7.0, respectively. The contrast between lower and higher affect participants was statistically significant ( $p=.021$ ). No other contrasts were significant. While the contrast between lower and higher affect participants in the neutral prime condition was significant, this effect was again not hypothesized and is also difficult to interpret. Again, post hoc tests of the model were not significant. When the analysis is repeated with the feeling thermometer measure, results were not significant ( $p=.171$ ). There were no significant main effects of prime, image condition, the feeling thermometer measure, or the DES-III emotion measure on the health scale.

Figure 8: Interaction of Positive Emotion Scale\*Prime on Health Scale



### Tests of Between-Subjects Effects

Dependent Variable: HlthSci

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	11.044(a)	5	2.209	1.318	.261
Intercept	1154.850	1	1154.850	689.288	.000
Condition	.135	1	.135	.080	.777
PosEmotTriPDT	.885	2	.443	.264	.768
Condition * PosEmotTriPDT	10.154	2	5.077	3.030	.052
Error	201.051	120	1.675		
Total	1406.889	126			
Corrected Total	212.095	125			

a R Squared = .052 (Adjusted R Squared = .013)

### Condition \* PosEmotTriPDT

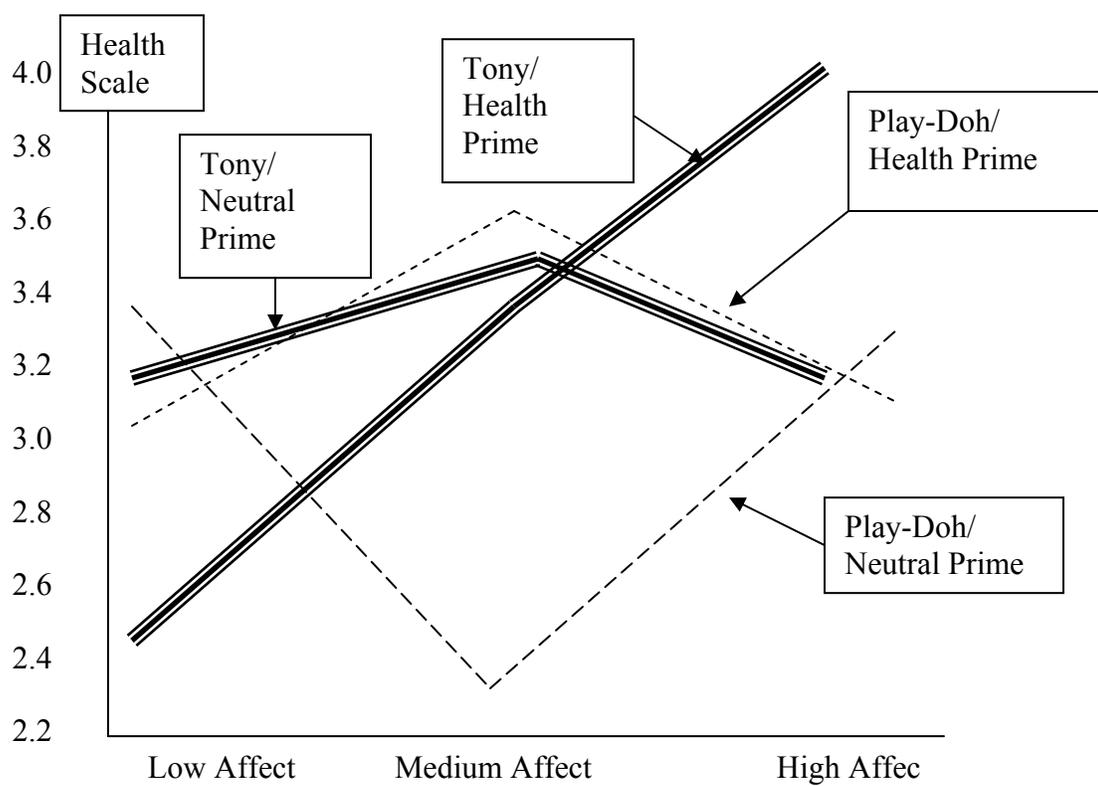
Dependent Variable: HlthSci

Condition	PosEmotTriPDT	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
PlayDoh	1.00	3.439	.297	2.851	4.027
	2.00	3.192	.254	2.690	3.695
	3.00	2.510	.314	1.888	3.131
Tony	1.00	2.861	.264	2.338	3.384
	2.00	3.083	.264	2.560	3.606
	3.00	3.396	.324	2.755	4.037

The unexpected two-way interaction of prime and emotion begged the question of whether a 3-way interaction might be present. Exploratory analysis revealed a three-way interaction between image condition, prime, and a tertiary split of the feeling thermometer (means are 45.9/100 for low, 80.3/100 for medium, and 92.0/100 for high affect participants) on the health scale was marginally significant (see Figure 9;  $F_{2,125}=2.685$ ,  $p=.073$ ). When class section (that is, whether participants were enrolled in the Introduction to Marketing course for majors versus minors) is included as a covariate in an ANCOVA, the interaction becomes significant ( $F_{2,125}=3.205$ ,  $p=.044$ ). The contrast

between higher ( $M=3.9/7.0$ ) and lower ( $M=2.4/7.0$ ) affect participants for participants in the Tony the Tiger/health prime condition was significant ( $F_{1,62}=7.140$ ,  $p=.019$ ), and the contrast between higher affect/Tony the Tiger participants in the health prime ( $M=3.9/7.0$ ) and the neutral prime ( $M=3.0/7.0$ ) was marginally significant ( $F_{1,62}=2.939$ ,  $p=.105$ ). While most of the contrasts between participants in the Play-doh condition are not significant, as expected, half of the medium affect participants in the neutral prime had extremely low scores. Since the cell size was relatively small ( $n=8$ ), this had an effect of creating significant contrasts between the medium affect/neutral prime participants ( $M=2.2/7.0$ ) with lower affect/neutral prime participants ( $M=3.0/7.0$ ,  $F_{1,63}=5.612$ ,  $p=.03$ ), higher affect/neutral prime participants ( $M=3.0/7.0$ ,  $F_{1,63}=4.358$ ,  $p=.052$ ), and medium affect/health prime participants ( $M=3.6/7.0$ ,  $F_{1,63}=4.988$ ,  $p=.04$ ). These significant contrasts are in opposition to the hypothesized results. When the analysis is repeated using the positive emotion scale derived from the DES-III, the three-way interaction is not significant.

Figure 9: 3-way Interaction of Feeling Thermometer\*Prime Condition\*Image Condition  
on Health Scale



Dependent Variable: HlthSci

Condition	Prime	PDTtherm3splt	Mean	Std. Deviation	N
PlayDoh	0	1.00	3.3636	1.10005	11
		2.00	2.1667	1.06904	8
		3.00	3.2424	1.13618	11
		Total	3.0000	1.18419	30
	1	1.00	3.0278	1.26697	12
		2.00	3.6000	1.53800	10
		3.00	3.0000	1.37437	11
		Total	3.1919	1.37192	33
	Total	1.00	3.1884	1.17562	23
		2.00	2.9630	1.50332	18
		3.00	3.1212	1.23676	22
		Total	3.1005	1.27933	63
Tony	0	1.00	3.1515	1.43266	11
		2.00	3.3333	1.48137	9
		3.00	2.9762	1.12062	14
		Total	3.1275	1.29234	34
	1	1.00	2.4333	1.07784	10
		2.00	3.1667	1.63691	14
		3.00	3.9333	.89443	5
		Total	3.0460	1.41904	29
	Total	1.00	2.8095	1.29774	21
		2.00	3.2319	1.54539	23
		3.00	3.2281	1.12794	19
		Total	3.0899	1.34165	63
Total	0	1.00	3.2576	1.25117	22
		2.00	2.7843	1.39911	17
		3.00	3.0933	1.11189	25
		Total	3.0677	1.23468	64
	1	1.00	2.7576	1.19603	22
		2.00	3.3472	1.57725	24
		3.00	3.2917	1.29314	16
		Total	3.1237	1.38458	62
	Total	1.00	3.0076	1.23575	44
		2.00	3.1138	1.51403	41
		3.00	3.1707	1.17408	41
		Total	3.0952	1.30562	126

### Tests of Between-Subjects Effects

Dependent Variable: HlthScl

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	19.339(a)	11	1.758	1.034	.421
Intercept	1140.659	1	1140.659	671.182	.000
Condition	.288	1	.288	.169	.682
Prime	.701	1	.701	.413	.522
PDTtherm3splt	1.779	2	.889	.523	.594
Condition * Prime	.500	1	.500	.294	.589
Condition * PDTtherm3splt	3.930	2	1.965	1.156	.318
Prime * PDTtherm3splt	7.669	2	3.835	2.256	.109
Condition * Prime * PDTtherm3splt	9.125	2	4.563	2.685	.073
Error	193.740	114	1.699		
Total	1420.222	126			
Corrected Total	213.079	125			

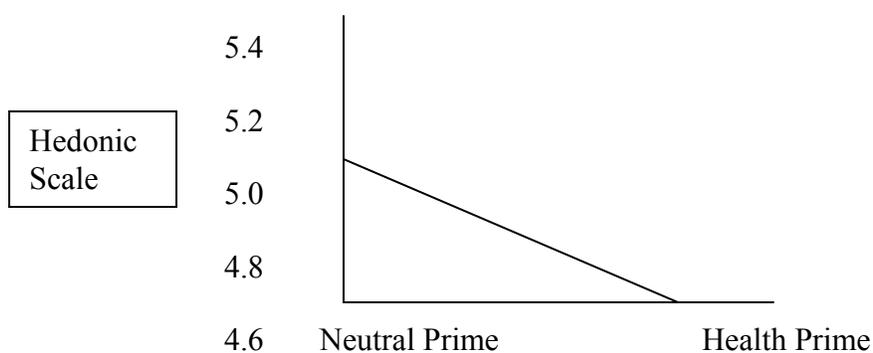
a R Squared = .091 (Adjusted R Squared = .003)

Exploratory Results. Because the hypotheses has at best weak support, further exploratory analysis was conducted in an effort to gain potential insights for further research from the data. There were marginal interactions between image condition and the trichotomized feeling thermometer ( $F_{1, 125}=2.837, p=.063$ ), as well as between image condition and the trichotomized positive emotion measure ( $F_{1, 125}=2.754, p=.068$ ) on the hedonic scale for Frosted Flakes. The hedonic scale was composed of the same items as in experiment 3: “the color is appealing,” “has a fun character,” “the shape is interesting,” “has a good flavor,” “has a fun personality,” and “brings back fond memories” ( $\alpha =.765$ ). These results beg the question of whether the health and hedonic scales are measuring the same thing (e.g., residual affect for the character). However, the pattern of results is not similar to the same interactions on the health scale. Furthermore, the 3-way interaction between image condition, prime, and the tertiary split of the feeling thermometer that was

significant on the health scale is not significant on the hedonic scale ( $F_{2,125}=.377$ ,  $p=.687$ ). Finally, while the two measures are significantly correlated, it is at a relatively low level ( $r=.242$ ,  $p=.003$ ).

In another unexpected effect, the main effect of prime on the hedonic scale, with the effect of the health prime reducing participant ratings on the hedonic scale, that was observed in experiment 3 replicated in this study ( $F_{1,211}=5.759$ ,  $p=.017$ , see figure 10).<sup>3</sup> The following main effects on the hedonic scale were also observed in linear regressions: the frequency with which cereal was eaten as a child ( $F_{1,211}=23.593$ ,  $p<.001$ ), whether Frosted Flakes was reported as a favorite childhood cereal in a free recall measure ( $F_{1,211}=29.528$ ,  $p<.001$ ), whether Frosted Flakes was reported as a current cereal in a free recall measure ( $F_{1,211}=4.35$ ,  $p=.038$ ), positive emotion felt toward the image ( $F_{1,211}=16.859$ ,  $p=.000$ ), positive mood ( $F_{1,211}=16.454$ ,  $p=.000$ ), and negative mood ( $F_{1,211}=5.268$ ,  $p=.023$ ).

Figure 10: Main Effect of Prime on Product Hedonic Scale



<sup>3</sup> Note: analysis of the replication includes data from all three conditions, since the confound associated with the emotional measures in the Simon Cowell condition are not relevant here.

### Tests of Between-Subjects Effects

Dependent Variable: FunSci

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	6.923(a)	1	6.923	5.759	.017
Intercept	5118.621	1	5118.621	4257.844	.000
Prime	6.923	1	6.923	5.759	.017
Error	252.454	210	1.202		
Total	5371.080	212			
Corrected Total	259.377	211			

a. R Squared = .027 (Adjusted R Squared = .022)

### Descriptive Statistics

Dependent Variable: FunSci

Prime	Mean	Std. Deviation	N
1	4.7364	1.13135	110
0	5.0980	1.05746	102
Total	4.9104	1.10873	212

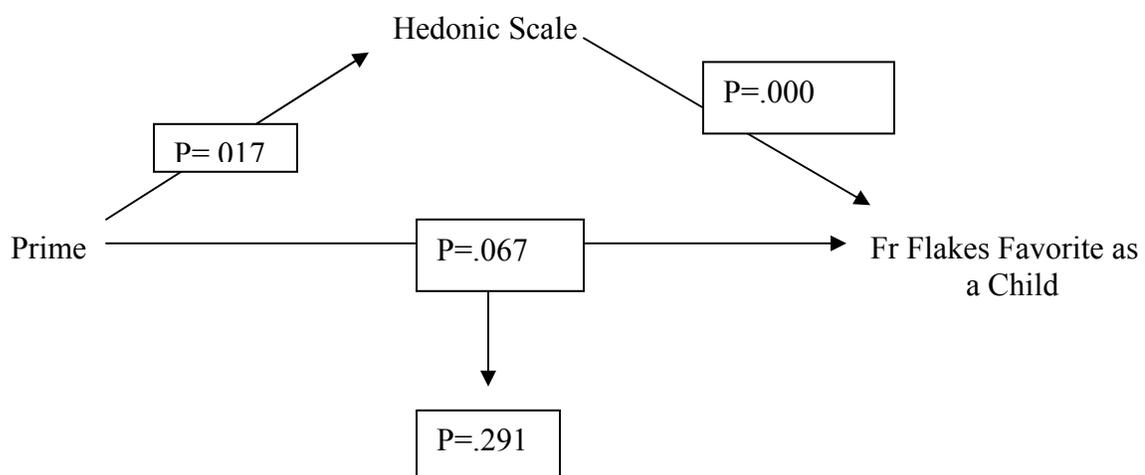
The large number of main effects on the hedonic scale posed the question of whether any potential mediation was taking place. After analyzing all of the correlations between each of these measures, one mediation model proved to be statistically significant (see figure 11). As mentioned earlier, the regression of the prime on the hedonic scale was significant ( $p=.017$ ) A regression of the prime on the free recall measure of whether Frosted Flakes was reported as a favorite childhood cereal was marginally significant ( $p=.067$ ), with the effect of priming health causing participants to report Frosted Flakes as a favorite childhood cereal less often than in the neutral prime. A regression was then run with whether Frosted Flakes was a childhood favorite as the dependent variable and the hedonic rating as the independent variable. Participants who rated Frosted Flakes as higher on the hedonic scale were more likely to report it as one of

their favorite childhood cereals ( $p < .001$ ). Finally, a regression was run with both prime and the hedonic scale as independent variables and with the self-report measure on whether Frosted Flakes was a childhood favorite as the dependent variable. When the hedonic scale measure is included in the model, the effect of prime on the report of Frosted Flakes as a childhood favorite becomes nonsignificant (p-value changes from .067 to .291). The Sobel test on mediation was significant ( $t = 2.18, p = .03$ ). Correlational analysis revealed that while there is indeed a correlation between whether Frosted Flakes was reported as a child and the hedonic scale, it is not particularly strong ( $r = .368, p = .000$ ). Therefore, it appears that these two measures are indeed different constructs. A possible explanation for this effect is that a motivational prime can create false memory in participants (Kunda 1990; Ross, McFarland, and Fletcher 1981). That is, priming health leads to biased retrieval of memory, and results in the participant reporting Frosted Flakes as a favorite childhood cereal less often. However, this effect is mediated by how positively the participant rates Frosted Flakes on the hedonic scale. That is, when participants perceive Frosted Flakes to be a highly hedonic brand, the effect of the prime on the false memory effect becomes nonsignificant.

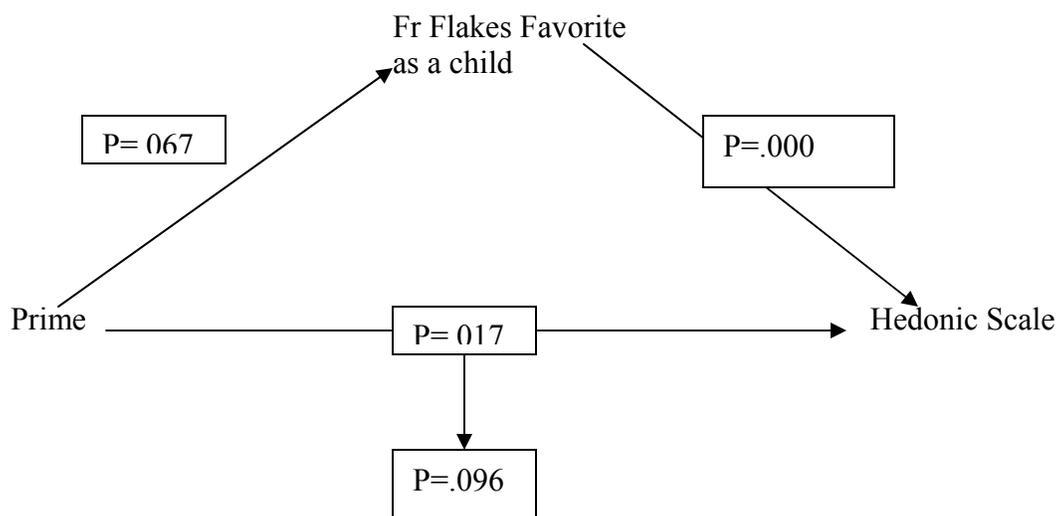
An alternative explanation is that since participants rated the product before reporting what cereals they liked most as a child, they could be reporting Frosted Flakes as a way to maintain consistency with their earlier rating. This is doubtful, however, because participants were instructed not to look back at previous parts of the study when moving on and there were several other measures that took place between the Frosted Flakes attributes measure and the free recall measure of favorite childhood cereals.

Figure 11: Unexpected Results, Mediation Analysis of Experiment 4

Proposed Model:

Sobel  $t=2.18$ ,  $p=.03$ 

Alternate explanation:

Sobel  $t=1.73$ ,  $p=.08$

In another alternative explanation, one could look at whether Frosted Flakes was reported as a favorite childhood cereal is a mediator between the prime and the hedonic scale (that is, does the childhood friendship prevent the consumer from experiencing the devaluation effect and lowering his/her hedonic rating?). A mediational analysis was conducted, with the result of the p-value between the independent variable, prime, on the independent variable, the hedonic scale, changing from .017 to .096 when both the prime and the free recall measure are included in the model as independent variables. However, the Sobel test on this mediation was marginal ( $t=1.73$ ,  $p=.08$ , see figure 11). A follow-up experiment could provide a better gauge of whether this experiment indeed created false memory by including a measure of reported favorite childhood brands prior to when the procedure takes place.

## Discussion

The results indicate that cuing autobiographical memories for animated spokescharacters can have an effect on health-related judgments of the endorsed product under certain conditions. This effect is moderated by the strength of affect felt toward the character: lower affect consumers have less favorable judgments when primed with health, presumably because the health prime either makes a persistent health goal salient or at least temporarily creates a motivational state favoring health over hedonic attributes. Higher affect consumers are resistant to this effect, and in might even skew their health judgments in a more favorable direction, possibly because the health prime creates a

threat to the self due to their high affective associations with the character. This threat to self could create a powerful motivation to reduce cognitive dissonance, which might be achieved by bolstering one's opinion about the healthiness of the endorsed product (Abelson 1968; Kunda 1990). Furthermore, the memory cue must be associated with the product that is evaluated, evidenced by the lack of a difference between high and low-affect participants in the Play-doh condition.

This evidence suggests that policy interventions involving health primes could have the desired effect of attenuating consumer's health-related judgments of a sugar-laden product, but effectiveness would be limited to consumers that do not have strong emotional feelings toward the spokescharacters. However, such a strategy would be at best ineffective for high-affect consumers, who are probably the more vulnerable consumers, and at worst would create a boomerang effect. Similarly, in the United Kingdom, there is currently a debate about whether celebrity and cartoon character endorsements in advertisements geared toward children ought to be banned. This study provides evidence that suggests that children might form strong emotional connections with spokescharacters when they are a vulnerable group. That is, the para-social relationship is developed when the child either does not understand the difference between advertisements and television programming (Ward et al 1972), does not understand the persuasive intent of advertising (Ward et al 1977), and/or does not possess sufficient cognitive resources to effectively defend against advertisements (Brucks et al 1988). Furthermore, this evidence suggests that the connection persists into adulthood,

which could affect adult's decisions as they make choices for what products to buy for themselves or their own children.

The results from this study also show that Tony the Tiger and Play-doh serve as good comparisons to each other due to the high degree of similarity between them on the feeling thermometer and DES-III measures, because they have both existed and have been continuously popular for over 50 years, and both elicited fond memories of childhood within verbal protocols of the memory exercise. In fact, the median values on both of these measures were exactly the same value for both Tony the Tiger and for Play-doh (80 degrees for the feeling thermometer and 4.33/7.0 on the positive emotions scale derived from the DES-III). Mood did not differ between conditions, and there was no significant effect on mood from either the prime or the image condition. Therefore, mood appears to be a state that pre-exists when participants enter the room, but is not affected by the manipulations. The usefulness of mood measures in future experiments in this context is limited to the possibility of including it as a covariate, since mood did have a significant effect on the hedonic scales in the study.

Results could be further improved by taking the steps mentioned in experiment 3 on improving the health prime manipulation. That is, future designs should include more words, and the words should be more difficult to find so that participants concentrate on the word longer, resulting in more confident activation of the motivational state. Furthermore, in the health prime, health-related words should be embedded within a set of neutral words. In addition, prior psychological research has shown that message framing can have an important impact on whether individuals act on health-related

messages (Rothman and Salovey 1997). Therefore, both negative and positive frames on the priming exercise will be tested in a future study.

Finally, it is possible that affect toward Tony the Tiger could be confounded with nutrition knowledge (i.e., participants could lower their affect toward the character because they have a greater knowledge of the high sugar and low fiber content of the cereal). Therefore, a future study should measure nutrition knowledge in order to control for this possible confound. The object of experiment 5 in the next chapter is to improve the measures used in experiment 4 in order to re-test the hypotheses about the effects of prime, image condition, and felt emotion on health judgments.

There was an unexpected result that provides promise for a future study. Consistent with findings that motivational states can create biased memory search, including one's own past behavior (Kunda 1990; Ross et al 1981), participants in the health prime condition were less likely to report Frosted Flakes as a favorite childhood brand in a free recall measure. Furthermore, participant's hedonic judgments of Frosted Flakes acted as a significant mediating influence. That is, if participants were primed with health, then hedonic judgments of the product were less favorable, which resulted in fewer reports of eating Frosted Flakes as a child on a free recall measure. While this is an interesting premise, it is impossible to tell whether this resulted in an actual change in self-reported behavior because consumption measures were not taken beforehand as a comparison. Furthermore, the fact that the judgment scales were administered prior to the self-report leaves open the possibility that participants reported eating the product as a child less frequently in order to maintain consistency with their less favorable hedonic

judgments of the product. An additional objective of experiment 5 is to formerly test the hypothesis of an effect of health prime on reports of past behavior, and the role of changes in hedonic judgments as a mediating influence.

In addition, there was another unexpected result in this experiment that provides a promising direction for additional studies. The main effect of prime on hedonic judgments of the product, with the effect of a health prime leading to lowered hedonic judgments of a sugary product, that was observed in experiment 3 replicated in this study. Brendl and colleagues (2003) found that activating a motivational state (in this case, health) can result in the devaluation of unrelated objects (or in this case, an attribute such as the hedonic value). They called this phenomenon the devaluation effect. This case appears to represent a special case of devaluation, as the primary inputs in deciding on a sugary cereal would be hedonic, not health-related, attributes. This devaluation effect is expected to replicate in future studies.

In summary, while the results from experiment 4 did not directly support the research hypotheses, there was support for a 3-way interaction involving the image cue, the prime, and the level of felt affect. However, because one third of the data had to be excluded from the analysis due to the confounding influence of the mostly negative emotional reaction to the Simon Cowell image, the tests have less statistical power than they otherwise would have. Furthermore, significant improvement to the manipulations and the measures can be made. Therefore, an additional experiment was executed to replicate and extend the effects in this study. The results of this study, as well as a follow-up study on another potential public policy initiative, will comprise the next chapter.



CHAPTER 4: ESSAY 2, FOCAL EXPERIMENTS

Long-Term Effects of Advertising to Children on Judgment and Decision Making in  
Adulthood

## ABSTRACT

This research attempts to explain long-term effects of advertising to children on consumer judgment and decision-making that persist into adulthood, and what can increase effectiveness of public policy initiatives aimed at undoing some of those effects. Results suggest that: (1) emotion felt toward early childhood advertising objects, but not late childhood advertising objects, leads to biased judgments, presumably due to age differences in persuasion knowledge when the advertising objects were encoded into memory, (2) activating cognitive defense against early childhood advertising objects can correct for bias, but only when emotion felt toward them is lower, and (3) motivation to attend to the message appears to be of critical importance, as participants who resist the defense message actually increase the bias in their judgments when cognitive defense is activated.

Research on the effects of advertising to children in the disciplines of consumer behavior, communication, public health, and psychology over the past 40 years has resulted in a rich literature exploring how children understand and respond to advertisements. This research has fueled extensive debate over the fairness of advertising to children that has recently resurged after a long hiatus. Despite this renaissance in interest, research on long-term effects of advertising to children has been virtually nonexistent. The purpose of this research is to demonstrate that advertising experienced in early childhood, before persuasive knowledge has developed, can lead to biases in favor of the brand that persist into adulthood. In addition, this research explores potential policy interventions to help individuals correct for bias they may have.

### CONSUMER-BRAND RELATIONSHIPS

In what is now widely considered to be a seminal article on the topic, Fournier (1998) asserted that consumers build relationships with brands in much the same way they would with other people. The brand builds relationships with consumers through the use of marketing communication channels, and the consumer reciprocates with purchases and loyalty. Fournier (1998) observed and catalogued fifteen different types of brand relationships with the informants in her study. She called one of these childhood friendships, which are those consumer-brand relationships that begin in childhood and are accessed later in life by adult consumers. These relationships are described as affective associations with the past that provide feelings of comfort and security to the past self.

Because these relationships are situated in childhood, I assert that these relationships have unique properties that make them especially prone to create biased judgments in favor of the brand that could persist into adulthood. These biased judgments are most likely due to a halo effect (Nisbett and Wilson 1977), whereby the perception of a particular trait (e.g., healthiness) is influenced by the perception of former traits (e.g., positive affect toward advertising spokescharacters). In this research, when I refer to bias, I specifically am referring to inflated judgments of healthfulness. I believe biased judgments persist into adulthood because (1) the relationships were initially developed at a time when the individual lacked knowledge of advertising's persuasive intent, and (2) because the relationships are affective in nature, they create positive biases toward brands.

#### DEVELOPMENT OF PERSUASIVE KNOWLEDGE

Children move through three primary stages of development in how they view and evaluate advertisements (John 1999). From when they are toddlers until they reach about the age of seven, children perceive things in literal, simple ways. In this so-called perceptual stage, evaluations are generally made on spatial observations, such as size. Children begin to understand that advertisements are separate from programming at this age, but do not recognize the persuasive intent of advertisements. Rather, they see advertisements as entertainment, but shorter in duration than television programs (Ward, Reale, and Levinson 1972). Not until the analytical stage, from approximately ages seven

to eleven, do children begin to understand the persuasive intent of advertisements (Ward, Wackman, and Wartella 1977). It is also at this stage that children begin to form cognitive defenses against advertising (Brucks, Armstrong, and Goldberg 1988; Moore and Lutz 2000). Around preadolescence, children begin to reflect on advertisements, observe whether they are relevant to their lives, and become skeptical of claims (John 1999).

Friestad and Wright (1994) assert that, through a “change of meaning,” individuals recognize their previous biases and metacognitively correct for them as they age and gain persuasive knowledge. I challenge this conceptual argument on the grounds that bias correction requires individuals to be aware of their biases and to be motivated to rethink their attitudes (Petty et al 2007). These conditions may be met for brand associations learned after cognitive defenses have begun to develop in mid to late-childhood. Prior to that time, however, marketing communications are likely to be accepted uncritically (Brucks et al 1988; Ward et al 1977). If “childhood friendships” with a brand result from these early experiences, people may lack both the knowledge and motivation to re-examine their beliefs and feelings toward the brand. Consequently, I expect that cuing memory of advertising stimuli from early childhood will lead to biased health-related judgments, whereas advertising stimuli from late childhood will not.

#### AUTOBIOGRAPHICAL MEMORY, THE SELF, AND AFFECTIVE STATES

Because childhood friendships are seeded in childhood, I argue that they are housed within the autobiographical memory store. Autobiographical memories are

generally referred to as those memories that make up one's life story, and are thought to be of fundamental significance to the self-concept and self-esteem (Conway and Pleydell-Pearce 2000; Fivush and Reese 1992; Wilson and Ross 2003). Because autobiographical memory plays an important role to the self, it tends to be affect-laden (Conway 2003).

The term affect generally refers to a valenced feeling state with some form of arousal. Affect can either operate consciously, semi-consciously, or non-consciously. Mood and emotion are the most researched affective states. While the terms are problematic within the psychology literature and are sometimes used interchangeably, the prevailing view is that moods are general, non-directive or directed toward multiple objects and longer lasting but less stable, whereas emotions are shorter in duration but more stable and specifically directed toward a single object or idea (Siemer 2005). Emotions are generally perceived to be conscious, whereas mood can operate at either a conscious or non-conscious level (Beedie, Terry, and Lane 2005). Emotions and moods can alternate, cause one another, and even co-occur (Beedie et al 2005; Siemer 2005).

Research in consumer psychology indicates that affective states that result from cued autobiographical memory can lead to biased judgments in favor of brands, devaluation of alternatives, and product attribute biases. In one study within the consumer research domain, Sujan, Bettman, and Baumgartner (1993) argued that the bias they observed was due to affect transfer from the memory to the brand. However, the authors' argument was made conceptually, without empirically demonstrating that affect transfer indeed took place. Consequently, there are several alternative explanations for this bias. For example, spontaneously-invoked affective reactions sometimes have a greater impact

on choice than cognitions have, resulting in a greater likelihood of selecting choices that are superior on affective dimensions and inferior on cognitive dimensions (Shiv and Fedorikhin 1999). Positive mood states can bias evaluations in a mood-congruent direction (Isen et al 1978; Isen and Shalcker 1982; Schwarz and Clore 1983); and positive mood can decrease elaboration and thus resulting in a peripheral route to persuasion (Batra and Stayman 1990; Petty and Cacioppo 1986). Finally, affect could serve as a distracter where the strength of arguments is not taken into account (Mackie and Worth 1989).

This research attempts to build on Sujan and her colleagues' (1993) research by providing an empirical explanation of the affective mechanism that drives biases when autobiographical memory for childhood advertising is cued. Specifically, the roles of emotion and mood are explored. For example, cuing memory for the advertising could create a positive mood state that inhibits critical information processing. Similarly, emotion felt objects in the advertising (e.g., a spokescharacter) could lead to a drive to maintain consistency between one's favorable attitude toward the object and judgments of its associated product. Results from a pilot study in the previous chapter suggested that emotion toward the consumable interacted with the memory cue condition, whereas mood did not. Nevertheless, mood did have a main effect on the dependent variable, judgment. Therefore, I expect emotion toward the object in the memory cue (i.e., a spokescharacter) to be the affective mechanism driving bias in this set of experiments, with the effect of higher affect toward the advertising referent resulting in favorably

biased judgments and also resulting in decisions congruent with judgment, while mood will continue to be measured as a possible covariate.

### POSSIBLE POLICY INTERVENTIONS

Given the hypothesized result of bias in product judgments, I explore potential ways of providing individuals with the resources to correct such bias. This is an important societal goal when the bias involves health-related judgments, especially in light of alarming increases in both childhood and adult obesity (Institute of Medicine 2005). Bargh and his colleagues (1992) found that nonconscious motivational primes resulted in behavior congruent with the primes, and that drive to satisfy the primed motivation grew until it was indeed fulfilled. Therefore, one of the objectives of this study is to investigate the potential effectiveness of using a nonconscious prime, with the real-life analog being perhaps a billboard near a grocery store, as a potential policy intervention to facilitate bias correction.

As bias correction is facilitated by ability and motivation to think (Petty et al 2007), another potential policy intervention could constitute providing individuals with information that enhances their ability to defend against advertisements. Brucks and her colleagues (1988) found that training children on the nature of advertising and encouraging them to be skeptical of claims assisted in the child's ability to defend against advertisements. Therefore, another objective of this research is to determine whether arming adults with the knowledge that young children do not recognize the persuasive

intent of commercials and therefore cannot effectively defend against them has the potential to result in enhanced ability and motivation to metacognitively correct for biases held in memory.

### UNEXPECTED RESULTS FROM PREVIOUS EXPERIMENTS

Because the pilot studies in the previous chapter were largely failed experiments, extensive exploratory analysis was conducted in order to glean potential alternate research directions from the data. In this chapter, I develop two unexpected effects into exploratory research hypotheses that are peripheral to the central research questions, but possibly could provide directions for future research.

The first of these unexpected effects was the devaluation of an unrelated set of product attributes when nonconsciously primed. This effect was observed across two experiments, and is consistent with Brendl, Markman, and Messner's (2003) finding that activating a motivational state (in this case, health) can result in the devaluation of an unrelated object (or in this case, an attribute such as hedonic judgment). Therefore, I expect this effect to replicate in experiment 5.

The second of these unexpected effects was a finding that priming health led to biased retrieval of memory that resulted in a participant reporting a childhood sugary cereal (i.e., Frosted Flakes) less often, which was mediated by the individual's judgment of the hedonic value of the product (that is, individuals were more likely to report the product as a childhood favorite when they judged it favorably on its hedonic value).

Research on autobiographical memory indicates that it is malleable, subject to external influence, and, apart from the most highly accessible memories, fleeting. Loftus (1997) asserts that memories can be distorted or even fabricated, resulting in false memory. Therefore, a possible explanation for this effect is that a motivational prime created false memory in participants (Kunda 1990; Ross, McFarland, and Fletcher 1981). That is, priming health in a pilot study led to biased retrieval of memory, and resulted in the participant reporting Frosted Flakes as a favorite childhood cereal less often. Similarly, I expect this effect to also replicate in experiment 5.

#### SUMMARY OF RESEARCH OBJECTIVES

In sum, in this research I examine the role of adults' early childhood consumption memories cued by a liked brand (i.e., spokescharacter). The main prediction is that biases in judgment will be evident for early but not late childhood advertising memory cues due to differing levels of persuasion knowledge associated with development stage. Secondly, because I argue that childhood consumer relationships are housed within the autobiographical memory store, I expect that emotion felt toward the object in the memory cue (i.e., the spokescharacter) will moderate bias, with the effect of higher felt emotion resulting in more biased judgments of the relevant product.

This research has important implications because the effects of advertising to children may be long term, possibly extending even to the next generation. In the case of food products of questionable nutritional value, adults may make inferior health-related

judgments and eating decisions for themselves and eventually for their own children many years after an initial brand relationship is formed. Given the importance of the issue, I explore the efficacy of two potential policy interventions in correcting bias: priming a motivational state (i.e., health) or manipulating the individual's ability and motivation to correct bias.

Finally, I follow up on two unexpected effects from pilot studies with exploratory hypotheses. The first of these involves a possible devaluation effect, whereby priming a motivational state (health) results in lowered evaluations of an unrelated set of product attributes (a hedonic scale). The second exploratory hypothesis concerns a potential false memory effect, where priming health could lead to the individual reporting a sugary breakfast cereal as a childhood favorite less often. The individual's judgment of the hedonic value of the product, which led to more reports of the product as a childhood favorite in a pilot study of the previous chapter, is expected to mediate this effect.

## EXPERIMENT 5

The objective of experiment 5 was to test the hypothesis that emotion toward a childhood consumable moderates individuals' judgments toward the associated product when childhood memory is cued, with the effect of higher levels of experienced emotion leading to more pronounced biases in favor of the product. In this experiment, I also test the potential efficacy of a motivational prime in correcting bias. When primed for health, participants who display lower affect toward the object in a memory cue (i.e., a spokescharacter for a breakfast cereal) are expected to have less favorable health-related

judgments (i.e., a judgment dependent variable) of the product relevant to the memory cue, whereas participants who display higher affect toward the object in the memory cue are expected to resist changing their judgments. I will compare these results to a control condition, where autobiographical memory will be cued for a similarly affect-laden but unrelated object (i.e., a childhood toy). The purpose of the control condition is to rule out general, positive memories of childhood as an explanation for the expected results in the experimental condition. Thus, I expect that participants in the control condition will not change their health judgments, regardless of the amount of positive affect felt toward the object, and regardless of whether health is primed or not. In this experiment, I will also investigate effects on a choice dependent variable, with expected effects in the same direction as the judgment dependent measure.

In addition, this experiment tests two exploratory hypotheses that were developed from unexpected results in previous pilot studies. Devaluation of the hedonic aspects of a brand was observed in two pilot studies when health was primed. This effect is expected to replicate. Another purpose of this experiment is to replicate the results of priming motivation on reported previous behavior that was observed in a pilot study, in order to provide a better gauge of whether false memory of previous consumption occurred. This will be accomplished by measuring free recall of favorite childhood cereals both before and during the experimental manipulation. Results from the pre-measure will be compared to the measure from the procedure in order to determine whether the brand in the memory cue (Frosted Flakes) is reported as a favorite childhood favorite less often after health is primed.

## Pilot Study for Experiment 5

The purpose of the pilot study was to maximize the effectiveness of the health prime manipulation in order to increase the probability of improved results in this experiment. Specifically, the objective was to compare a positively framed health prime with a negatively framed health prime, with a neutral prime serving as an experimental control. The dependent variables in this pilot test were self-reported health behaviors and a food choice task.

Eighty-six participants were recruited from consumer behavior courses at the University of Arizona. Participants were greeted and informed that they would be participating in two unrelated tasks, and then were given a word search puzzle as per Bargh et al (2001). Participants were told that I was pre-testing several word search puzzles and wanted to make sure they were solvable. There were three word search puzzle conditions to which participants were randomly assigned: a neutral prime, a positive frame health prime, and a negative frame health prime (see Appendices D, E, and F). The neutral prime included the following words: robin, mountain, turtle, gasoline, ranch, green, shampoo, staple, plant, picture, alligator, lamp, and magazine. The positive frame health prime included health items that were embedded within some of the control words: robin, healthy, turtle, nutritious, exercise, green, fitness, staple, plant, thin, energetic, lamp, strong. In addition, one third of participants completed a puzzle with a negative frame health prime because previous research has indicated that many

individuals are more motivated by avoiding negative outcomes such as weight gain rather than by improving health (Rothman and Salovey 1997). Again, the words in the negative frame health prime were embedded within some of the control words, and consisted of the following: robin, fat, turtle, weak, unhealthy, green, bloated, staple, plant, lazy, sickly, lamp, and lethargic.

After completing the word search task, participants were asked to answer a set of “unrelated” questions regarding health-related behaviors (adapted from Jessor 1992; see Appendix G) that served as the dependent measure for the study. In order to operationalize the dependent variable, participants were told that, later in the course, two food companies were going to sponsor taste test studies and that they could choose whether they wanted to participate in a candy or in a fruit taste test. Half of participants were asked for their preference before completing the health behavior inventory, and half were asked for their preference after completing it. The purpose of this measure was to serve as a choice dependent variable. Participants then completed a funnel debrief to probe for suspicion, and were thanked for their participation.

Results of a one factor, 3-level ANOVA showed no significant difference between the attitudes or behavior of individuals in the negative or positive frame prime conditions. Consequently, because effects from pilot studies were observed with a positively framed health prime, and because utilizing a negatively framed prime does not appear to improve results, a positive health frame will be used as this study’s motivational prime.

## Procedure for Experiment 5

Two hundred and fifty-three participants were recruited from introduction to marketing and introduction to management courses at the University of Arizona in exchange for course credit. Students signed up for studies via a computerized system. This system allowed for measures to be taken when the student signed up to participate. Participants provided basic demographic information (sex, age, and whether they grew up in the United States) and rated Tony the Tiger and Play-doh embedded within five other unrelated images of products and character filler items (Mickey Mouse, Batman, the Nike logo, the Chevrolet logo, and the Pillsbury Doughboy) on a feeling thermometer. The feeling thermometer measure included a graphical representation of a thermometer, with labels of 0 degrees for very cold, 50 degrees for neutral, and 100 degrees for very warm values.

In addition, participants were asked the following questions about childhood and current breakfast cereal consumption: whether cereal was/is consumed, how often it was/is consumed, and what the participant's favorite brands were/are. The purpose of these measures was to provide a better gauge for whether memory search of previous behavior is biased when participants are primed with a health motivation. Finally, participants were asked to complete a short nutrition quiz of ten pre-tested questions (adapted from North Department of Agriculture and Consumer Services 2007; see Appendix H for the set of quiz questions). The purpose of this measure was to control for a possible confound between affect toward the cereal spokescharacter and the

participant's general nutrition knowledge. Registration for this experiment closed one week prior to when the procedure took place in order to minimize effects of the pre-measure on the measures used in the experiment.

Participants were randomly assigned to one of six conditions in a 2 (image: relevant/irrelevant memory cue) X 3 (health/neutral/hedonic prime) between subjects design. The third factor in the study, affect, was measured on a feeling thermometer measure. Participants were told that they would be participating in three short, unrelated studies: a language study, an image study, and a taste test. First, participants were given the word search puzzle described in the pilot study. The word search puzzles either consisted entirely of neutral words, health-related words embedded within neutral words, or hedonic-related words embedded within neutral words. After completing the word search exercise, participants were instructed that they would be moving on to the next study, were shown an image of either a relevant (Tony the Tiger) or irrelevant (Play-doh) memory cue, and completed an autobiographical memory exercise where they were asked to take a few moments to visualize a memory involving the character or toy in the image, and then to write down their memory with as much detail as possible. Participants completed the Positive and Negative Affect Schedule (PANAS, Watson, Clark, and Tellegen 1988) as a mood measure about their general feeling state, and reported emotion felt toward the object in the image by repeating the feeling thermometer measure used during sign-up for the study. The purpose of this second measure was to determine whether affect toward the character changes when the memory is cued, with the expectation that affect will be more positive after the memory cue. Participants were then

asked to evaluate Frosted Flakes on a product attribute measure, with five health-related items embedded within nine other items (see Appendix B).

After completing the judgment dependent measures, participants then continued to the final, “unrelated,” taste test study in a different room, which served as the decision dependent measure. The purpose of the choice measure was to determine whether the hypothesized effects on attitude change would influence actual decision-making at a highly abstracted level. Participants were asked to choose whether to participate in a taste test study of a “new” variety of fruit or a “new” variety of candy. The study chosen for participation served as a dependent measure of a healthy versus a hedonic choice. Participants made their choices before being presented with either the fruit or the candy in order to avoid potential visceral influences on decision-making, due to findings that being in a sensory-rich environment or being highly stimulated can alter individuals’ decisions (Ariely and Loewenstein 2006; Ditto et al 2006; Shiv and Fedorikhin 1998). Participants then tasted the product that they selected and provided their opinions about the product tasted. In order to simplify data analysis, only one fruit and one candy were used as taste stimuli (participants were told that other participants were tasting alternate items in order to maintain realism and reduce suspicion). Finally, participants provided demographic information, were probed for suspicion using a funnel debrief, and thanked for their participation.

## Results

In this section, I will begin by discussing data issues and results from control variables, continue with hypothesis tests, then conclude with analysis of the exploratory hypotheses and a discussion of the results.

Data. Twenty-six participants were eliminated from the analysis because they did not grow up in the United States and were unlikely to have encountered the images in the memory cues during early childhood. The dependent measure of judgment was derived from the five health-related items in the product attribute measure (“is healthy,” “is nutritious,” “has a lot of fiber,” “is low in calories,” and “has added sugar” (reverse coded),  $\alpha=.78$ ).

As a manipulation check for the memory cue condition, verbal protocols were analyzed to make certain that childhood was referenced (85.7% of the written memories included unambiguous references to childhood). Because autobiographical memories tend to be affect laden, the level of emotion felt before and after cueing memory was measured as an additional manipulation check. Results from a comparison of means were consistent with the assumption that cueing autobiographical memory would increase the level of felt positive affect for both the relevant (Tony the Tiger) ( $M_{\text{premeasure}}=65.28$ ,  $M_{\text{memorycue}}=69.79$ ,  $t_{95}=-2.048$ ,  $p=.043$ ) and the irrelevant (Play-doh) ( $M_{\text{premeasure}}=65.33$ ,  $M_{\text{memorycue}}=72.46$ ,  $t_{86}=-2.195$ ,  $p=.005$ ) image conditions, due to the affective nature of autobiographical memory. The extremely similar affective reactions to both images are consistent with pilot studies, and further supports that the Play-doh image is a good control for the Tony the Tiger image.

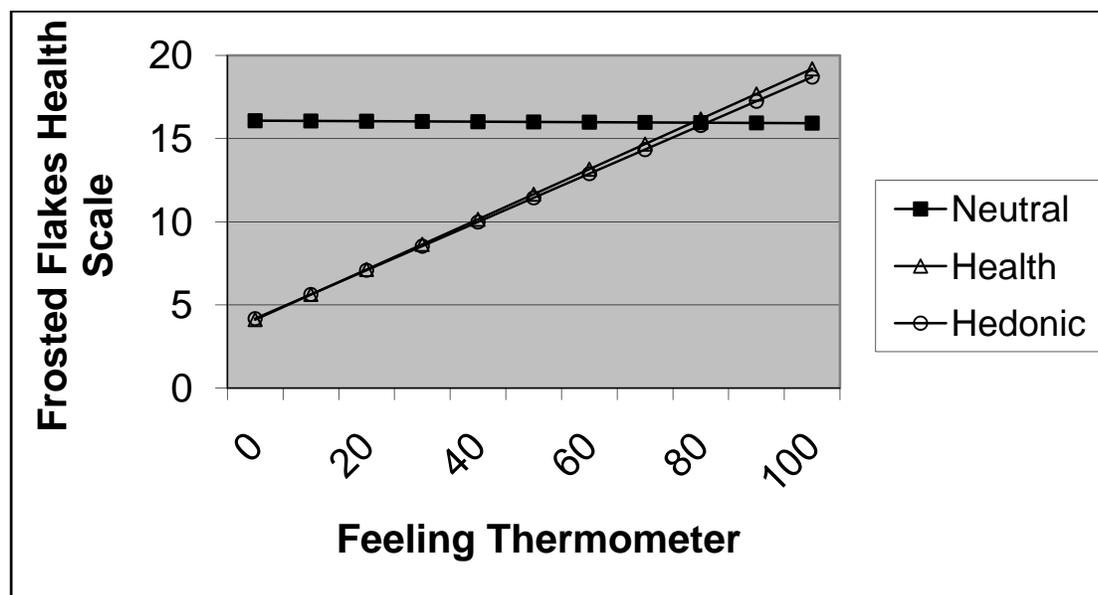
As a control variable, nutrition knowledge was measured in order to determine whether it was confounded with emotion felt toward the stimulus (Tony the Tiger). This did not turn out to be the case. The relationship between nutrition knowledge and affect is not significant in a linear regression of participants in the relevant (Tony the Tiger) condition ( $F_{1,85}=.503$ ,  $p=.48$ ), and the direction of the relationship is the same as it is for the control condition (Play-doh). Similarly, nutrition knowledge did not have a significant effect on health judgments in a linear regression ( $F_{1,165}=.005$ ,  $p=.946$ ).

Hypothesis Test, Judgment. When primed for health, participants who displayed lower affect toward the image in a memory cue (Tony the Tiger) were have less favorable health-related judgments of the product relevant to the memory cue (Frosted Flakes) relative to participants with higher affect, whereas participants who displayed higher affect toward the image in the memory cue were expected to resist changing their judgments of the product relevant to the memory cue. Participants in the control condition, where autobiographical memory for an similarly affect-laden but unrelated image (Play-doh) were not expected to change their health judgments, regardless of the amount of positive affect felt toward the object, and regardless of whether health was primed or not. The judgment hypothesis was tested with a 3 (neutral/health/hedonic prime) X 2 (image: relevant/irrelevant childhood memory cue) full factorial ANOVA with the feeling thermometer included in the model as a continuous variable. The hypothesized 3-way interaction was significant ( $F_{2,227}=3.373$ ,  $p=.036$ , see figure 1). Significant 2-way interaction on prime and image in the memory cue ( $F_{2,227}=4.525$ ,

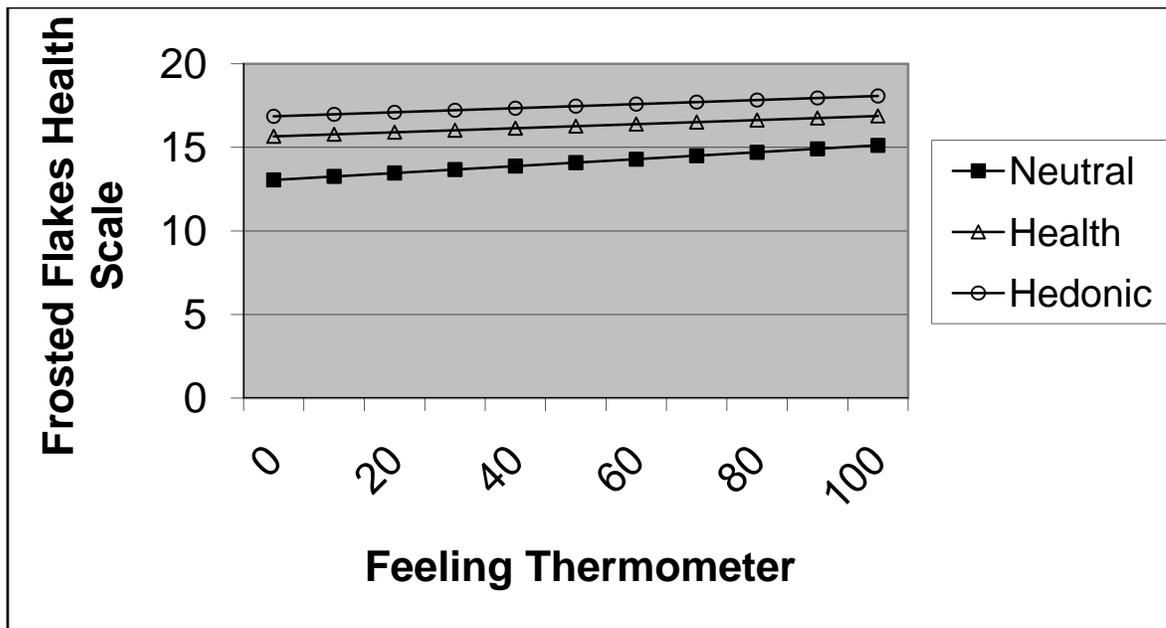
$p=.012$ ) and affect and image in the memory cue ( $F_{1,227}=8.156$ ,  $p=.005$ ), as well as significant main effects of image in the memory cue ( $F_{1,227}=8.432$ ,  $p=.004$ ) and affect ( $F_{1,227}=9.484$ ,  $p=.002$ ) were qualified by the 3-way interaction.

Figure 1: 3-Way Interaction on Judgment

RELEVANT/TONY THE TIGER CONDITION (Note: It is difficult to see the health and hedonic prime lines because they essentially overlap)



IRRELEVANT/PLAY-DOH (CONTROL) CONDITION



#### Tests of Between-Subjects Effects

Dependent Variable: NewHlthSci

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	648.983 <sup>a</sup>	11	58.998	2.778	.002
Intercept	1945.805	1	1945.805	91.632	.000
Image	179.044	1	179.044	8.432	.004
Prime	61.983	2	30.992	1.459	.235
FeelTherm_Post	201.392	1	201.392	9.484	.002
Image * Prime	192.171	2	96.086	4.525	.012
Image * FeelTherm_Post	173.186	1	173.186	8.156	.005
Prime * FeelTherm_Post	70.879	2	35.440	1.669	.191
Image * Prime * FeelTherm_Post	143.268	2	71.634	3.373	.036
Error	4586.736	216	21.235		
Total	58596.000	228			
Corrected Total	5235.719	227			

a. R Squared = .124 (Adjusted R Squared = .079)

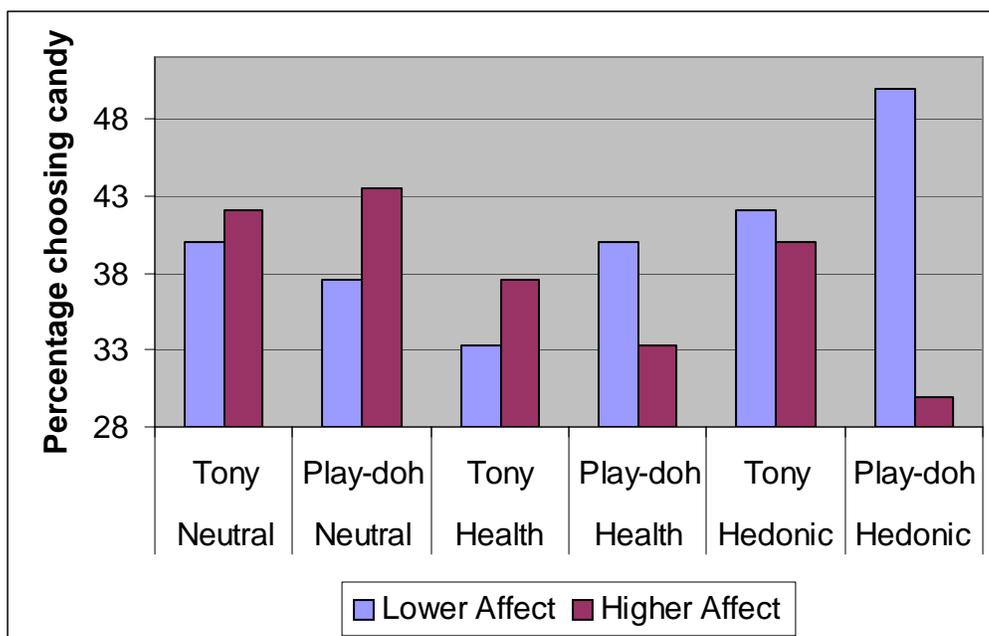
As expected, there are no significant interactions or main effects within the control/irrelevant (Play-doh) condition. Thus, the alternate explanation that effects could be simply due to generalized affect from cuing childhood can be ruled out. Within the relevant (Tony the Tiger) condition, there is a significant 2-way interaction of prime and felt affect ( $F_{2,110}=4.919$ ,  $p=.009$ ), with significant main effects of prime ( $F_{2,110}=5.975$ ,  $p=.003$ ), and affect ( $F_{1,110}=17.994$ ,  $p<.001$ ), qualified by the interaction. As can be seen in the trend lines graphed in figure 1, participants in the neutral prime condition did not alter their health evaluations of the relevant product, regardless of felt affect. As expected, participants in the health prime condition lowered their health evaluations of the relevant product when affect was lower, but resisted changing their evaluations as the level of felt positive affect increased.

Surprisingly, a similar pattern of results was observed for participants in the hedonic prime condition. While this result was not expected, it can be explained by the finding that priming a motivational state (i.e., fun) can sometimes lead to devaluation of an unrelated object (in this case, the attribute of perceived healthfulness of Frosted Flakes) (Brendl et al 2003). In essence, priming health appeared to cause participants to evaluate the product as less healthy because the prime calls attention to nutrition elements. The hedonic prime appears to result in similar behavior because, in the product category used in the experiment (breakfast cereal), fun is associated with sugary juvenile products that are associated in memory with junk food. When individuals experience high levels of affect toward the relevant memory cue (Tony the Tiger), nutrition evaluations do not change because these associations are blocked by attitudinal defenses.

Hypothesis Test, Choice. When primed for health, participants who displayed low affect toward the image in a relevant memory cue (Tony the Tiger) were expected to choose a hedonic, sugary snack (candy) less often than participants with higher affect, whereas participants who displayed higher affect toward the image in the memory cue were expected to choose the sugary snack more often. Participants in the control condition, where autobiographical memory for an similarly affect-laden but unrelated image (Play-doh) were not expected to choose a sugary snack at different rates, regardless of the amount of positive affect felt toward the image, and regardless of whether health was primed or not. The observed results for judgment did not appear to carry over to this highly abstracted choice. The hypothesis was tested using a full factorial logistic regression with affect included as a continuous variable, and failed to yield any support for the hypothesized three-way interaction (see figure 2). Similarly, there were no significant 2-way interactions or main effects.

Figure 2: 3-way Interaction, Choice

(Note: feeling thermometer measure is dichotomized in the graphical representation to simplify presentation of results)



Exploratory Hypothesis Tests. The devaluation hypothesis (i.e., priming health leads to a devaluation of hedonic attributes) was not supported. There is a significant relationship ( $F_{1,146}=4.562$ ,  $p=.034$ ), but it is in the opposite direction as observed in the pilot studies. That is, priming health actually led to an increase in hedonic product evaluation rather than a decrease in hedonic product evaluation. This is perhaps due to a perception that healthy foods tend to be less fun or tasty, and priming health in this case may have led to a heightened sense of fun and tastiness due to its supposed diametric opposition to healthiness. Because of improvements to the primes and measures, the results from this experiment are believed to be more reliable than those of the pilot studies. However, as was described in the results of the judgment hypothesis test, devaluation of the perceived healthfulness of a product (Frosted Flakes) was observed when participants were cued for a relevant memory (Tony the Tiger), had lower affect

toward the image in the memory cue, and were in the hedonic prime condition. Consequently, due to inconsistency in results between studies and in order to maintain focus on the central research question, this hypothesis will not be pursued any further. Finally, in one of the pilot studies, reports of whether the brand in the memory cue was reported as a childhood favorite appeared to be mediated by whether the participant was primed for health. This hypothesis was not supported, as the results from the pilot study did not replicate in this experiment. Similarly, this hypothesis will not be further pursued, either.

## Discussion

In this study, I find that priming health causes participants to have less favorable health-related judgments toward a product (Frosted Flakes) when cued for a relevant memory (Tony the Tiger), but only when participants do not have high affective affiliations with the image in the relevant memory cue. When the image in the memory cue is irrelevant (Play-doh), however, the prime does not have an effect on health judgments, regardless of the level of affect felt toward the image in the memory cue. While I find effects on judgment, results do not carry over to a highly abstracted but related choice (candy versus fruit).

These results show that motivational primes might serve a practical albeit limited purpose in correcting biases from early childhood advertising. When primed for health, participants that were cued for a memory relevant to a sugary and generally well-liked

breakfast food adjusted health judgments toward that product in a less favorable direction, but only when they experienced lower levels of felt affect toward the image in the memory cue. Participants that experienced higher levels of felt affect, however, resisted changing their judgments. Therefore, such an initiative would likely be effective for individuals with lower affect toward the brand, but would have no effect among those with higher affect toward the brand.

These results extend Sujan and her colleagues' (1993) research on the effects of cueing autobiographical memory on attenuated information processing by investigating which affective state drives the process behind the results using real-life childhood advertising stimuli. I find that emotion toward the brand moderates consumer bias on attribute judgments of childhood brands: lower-affect participants judged a product (Frosted Flakes) as less healthy when cued for memory of relevant advertising (Tony the Tiger), whereas higher-affect participants judged the product as healthier, whereas there was no difference between lower and higher affect participants in the irrelevant memory cue (Play-doh) condition.

This study provides evidence that suggests children might form strong emotional connections with brands when they are a vulnerable group. That is, a brand relationship is developed when the child either does not understand the difference between advertisements and television programming (Ward et al 1972), does not understand the persuasive intent of advertising (Ward et al 1977), and/or does not possess sufficient cognitive resources to effectively defend against advertisements (Brucks et al 1988).

Furthermore, this evidence suggests that the connection persists into adulthood, and consequently affects adults' judgments.

These results challenge Friestad and Wright's (1994) assertion that individuals metacognitively correct for previous bias as they gain persuasive knowledge spontaneously, through what they call a "change of meaning." This argument, however, was made conceptually and without empirical evidence. The results of this experiment challenge their assertion that this always takes place, since I find that biased judgments of the brand associated with the childhood memory cue persist into adulthood.

## Conclusion

While previous research on advertising to children has focused on shorter-term effects, this study examines whether there are effects from exposure to advertising in childhood that extend into adulthood. These results indicate that such advertising seen in childhood indeed has effects on health judgments that persist into adulthood.

Consequently, the results of this study have important public health implications that extend the debate over the impact of advertising, particularly food products, to children.

In seeking to generalize these results to other childhood brand relationships, it is important to examine the time frame in which the relationship was formed. The results of experiment 5 do not isolate early childhood as the source of advertising-based affect, leaving this issue open to speculation. I directly address this limitation in experiment 6.

## EXPERIMENT 6

The results from experiment 5 challenge Friestad and Wright's (1994) assertion that a "change in meaning" of advertising spontaneously occurs as people age. In the persuasion knowledge model, the term "change in meaning" is used to imply that people will metacognitively correct for advertising-based misimpressions as they gain additional persuasion knowledge (Friestad and Wright 1994). In this experiment I further explore a process explanation for the results in experiment 5 by exploring the developmental stage of persuasion knowledge at which the advertising was encoded into memory. Because there are potentially important public health implications to the bias in health judgments that were observed in the previous experiment, I also explore the effectiveness of another potential public policy initiative.

The first research question addresses the developmental process behind the effects observed in experiment 5. In this research to date, I have assumed that affect towards the spokescharacter developed at an age when children are unable to employ cognitive defenses against advertising. This assumption is critical because young children are vulnerable to advertising claims and images in ways that older children and adults are not. Prior to about age five, children neither know the difference between ads and programming (Ward et al 1972), nor do they understand persuasive intent (Ward et al 1977). Thus, they would be expected to accept advertising uncritically during this period (John 1999). Between eight and 12, children typically understand the distinction between advertisements and programming, and also understand persuasive intent, but may still have difficulty defending against advertising (Brucks, Armstrong, and Goldberg 1988).

The development of cognitive defense represents a critical stage in the understanding of advertising, as this is where true skepticism toward advertising and critical evaluation of arguments begins to appear. The overall hypothesis is that effects on judgment observed for an early childhood advertising memory cue would be attenuated for a product first introduced to children 10-12 years of age because, at this stage in development, the individual would understand advertising's persuasive intent as it was encoded into memory. Given the developmental differences in the processing of advertising between the under-eight set and the 10-12 set, this experiment includes a late childhood experimental condition, where participants would have been initially exposed to the image in the memory cue at the developmental stage where cognitive defenses against advertising have already begun to develop.

The second research question concerns a possible policy intervention for the biased health judgments that were observed in experiment 5. Please recall the hypothesis that residual affect toward brands introduced by childhood advertising interferes with adults' ability to defend against advertising that they experienced in early childhood. In this experiment, I hope to facilitate bias correction by enhancing the ability and motivation to do so (c.f., Petty et al 2007). In order to test this hypothesis, the participant's active defense against the childhood advertising will be manipulated. If the participant is actively engaged in defending against the childhood referent, then I expect the effect of biased judgment when cued for memory of relevant childhood advertising to be attenuated. Similarly, due to heightened awareness, I expect participants to be more

thoughtful in the choice exercise. As a consequence, I also expect the effect on choice to be attenuated.

### Pre-Test

The purpose of the pre-test was to assist in selecting experimental stimuli. The stimulus used in previous experiments, Tony the Tiger, was first introduced in 1951 and has been continuously and heavily advertised since. Because of the ubiquity of advertising of this spokescharacter in the United States, it is highly likely that it would have first been encountered at a very early age, when children first begin watching television. Therefore, an assumption of this research is that this image represents an early childhood condition. In order to test the hypothesis that exposure in advertising in late childhood, after the development of persuasion knowledge, does not result in biased judgments in favor of the brand, I used another set of characters that would have been historically impossible for undergraduate participants to experience in early childhood. The M&Ms characters were not introduced until 1998, but have been continuously and heavily advertised since. Because undergraduate participants in our subject pool are typically in their early 20s, they would have first encountered the M&Ms characters at a minimum age of 10 years old, after the development of persuasion knowledge.

Therefore, the objective of the pre-test was to make certain that the stimulus image used for late childhood (M&Ms characters) was indeed associated later in childhood than the early childhood image (Tony the Tiger). Thirty-two undergraduate participants in an advertising class were shown one of the two images. Participants were

first asked to identify the character(s) seen in the image. Next, participants were asked to indicate the stage in life that they associated the image with on a five-point scale, with one representing early childhood (before grade school), two representing middle childhood (grade school), three representing late childhood (middle school), four representing adolescence (high school), and five representing adulthood (post high school).

Both spokescharacters were equally recognizable, and were identified correctly by all of the participants. The mean age of participants was 21.6, and none of the participants were under the age of 21. Thus, the earliest age that any participant could have experienced the M&Ms characters was 11 years old, when persuasion knowledge is extant and cognitive defenses begin to form. Using a one-way ANOVA, there was a significant difference in the life stage association between the two images ( $F_{1,19}=19.263$ ,  $p=.025$ ), with the mean for the Tony the Tiger image being earlier in childhood (2.13) than the mean for the M&Ms image (2.71). Thus, this supports the contention that not only were the M&Ms characters introduced at a point in history that would have occurred in undergraduate participants' late childhoods, but also that the spokescharacters are indeed associated with a later point in childhood than the Tony the Tiger image.

## Method

This experiment utilizes a 3 (image: early childhood relevant/late childhood relevant/irrelevant advertising object memory cue) X 2 (cognitive defense activated/not)

between subjects design with 253 participants who were recruited from Introduction to Marketing classes at the University of Arizona in exchange for course credit. The third factor in the design, emotion toward the image in the memory cue, was measured. The first part of the procedure is similar to that of experiment 5. Participants began by looking at an image and then describing a childhood memory associated with that image. Tony the Tiger and Play-doh continued to serve as the early childhood relevant and childhood irrelevant memory manipulation images. The M&Ms characters served as a third level of the image factor, representing the older childhood relevant condition.

Participants then completed the mood measure and emotion measure toward the image presented to them. The PANAS scale was used to measure mood as in previous experiments, as it had a significant main effect on the dependent variables and might serve as a covariate. Results from a pilot study indicated that measuring mood prior to emotion did not have an effect on the emotion measurement. A feeling thermometer, where participants were shown a graphical representation of a thermometer and asked to report their feelings toward the object in the image (0 degrees=very cold feelings, 50 degrees=neutral feelings, 100 degrees=very warm feelings), served as the measure for emotion toward the object in the image.

Next, cognitive defense was manipulated in an attempt to assist in metacognitive bias correction. Bias correction is best facilitated when motivation and ability to think are high (Petty et al 2007). Therefore, I attempt to activate cognitive defense in participants by prompting them to think about potential biases they may hold due to being exposed to advertising before the acquisition of persuasion knowledge, with the intent to

subsequently move health judgments in a less favorable direction. Due to potential demand characteristics associated with asking participants to describe a memory of a childhood spokescharacter, then giving them knowledge about the lack of persuasion knowledge in children immediately afterward, the manipulation was disguised as a task unrelated to the memory exercise.

In the defense activation condition, participants were told that the Eller College at the University of Arizona was interested in their opinion about possible topics for a fictitious future research symposium on marketing and society that it was planning to host. Participants read two short passages and voted for the topic that they found more interesting. Two topics were included in order to reduce potential resistance to the message in the cognitive defense manipulation, as participants would have just seen and reported their feelings toward a childhood advertising image just prior to reading the passage. In both conditions, participants read first about an irrelevant public policy and marketing topic, shelf space. This topic was intentionally composed to appear less interesting than a second passage about a topic on vulnerable groups of consumers (see Appendix I for passages). The reason the irrelevant topic was composed to appear less interesting was so that participants would reflect more on the vulnerable consumers topic, resulting in a greater likelihood of engaging cognitive defense. There were two different versions of the vulnerable consumers topic. In the defense activation condition, participants read about young children's inability to defend against advertisements due to their lack of persuasion knowledge. In the control condition, participants read a passage on elderly consumers and their reduced ability to defend against advertisements due to

cognitive decline. Participants were asked to read the passages very carefully, as they would be asked further questions about the topics later on. As a manipulation check, participants were asked to write down what they remembered about each topic just prior to the debriefing.

Participants then proceeded to the dependent measures. In this experiment, participants were asked to consider two new pre-sweetened, puffed corn cereals that were ostensibly being developed by Kellogg's: Frosted Puffs featuring Tony the Tiger (a pre-sweetened, puffed corn cereal), described as being developed to compete with General Mills' Kix, and M&Ms Puffs (a pre-sweetened, puffed corn cereal), described as being developed to compete with General Mills' Cocoa Puffs. The context of the fictitious cereals was used to equate the product categories and associated product attributes for the two spokescharacters (Tony the Tiger and the M&Ms characters).

Images of the "products" appeared on the evaluation sheet containing the scales used to measure health judgments in Experiment 5 (see Appendix B). The boxes were made to resemble actual cereal boxes, featuring a character (Tony the Tiger for Frosted Puffs or the M&Ms characters for M&Ms Puffs), a photograph of the product, a realistic looking logo, and the information "130 calories per serving" and "Contains 10 essential vitamins and minerals" on the box, similar to what is on current Kellogg's products. Identical nutrition information was placed on both boxes in order to control for a confounding influence on health judgments that would likely be present between the categories that Tony the Tiger (cereal) and the M&Ms characters (candy) represent. None of the participants reported disbelief as to the veracity of the images of the boxes during

the debriefing. The order in which these products were shown to participants was randomly alternated in order to mitigate potential order effects on product judgments.

Participants then chose whether to participate in a candy or fruit taste test. As in the previous experiment, the taste test served as a dependent measure of a highly abstracted hedonic (candy) or healthy (fruit) choice of snack. After tasting their chosen product, participants rated it on ten sensory attributes, then provided demographic and cereal consumption information. Finally, participants completed a survey on healthy behaviors, in the event that there was a possible confound between current behaviors and emotion felt toward the spokescharacter (see Appendix G).

## Results

This section will begin with issues related to the data. I will then continue with hypothesis tests for the judgment dependent variable. This analysis will include the attempt to explain an unanticipated factor in the design that had a profound effect on the results. Finally, I will conduct hypothesis tests on the choice dependent variable and conclude with a discussion of the results and future research directions.

Data. Sixteen participants were eliminated from the analysis because they did not grow up in the United States, leaving a net total of 237 participants. The median values for all three images were identical, at 75/100 degrees. Furthermore, the mean values for all three images were not statistically different in a comparison of means, with 71.3/100

degrees for Tony the Tiger, 71.9/100 degrees for the M&Ms characters, and 72.8/100 degrees for Play-doh. These data confirm that the images are good comparisons of each other in terms of the affective reaction to each image.

As in experiment 5, participants' memories were coded for content as a manipulation check for the memory cue (90.7% of the memories contained unambiguous references to childhood). In order to determine that participants read the passages in the defense manipulation, I performed a manipulation check by first analyzing the content of free-recall measures of the fictitious seminar topics. Then, I counted the number of correct thoughts per topic ( $M_{\text{VULNERABLE}}=2.24$ ,  $M_{\text{SHELFSPACE}}=2.05$ ).

Scales for the judgment dependent variables were derived from the product attribute measures in a manner consistent with previous experiments. Health scales for the five-item fictitious Frosted Puffs ( $\alpha=.786$ ) and M&Ms Puffs ( $\alpha=.791$ ) products consisted of the items "is nutritious," "is low in calories," "is healthy," "has a lot of fiber," and "has a lot of added sugar" (reverse coded). In order to test the experimental hypotheses, the judgment dependent variable (hereafter referred to as "relevant judgment") is the health scale for the product associated with the primed character.

The M&Ms Puffs product was generally considered to be less nutritious than the Frosted Puffs product in a comparison of means, with mean values of 11.8 and 15.5 on their health scales, respectively ( $t_{236}=11.228$ ,  $p<.001$ ). This occurred despite the steps taken to control for the possibility that the fictitious M&Ms Puffs products would be perceived as less healthy due to its association with candy and/or because the cereal was chocolate flavored (i.e., putting identical calorie counts and nutrition information on each

fictitious product as well as stating both products were made of corn). However, this potential confound did not appear to have a material effect on the hypothesized results and will be addressed later in the discussion section.

Control Variable. Data were also collected on an array of self-reported health behaviors in order to examine whether there was a confounding influence on affect felt toward the spokescharacter (i.e., perhaps high affect toward the character is correlated with less healthy behavior). Exploratory factor analysis yielded three factors that explain 47.9% of the variance in the data. The first factor, related to dietary habits, explained 31.6% of the variance in the dataset and provided the basis for a scale developed from these items on diet-related behaviors. The second factor was related to overall fitness and wellness, while the third factor was related to what could be described as vice avoidance, which included drug and alcohol consumption, practicing safe sex, wearing a seat belt, and driving the speed limit. An eight-item dietary habits scale ( $\alpha=.878$ ) was derived from the first factor and includes the items (all preceded by “How important is it to you to...”) “to know that your weight is right about what it should be,” “to limit sweets and junk food,” “to keep yourself in good health all year long,” “to eat plenty of fruits and vegetables,” “to keep healthy even if it takes some extra effort,” “to know that you are in excellent health,” “to have good habits about eating and exercise,” and “to read nutrition labels on food.” In a linear regression, the dietary habits scale did not predict affect toward the character in the early childhood (Tony the Tiger) condition ( $F_{1,78}=.371$ ;  $p=.544$ ). However, the dietary habits scale had a marginally significant effect on affect

toward the character in the late childhood (M&Ms characters) condition ( $F_{1,78}=3.689$ ;  $p=.058$ ). Even though there appears to be confounding influence between health behaviors and affect in the late childhood condition, it is inconsequential because affect is not predicted to have an influence on judgment in this condition. This confound will be addressed in further detail in the discussion section.

Hypothesis Test, Judgment. I will now proceed to analysis of the results of the research question of whether activating cognitive defenses against the childhood advertising will facilitate bias correction. It was expected that those lower in affect in the early childhood memory condition would correct for bias, but there would be no change in those high in affect in the early childhood condition, and no difference at all for participants in the late childhood condition, regardless of level of affect felt or whether cognitive defense was manipulated. At first glance, the experiment appears to have utterly failed, as results for the hypothesized 3-way interaction are profoundly non-significant ( $F_{1,159}=.125$ ,  $p=.724$ ), which might lead one to the conclusion that the cognitive defense manipulation is ineffective.

However, further analysis revealed that an unanticipated factor in the design played a major role in the results. When the experiment was designed, the intent of the cognitive defense manipulation was to prompt participants to reflect on consumer vulnerability by making the shelf space topic sound boring in comparison to the vulnerable consumers topic. I expected, based upon experience in teaching and acting as a teaching assistant for marketing and policy courses, that students would find the shelf

space topic less interesting and would therefore focus their attention on the vulnerable consumers scenario. In fact, the shelf space topic was intentionally written to appear boring relative to the vulnerable consumers topic in the effort to prod participants into more elaboration of the vulnerable consumers topic, which operationalized the intended cognitive defense manipulation.

Quite unexpectedly, 53% of the participants chose the shelf space, rather than the vulnerable consumers, topic as preferable for a special topics seminar. This raises the concern that the experimental manipulation of defenses may not have been effective among those who selected the shelf space topic. In order to examine this issue, I analyzed recall of the vulnerable consumers passage as a function of the passage selection. A repeated measures ANOVA within the participants that chose the shelf space topic did not yield statistically significant differences in levels of recall between the shelf space and vulnerable consumers topics ( $M_{\text{VULNERABLE}}=2.197$ ;  $M_{\text{SHELFSPACE}}=2.230$ ,  $F_1=.109$ ,  $p=.742$ ). Therefore, it does not appear that the vulnerable consumers manipulation failed to attract the attention of participants who selected the shelf space condition.

Nevertheless, participants that chose the vulnerable consumers topic remembered more about the vulnerable consumers topic than the shelf space topic ( $M_{\text{VULNERABLE}}=2.336$ ;  $M_{\text{SHELFSPACE}}=1.869$ ,  $F_1=19.253$ ,  $p<.001$ ). This result indicates that those that chose the vulnerable consumers topic attended to it more carefully than the alternate topic, whereas those who chose the shelf space topic attended to both passages equally carefully. Consequently, ability to think in both groups appears to have been

successful in the cognitive defense manipulation (that is, those that chose the shelf space topic as more interesting did not simply ignore the vulnerable consumers passage).

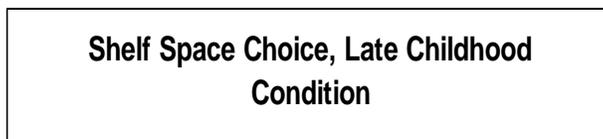
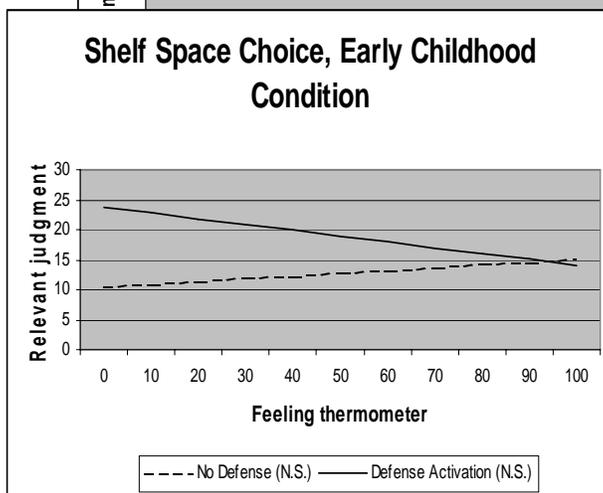
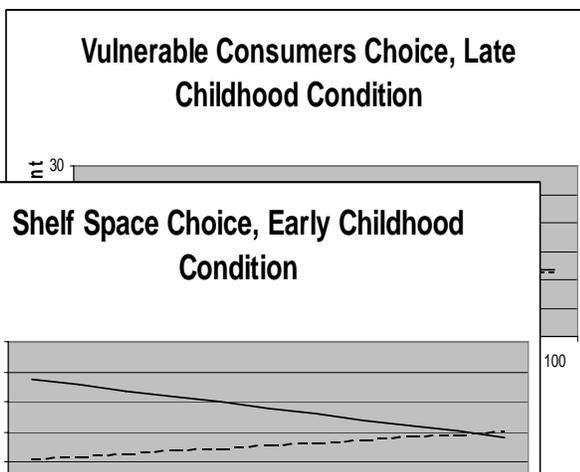
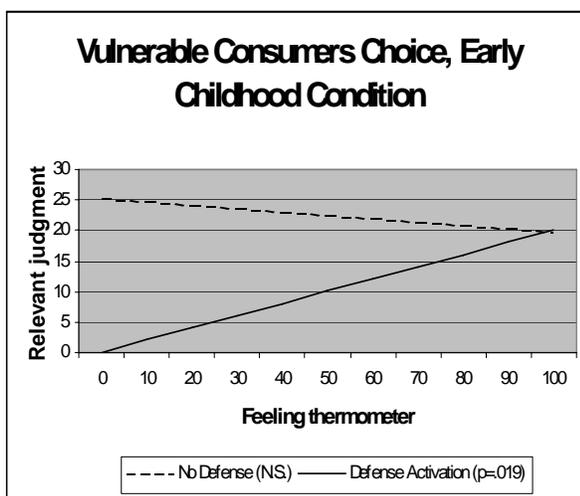
Next, I addressed the concern that the vulnerable consumers topics were unequal in attractiveness, thus confounding the seminar choice with the defense manipulation. Results of a chi-square test with defense activation as the independent variable and seminar choice as the dependent variable indicated that there was no statistical difference in the proportion of participants that selected the shelf space topic based upon the vulnerable consumers passage that they read (No Defense/Elderly=56.8%, Defense Activation/Children=49.5%,  $\chi^2_1=1.201$ ,  $p=.168$ ). Therefore, it appears that both of the vulnerable consumers passages (i.e., children and elderly) were equally attractive topics.

Because the number of participants selecting the shelf space topic was so surprising, I began to speculate that the defense activation manipulation might have succeeded only in enhancing the ability, but not the motivation, to defend. Since motivation is also an important component in bias correction (Petty et al 2007), and I argue that the seminar topic choice might serve as a proxy for motivation (I will explore this speculation in more detail later), I re-ran the model with seminar choice included as an independent variable. The results of this analysis reveal a 4-way interaction ( $F_{1,157}=4.742$ ,  $p=.031$ , adjusted  $r^2=.172$ ) of image for the memory cue by the feeling thermometer measure (included as a continuous variable) by the cognitive defense manipulation by the choice of topic (see Figure 5). Because attempting to make sense of a 4-way interaction is a task akin to cleaning the Aegean stables, I will interpret this interaction by first investigating what the results were for participants who made the

choice I expected: to attend the workshop on vulnerable consumers rather than on shelf space.

Figure 5: Image X Feeling Thermometer X Cognitive Defense X Vulnerable Consumers

4-way Interaction, Judgment





### Tests of Between-Subjects Effects

Dependent Variable: RelevantJudgment

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1600.866 <sup>a</sup>	15	106.724	3.178	.000
Intercept	1425.136	1	1425.136	42.431	.000
Image	18.764	1	18.764	.559	.456
DefendActv	27.927	1	27.927	.831	.363
VulChoice	8.678	1	8.678	.258	.612
Feeltherm	7.311	1	7.311	.218	.642
Image * DefendActv	9.835	1	9.835	.293	.589
Image * VulChoice	11.462	1	11.462	.341	.560
Image * Feeltherm	6.250	1	6.250	.186	.667
DefendActv * VulChoice	113.218	1	113.218	3.371	.068
DefendActv * Feeltherm	12.215	1	12.215	.364	.547
VulChoice * Feeltherm	22.984	1	22.984	.684	.409
Image * DefendActv * VulChoice	272.652	1	272.652	8.118	.005
Image * DefendActv * Feeltherm	5.878	1	5.878	.175	.676
Image * VulChoice * Feeltherm	33.458	1	33.458	.996	.320
DefendActv * VulChoice * Feeltherm	72.867	1	72.867	2.169	.143
Image * DefendActv * VulChoice * Feeltherm	159.268	1	159.268	4.742	.031
Error	4769.343	142	33.587		
Total	36753.000	158			
Corrected Total	6370.209	157			

a. R Squared = .251 (Adjusted R Squared = .172)

**DefendActv \* Image \* VulChoice**

Dependent Variable: RelevantJudgment

DefendActv	Image	VulChoice	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
No Activation	Early Child	Shelf Space	13.772 <sup>a</sup>	1.193	11.414	16.130
		Vulnerable	21.427 <sup>a</sup>	1.592	18.280	24.575
	Late Child	Shelf Space	13.161 <sup>a</sup>	1.214	10.762	15.560
		Vulnerable	11.386 <sup>a</sup>	1.421	8.577	14.196
Activation	Early Child	Shelf Space	16.845 <sup>a</sup>	1.526	13.828	19.862
		Vulnerable	14.351 <sup>a</sup>	1.262	11.857	16.844
	Late Child	Shelf Space	10.932 <sup>a</sup>	1.355	8.254	13.610
		Vulnerable	12.007 <sup>a</sup>	1.375	9.289	14.726

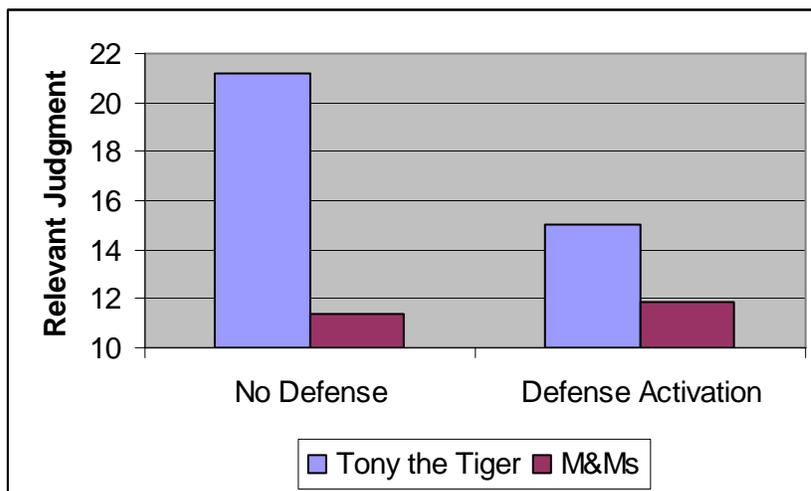
a. Covariates appearing in the model are evaluated at the following values: Feeltherm = 71.3911.

The hypothesis tests will be conducted within the group of participants who chose the vulnerable consumers topic, as it was assumed that the majority of participants would self-select into this condition. Within this group, the results of an 3-way ANOVA directionally support the hypothesized 3-way interaction of image in the memory cue by emotion felt toward the object in the image by the cognitive defense manipulation ( $F_{1,72}=3.233$ ,  $p=.077$ , adjusted  $r^2=.279$ ). In a follow-up contrast within the early childhood image (Tony the Tiger) condition, when participants had lower affect for the object in the image, then the defense manipulation resulted in bias correction (i.e., lowered health evaluations of the associated product ( $F_{1,16}=4.216$ ,  $p=.048$ , adjusted  $r^2=.268$ ). As hypothesized, higher affect participants were resistant to the cognitive defense manipulation, and there was no difference in judgment for participants in the late

childhood (M&Ms) condition regardless of level of affect or whether defense was manipulated (refer back to figure 5).

Within the group of participants who chose the vulnerable consumers seminar topic, a significant 2-way interaction of image by defense activation (see figure 6,  $F_{1,72}=5.365$ ,  $p=.024$ ) is also qualified by the 3-way interaction, with the effect of bias correction in the early childhood group ( $M_{\text{NODEFENSE}}=21.21$ ,  $M_{\text{DEFENSE}}=15.04$ ;  $F_{1,35}=7.638$ ,  $p=.005$ ), but not in the late childhood group ( $M_{\text{NODEFENSE}}=11.35$ ,  $M_{\text{DEFENSE}}=11.90$ ;  $F_{1,36}=.09$ ,  $p=.383$ ). Similarly, a main effect of defense activation ( $F_{1,72}=3.524$ ,  $p=.033$ ) is also qualified by the 3-way interaction.

Figure 6: Image X Defense Activation Interaction Within Participants Who Chose Vulnerable Consumers Topic



### Tests of Between-Subjects Effects

Dependent Variable: RelevantJudgment

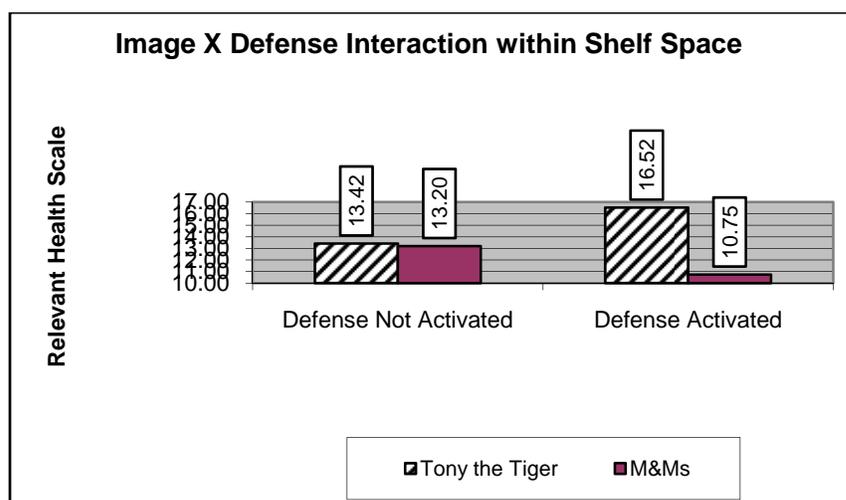
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	941.253 <sup>a</sup>	3	313.751	8.608	.000
Intercept	15691.870	1	15691.870	430.514	.000
Image	749.543	1	749.543	20.564	.000
DefendActv	140.024	1	140.024	3.842	.054
Image * DefendActv	199.831	1	199.831	5.482	.022
Error	2514.994	69	36.449		
Total	18819.000	73			
Corrected Total	3456.247	72			

a. R Squared = .272 (Adjusted R Squared = .241)

The 3-way interaction of image, defense activation, and affect is not present in the case where participants chose the shelf space condition as more interesting. However, within this model, there is a marginally significant 2-way interaction of image by defense manipulation ( $F_{1,85}=2.846$ ,  $p=.096$ ) that becomes significant in a 2-way ANOVA when affect is removed from the model ( $F_{1,85}=5.034$ ,  $p=.028$ , adjusted  $r^2=.063$ ). This interaction results in a boomerang effect for those that were cued for memory for the early childhood referent (see Figure 7). That is, participants who were cued for memory of the early childhood (Tony the Tiger) image evaluated the relevant product as healthier when defense was activated than when it was not ( $F_{1,41}=3.139$ ,  $p=.042$ , adjusted  $r^2=.031$ ). There was no statistically significant difference for participants who were cued for memory of the late childhood (M&Ms) image ( $F_{1,41}=1.841$ ,  $p=.183$ ). These results connote some form of resistance to the cognitive defense message, but only for the early childhood

referent. A potential explanation for this result is through dissonance theory. Because the participant experienced high levels of affect toward the early childhood image when cued for memory of it, then it is possible that introducing information that explains the effects of advertising on young children creates a threat to the self that can consequently lead to a powerful motive to reduce dissonance (Abelson 1968; Kunda 1990). Consequently, this threat to the self can lead to bolstering as a dissonance reduction strategy (Festinger 1957). Therefore, defense activation would be counterproductive when the recipient of the message does not want to hear what is being said. A significant main effect of image ( $F_{1,85}=5.793, p=.018$ ) is qualified by the interaction.

Figure 7: Image X Cognitive Defense within Participants Who Chose Shelf Space, Judgment



### Tests of Between-Subjects Effects

Dependent Variable: RelevantJudgment

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	308.457 <sup>a</sup>	4	77.114	2.419	.055
Intercept	3992.602	1	3992.602	125.258	.000
Session	4.522	1	4.522	.142	.707
Image	184.639	1	184.639	5.793	.018
DefendActiv	2.034	1	2.034	.064	.801
Image * DefendActiv	160.452	1	160.452	5.034	.028
Error	2581.881	81	31.875		
Total	18295.000	86			
Corrected Total	2890.337	85			

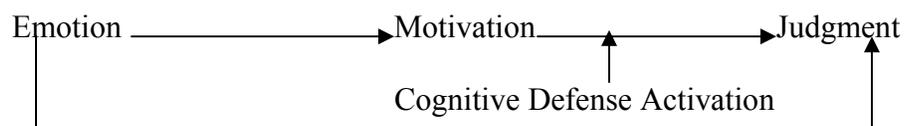
a. R Squared = .107 (Adjusted R Squared = .063)

Exploratory Analysis, Seminar Topic Choice—What Does It Mean? I conducted further exploratory analysis in an attempt to explain what was prompting participants to choose the shelf space topic over the vulnerable consumers topic. Please recall that I reviewed the manipulation check verbal protocols for the defense manipulation, where participants wrote down what they remembered from the shelf space and vulnerable consumers seminar topics. I coded the number of accurate recalled thoughts, whether the participant made normative conclusions from the passages (e.g., “advertising to children is wrong”). I also coded for whether participants counterargued the information in the vulnerable consumers passage (of which there were only three in the entire dataset). Logistic regressions were run because the dependent variable was binary (chose/did not choose vulnerable consumers topic). Whether the participant made normative conclusions from the information in the passage (i.e., the marketing action in the passage was described as wrong or unethical) was not significant on the topic choice ( $\chi^2_1 = .668$ ,  $p = .414$ ). However, the number of accurate recalled thoughts from both the shelf space

passage ( $x^2_6=19.526$ ,  $p=.004$ ) and the vulnerable consumer passage ( $x^2_5=17.048$ ,  $p=.004$ ) had a significant effect on the topic that participants chose. Not surprisingly, participants generated more accurate recalled thoughts for the topic they chose. This result suggests that interest in the topic caused participants to attend more to, and likewise remember more from, the passage they were more interested in. However, please recall that a repeated measures ANOVA within the participants that chose the shelf space condition did not yield statistically significant differences in levels of recall between the shelf space and vulnerable consumers topics, which further supports that selection of this topic did not interfere with the ability to defend against advertisements, but very well could have represented a lack of motivation to do so.

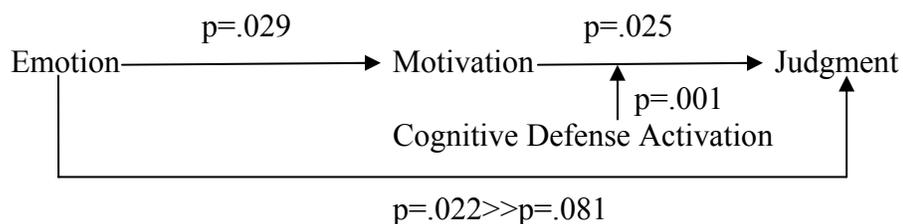
As stated previously, both motivation and ability to think are conditions that facilitate bias correction (Petty et al 2007). Assuming that the defense activation condition represents an enhanced ability to think, and that the seminar topic choice represents a motivation variable, I built a conceptual model for the previously described 4-way interaction between image in the memory cue, emotion felt toward the image, motivation to attend to the message (i.e., choice of seminar topic), and defense activation condition on the relevant judgment dependent variable (see figure 8).

Figure 8: Conceptual Model



I will now explain the logic behind this process model. Emotion toward the image in the memory cue has a positive relationship on health-related judgments due to a halo effect (Nisbett and Wilson 1977), but has a negative relationship on motivation to reconsider their attitudes in the cognitive defense condition, because doing so could result in a threat to the self. When participants are prompted to engage cognitive defenses, their ability to defend interacts with their motivation to do so, resulting in a bias correction on judgment only if both conditions are satisfied. Since the simple contrasts of this interaction revealed an effect for the early childhood condition (Tony the Tiger), but not for the late childhood condition (M&Ms characters), I conducted mediational analyses following Baron and Kenny (1986) within each image condition in order to test the conceptual model (see figure 9).

Figure 9: Mediation Analysis, Early Childhood Condition

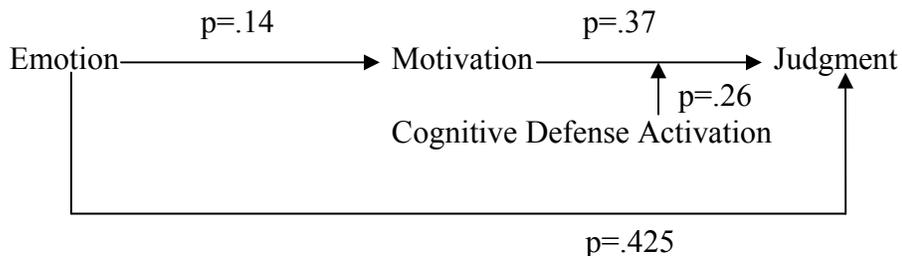


Please recall the significant interaction of image and felt emotion on judgment. Within the early childhood (Tony the Tiger) condition, felt emotion has a significant effect on health judgments for the associated product in a linear regression (Frosted Puffs,  $F_{1,78} = 4.212$ ,  $p = .022$ ), with the effect of higher felt emotion resulting in more positive

health judgments. Felt emotion also has a significant effect on the motivation measure (choice of seminar topic) in a logistic regression ( $\chi^2_{22}=33.360$ ,  $p=.029$ ), with the effect of a lower likelihood of choosing the vulnerable consumers topic as more interesting when higher levels of felt emotion are experienced. Therefore, these results support the explanation that affect toward the early childhood image created a motivation to resist the implications of the vulnerable consumers passage.

There is a significant effect of the mediating variable, motivation to reconsider attitudes, on the judgment dependent variable in an ANOVA ( $F_{1,78}=3.845$ ,  $p=.025$ ), but this is qualified by an interaction with whether cognitive defense was activated or not ( $F_{1,78}=11.414$ ,  $p=.001$ ). Activating cognitive defense resulted in less positive health judgments among those who were more motivated to reconsider their attitudes ( $M_{\text{NODEFENSE}}=20.998$ ,  $M_{\text{DEFENSE}}=14.849$ ,  $F_{1,35}=7.638$ ,  $p=.005$ ) but in bolstered health evaluations among those who were less motivated to reconsider their attitudes ( $M_{\text{NODEFENSE}}=13.825$ ,  $M_{\text{DEFENSE}}=16.201$ ,  $F_{1,43}=3.445$ ,  $p=.035$ ). When the ANOVA is rerun with emotion (the feeling thermometer measurement, a continuous variable) as a covariate, then the motivation by cognitive defense interaction remains significant ( $F_{1,78}=9.05$ ,  $p=.004$ ), whereas emotion loses significance ( $F_{1,78}=1.991$ ,  $p=.081$ ). When the mediation analysis is repeated for the late childhood (M&Ms) condition, there are no significant effects anywhere along the path, further supporting that these effects only occur in early childhood, before persuasion knowledge has developed (see figure 10).

Figure 10: Mediation Analysis, Late Childhood Condition



In summary, my interpretation is that the choice that participants made in seminar topic serves as a proxy for motivation. Recall that Petty and colleagues (2007) assert that bias correction is best facilitated when ability and motivation to think are high. It appears that the cognitive defense manipulation, as designed, increased ability to think but did not affect the motivation to do so. Bias correction occurs among participants who have higher motivation to reconsider their attitudes (i.e., have lower affect toward the early childhood advertising object and with greater interest in the vulnerabilities of consumers). In contrast, bolstering of health judgments occurs among those who have lower motivation to reconsider their attitudes (i.e., have higher affect toward the early childhood advertising object and with less interest in the vulnerabilities of consumers). The bolstering effect could be explained by dissonance theory. That is, the information in the passage creates a threat to the self that creates a powerful motive to reduce dissonance (Abelson 1968; Kunda 1990), which can be achieved by bolstering attitudes (Festinger 1957). There are a number of theoretical explanations that could explain the motivation behind choice of topic as well as the bolstering result, which will be discussed in detail in directions for future research.

Hypothesis Tests, Choice. The 4-way interaction (between image in the memory cue, emotion felt toward the image, cognitive defense manipulation, and whether the participant chose the vulnerable consumers topic as more interesting) that was observed on the judgment dependent variable was not significant on the choice dependent variable in a full-factorial logistic regression. Similarly, the 3-way interaction of image memory cue, emotion toward the image, and defense activation when participants chose the vulnerable consumers topic as more interesting that was observed for the judgment dependent variable is not significant, either. In summary, it does not appear that cognitive defense makes a difference in this highly abstracted choice in a theoretically interpretable manner. Again, whether cognitive defense has a meaningful effect on a more directly related choice (e.g., a sugary versus a healthier cereal) remains unanswered by this dataset.

## Discussion

The results from this experiment suggest that the developmental stage at which advertising is first encountered plays a role in adult judgments. That is, positive emotional associations with an image from early childhood advertising (Tony the Tiger) can cause biased evaluations in an affect-congruent direction. However, when the advertising image was from late childhood (M&Ms characters), when children have gained persuasion knowledge and have begun to develop cognitive defenses, then the effect no longer occurs. The effect is not merely driven by affect transfer from the object

in the advertising to the related product, as affective reactions to both of these images were not statistically different. The effect is also not driven by familiarity, as both images were correctly identified by 100% of participants who grew up in the United States in a pre-test.

These findings challenge a component of Friestad and Wright's (1994) Persuasion Knowledge Model, which argued that as people age and gain persuasive knowledge, they correct for previous bias in a "change of meaning." In this experiment, I demonstrate that gaining persuasion knowledge indeed facilitates skepticism toward new advertisements, but that a "change of meaning" does not necessarily occur for advertising that the child has already been encoded into memory. Given that this positive bias occurs and, in the case of this experiment, affects health judgments in an undesirable way, there is a public interest in finding ways to facilitate bias correction. Petty and colleagues (2007) posit that metacognitive bias correction is best facilitated when ability and motivation to think are high. In this experiment, I attempted to assist ability to think by providing information about children's lack of ability to defend against advertisements and how affective states lead to biases in an affect-congruent direction even in adulthood. The manipulation resulted in activation of cognitive defense and bias correction, but only for those participants who were also motivated to defend.

There were two potential confounds in this study. The first was that the product represented by the late childhood spokesperson (M&Ms) was evaluated as significantly less healthy than the product represented by the early childhood spokesperson (Tony the Tiger), despite the fact that both product boxes displayed identical nutrition

information. This confound is likely either due to the fact that the late childhood spokescharacter (M&Ms) typically represent a candy product, or because the product was presented as being chocolate-flavored. Even though this confound is present, it does not have a material consequence for the results. The reason I argue that there is no material consequence is because the hypotheses predicted a change in judgment among the early childhood condition (Tony the Tiger), but not among the late childhood condition (M&Ms) because of the lack of persuasion knowledge in the former and the presence of it in the latter. Please recall that there were no statistically significant differences between groups within this image condition, as hypothesized, regardless of level of affect felt, whether cognitive defense was activated, or whether participants chose the vulnerable consumers or shelf space topic. Because it is change in judgment, rather than the judgment itself that is hypothesized, the fact that the late childhood product is generally perceived as less healthy is not important.

In addition, I argue that there are not floor effects in the late childhood condition because, in linear regressions of emotion on judgment within those that had the ability and motivation to think (i.e., read the children's vulnerable consumers passage instead of the elderly consumers passage and selected it as more interesting than the shelf space topic), the beta weight of the constant is actually lower in the early childhood condition ( $\beta=.063$ ) than it is in the late childhood condition ( $\beta=13.274$ ), indicating that judgments had ample room to be lowered.

An additional confound that was present is the observation that current health behaviors predicted affect toward the late childhood but not the early childhood

spokescharacter. I argue that this confound also has no material consequence. This is because affect does not predict health judgments nor interact with other independent variables in the late childhood condition, as hypothesized. Whereas, in the early childhood condition, affect does predict health judgments and interact with other independent variables, as hypothesized. Since the confound does not exist in the early childhood condition, where the influence of emotion was hypothesized, then it does not pose a problem in the interpretation of the results.

The role of motivation in bias correction appears to be crucial. When participants were cued for memory of the early childhood advertising referent, they lowered health judgments only when they experienced low levels of emotion toward it. Participants who displayed high levels of felt emotion were resistant to defending, and did not change their health judgments when given information about their potential biases. A possible explanation for this effect is that, because the person has a positive emotional reaction to the image in the memory cue, then the information provided could have resulted in a threat to the self, which may have created a powerful motivation to reduce dissonance (Abelson 1968; Kundo 1990). As a result, the person fails to attend to or dismisses the new information.

Motivation proved to be even more important than was anticipated. In this experiment, half of participants surprisingly expressed more interest in a topic that was intentionally written to sound more boring than in the focal topic in the cognitive defense manipulation. The results of the cognitive defense manipulation actually depend entirely on this difference. It appears that there may have been resistance to the information in the

vulnerable consumers passages, such that information in the passage might have been perceived the information as a threat to their agency. In this case, participants may have reduced dissonance by not merely resisting changes in health judgment, but by actually bolstering existing judgments. The theoretical explanation for what might drive the individual to choose the shelf space topic over the vulnerable consumers topic remains an unanswered question and a direction for future research that will be discussed in more detail in the next section.

Finally, there were no significant hypothesized results for the choice variable. The choice, though, was at a highly abstract level, and only loosely related to the advertising images, so it is possible that the effects on choice operate at more of a non-conscious level than do judgments. Hence, development of persuasion knowledge does not appear to affect this highly abstracted choice, and efforts to activate cognitive defenses against advertising can result in metacognitive bias correction, but do not necessarily transfer over to a related choice.

#### Future Research Directions

The question of what drives the difference in interest in the vulnerable consumers topic, and hence motivation to correct bias, is a critical piece of the puzzle that remains an unanswered question and a direction for future research. The most parsimonious and theoretically powerful explanation should account for two parts of the observed data: (1) why participants were differentially drawn to the vulnerable consumers (versus shelf

space) topic; and (2) why this difference would lead to the observed pattern of health judgments (bias correction and bolstering). I have identified two potential individual difference variables that meet both of these criteria: political ideology and fragility of self-esteem.

**Political Ideology.** A captivating and recently renewed interest in political ideology provides grounds for speculation, as psychologists increasingly assert that differences in ideology have psychological meaning (Jost, Nosek, and Gosling 2008). The topic of vulnerable consumers and possible regulation to protect them is hotly debated, typically with political liberals in favor of protective regulation and political conservatives in favor of free-market solutions. The control condition, shelf space, is less hotly debated, and the discourse is typically more in the context of fair business practices than in consumer advocacy. This is consistent with research that indicates conservatives tend to justify the economic system more than liberals do (Jost and Thompson 2000) and oppose measures to decrease economic inequality more than liberals do (Kluegel and Smith 1986). Thus, I speculate that the proportion of participants who found the vulnerable consumers topic more interesting contained a larger percentage of liberals, and the proportion of participants who found the control topic as more interesting contained a larger percentage of conservatives.

Personality research has unveiled trait differences that could be correlated with political ideology. Conservatives, at least in Western cultures, are generally lower on the Big Five personality trait of openness (Jost 2006), which could explain the choice in topic

observed in this experiment. That is, participants who found the vulnerable consumers topic less interesting could be less open to attending and integrating the information in the vulnerable consumers passage. Conservatives also tend to be higher on need for closure (Jost et al 2008). Individuals high in need for closure feel a greater compulsion to quickly “seize” on a position, then “freeze” on it (Kruglanski and Webster 1996), which can lead to lower levels of perspective taking, and hence, empathy for others (Jost et al 2008).

While there appear to be stable trait differences associated with ideology, research has nevertheless revealed situational factors that predict shifts to conservatism, which could serve as possible manipulations in a future study. For example, ambiguity and needs for order, closure, and structure are associated with conservatism (Jost et al 2003). When one of these needs is violated, such as in the terrorist attacks on the World Trade Center, then shifts to conservative ideologies are observed (Jost et al 2003). Correspondingly, a number of studies found similar results when reminding students of the 9/11 events and mortality salience (Cohen et al 2005; Jost, Fitzsimons, and Kay 2004; Landau et al 2004).

**Self-Esteem.** Research in social psychology suggests that individuals with low self-esteem sometimes react negatively, even violently, to perceived threats to the self (e.g., providing information that states children cannot defend against advertisements after the individual has indicated highly positive emotions toward a childhood advertising spokescharacter) (Kernis and Goldman 2003). Therefore, another individual difference

variable that might explain the bolstering effect observed among those that chose the shelf space condition and had high affect for the early childhood memory cue could be self-esteem. According to self-affirmation theory, negative feedback poses a threat to the self (Steele 1988). Individuals with higher self-esteem tend to have a greater capacity to affirm themselves when posed with negative feedback than those with low self-esteem (Spencer, Josephs, and Steele 1993). Therefore, if reading a passage on advertising's effects on young children makes a person with lower self-esteem perceive this as failure to defend against advertisements because they had high affective associations with the object in the memory cue, then this threat to the self could create a powerful motive to reduce dissonance (Abelson 1968; Kunda 1990).

Perhaps variability in self-esteem is an even more interesting explanation. Individuals with highly variable self-esteem tend to be highly responsive when to information perceived to be relevant to the self, even when it is not intended to be (Greenier et al 1999). Variability in self-esteem can be captured in measuring the personality trait of narcissism (Rhodewal, Madrian, and Cheney 1998). Narcissists tend to have high self-esteem, but this esteem is fragile due to insecurity. As a result, self-esteem is highly variable, and narcissists tend to react with anger and resentment when threatened (Rhodewalt et al 1998). Thus, if the information in the vulnerable consumers passage is again regarded as negative feedback, resisting the information in the passage would be an intuitive reaction. It is possible that cognitive defense messages need to be framed in such a way as to be affirming so that individuals with low or variable esteem do not feel threatened.

## Conclusion

In summary, I intend to explore both political ideology and self-esteem as follow-up studies to my dissertation. Through this work, I hope to build on the results in experiment 6 by investigating individual difference factors that lead to motivation to reconsider attitudes. In understanding these individual difference variables, I will contribute to the literature on bias correction by explaining factors that can influence it. As a practical implication, better understanding of how to frame public health messages can lead to more effective policy initiatives.

## GENERAL DISCUSSION

This research has both managerial and public policy implications that are inextricably intertwined with one another. The alarming rise in childhood obesity, particularly among the poor and in ethnic minorities, has led to a great deal of debate over advertising food products to children. Based on evidence that children do not process information in the same way that adults do, a similar debate raged in the 1970s, culminating in a proposal by the Federal Trade Commission to ban all advertising to children under the age of eight (the initiative was ultimately defeated). This debate is particularly applicable in the context of this research, since more than half of the 10,000 food advertisements children see each year are for sugared cereals (Brownell and Horgen

2004). As eighty percent of overweight children become overweight adults, and often develop life-threatening conditions such as heart disease and type two diabetes (Henry J. Kaiser Family Foundation 2004), there are potential implications to public health and to taxpayers. I suspect that the findings in this study could add fuel to this debate, as long-term effects of advertising to children on adult product judgments has not previously been researched.

Results of this research suggest that biases based upon fond memories from early childhood, prior to the development of persuasion knowledge, carry into adulthood. In addition, individuals appear not to spontaneously correct for this bias as they gain persuasion knowledge, as posited by Friestad and Wright (1994). The observation of this effect poses the question of what policy interventions might best serve the objective of effectively correcting bias.

Results from this study indicate that well-intended policy interventions may have limited effectiveness, or even have the potential to backfire. Results support the notion that initiatives using motivational primes would likely have the desired effect of attenuating consumer's perceptions of the nutritional value of a sugar-laden product. However, effectiveness would be limited to consumers that do not have strong emotional feelings toward the object featured in the childhood advertising. While cognitive defense manipulations appear to have a more direct effect on bias correction, similar challenges exist. Moreover, it may be necessary to construct cognitive defense interventions as self-affirming in order to avoid the potential for negative reactions to these messages. At worst, such an initiative could create a boomerang effect, because results indicate that

participants who are not interested in cognitive vulnerabilities of consumers might resist the information in the message and actually adjust their ratings of the healthiness of associated products upward in order to reduce dissonance created by a threat to the self.

Nevertheless, because affective appeals lead to enhanced persuasion (Escalas 2004), there are potential positive uses for the effects observed in this study. Gorn and Goldberg (1982) noted that nutrition public service announcements were often devoid of any emotional appeal. Animated characters, such as Smokey the Bear or MacGruff the Crime Dog, have been used successfully in other public service announcements, so it is reasonable to suggest that building strong affective associations may also enhance the long-term effectiveness of public service announcements directed to young children.

## CONCLUSION

Results from this research indicate that affect-laden memories of childhood advertisements have an effect on consumer judgments of health-related product attributes, resulting in inferior nutrition perceptions and decisions. Results also indicate that the stage at which childhood advertisements is encoded into memory matters, as the above-stated biases are observed for participants cued for memory of early childhood advertising, but not for participants cued for memory of late childhood advertising. I attribute these differences to the development of persuasion knowledge in late childhood that facilitates skepticism toward advertisements. However, this skepticism appears to be directed only to advertisements seen after persuasion knowledge is gained, and adults fail

to metacognitively correct for previous bias, as has been previously supposed. Finally, given that adults fail to correct for previous bias on their own, policy initiatives that might facilitate bias correction are explored. Results indicate that providing information to individuals can facilitate bias correction, but only when motivation to do so is present. Participants who experience high levels of emotion toward the advertising referent resist changing judgments, and participants who are not interested in the content in the message actually bolster judgments. Factors that drive motivation reconsider attitudes in response to cognitive defense messages represent an interesting opportunity for future research.



## APPENDIX B: PREFERENCE RATINGS MEASURE FOR EXPERIMENTS 1-4

## Marketing Cereal Study Product Ratings

Please circle, on a scale of 1 to 5 (1 is low, 5 is high), how important each of the following things is to you when you buy a breakfast cereal:

	Not important			Very Important	
Stays crunchy in milk	1	2	3	4	5
The color is appealing	1	2	3	4	5
Has a fun character	1	2	3	4	5
Is nutritious	1	2	3	4	5
The shape of the cereal is interesting	1	2	3	4	5
Has a good flavor	1	2	3	4	5
Is low in calories	1	2	3	4	5
Has added sugar	1	2	3	4	5
Is inexpensive	1	2	3	4	5
Is healthy	1	2	3	4	5
Has a fun personality	1	2	3	4	5
Has fun prizes	1	2	3	4	5
Is high in fiber	1	2	3	4	5
Brings back fond memories	1	2	3	4	5

## APPENDIX C: MOOD MEASURE 1 FROM EXPERIMENT 2

Please rate how pleasant you think this image is.



Extremely Unpleasant

Extremely Pleasant

1      2      3      4      5      6      7

## APPENDIX D: WORD SEARCH EXERCISE FOR NEUTRAL PRIME, PILOT

## STUDY

**Puzzle**

Please find the words in the list at the bottom of the page in the box below. The words to be found in the box are placed vertically, horizontally, diagonally, forwards and backwards. Please circle each word as you find it in the box.

```

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

```

```

ALLIGATOR
GASOLINE
GREEN
LAMP
MAGAZINE
MOUNTAIN
PICTURE
PLANT
RANCH
ROBIN
SHAMPOO
STAPLE
TURTLE

```

## APPENDIX E: WORD SEARCH EXERCISE FOR POSITIVE FRAME HEALTH

## PRIME, PILOT STUDY

**Puzzle**

Please find the words in the list at the bottom of the page in the box below. The words to be found in the box are placed vertically, horizontally, diagonally, forwards and backwards. Please circle each word as you find it in the box.

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

ENERGETIC  
 EXERCISE  
 FITNESS  
 GREEN  
 HEALTHY  
 LAMP  
 NUTRITIOUS  
 PLANT  
 ROBIN  
 STAPLE  
 STRONG  
 THIN  
 TURTLE

## APPENDIX F: WORD SEARCH EXERCISE FOR NEGATIVE FRAME HEALTH

## PRIME, PILOT STUDY

**Puzzle**

Please find the words in the list at the bottom of the page in the box below. The words to be found in the box are placed vertically, horizontally, diagonally, forwards and backwards. Please circle each word as you find it in the box.

```

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

```

```

BLOATED
FAT
GREEN
LAMP
LAZY
LETHARGIC
PLANT
ROBIN
SICKLY
STAPLE
TURTLE
UNHEALTHY
WEAK

```

APPENDIX G: HEALTHY BEHAVIORS QUESTIONNAIRE (ADAPTED FROM  
JESSOR 1992)

HOW IMPORTANT IS IT TO YOU (Please circle the response that best indicates the degree to which each of the following statements best represents your thoughts):

To feel in good shape?

Not very important

Very Important

1            2            3            4            5            6            7

To feel like you have plenty of energy?

Not very important

Very Important

1            2            3            4            5            6            7

To avoid tobacco?

Not very important

Very Important

1            2            3            4            5            6            7

To know that your weight is right about what it should be?

Not very important

Very Important

1            2            3            4            5            6            7

To be able to play active games and sports without getting tired too quickly?

Not very important

Very Important

1                    2                    3                    4                    5                    6                    7

To keep yourself in good health all year long?

Not very important

Very Important

1                    2                    3                    4                    5                    6                    7

To eat plenty of fruits and vegetables?

Not very important

Very Important

1                    2                    3                    4                    5                    6                    7

To brush and floss your teeth regularly?

Not very important

Very Important

1                    2                    3                    4                    5                    6                    7

To wear your seatbelt every time you get into a car?

Not very important

Very Important

1                    2                    3                    4                    5                    6                    7

Not to get sick when something like the flu is going around?

Not very important

Very Important

1

2

3

4

5

6

7

To get better quickly whenever you get sick?

Not very important

Very Important

1

2

3

4

5

6

7

To avoid drinking too much alcohol?

Not very important

Very Important

1

2

3

4

5

6

7

To keep yourself healthy even if it takes some extra effort?

Not very important

Very Important

1

2

3

4

5

6

7

To know that you are in excellent health?

Not very important

Very Important

1

2

3

4

5

6

7

To have good health habits about eating and exercise?

Not very important

Very Important

1            2            3            4            5            6            7

To get plenty of sleep each night?

Not very important

Very Important

1            2            3            4            5            6            7

To read nutrition labels on food?

Not very important

Very Important

1            2            3            4            5            6            7

To avoid drinking and driving?

Not very important

Very Important

1            2            3            4            5            6            7

To maintain a positive outlook on life?

Not very important

Very Important

1            2            3            4            5            6            7

Practice safe sex?

Not very important

Very Important

1

2

3

4

5

6

7

To avoid using drugs?

Not very important

Very Important

1

2

3

4

5

6

7

To drive the speed limit?

Not very important

Very Important

1

2

3

4

5

6

7

To drink plenty of water?

Not very important

Very Important

1

2

3

4

5

6

7

## APPENDIX H: NUTRITION PRE-MEASURE FOR EXPERIMENT 5 (obtained from

<http://www.agr.state.nc.us/cyber/kidswrld/nutrition/NutritionQuiz.html>)

1. This food group is our body's best source of energy?

- A. Meat Group
  - B. fats,oils and sweets
  - C. breads and cereals
  - D. milk and cheese
- 

2. Which of these is NOT considered a nutrient?

- A. vitamins
  - B. minerals
  - C. fiber
  - D. fats
  - E. Don't know
- 

3. Which of these is added to the food label because people sometimes don't eat ENOUGH of this?

- A. fat
  - B. calcium
  - C. sodium
  - D. cholesterol
  - E. Don't know
-

4. Which of these is required on the food label?

- A. total carbohydrate
  - B. sugars
  - C. iron
  - D. all of the above
  - E. Don't know
- 

5. The bread, cereal, rice and pasta group is a good source of \_\_\_\_\_?

- A. carbohydrate
  - B. vitamin C
  - C. calcium
  - D. vitamin D
  - E. Don't know
- 

6. Citrus fruits are an excellent source of \_\_\_\_\_?

- A. calcium
  - B. vitamin c
  - C. vitamin B
  - D. calories
  - E. Don't know
-

7. Foods from the meat, poultry, fish dry beans, eggs and nuts group are an important source of \_\_\_\_\_?

- A. iron
  - B. fiber
  - C. beta carotene
  - D. calcium
  - E. Don't know
- 

8. Which food contains the most fat?

- A. graham crackers
  - B. brownies
  - C. pudding
  - D. angel food cake
  - E. Don't know
- 

9. The milk, cheese & yogurt group are important for \_\_\_\_\_?

- A. strong bones
  - B. teeth
  - C. muscles
  - D. all of the above
  - E. Don't know
-

10. How many servings of vegetables do we need each day?

- A. 6-11
- B. 2-3
- C. 3-5
- D. 1-2
- E. Don't know

## APPENDIX I: MARKETING POLICY TOPICS FOR COGNITIVE DEFENSE MANIPULATION

Passage 1 (all participants)

**Shelf space.** Numerous controversies exist around the allocation of shelf space in retail stores. Due to consolidation in the retail sector, where numerous, smaller regional chains have merged into fewer, larger national chains, the balance of power in the supply chain has shifted from manufacturer to retailer. It is now commonplace for major retail chains to charge slotting fees to their suppliers, whereby the manufacturer must pay the retailer in order to secure the best shelf space. Consumer advocates argue that the practice leads to higher prices for consumers, as the slotting fees are passed along in the retail price of products. Furthermore, they also argue that the practice leads to reduced competition and innovation, as smaller firms are less able to raise the capital needed to secure prime shelf space. This seminar would look at arguments from both the consumer advocacy and industry points of view.

Passage 2a (cognitive defense condition)

**Vulnerable consumers.** Children's advocacy groups have renewed a debate on the fairness of advertising to children, which was also a hotly debated topic in the 1970s. Psychological studies have shown that young children respond to messages of fun in advertisements, but lack the ability to critically evaluate or display skepticism toward these messages. Furthermore, people often maintain positive associations with things that they experienced in their childhood, including advertisements. Other studies have shown that positive feelings can influence consumers' attitudes and behaviors. For example, being in a good mood serves as a distracter that causes even adult consumers to think less critically. Due to children's limited ability in understanding advertisements and its possible long-lasting effects, some groups argue that advertising to children ought to be more heavily regulated. This seminar would look at arguments from both the consumer advocacy and industry points of view.

Passage 2b (control condition)

**Vulnerable consumers.** Advocacy groups for the elderly have begun a debate on the fairness of advertising to the elderly. Psychological studies have shown that the elderly often lack the ability to critically evaluate or display skepticism toward advertising messages due to cognitive decline. Because the elderly are less critical of advertising messages, it is easier to get them to like something. Other studies have shown that positive feelings can influence consumers' attitudes and behaviors. For example, being in a good mood serves as a distracter that causes even fully functioning adult consumers to think less critically. Due to the limited ability in understanding advertisements among the elderly and the relative ease in getting them to have positive feelings for advertising, some groups argue that advertising to the elderly ought to be more heavily regulated. This seminar would look at arguments from both the consumer advocacy and industry points of view.

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