PRODUCT PLACEMENT:

IMPLICIT MEMORY AND CHOICE FOR BRANDS PLACED IN A NOVEL

A Dissertation

by

ISABEL MANZANO

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2010

Major Subject: Psychology

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Approved by:

Chair of Committee,	Steven M. Smith
Committee Members,	Lisa Geraci
	Terrence Barnhardt
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ABSTRACT

Product Placement: Implicit Memory and Choice for Brands Placed in a Novel.

(August 2010)

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Product placement, an advertising trend that places a brand within the context of an information medium, has emerged as an effective means of increasing brand recognition. The practice has not been thoroughly examined in the different media in which it occurs. The purpose of the present experiment was to investigate the effectiveness of prominent and subtle product placements in books on different forms of memory. The effectiveness of the placements was evaluated by measuring explicit and implicit memory for the placed brands. Additionally, effectiveness was measured with two types of preference judgments: a forced choice scenario and a shopping list scenario.

Results from Experiment 1 showed that participants demonstrated implicit memory for brands mentioned in the novel with a word stem completion task and a category exemplar generation task. The centrality of placement only affected performance on these tasks for test-aware participants. Experiment 2 used a forced choice task and showed that consumer preference was unaffected by subtle and prominent placements. Experiment 3 used a shopping list scenario and showed that

brand placement affected participants' preferences for previously studied brands regardless of the placement centrality. The experiments also showed that participants had explicit memory for the brands with prominent placements leading to better recall than subtle placements. Taken together, the findings show that the placement of brands in books is a valid means of influencing consumer awareness and behavior toward the brand.

DEDICATION

To my entire family: My mom, Zenaida, my dad, Santiago, Carolina, Marcela, & Cristian, thanks for your unwavering support in all of my educational endeavors. I could never have gotten this far without all of your help and continuous encouragement.

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CHAPTER I

INTRODUCTION: OVERVIEW OF PRODUCT PLACEMENT

People have many sources of entertainment including video games, television, movies, the Internet, and books, and product placement has permeated each medium, slowly gaining momentum. In this era of digital video recorders and TiVo, which allow viewers to bypass television advertisements, advertisers are struggling to assure that consumers become and remain aware of their brands. Product placement, one of the more popular current trends in advertising marketing techniques, enables companies to market brands and give their names exposure even while consumers are skipping through entire blocks of commercials. Originally developed as a way of enhancing the realism of the scenes, product placement has now developed into a good avenue for advertisements.

Many have investigated the effectiveness of the practice in television and movies, and currently research is examining the effectiveness of the practice in videogames, songs, and music videos. However, the effectiveness of the practice in books is not well understood. This is very surprising because while in the past, this might have seemed like a dwindling source of entertainment, electronic book readers like the Nook and the Kindle in addition to applications that you can download for the iPad and iPhones have increased the accessibility and the ease of reading novels. One study that has been conducted on product placement in books was a content analysis

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This dissertation follows the style of *Applied Cognitive Psychology*.

investigating the incidence of brand mentions in popular American novels (Friedman, 1985). But, what happens when you are reading the latest James Patterson book, *The 9th Judgment*, and he mentions: "… The victims were bracketed between a red Dodge Caravan and a silver Highlander…?" How do those mentions affect our memory for those brands? The current research from studies with placements in film, television shows, and videogames tells us that mentioning the brand name will lead to improved explicit memory performance for that brand. After seeing a movie, watching a television show, or playing a videogame, people remember the brands that they saw placed in the scene, so, it is expected that seeing the brand "Dodge" in a novel, will lead to improved memory for that brand. In fact, books are probably a more effective means of brand placement. Unlike placements in other media (e.g., television, or movies), where the audience can get distracted and miss a placement, it is highly unlikely that a brand mention in a book will be missed because the reader has to attend to the words in order to follow the plot.

Research in product placement has also found that prominently placed brands are remembered better than subtle placements. Would this occur in books? What if the brand mention went something like this: "So we stopped at the Mercedes dealer…Jannie and Damon ogled a silver CLK500 Cabriolet convertible, while Ali and I tested out the spacious front seat of an R350. I was thinking family car — safety, beauty, resale value. *Intellect and emotion*" (emphasis in the original). This is an excerpt from another of James Patterson's books, *Cross*, and can be described as a prominent placement, as compared to the Dodge brand mention, because the Mercedes brand is not only

mentioned, but the attributes of the product are also thoroughly elaborated. If placements in this medium behave in the same manner as placements in other media, then it would be best for advertisers to include a prominent mention of their product if they need consumers to remember their product well.

Because consumers may not always consciously retrieve information from memory to make their decisions for what products to purchase, and because consumers often make decisions for what products to purchase in a very short amount of time, it is important to assess implicit memory for product placements in books. Implicit memory is memory without conscious awareness and is gauged by improved performance on a task due to prior exposure. Research has shown that some manipulations can negatively impact explicit memory while leaving implicit memory intact (e.g., Law & Braun, 2000). Do people display implicit memory for product placements in books?

The present research asked whether product placement in books affects behavior, attitude, or preference for the brand. Research in other media (i.e. television, films) has found that choice and attitude toward a brand are affected by mentions of the brand. However, we do not know if a preference for Dodge or Mercedes will increase due to mentions in a novel. We are also unaware of how choice will be affected based on the placement centrality. Will consumers be more likely to choose a brand after a prominent mention (e.g., Mercedes placement), or after a subtle brand mention (e.g., Dodge placement)? These are all questions that will be addressed in the present paper.

History of Product Placement

Researchers have tracked the practice of product placement to the 18th century,

when a Japanese author of comics placed in his works information about products available in his store (Kern, 1997). This advertising technique has existed in films since the late 1800s. In 1896, a short film featured two women washing laundry, with two cases of Lever Brothers soap on display (Newel, Salmon, & Chang, 2006). In order to reduce production expenses, Thomas Edison placed products in films he produced. His film crews were transported to set locations by the same railroad companies that bought products from Edison's manufacturing business; in return, the Edison films showed people buying railroad tickets. In his movies, he also often advertised products, with some placements resembling commercials (Newell at al., 2006).

The name "product placement" was not coined until the 1980s. Previously the practice had gone by other names, such as "tie-ups" and "tie-ins" (Newell et al., 2006). In much the same manner as today, early twentieth century manufacturers provided products to filmmakers at no cost, which allowed for a reduction of production expenses. In return, manufacturers could expect their brand to be mentioned in the film campaign and the products to be endorsed by actors off-screen, thus gaining exposure for their products (Andriasova, 2006).

Tie-ins in the 1930s typically featured tobacco companies, and these companies paid actors to endorse their products (McKechnie & Zhou, 2003). For a tie-up, the manufacturer supplied advertisements featuring both product and movie, as well as ads that distributors could place in their windows. In addition to these efforts, theater owners and manufacturers would devise ways to promote both product and movie within the theaters (Newell et al., 2006). For example, a tie-up contract between Buick and Warner

Brother films specified that a particular series of films would use only Buick vehicles, while in return Buick promoted the films in the advertisements (Newell et al., 2006).

Companies from the late 1940s to the 1960s sponsored television dramas and variety shows such as the *Colgate Comedy Hour*, *Kraft Television Theater*, and *Ford Television Theater*. In 1948, the *Texaco Theater* even had Texaco workers in "guardian angel" roles (Roberts, 2004). In 1949, *Man Against Crime* was sponsored by Camel cigarettes; the program's writing was controlled so that cigarettes were never shown with negative characters or negative plots, neither the narcotic effects of cigarettes nor fires were ever to be mentioned, and no one was allowed to cough in the show (Kretchmer, 2004).

In the 1980s, the exchange of products for advertisements changed and product placement agencies were established. These firms served as the middleman between moviemakers and suppliers, arranging financial support and verisimilitude for the filmmakers while giving suppliers the desired exposure (McKechnie & Zhou, 2003). Placement can occur in different ways: a company can offer a fixed payment for a movie studio to place their product; a movie studio may approach the marketer to ask to use their product in a movie; the studio may use the brand without asking the marketers; or placement may be arranged through a product placement agency (Gupta, Balasubramanian, & Klassen, 2000).

While product placement is a longstanding practice, it did not gain notoriety until 1982, with the premier of *E. T.* In this film, Reese's Pieces candy is prominently placed and used by the young protagonist to lure the alien into the home. Movie producers had

first approached the Mars Company (maker of M&M's) with the opportunity to place their product in the movie; when Mars declined, Hershey's Inc. agreed to pay $1 million to jointly promote the candy and the movie (Newell, et al., 2006). This placement led to a temporary tripling of the candy sales (Van Biema, 1982).

Definitions of Product Placement

Placing a product involves the addition of a product or brand into a medium in which it can be seen and/or the name can be heard. Researchers and advertisers alike use the term "product placement" interchangeably with "brand placement," although the latter is considered to be a more accurate depiction of the practice because brand rather than product type is being placed. However, "product placement" continues to be the more prevalent term (e.g., Karrh, 1998; Babin & Carder, 1996).

Initial definitions of product placement explained the practice as "the inclusion of a brand name product package, signage, or other trademark merchandise within a motion picture, television show, or music video" (Steortz, 1987, p. 22). This definition essentially stated that these products were added solely in order to create a more realistic set. As a result, later refined definitions included the fact that these products could be placed for a fee or for the promotion of consumer exposure to the brands: "compensated inclusion of branded products or brand identifiers, through audio and/or visual means, within mass media programming" (Karrh, 1998, p. 10). Another definition states that it is "the inclusion of a product, a brand name or the name of a firm in a movie or in a television program for promotional purposes" (d'Astous & Chartier, 2000 p. 31). Others have claimed it to be "the inclusion of commercial products or services in any form in

television or film production in return for some sort of payment from the advertiser (Baker & Crawford, 1995, p. 2). It was later postulated that inclusion of the product should be unobtrusive, with the intention of persuading the viewing audience: Balasubramanian (1994) has called product placement a "hybrid" advertising technique because the advertisement is placed within an entertainment medium in which the planned inclusion of this placement may influence in a positive manner viewers' beliefs and behaviors towards the brand.

The definition of product placement has also been expanded to include the placement of names of service companies, organizations, music groups, and sports teams (La Ferle & Edwards, 2006), and some definitions have acknowledged that these placements can occur in a wider variety of mass media programming (i.e. plays, songs, novels, music videos, and radio shows) (e.g., Russell, 2002).

Andriasova (2006) has proposed an all-encompassing definition of product placement:

> *Brand placement is a method of marketing communication that includes the unobtrusive insertion of a brand or any brand identifier in the content of mass media programming, in return for monetary or other consideration, with the purpose of influencing the audience* (p. 8).

Purpose of Product Placement

Product placements serve two main purposes: they add realism to the storyline by depicting the characters using products that members of the audience normally use, and they serve as advertisements (Andriasova, 2006). Obtaining brand recall and improving

brand image (Lehu 2007), inducing consumers to form more positive associations with the brand (Cowley & Barron, 2008) and otherwise changing consumer behavior toward the brand (Karrh, 1998) are all cited as advertisers' goals. Studies have shown that audiences enjoy the realism that placements contribute to a film, and they can be put-off by the appearance of generic products in an on-screen milieu (e.g., Gupta et al., 2000).

Normal Exchange of Profit for Studios and Marketers

Product placement has been featured in all sorts of media including music videos (Schemer, Matthes, Wirth, & Textor, 2008), video games (e.g., Nelson, 2002), magazines (Lareau, 2005), and books (Nelson, 2004). For movies and television shows advertisers can provide the product free of charge for use, to equal benefit of advertisers and studios (Mortimer, 2002) as products received free from advertisers lower the studio's expenses for buying or renting props. Advertisers may also pay a fee to the studio, author, or singer to choose their brand over another brand (e.g., using an Apple computer instead of a Dell computer) in the medium (Andriasova, 2006). Rather than a fee, advertisers or manufacturers may provide capital to promote the medium (Mortimer, 2002). For example, because James Bond drove BMW's Z3 model in the film *Golden Eye*, the automobile company gave the studio $20 million dollars for advertising (Karrh, 1998).

Benefits of Product Placements

A primary advantage of the practice in television and films is relative cost. Placement of a product within a film or television show is usually much cheaper than a 30-second commercial spot. Commercials can cost from $100,000 to $500,000 to air

(Andriasova, 2006), while some placements may require investment of as little as $25,000 to $225,000, depending on how prominently the product will be placed (Gupta & Lord, 1998).

Another advantage that product placements hold over traditional forms of advertising lies in the overall length of audience exposure to the placements. Companies will usually pay a one-time fee for the placement of their product within a film but will continue to reap benefits with the DVD release and whenever the film appears on television (Karrh, 1998). By one estimate, a movie with international distribution can reach about one hundred million consumers as it goes from the big screen, to DVD, and finally to the television screen (Vollmers & Mizerski, 1994). This is also the case for product placements in other media such as books and songs. In these media, the author or songwriter receives a one-time payment for the inclusion of a brand in their creation, but the brands will receive repeat advertisements as books and songs continue to be read by others and played on the radio and portable music players.

Having a character use the product may also boost the brand's credibility by having the product assume the qualities of the movie character or the celebrity (Morton & Friedman, 2002). This also applies in the case of placements in books, especially in the case of book series. In these instances, readers come to know the characters very well, much like loyal fans of the show *Friends* came to know Monica. As such, the fondness of a particular brand by a well-known character may encourage the reader to purchase that brand in the future.

Seeing a product in its natural environment can also be extremely informative for

viewers, who are given the opportunity to experience how the product works and what its capabilities are (Loro, 1990). These product capabilities are shown when the consumer is most attentive (e.g., when they are fully engaged with the television series, film, or reading a novel), thus assuring marketers that consumers are gaining exposure to their product (Gupta et al., 2000).

The greatest advantage of product placements, in fact, is their ability to allow the advertisers some control over audience exposure to their brands in an uncluttered advertising environment.

Disadvantages of Product Placement

The main disadvantage to product placements from the perspective of the advertisers is the lack of control that they often have over how their product is placed within a particular medium (Andriasova, 2006). In some cases, a brand that has been placed in a movie may be completely removed if a scene is cut (DeLorme & Reid, 1999). Sometimes the product may be portrayed negatively within the story, as was the case for K-Mart in the movie *Rainman*. Here, one of the protagonists, Charlie, is heard saying, “I’m gonna let ya’ in on a little secret, Ray. K-Mart sucks.” As a result of these kinds of cases, some companies have limited the manner in which their products are portrayed within different media (DeLorme & Reid, 1999).

Another problem for product placement is the lack of standardized method for evaluating product placement effectiveness within all of the different media.

Characteristics of Product Placements

Several variables have been put forward as crucial in order to evaluate and

distinguish among different placements. These dimensions, which have been studied by various researchers, include the presentation type; plot connection; and the modality.

Presentation Type

Some early researchers made a distinction between creative and on-set placements (Murdock, 1992). Creative placements were said to be those that appear in the background of the action on the screen. On-set placements were those that seem more salient to viewers and more central to the scene (Murdock, 1992; Brennan, Dubas, & Babin, 1999).

Other researchers have proposed that the study of product placements should be based on the prominence, to the extent to which placement makes the product a central focus of the viewer's attention (Gupta & Lord, 1998). Size and position on the screen, length of time on the screen, and centrality to the action all affect the degree of prominence. Prominent placements contrast with subtle placements. In subtle product placement, the brand or product is not part of the main focus of the action, is shown for only a short period of time, or is small on the screen (Gupta & Lord, 1998). These two descriptions align themselves very well with the creative and on-set placement dimensions, with creative placements being very much like subtle placements, and on-set placements closely corresponding to prominent placements.

While this distinction was originally instituted to describe placements in films and televisions shows, it can easily be applied to other media such as books. So, the present experiments studied the effects of placement centrality in novels on participants' memory. Prominent placements in the short story were defined as brand mentions in

which features or traits of the brand were developed at length such as the Mercedes mention in the novel *Cross*. On the other hand, subtle placements in novels were defined as those brand mentions where the brand name was simply mentioned during the course of describing a scene (e.g., the Dodge mention in *The 9th Judgment*).

Plot Connection

Plot connection refers to the degree to which the brand is integrated into the storyline (Russell, 1998). Low plot connection placements refer to placements that do not contribute significantly to the storyline. High plot connection placements refer to placements that play an integral role in the plot. Plot connection has been shown to affect memory for placements presented visually but not for auditory placements showing that visual placements with high plot connection lead to better memory for the placed products (Russell, 2002).

Research has yet to study plot connection in novels, but this placement dimension can easily be applied to placements in novels. A great example of a high plot connection placement in a novel is the Bulgari brand in the novel *The Bulgari Connection*. In this novel, the brand is so inextricably incorporated into the plot, that the author, Fay Weldon, decided to name the book after jewelry company. High plot connection is also clearly evident in children's books (i.e. *The Cheerios Counting Book*) that teach children concepts through the use of the actual product. It would be interesting to investigate the effect that plot integration has on consumer memory and attitudes toward the band.

Modality of Presentation

Product placements have also been categorized based on the manner in which they are introduced to the viewer. Placements can be: visual-only, used as props in the background of the scene; audio-only (e.g., mentioned verbally by a character or in a background jingle); or audiovisual, in which case the product is not only seen but is also referenced by a character.

Studies investigating how modality affects product placement effectiveness have found that audiovisual placements are usually remembered best, followed by verbal-only and visual-only placements (Balasubramanian, Karrh, & Patwardhan, 2006; Gupta & Lord, 1998). Specifically, some studies have shown that audiovisual placements lead to better memory for products than do merely visual placements (Law & Braun, 2000; Sabherwal, Pokrywcynski, & Griffin, 1994).

This distinction has not been applied to novels, but this dimension can easily be employed with placements in novels. A verbal-only placement can be one in which one of the characters in the novel mentions the brand. A visual placement can be one in which the narrator of the novel uses the brand mention to describe the scene. Finally, an audiovisual placement can be one in which the character not only mentions the product, but also uses it in some way.

Viewers' Attitudes toward Product Placement

Researchers have not directly investigated how people feel about the placement of products in books; however, researchers have spent quite a bit of effort assessing consumers' feelings toward the practice in television and films. Research has also

shown that most people believe that product placement is a good advertising strategy and do not frown upon the practice (Nebenzahl & Secunda, 1993; Gupta, et al., 2000), and in fact people prefer product placements to more traditional forms of advertising (e.g., Tiwsakul, Hackley, & Szmigin, 2005). For consumers, placements can add to the realism of the storyline, help with character development, create historical subtext, and provide a sense of familiarity (Nelson, 2002). People generally report that placement of generic brands within movies or television shows takes away from the viewing experience (e.g., Gupta et al., 2000). Research has also shown that consumers prefer placements to be well integrated into the plotline rather than forced and overexposed (d'Astous & Chartier, 2000). Perceptions of product placement do vary based on the product category (ethically charged vs. non ethically charged products), country, and individual differences. This perception of product placements holds true in other media as well such as video games (Nelson, 2002), songs (de Gregorio & Sung, 2009), and it is expected that it will also apply to media such as novels. However, because of the backlash reported with the novel *The Bulgari Connection* (Nelson, 2004), it is expected that overall consumer acceptance of the practice in this medium will be much lower.

Research of Product Placement in Movies

Research of product placement in films has generally found that movie viewers can recognize the brands placed within films and, most importantly, that they do not mind the placements (e.g., DeLorme & Reid, 1999; Gupta et al., 2000). A study conducted in Spain investigated the relationship between movies and the products that were placed within those films to determine how effectively the brands were being

placed in relation to the target audience (Redondo, 2006). Overall, this study found that there had been no systematic analysis by advertisers to determine how the placements might affect the specific group of consumers attending those movies.

Research of Product Placement in Television

Some researchers claim that product placement is more effective in television shows than in films. One reason for this is that while the storyline of a movie ends with the film (barring sequels), in television, characters live in the same time frame as the viewers (experiencing the holidays in season and discussing current world affairs), which allows viewers to more closely relate to and identify with television characters (Russell, 1998). With television shows viewers become engaged in a prolonged storyline where the audience can form bonds with the characters (Avery & Ferraro, 2000). Television programs may also portray the beliefs and ideologies of the culture in which they premiere which aids in viewer/television character identification (Russell, 1998).

Russell, Norman, and Heckler (2004) looked at how connectedness (the intensity of the relationship developed between viewers and certain television shows/characters) affects memory for product placements. In the study, participants were asked to list the brands or products that they remembered from the show *Friends*. Highly connected viewers remembered more brand instances than did low connected individuals. This is also expected to hold true for the large number of book series where the readers come to really "know" the main characters. For example, James Patterson is a well-known author best known for his books written about the psychologist Alex Cross. Through

each of the Patterson books in the series, readers come to know not only the main character very well, but they also learn about everyone else involved in Alex Cross' life.

Research of Product Placement in Video Games and Computer Games

Product placement in video games is slowly becoming more popular, and some videogames have been written exclusively for the inclusion of placements (Nelson, 2002) in the same way that some books are written for the inclusion of brand mentions to increase brand awareness. Researchers note that product placement in this medium is effective because videogame players are a captive and active audience, which offers advertisers an advantage. This is also the case with readers of books where people have to read the words in order to be able to follow the plotline, unlike placements in movies or televisions shows where the audience may look away from the movie or walk away from the television show and completely miss a placement. Videogames also allow marketers to target a very specific audience (Nelson, 2002), and in this way, the placement in videogames is much like the placement of brands in books. Each type of books targets a very specific audience demographic: *The Oreos Counting Book* is obviously targeted toward young readers while *Cathy's Book* is targeted toward older teenagers. This makes it easy to place brands in those novels that are pertinent to the age group reading them assuring that the placement is most effective.

Research of product placement in games has found that players are generally receptive toward the practice and state that this technique adds realism to the medium unless the products are poorly placed or do not match real-world situations. Research has also found that players do not find the practice deceptive or, generally disruptive. Having

the brand as a major part of the game reinforces the brand and helps people identify with it. Finally, placing brands in the background of the game also improves players' memory for the brand (Nelson, 2002).

Another study found that familiar brands that appear in videogames were more likely to be remembered than less familiar or fake brands (Nelson, Yaros, & Keum, 2006). The authors of this study explained that this occurred because the well-known brands attract more attention and thus are later recalled better. Mau, Silberer, and Constien (2008) found that not only had players' perceptions toward the unfamiliar brands improved with placements, but also that their perceptions of familiar brands worsened with brand exposure in the game. Recall was also measured, and while most participants (68.3%) correctly recalled the brands placed in the game, recall was significantly greater for the familiar brand (Coca-Cola: 71.0%) than for the unfamiliar brand (Jolt Cola: 60.4%). Because placements in this medium resemble brand placements in books, it is expected that these same findings may hold true for brands placed in books. So, it might be better to include familiar brands (based on reader characteristics) if the goal is to increase memory for the brand knowing that this might lead to negative perceptions of those same brands. Future research should investigate the role of familiarity in product placement in books.

Research of Product Placement in Songs and Music Videos

Mention of brands in top-10 popular songs increased between the 1940s to 1980, with the greatest gains occurring in the period 1970-1980 (Friedman, 1986). A recent content analysis found that the mention of brands in songs has increased in the last 50

years (de Gregorio & Sung, 2009). Additionally, this research found that people perceive the placement of brands in this medium more negatively than the placement of brands in films.

One analysis of product placement in music videos in the United States and Sweden found that 39% of the sampled music videos in the United States mentioned at least one brand. This contrasts sharply with the 15% finding of such mentions among a sampling of Swedish music videos (Englis, Solomon, & Olofsson, 1993). How the pairing of a music artist and a product influences attitudes toward the brand was the focus of a recent study (Schemer et al., 2008). Pairing a product with a music artist who had been given a positive image improved attitudes toward the brand as compared to evaluations of brands from the people who saw a music artist with a positive image, but no placements. Correspondingly, when the same music artist was given a negative image, the association had a detrimental impact on people's evaluations of the brand as compared to the evaluations of people who had seen the video of the music artist with a negative image without the placements.

Research in this medium shows that consumer feelings toward the practice are not stable across the different media. This can be taken as further evidence for the need of research investigating consumers' perceptions of the practice in books.

Research of Product Placement in Books

The literature on priming for words in text has found mixed results and leads to the critical question of this paper: Is product placement in books effective? This question has yet to be investigated by researchers, although product placement in books can be

traced back to Charles Dickens' *Pavilionstone* (Nelson, 2004). While placement of products within books is currently an under-utilized avenue of advertisement for marketers in the United States, it is a common practice in Germany, and there are examples of exchange of goods for placements in books. Nelson (2004) mentions some instances where manufacturers have exchanged services or money for the placement of their product within a novel in the U.S. that include a payment in 1988 by Maserati to Beth Ann Herman for mentioning its name in *Power City*, and Seagram's payment (in whiskey) in 2000 to Bill FitzHugh for mentioning the product in the book *Cross Dressing*. The most well known paid placement within a novel occurred in Fay Weldon's *The Bulgari Connection*. Bulgari commissioned the author to write a book that featured their company at least 12 times (Nelson, 2004). However, the author decided to make the company integral to the plotline and titled the novel after the company. Another example of product placement is the young adult novel *Cathy's Book,* in which the title character uses Cover Girl products. Proctor & Gamble, which owns Cover Girl, paid neither publisher nor authors, but they publicized the book on a website (Rich, 2006). Another way that products are making their way into books is though tie-ins with children's workbooks such as *The Cheerios Counting Book* and *The Hershey's Milk Chocolate Multiplication Book.* More than 40 such books have been written (Nelson, 2004).

An exploratory study of product placement in books investigated the number of brand mentions from 1945-1975 in novels (Friedman, 1985). Friedman (1985) looked at incidences of product placements in 31 top selling American novels to see how brand

usage in popular media had changed since World War II. This study found that the incidence of product mentions in novels increased by more than 500% from the 1940s to the 1970s. There has also been some research on brand placement effectiveness in print media (e.g., magazines, newspapers). For example, one study advertised a soup and its healing attributes either within an article, or within an advertisement in an airline magazine. Results showed that participants' recognition scores for the brand and brand claims were significantly greater when the brand was placed within the article. However, the placement of the soup brand within the article was detrimental for consumers' trust toward the brand and its perceived motive purity (Bhatnagar, Aksoy, & Malkoc, 2003).

With the proliferation of this advertising technique (in books for all ages), and with the number of brand mentions in this medium ballooning each year, it is critical to analyze the effects that these placements have on consumers. It has become important to evaluate whether these placements will affect consumer memory for the brands, and consumer behavior toward the brands. Also, methodological problems associated with previous studies gauging placement effectiveness with implicit tasks call for a refined methodology in the research of product placement effectiveness with implicit tasks. These issues will all be addressed with the present experiments.

CHAPTER II

PRODUCT PLACEMENT EFFECTIVENESS: EXPLICIT MEASURES

Explicit Memory

There are two types of memory systems: explicit and implicit. When one encounters an item to be remembered, a representation of that item may be formed and encoded in memory along with other spatiotemporal context associations. Explicit memory is characterized by conscious recollection of an event when remembering a past episode. Explicit memory is affected by changes in attention (e.g., Eich, 1984), elaboration of encoded material (e.g., Craik, & Lockhart, 1972), and delay (e.g., Tulving Schacter, & Stark, 1982). It has been shown that performance on explicit memory tests can be dissociated from performance on implicit memory tests (e.g., Jacoby & Dallas, 1981). Evidence for two types of memory systems comes from amnesiacs who display poor explicit memory performance but whose implicit memory performance is unaffected compared to nonamnesic controls (Eslinger & Damasio, 1986).

As far as advertisers are concerned, the biggest effect of product placements is the increase in sales of a product. As noted in the previous chapter, it has been speculated that the placement of the BMW Z3 in the movie *Golden Eye* increased the number of orders for the vehicle (Mortimer, 2002), and placement of Reese's Pieces in *E.T.* is said to have increased the sales of the candy by 65% (Van Biema, 1982) and although product placements are quite prevalent, there is still little knowledge or

consensus about how to measure their effectiveness and the evidence available remains inconclusive (Law & Braun, 2000).

Some of the means of identifying product placement effectiveness include brand incidence/typicality, placement recognition, brand salience, placement recall, brand portrayal rating, consumer identification with the brand, brand attitude, purchase intention, brand choice, and brand usage behavior (Balasubramanian et al., 2006). Because the goal of advertisers is to ensure that their product is remembered by the consumer, researchers of product placement using memory measures have tended to investigate the recall and recognition (two explicit memory measures) for placed products and advertisers generally view correct recognition rates from 20-25% as successful placements (Karrh, 1998). The present chapter will focus on these two explicit memory measures, although more current research has begun using implicit memory tests to gauge product placement effectiveness.

Recognition

Research on recognition has yielded mixed results. Ong and Meri (1994) found no effect of product placement on recognition memory of viewers who had watched placements in a film. Other researchers have found that prominent placements showed better recognition rates than subtle placements (e.g., Karrh, 1994; Gupta & Lord, 1998, Brennan et al., 1999, d'Astous & Chartier, 2000). This prominence finding also occurs when placements are categorized based on the on-set and creative dimensions with on-set placements leading to significantly better recognition of the products as compared to creative placements (Brennan et al., 1999). Additionally, research has found that not

only does prominence affect recognition scores, but recency does as well. Placements presented toward the end of the movie were recognized better than those appearing at the beginning (Babin & Carder, 1996).

Modality has also been shown to affect recognition. For example, Gupta and Lord (1998) looked at the effect of prominent and subtle placements and the mode of the placement on recognition using clips of movies. Audio placements and prominent visual placements resulted in better recognition than subtle visual placements. Audiovisual placements have also been found to be recognized better than visual only placements (Babin & Carder, 1996; Brennan & Babin, 2004).

Recognition has also been shown to be better when the product appears with lead actors (d'Astous & Chartier, 2000), and with verbal placements that are plot-related placements, but it is low with visual placements that are not particularly connected to the storyline (Russell, 2002).

Recall

Previous studies of product placements have typically used free recall measures in which participants are asked to recall the brands that they have just seen in a film or program. Participants sometimes were given cued recall tests in which they might be given a product category and then be asked to name a brand from the movie or television show. These explicit tests have generally shown positive effects of placements on memory (e.g., Law & Braun, 2000). In some of the earlier studies (e.g., Steortz, 1987), participants would be called a day after exposure to a movie to test their recall. One study using telephone surveys interviewed people who had seen a movie the day before;

looking at 29 different placements in six movies, the study found that 38% of the participants correctly recalled brands from the movie (Steortz, 1987). Another study of product placement on memory showed participants clips of two movies and had them recall the brands placed within the clips. They found that most of the participants (95.8%) were able to correctly recall the products (Vollmers & Mizerski, 1994). An exit survey that measured memory for placements in the movie *Falling Down* found that more than 77% of people remembered seeing Coke, a prominent placement, but only 18% recalled background placements, prompting the researchers to conclude that product placement was an ineffective advertising strategy (Ong & Meri, 1994).

It has generally been shown that prominently placed products are significantly better recalled than products that are the subjects of subtle placements (Karrh, 1994; d'Astous & Chartier, 2000; Gupta & Lord, 1998; Brennan et al., 1999; Law & Braun, 2000). For example, a Pepsi vending machine in Tom Hanks' living room in the film *Big* is remembered better than the Pepsi logo appearing on a cooler that serves as a background prop of the movie *Project X* (Gupta & Lord, 1998).

Research has also shown that increased integration of a product into a plot leads to better memory for the placed products and better evaluations of the products (d'Astous & Chartier, 2000). This study and others have also found that having an actor interacting with the product increases participants' memory for the placed product (e.g., Russell, 2002). However, studies have shown that the congruence between modality and plot connection is key in memory for product placements. Incongruence between modality and plot connection has been shown to improve memory for the placements

(Russell, 2002). Research on modality's effects on memory for product placements has shown that verbal placements are recalled better than a subtle visual placements. Additionally, audiovisual placements lead to better recall rates as compared to visual only placements (Saberwhal et al., 1994).

Some of these findings have implications for product placement in the arena of novels. Since brand placements that are highly integrated into the plot have been found to be more memorable for participants, it can be expected that this would hold true for novels. So, those brands that are integral to the plot of a novel would probably be most memorable for consumers. Take, for example, the novel *The Bulgari Connection* where the brand was so integral to the plotline that the author felt compelled to name the novel after the jewelry company. It is expected that this level of integration made Bulagri a very memorable brand in the readers' minds, but research has yet to address the effectiveness of this and other brand placements in books.

Additionally, the literature has found that prominent placements were remembered better than subtle placements. So, based on past research, an elaborate brand mention that goes on to expand on the attributes of a product is expected to be remembered better than a passing mention of a brand in the course of describing a scene. This has yet to be determined with brand mentions in novels, but the present experiments sought to answer this question. Participants read a short story with prominent or subtle brand mentions, and their memory for those brands was tested to see which brands were remembered best.

CHAPTER III

IMPLICIT MEMORY IN ADVERTISING

In general, advertising research has shown that memory can change how consumers evaluate a particular brand, and that when consumers make purchasing decisions, brands that are more readily available in memory have an advantage (Alba, Hutchinson, & Lynch, 1991; Nedungandi, Mitchell, & Berger, 1993; Nedungadi, 1990).

How different types of memory affect consumer decisions and choices is, therefore, an important focus for advertising research (Lee, 2002). Typical studies of consumer memory of advertisements rely on only explicit measures of memory such as Day-After-Recall tests (DAR). A DAR might ask people to attempt to recall certain commercials that they saw the night before, or certain products that they saw placed within a movie or television show. These types of tests do not allow researchers to examine the effects of unconscious processes on brand awareness, choice or affect toward the product (Krishnan & Chakravarti, 1999). Additionally, research has shown that consumers use effortful retrieval only when it is necessary; some consumers spend just a few seconds (5 s) to make some choices (Park & Hastak, 1994). Other research on consumer purchasing behavior has shown that people make their decisions based not on what they remember about an ad but on what they know about a product (Monroe & Lee, 1999).

Confining study to conscious memory retrieval of ads and products neglects half of the story; the advertising literature has also examined the effects of unconscious

processing on brand evaluation (e.g., Janiszewski, 1988; Krishnan & Shapiro, 1996), and comprehensive frameworks that incorporate direct and indirect tests of memory have been put forward to evaluate the effects of advertising on consumer behavior (Krishnan & Chakravarti, 1999). Implicit memory, and more specifically, conceptual and perceptual priming, can improve understanding of how nonconscious processes can affect behavior towards brands and perceptions about those same brands.

The truth effect, a result of unconscious processes affecting judgments, reflects a consumer's increased belief in an advertising claim as a result of previous exposure to it. In this case, repeatedly presenting younger and elderly participants with a claim such as "British Airways has flown the greatest number of transcontinental passengers" made participants more likely to believe the information depicted in the statement (Law, Hawkins, & Craik, 1998). The mere exposure effect has also been investigated in reference to advertisements. One study tasked students with reading an article in a newspaper, which incidentally exposed them to a brand. Even though participants did not remember having encountered the brand, they nonetheless formed a positive perception of that brand consequent to the exposure (Janiszewski, 1993).

Krishnan and Shapiro (1996) tested implicit and explicit memory for brand names in advertisements. They showed participants print ads that were modified from original magazine advertisements, varying frequency of the brand name, type of processing (deep vs. shallow), and repetition of the brand. They then tested participants with indirect tests of memory: a stem completion task and forced choice task. For preference judgments, participants were given several four-word sets and asked to

choose from each set (which included the target) the word they most preferred. They also gave participants direct memory tests that included a three-letter cued recall test, and a recognition test. Results showed that on stem completion and forced choice tasks, high-frequency brand names showed better priming than low-frequency brand names. Higher frequency brand names also showed better cued recall performance than low frequency brand names. The levels of processing (LOP) manipulation showed that semantic processing of the brand name led to better explicit memory for the brand name but resulted in no benefits for implicit memory when the ad as a whole is processed. However, elaboration led to priming in the forced choice task when the brand name received individual attention at encoding.

Another study looked at the effects of divided attention and delay on implicit and explicit memory for advertisements (Shapiro & Krishnan, 2001). Participants listened to a short story over the radio while evaluating several slides of fictitious advertisements. Participants were either tested after a delay of 15 minutes or a week. To measure explicit memory, participants were given a category cued recognition test that presented two brands, from which they had to choose the one that had been presented at study. For the implicit memory test, participants were given a two-item forced choice task in which they were asked to choose from two brand names the product that they would select as consumers. Results showed that participants in the delayed group performed more poorly on the recognition test than did participants who were tested after 15 minutes. Participants in the divided attention condition also showed poorer recognition scores compared to people in the full attention condition. To assess implicit memory,

preference after exposure was compared to a baseline preference from participants who were not exposed to the brands before completing the choice measure. Results from the implicit memory forced choice test showed that prior exposure to the advertisements led to a greater likelihood of the fictitious brands being chosen in all conditions: delay, no delay, full attention, and divided attention. The results demonstrated that explicit memory performance suffered from both, delay and divided attention. However, performance on the indirect memory measure (preference judgments) remained unaffected by these same manipulations. These results illustrate how the use of a standard explicit memory test may lead to incomplete conclusions about consumer memory and behavior.

Another study looked at consumer choices based on the modality (auditory vs. visual) and type of processing (shallow vs. deep) at study and the amount of involvement (low vs. high) at test (Chung & Szymanski, 1997). Half of the participants heard, and half of them saw, a set of brands. Additionally, some of the participants were asked to count the number of vowels in the brand name (shallow processing), while the other half were asked to think about at what time of the day the brand would be used (deep processing). At test, the participants were asked to make a selection from among five brands in a product category. Some of the participants made their choices under high involvement conditions in which the choice set for each of the product categories were up on the computer screen for 10 s. The remaining participants made their decision under low involvement conditions, with the choice set being on the screen for only 3 s. Modality of exposure affected which brands participants chose. Under low involvement

conditions, the probability of choosing the exposed brands in the visual exposure group was higher than it was in the auditory exposure group. The difference in exposure modality was not significant under high involvement choice situations. Likewise, the study found no effect of levels of processing at exposure (shallow vs. deep) in either of the involvement situations. Thus, in both of the involvement choice situations, participants who processed the brands conceptually at study failed to choose the primed brands more often than those participants whose processing had been perceptual. The authors posit that this result may have occurred because participants made their choices with all of the alternatives present, and conceptual processing may become more useful in memory-based choices in which the choice situation is made without the physical presence of alternatives.

Dissociation between explicit and implicit memory measures were also revealed in a study involving magazine advertisements conducted by Shapiro, MacInnis, and Heckler (1997). In their experiment participants, having read articles with advertisements placed in the periphery of the story, took implicit and explicit memory tests. The latter was simply a recognition test that asked participants to identify, from among a set of four brands, the brands that they had seen earlier when reading the story. Participants were also asked to complete a memory-based test that gave participants a buying scenario in which they had to make a shopping list of the eight products they would consider buying. There was also a stimulus-based test: given a purchasing scenario, participants were provided with a checklist from which to select which brands they would consider buying. Results showed that prior exposure to the brands did not

affect performance on the recognition memory test; recognition scores for participants in the experimental group were not significantly different from those of the control group. However, people exposed to the brands were more likely to include those brands as part of their consideration sets than were people who had not seen the brands in the memory-based test and the stimulus-based test. The authors posited that incidental advertising exposure leads to a higher probability of consumers including a brand in their consideration sets.

Lee (2002) conducted experiments that tested conceptual and perceptual priming for brands presented either in the context of a sentence or brands presented in isolation. In Experiment 1 the participants saw a set of brand names either in isolation or in the context of the sentence. They then completed two tasks, one that tested for perceptual or conceptual priming and another that detected how brand choice changed with a stimulus-based or a memory-based shopping situation. Results showed higher conceptual priming when brands were presented in the context of a sentence as compared to brands presented in isolation. However, performance on the word fragment completion task benefited more from brands shown in isolation as compared to brands placed within a sentence, though this did not reach significance ($p = .07$). Lee took this to show support for the idea that conceptual priming, much like explicit memory, benefits from elaboration, whereas perceptual priming does not. Choices in the memory-based choice task in which participants were asked to list the brands they would choose in a given product category showed no effects of previous exposure. Results of stimulus-based choices (choosing between two brands within a given product category) did, however,

show an effect of exposure, with target brands being selected more often than brands that were not presented at study. More specifically, participants who had seen the brands in isolation at study were more likely to select the target brand in the stimulus-based choice (71%) than those making stimulus-based choices after they had seen the brands in the context of a sentence (32%).

In Experiment 2, low-involvement categories (toothbrushes, chewing gum, candy bars, and cough drops) were used because participants did not indicate a strong preference for a brand. At study, participants were once again shown either brands in isolation, or brands in the context of a sentence. At test, participants were asked about what brand (in a given product category) they would like the local convenience store to stock. Half of the participants were given a stimulus-based choice task in which participants selected from two items in the product category. A memory-based choice task was administered to the remaining participants, who were asked to write down their preference. Results showed that participants making the memory-based choices were more likely ($p = .05$) to choose the target brand after they had studied the brand in the context of a sentence (45%), while only 29% made that choice if they had studied the brands in isolation. On the other hand, participants making the stimulus-based choices were significantly more likely to choose the target brands if they had studied the brands in isolation (63%) compared to if the brands had been studied the brands in the context of a sentence (45%).

This study concluded that presentation of the brands in isolation increases perceptual fluency of the brand name and increases the choice of that brand in stimulus-

based choices. Presentation of the brands in a context that allows for some elaboration of the brand increases conceptual fluency of the studied brands and increases the choice of target brands in memory-based choices. The current experiments tested these two conclusions in the context product placement in novels. Participants saw either brands mentioned in passing, or brand mentions with some elaboration about the product characteristics. Participants were then given stimulus-based and memory-based choices similar to the tasks used in Lee (2002) experiments to see how the brand mentions influenced consumer behavior.

The studies in the advertising literature suggest that the effects of previous exposure on consumer judgments and consideration sets can sometimes be reflected in implicit memory tests (i.e. preference judgments) even when the explicit memory tests show no effects of exposure. As a result, the current goal of product placement literature is to include implicit memory measures in addition to the explicit memory measures.

CHAPTER IV

IMPLICIT MEMORY IN PRODUCT PLACEMENT

Product placement effectiveness has been evaluated with implicit measures because research has shown that past exposure can affect how people react to later stimuli. Implicit memories have been shown to lead people to respond using previously seen information without being aware that they are using that information. One of these response biases is heightened preference for previously seen information (Schacter, 1987). Because product placements could prime consumers to choose the product without their recollection of the placement, implicit tests have become more commonplace for the evaluation of product placement effectiveness. There are many instances in advertising in which implicit memory measures may be more appropriate than explicit measures. This is especially true when the consumer is not going to spend much time and effort attempting to retrieve product information to make a decision and the only way that a previously viewed advertisement will have an effect is through its impact on unconscious decisions (Shapiro & Krishnan, 2001). Additionally, implicit memory measures might be more appropriate for gauging product placement effectiveness because brands will probably not receive much attention or processing and studies have shown that elaboration or levels of processing do not affect implicit memory (Jacoby & Dallas, 1981).

Some studies have found that product placement in television shows has a

significant effect of brand placement on choice (Law & Braun, 2000) and on attitudes toward the brand (Russell, 2002).

Stimulus-based Choices vs. Memory-based Choices

Choices in advertising have been categorized as either stimulus-based or memory-based (Chung & Szymanski, 1997). Stimulus-based choices are choices that people make from information they have available in their environment (Lee, 2002). With stimulus-based choices, all of the choices and their attributes are present when the consumer is making the decision. For example, a consumer looking for a drink in the juice aisle may make decisions based on memory of a preferred brand, using conscious retrieval. However, if the first product choice is unavailable, the consumer is likely to choose whichever product is more perceptually salient. Thus, because stimulus-based choices might be made in the absence of a preferred brand, product exposures that lead to greater perceptual fluency of the product would be advised.

For memory-based choices, the consumer makes a selection among alternatives and their attributes that must be retrieved from memory (Lee, 2002). When people make shopping lists, they are making choices based on the information they can consciously remember. In this case, a brand that is more accessible and comes to mind quickly is more likely to be selected for purchase. Studies have shown that if a brand is made more accessible through exposure, it is more likely to be selected in the future (Nedungadi, 1990). Thus, brand exposures that lead to higher accessibility of the brand or product name are preferred when consumers will be making memory-based decisions.

Choice in Product Placement

Auty and Lewis (2004) looked at the effect of a product placement on children's choices. In this UK-based study, two groups of children ages 6-7 and 11-12 watched a clip from the movie *Home Alone* and were subsequently asked to describe what they had seen. One group saw a clip in which the main character spilled a can of Pepsi on the table; the other half saw a similar clip in which nothing was being spilled. At the end of the experiment, choice was measured by having the children choose a drink, either Coke or Pepsi, as a thank-you gift. Those children who had seen the branded clip were more likely to choose Pepsi even though Coke outsold Pepsi in the UK by a 3:1 ratio. After more careful study, it was found that it was not just exposure to the film clip that affected choice; previous exposure to the movie, along with the "reminder," had an impact on children's choices.

In a study of modality and centrality of placement by Law and Braun (2000), participants were asked to watch and rate television clips of the sitcom *Seinfeld* with several brand placements. After viewing the clips, participants were given a hypothetical scenario in which they would be shopping for a friend who had just moved into a new apartment. Provided with a list of items and brands that the friend preferred, participants were asked to check off the brands that they would choose for their friend. Results showed priming for the products placed within the clip. Centrality of placement did not have an effect on choice. However, modality of placement did; visual placements were most likely to be chosen, followed by verbal and audiovisual placements.

Another study looked at how three different levels of visual placements

(background, use by lead actor, and integral part of plot) in a movie affect subsequent product choice behavior (Yang & Roskos-Ewoldsen, 2007). Participants were assigned to one of three groups and were asked to watch a single movie clip that lasted 20 minutes. There were a total of 15 movie clips, five in each of the three different levels of placements. Participants then completed a word-fragment completion task; a distracter task was then followed by a recognition test, and finally participants were administered the choice test. To judge product choice, participants were asked to choose a product as a "token of appreciation" for their participation in the experiment. Results showed that the levels of placement affected recognition rates. Recognition rates for products used by the main character and products connected to the storyline were highly recognizable but did not differ from each other. Background placements led to significantly worse recognition rates when compared to other types of placements. The implicit memory test showed that brands presented in the movie showed priming, but priming rates did not differ across the three levels of placements. More importantly, the choice task showed that participants who were exposed to the products in the movie clips were more likely to choose the products from the movie than were people in a control group who were not exposed to the brands; levels of visual placements did not affect choice. The effect of brand placements on consumer choice was evaluated in a new medium, books, in the present experiments to see if a similar pattern of results would emerge.

Attitude toward the Brand

Researchers have studied how product placements affect attitude toward the brand. Two explanations have been put forward to explain how placements affect brand

attitudes. By one explanation, product placement makes the brand more accessible in memory, which later affects attitudes: exposure increases implicit memory for the brand, and consumers misattribute the increased ease of recall for the brand as preference. Although people may not remember seeing the brand, they might nonetheless report a more positive attitude toward it (Cowley & Barron, 2008). This hypothesis can explain the results of some studies (e.g., Law & Braun, 2000; Russell, 2002). Another explanation for a positive change in attitude after a placement is that consumers form a positive association with the brand after seeing its placement (Cowley & Barron, 2008). Studies that have found support for this idea show that when people have explicit memory for certain products, those same products later receive a more positive increase in brand attitudes (Russell, 2002).

The research into the effect of product placements on attitudes is inconclusive. Some research has found that placements do not affect how consumers feel about the brands (Ong & Meri, 1994; Babin & Carder 1996; Vollmers & Mizerski, 1994), whereas research on the effect of cigarette placements on consumers' perceptions has shown that seeing actors smoking cigarettes in movies makes young people more likely to evaluate smokers and cigarettes positively (Gibson & Maurer, 2000); and when a well-liked actor uses the placed product, the audience is more likely to evaluate the brand positively (d'Astous & Chartier, 2000; DeLorme & Reid, 1999).

It has been found that congruence between plot connection and modality of placement leads to better evaluations of the placed brand because these placements seem more natural in the context of the medium (Russell, 2002). Specifically, auditory

placements with a high connection to the plot have the best chance of positively affecting a consumer's attitude toward the brand. Those visual placements with a low plot connection can also positively influence a consumer's attitude toward the brand even without the participants' conscious recollection of the product. A visual placement with high plot connection or an audio placement with low plot connection adversely affect consumer evaluations of the brand because they seem forced and out of place (Russell, 2002).

Other research, using 20-minute movie clips, has shown that attitude toward a brand can be positively affected by levels of visual placement: use by lead actor was most influential, followed by background placement, and close integration between product and storyline (Yang & Roskos-Ewoldsen, 2007).

Another study looked at the effects of prominent placements on attitudes toward the brand (Cowley & Barron, 2008). This study had participants watch advertisements for products that were placed in a *Seinfeld* episode, followed by the episode. The ads were expected to remind the viewers of the ultimate reason for the placements, namely, to persuade them to buy the product. Those people who reported liking the program reported lower attitudes for the products that were subjects of prominent placements in the episode compared to the attitudes of people in a control condition. On the other hand, people who did not like the program as much had more positive attitudes towards the placed products. While recognition tests indicated that the participants did not explicitly remember seeing these products, they nevertheless reported changes in brand attitudes, unlike a control group; these positive attitude changes disappear when an advertisement

for the placed product is seen before the program. Subtle placements, on the other hand, did not affect viewers' attitudes negatively. For those who reported lower enjoyment of the program, seeing an ad for the brand followed by a subtle placement led to a significant positive change in attitude toward the brand. From these results the authors posit that having an advertisement before a prominent placement can have a negative impact on brand attitudes. They suggest that the advertisement at the beginning of the program primed the viewers of the persuasive intent of the placement. This led to the changes in consumer attitudes toward the brands after the placements.

A study involving product placements in television and movies (Homer, 2009) found that repeated prominent placements produced a significant decrease in attitudes toward the brand when compared to prominent placements with a low rate of repetition. On the other hand, subtle placements with moderate repetitions led to a nonsignificant increase in brand attitudes, compared to subtle placements with low repetitions; however, brand attitudes toward subtle placements were generally positive.

Attitude toward placed brands should also be studied in books. Because the placement in this medium has been thought to be highly controversial (Nelson, 2004), it is expected that consumers will be overall, much less likely to positively change consumer attitudes toward the product. If anything, it is possible that attitudes toward the brands placed in novels will likely become more negative since this appears to be a medium that people believe should go without advertisements. It is also possible that like the research previously discussed, the prominent placements in books will engender more negative attitudes than subtle placements.

Impulse Buys vs. Deliberate Buys

First and foremost, advertisers need to be aware that the ways in which they evaluate advertising effectiveness depends on the type of processing that consumers will be engaged in at the time of purchase. In an impulse-buying situation, familiarity may drive a consumer's decision to purchase one product over another. Making a brand highly familiar and accessible to consumers would be more useful for brands in product categories that are usually bought on impulse (low involvement products like gum and pens). For impulse buying situations, which may be prone to unconscious influences, it is more logical to use implicit memory measures because, at the time of purchase, consumers might not attempt an extensive memory search to find the product they want to purchase.

With low-involvement products that lead to little risk (e.g., gum, pens), consumers may actually be focusing on the peripheral aspects of the products such as background and packaging and may therefore not spend much time trying to assess advertising claims (Krishnan & Shapiro, 1996). With products of this nature, indirect tests may be better able to gauge the effectiveness of the advertisement on consumers, who are unlikely to spend much time trying to consciously recall information. With low-involvement products it is important that consumers process the brand name individually by making it more salient within the context of the advertisement (Krishnan & Shapiro, 1996).

With high involvement products (e.g., cars), consumers will more than likely spend more time trying to elaborate upon the advertisement and its claims, and they will

probably try to consciously recollect product information at the point of purchase. Direct tests would be more appropriate with these types of products.

It is important to be aware that the effects of brand accessibility and perceptual fluency on choice consideration sets are first and foremost affected by consumers' preferences. In order for priming to really affect choice, consumers must not have strong brand preferences in that particular product category; this is especially important for situations in which consumers will be making memory-based decisions. In many cases, the most prevalent brand is likely to be chosen by consumers not only because consumers are partial to it but also because that brand will be more accessible in their memory (Lee, 2002).

Purchase Intention in Product Placement

Research has shown that conscious and unconscious processes may influence purchasing decisions (Chung & Szymanski, 1997). When consumers go to buy something, they may not want spend much time trying to retrieve information about the product, or they may not be able to retrieve information; thus implicit tests provide a better gauge for consumer purchases. Consequently, researchers have also investigated people's intention to purchase products after exposure to a placement. It has been found that consumers, in general, vary in their intention to purchase a product based on their gender (e.g., Gould, Gupta, & Grabner-Krauter, 2000). Males are more likely than females to report intention to purchase a product based on a placement in a movie (Gould et al., 2000).

Morton and Friedman (2002) performed an exploratory study with 132 college

students to examine the relationship between beliefs about product placement and reported product usage after seeing a placement. Participants completed a questionnaire, the results of which showed that beliefs toward placement were influenced by how the products were portrayed in the movie: positive portrayals were related to consumers' decisions to purchase the product and negative ones prompted consumers to stop using the product. It is important to note that the studies in product placement and purchase intention have gathered evidence only through questionnaires and self reports and unlike the advertising literature, have not experimentally manipulated those variables that might affect the products included in participants' consideration sets.

Purchase intention is ultimately the most important factor for advertisers. While it is important that consumers demonstrate a positive attitude toward the product, this factor is irrelevant if it does not influence purchasing decisions. Because novels already include these brand mentions, it is crucial for advertisers to measure whether purchase intentions are positive (or negatively) affected by placements in this medium.

CHAPTER V

IMPLICIT MEMORY

Implicit memory tests deal with improved performance on tasks due to previous exposure to a stimulus without conscious recollection of the study episode, a process referred to as "priming." (Schacter, 1987; Roediger & McDermott, 1993). Implicit memory is determined by measuring performance on an indirect task that does not mention the study episode, such as word fragment completion or word stem completion. On these tests, “memory” is inferred from improvements in performance on indirect tasks and is attributed to previous exposure to stimuli. To measure memory, performance on primed (studied) items is compared to performance on unprimed (nonstudied) items (Roediger & McDermott, 1993).

Research has often shown that variables affecting performance on explicit memory tasks have little or no effect on performance on implicit memory tasks. Additionally, while explicit memory performance decays quickly with the passage of time, priming effects on implicit tests can last many weeks (Graf & Schacter, 1985). This may occur because semantic information decays faster than perceptual information, so explicit memory shows a deficit while implicit memories remain intact (Shapiro & Krishnan, 2001). One study found no significant changes in priming with a one-week delay (Tulving et al., 1982). Other studies have found that priming on fragment completion can last up to a year (Sloman, Hayman, Ohta, Law, & Tulving, 1988). Research has also demonstrated that priming effects with conceptual tasks decreases at

faster rates, showing that over a period of 90 minutes category exemplar priming declined rapidly (Hamann, 1990). Other researchers have shown that conceptual priming can last longer. In one experiment, Goshen-Gottstein and Kempinksy (2001) showed that priming on a conceptual implicit test was unaffected after a two-day delay; a second experiment showed that priming effects on conceptual tasks can last up to three weeks.

Explicit memory tests like recall and recognition ask participants to think back to the original study episode. Memory performance, calculated from participants' responses, is therefore said to be a direct test of memory. Implicit memory tests are indirect tests of memory because memory is inferred from differences in participants' test performance on nonstudied and previously studied items (Richardson-Klavehn & Bjork, 1988).

A series of models have been posited to explain the differences in performance on implicit and explicit memory tests (Schacter, 1987). The activation view posits that performance on an implicit test will be affected by concepts activated by the stimuli at study. Other researchers have posited that there are multiple memory systems where the explicit memory system involves conscious recollection and is associated with declarative or episodic memory; implicit memory processes are said to be a part of the procedural or semantic memory system (Tulving, 1983). Finally, the processing approach states that dissociations arise because of the different processes required by explicit and implicit memory tests (e.g., Roediger, Weldon, & Challis, 1989). While performance on explicit memory tests (e.g., recall and recognition) require participants

to think back to the original encoding episode, participants' performance on implicit memory tests is affected by the use of the information provided in the test.

The activation view holds that the presentation of stimuli at study activates the related concepts and it is the activation that leads to facilitation in performance on different implicit memory tests (Graf & Mandler, 1984). The improved memory performance is thus due to quicker access to the activated concepts than for concepts that were not activated. This approach states that the activation of concepts occurs automatically, although people can choose to elaborate on the stimuli, which leads to participants' differing performance on implicit and explicit memory tests (Schacter, 1987).

Another attempt to explain differences in performance on implicit and explicit memory tests states that we have multiple memory systems. Some have distinguished between declarative and procedural memory. Declarative memory is associated with an individual's personal memories and general knowledge; procedural memory is associated with cognitive and motor procedures (Cohen & Squire, 1980). Other researchers have separated long-term memory into episodic and semantic memory (Tulving, 1983). Where episodic memory refers to memory containing personal episodes, or information not readily available to others (such as daily activities and events), semantic memory refers to memory containing general information, such as word meanings. Impairments with a person's episodic memory system would then lead to deficient performance on explicit memory tests, but implicit memory test performance

would remain normal because the semantic memory system can show facilitation, or changes in preference without conscious awareness.

Processing views of memory credit differences in performance between implicit memory tests and explicit memory tests to the difference in the retrieval demands of the tests (e.g., Roediger et al., 1989; Weldon, 1991). In this approach, performance on a memory test is affected by the similarities in the processes required to complete the test and the processes required of participants at study. Because explicit and implicit memory tests differ in the processes required at retrieval, each is affected by different manipulations at study. Explicit memory tests depend on semantic processing, conceptual processing, and elaborate processing of the stimuli (Roediger, 1990). Performance on implicit memory tests depends on the correspondence between the perceptual processing of stimuli at study and test. Further, perceptual implicit memory tests, or data-driven implicit memory tests (such as word fragment completion and word stem completion tests), rely on the processing of the surface features of the stimuli. Conceptual priming relies on top-down processing and is achieved when conceptual fluency makes certain knowledge structures more easily accessible in memory. One of the major advantages of this approach is the fact that it makes clear-cut predictions about how different variables will affect performance on the different implicit memory tests. However, this theory does not account for the conscious processes that participants may be engaging at the point of encoding or retrieval (Roediger & McDermott, 1993) and fails to explain some findings in the literature (e.g., McDermott & Roediger, 1996).

The major impetus behind the study of implicit memory originally stemmed from

research with amnesic patients. Studies showed that these patients displayed great impairments in comparison to their normal counterparts when tested with conventional memory tests such as recall and recognition; however, when tested with word fragments, picture fragments, or stem completions patients' performance on these tasks improved through repeated exposures to the stimuli, even though the patients could not consciously remember having seen the stimuli before (e.g., Warrington & Weiskrantz, 1968; 1970). Often these experiments showed that amnesic patients performed just as well as the control group on implicit memory tasks (e.g., Graf, Shimamura, & Squire, 1985). Warrington and Weiskrantz (1970) gave a group of amnesic patients and a group of control subjects a list of words to study; they then tested them with a recall test, a recognition test, a word fragment completion in which parts of each letter were missing, and a three-letter stem completion test. Results showed that performance on the explicit memory tests of recall and recognition was greatly diminished in amnesic patients. Conversely, on the two implicit memory tests, both groups of participants, amnesic and control alike, showed similar levels of priming. A critical manipulation seems to be the instructions given to participants during the test episode. When amnesic patients are asked to think back to the study items in order to complete word stems, they show the same memory deficits seen with recall and recognition tests. However, when given instructions that simply ask them to complete fragments with the first word that comes to mind, amnesic participants perform the same levels of priming as the control subjects (Graf, Squire, & Mandler, 1984). Analysis of the literature dealing with amnesic patients shows that the priming in this group is reliable with a series of different tests (see

Shimamura, 1986 for a review). Amnesics are, therefore, able to encode the information but cannot consciously recollect it (Roediger et al., 1989). Similar patterns have emerged in the literature examining memory in older adults. While older adults show impairments relative to younger adults with explicit memory tests, implicit memory tests show that performance by both groups on implicit memory tests is relatively equivalent (e.g., Light & Singh, 1987).

There are two main requirements for an implicit memory test. Participants must first be exposed to the stimuli during the encoding phase and the test phase must evaluate how prior exposure affects performance without inducing conscious recollection of the study episode (Roediger, Guynn, & Jones, 1994). Of interest is whether previous exposure to the studied items will lead to faster identification or greater completion rates of the studied items compared to nonstudied items. There are two types of implicit memory tests: perceptual tests and conceptual tests (Roediger & Blaxton, 1987). The key difference between the two tests is whether the stimuli presented at the time of the test share the surface features of the studied stimuli (perceptual tests), or if the test stimuli are conceptually associated with the studied stimuli. Research has found that perceptual tests generally lead to more priming than conceptual tests. Patients with amnesia have been shown to perform as well as control groups on both conceptual and perceptual implicit memory tests (Graf et al., 1985).

Perceptual implicit memory tests are data-driven and can be verbal or nonverbal. In these tests, participants are presented with either a degraded version of the originally studied stimulus or a quick glimpse of the stimulus, and are asked to identify the item.

Examples of perceptual implicit memory tests include word stem completions in which participants have studied, for example, the item "ELEPHANT" and at test are presented with the first few letters of the word, "EL_____;" they are then asked to complete the stem with the first word that comes to mind. In these tests, stems with ten or more completions are typically used (Roediger & Geraci, 2005). Another example of a perceptual test is a word fragment completion (e.g., _L_ _H_ _ _). In word fragment completions, participants see words with most letters missing and are asked to identify the word. With this test, participants are given about 15 seconds to complete the fragment and the fragment is unique in the sense that only one word can be used to complete the fragment (Roediger & Geraci, 2005).

Performance on perceptual implicit memory tests is affected by the correspondence between the study items' physical features, and the features of the stimuli presented at test, with more priming occurring when similar perceptual operations are required when processing the study stimuli and the test stimuli (Roediger et al., 1994). For example, previous studies have shown that if participants studied lists of pictures and words and were later tested with either word fragments or a picture fragment naming test, there was significantly more priming for studied words compared to studied pictures in the word fragment completion test. The opposite effect occurred with the picture fragment naming test: more priming occurred for the studied pictures than for the studied words (Weldon & Roediger, 1987). It was posited that these effects occurred because the processes required to study a picture and later name a picture fragment were better matched than those processes required to study a word and later

name a picture fragment (Roediger et al., 1994). Some researchers have stated that the surface features of the studied stimuli become activated and that priming on these tests is a result of increased perceptual fluency of the stimuli, which makes it easier to identify or produce the item on the task (Jacoby & Dallas, 1981). An experiment presented participants with a set of items that were either focused or blurred to study. At test, participants were presented with word fragments that were either blurred or focused. Results showed that how participants originally studied the words (either focused or blurred) affected priming on the fragments at test. The researchers found more priming on the fragments that were "focused" at test for those items that were studied in clear focus as compared to those words that were blurred. The opposite pattern emerged for the blurred word fragment completion test; words that were studied while blurred showed more priming compared to words studied under clear focus (Roediger & Blaxton, 1987). As discussed above, these tests are affected by the changes in physical features of the stimuli (e.g., Weldon & Roediger, 1987) and can also be affected by changes in the presentation modality and by changes in typography (e.g., Blaxton, 1989).

In conceptual implicit memory tests, the participants are given a test cue that, although conceptually or meaningfully related to the studied items, is not perceptually related to the studied stimuli. In a conceptual implicit memory test, participants may study a list of items including the word "ELEPHANT." They later receive a set of related words, and are asked to write down associated words for 15 or 30 seconds. Another way to test conceptual priming is by having participants answer general knowledge questions (e.g., "What animal did Hannibal use to help him cross the Alps in

his attack against Rome?"). Participants are more likely to complete the questions with the correct answer when they have previously studied the answers. Finally, another type of conceptual implicit memory test is a category exemplar generation task where participants are given, for example, a category name at test (e.g., "MAMMALS") and are asked to produce members of that category in 30 seconds. Other tests of conceptual priming include asking participants to make judgments of fame under conditions in which people may mistakenly judge a name to be “famous” because they have studied it before and fail to remember the study episode (e.g., Holden & Vanhuele, 1999). Another way that priming can affect judgments is by giving participants claims to study. Participants in these studies are given claims such as “Shark cartilage is good for your arthritis” to study and are told that these claims are wither true or false. At test, participants shown the claims again and are asked which of the statements are true. Research has shown that those claims that have been previously studied, and were told were false, are likely to be judged as truthful (e.g., Skurnik, Yoon, Park, & Schwarz, 2005).

Conceptual implicit memory tests are affected by manipulations in meaning, though these same manipulations have no effect on priming in perceptual implicit memory tests (Roediger et al., 1994). Because these tests need conceptual elaboration of the study items, many variables that commonly affect explicit memory have similar effects on conceptual implicit memory tests but not perceptual memory tests. For example, repetition of target items at study has been shown to lead not only to better recall and recognition of the study items but also to priming for target words on general

knowledge questions (i.e. conceptual implicit memory test); however, it creates no difference in priming effects on fragment completion tests (i.e. perceptual implicit memory tests). Additionally, modality changes have been shown to affect priming on tests for perceptual implicit memory, but they do not do so on those for conceptual implicit memory (Challis & Sidhu, 1993).

Though implicit memory tests are said to evaluate nonconscious memory processes, researchers cannot be fully certain that participants are not becoming aware of the purpose of the test or using intentional retrieval strategies to complete the fragments or answer the general knowledge questions (Roediger et al., 1994). Researchers cannot, therefore, always claim that they are assessing incidental retrieval. Although instructions at test make no reference to the study episode, some participants may realize that the words they are using to complete the word fragments, for example, are words that they studied earlier and may engage in conscious recollection to fill in the remaining fragments. As a result, researchers have posited that conscious processes can come into play at the point of retrieval with implicit memory tests, even in instances where subjects may be unaware that this is occurring (Schacter, Bowers, & Booker, 1989). To attempt to ensure that implicit memory tests assess nonconscious processes, different methods have been used. Some researchers use a task dissociation approach in which participants are given post-test questionnaires that assess awareness and retrieval intentionality (e.g., Bowers & Schacter, 1990; Barnhardt & Geraci, 2008). This has been shown to be a good approach to assess intentional retrieval, or awareness because studies using such questionnaires have shown that priming is greater with participants who are classified as

test aware compared to priming with participants classified as test unaware (e.g., Barnhardt, 2004; Bowers & Schacter, 1990). Other researchers have posited a process dissociation approach to determine participants' conscious retrieval processes from their nonconscious retrieval processes (e.g., Jacoby, 1991). Some researchers have used the method of opposition (see, Richardson-Klavehn, Gardiner, & Java, 1994) or the retrieval intentionality criterion (see, Schacter, Bowers, & Booker, 1989). The method of opposition states that conscious and unconscious memory processes can be teased apart if they are placed in opposition (recollections vs. familiarity) so that conscious processes conflict with unconscious memory processes (e.g., Jacoby, Woloshyn, & Kelley, 1989). This approach assumes that both processes, conscious and unconscious, differ in terms of intentional control, where people can assert control over information that is consciously available (i.e. remembered), but they cannot exert control over information that is unconsciously available (i.e. familiar), and this can lead unconscious processes to affect conscious behavior. In one experiment, participants saw a list of names and were told that the names were non-famous. At test, participants were given a list of names that included famous names (e.g., Satchel Paige) and nonfamous names from the study list (e.g., "Sebastian Weisdorf"), participants were then asked to decide if the names were those of famous people or nonfamous people, which placed conscious and unconscious processes in opposition. If participants successfully recollected "Sebastian Weisdorf" from the study list at test, they would be able to judge the name as nonfamous. However, the name would be judged to be famous if recollection failed but unconscious processes made the name appear to be familiar. In their experiment, the researchers found that

manipulating attention at study affected conscious recollection and caused participants to judge nonfamous names presented on the study list (e.g., Sebastian Weisdorf) to be famous relative to nonfamous names that were not presented in the study list. These results showed that unconscious processes (i.e., familiarity) influenced explicit memory performance.

The retrieval intentionality criterion states that tasks should be kept the same so as to standardize the processing demands on the participants. The only things that should change are the instructions given to participants: some are given direct test instructions, while others receive indirect test instructions. In this way, it is expected that an indirect test of memory is process pure and unaffected by explicit contamination when manipulation of a variable affects performance on the direct memory test, but it does not affect performance on an indirect test. Researchers have posited that some of the problems with this approach include differences in sensitivity for direct and indirect tests (Merikle & Reingold, 1991; see Berry, Shanks, & Hensen, 2006 for a counterargument) and the fact that research has shown that unconscious processes are involved in direct tests of memory (e.g., Jacoby, Toth, & Yonelinas, 1993).

The process dissociation procedure is based on the idea that memory tests are not process pure; nonconscious processes can affect explicit memory tests and conscious retrieval can influence performance on implicit memory tests. The process dissociation procedure, which allows researchers to measure the conscious and nonconscious processes affecting performance on a task, helps to tease apart automatic and controlled processes. It looks at performance on two separate tests in which the cues provided at

test are held constant for everyone, but the instructions for participants differ (Jacoby & Kelley, 1992; Jacoby, 1991).

With the process dissociation procedure, participants study a list of items. At test, one group is given instructions to complete the test items with items from the study list, and if they cannot come up with an item from the study list, they are to write down the first items that come to mind. A separate group of participants is asked to complete the test items with words that were *not* presented in the study list. Therefore, the process dissociation procedure creates an inclusion condition in which participants are intentionally trying to recollect items from the study list and may sometimes fill in test items with words from the study list because recollection failed, but the study list items automatically came to mind. The inclusion condition represents intentional retrieval and incidental retrieval. In the exclusion condition, participants should be using only studied list items to answer test questions when their recollection of studied items fails. With the exclusion condition, incidental retrieval or automatic responding is at work (Roediger & McDermott, 1993). Using these guidelines, recollection is calculated as the difference between participants' performance on the inclusion condition and the exclusion condition. Inclusion performance is thus equal to the probability of retrieval using intentional recollection plus the probability of recollection using incidental retrieval. Exclusion performance is equal to the probability of recollection using automatic retrieval (Roediger & Geraci, 2005).

Researchers have posited problems with the process dissociation procedure: some have probed the assumption that conscious and nonconscious processes work

independently of one another (e.g., Curran & Hintzman, 1995); others have questioned whether the response criteria are stable, as some participants may use different strategies for excluding responses. Finally, the process dissociation procedure may overestimate the controlled processes at work on a task because participants may come up with an item from the study list through incidental retrieval but discard that item once recognizing it as coming from the list (Roediger & McDermott, 1993).

As stated earlier, other researchers have used post hoc questionnaires to assess whether awareness or intentional retrieval (i.e. conscious processes) affected participants' responses on the implicit memory tests. The questionnaires usually begin with open-ended questions followed by more specific questions. The questions attempt to determine whether people believed that they were to complete the test with items from the study list, or, if they noticed the relation between the items during the test, whether this made them change their strategy for how they completed the implicit memory test (Roediger & Geraci, 2005). These questionnaires show that test aware participants usually show levels of priming different from those of test unaware participants (e.g., Barnhardt, 2004; Bowers & Schacter, 1990; Geraci & Rajaram, 2002), sometimes eliminating priming altogether, depending on the conditions at study (e.g., Mulligan, Guyer, & Beland, 1999). One study gave participants a list of items and later tested memory with a word stem completion task (Bowers & Schacter, 1990). The researchers manipulated whether participants were told ahead of time that they would be receiving a memory test. They also varied whether participants would be asked to complete the word stems with items from the study list, and, finally, they varied how participants

processed the study list (either shallow processing or deep processing). After the test, participants were given a questionnaire about the test. Participants were described as test aware if they stated that some of the items that they wrote down on the test came from the study list. Participants who did not report this were described as test unaware. Results from this study showed all of the participants showed equal levels of priming. However, test aware participants showed an effect of level of processing with semantic encoding leading to an increase in priming as compared to structural encoding; this has also been observed with category exemplar generation tests (Mace, 2003). Other studies have shown that with perceptual implicit memory tests, the orthographic distinctiveness effect occurs only with participants who are grouped as test aware. A more recent study presented participants with study items and tested them with a word fragment completion task (Barnhardt & Geraci, 2008). Participants were asked to process the items under deep encoding conditions or shallow encoding instructions; additionally, the researchers manipulated participants' ability to complete the fragments with studied words: some participants were tested on word fragments that could not be completed with studied items, and others saw fragments that could. As would be expected, they found that reported awareness was much lower in participants who were tested on fragments that could not be completed with studied words: 83% were classified as unaware. Additionally, they found that performance differences between test aware and test unaware participants were larger in the deep processing condition relative to those in the shallow processing condition, although awareness did not significantly affect priming. In the shallow encoding condition, priming was observed, but very few

participants reported awareness. A second experiment examined the effects of awareness on conceptual priming. According to the questionnaire, participants who had been tested with category labels not associated with the study list were mostly classified as unaware (83%). Like previous studies, they found that priming increased in the deep encoding condition for participants taking the standard conceptual implicit test and that priming was higher for test aware participants than for test unaware participants. They concluded that awareness questionnaires were valid measures when using both, conceptual and perceptual implicit tests.

Barnhardt and Geraci (2008) discussed some of the disadvantages of these questionnaires. Participants may be reporting their awareness during the completion of the questionnaire rather than awareness that they might have experienced during the actual implicit test. Also, by the time participants answer the questionnaires, they might have forgotten the level of "awareness" that they felt during the actual test. Furthermore, the questions are usually presented in such a way that they may essentially lead participants to claim test awareness even when this is not the case.

Roediger and McDermott (1993) proposed a series of suggestions for conducting implicit memory tests in order to avoid explicit contamination. Participants should be tested under incidental study and test conditions. They also suggested that participants should be asked to respond quickly with the first item that comes to mind. This can be achieved through instructions or through manipulation of the experimental stimulus presentation. Using a fragment completion task, Weldon (1993) showed that while conceptual processing and perceptual processing are recruited to complete the fragments,

participants first rely on perceptual processing to complete the test. Results from a second experiment showed that perceptual processes become available faster than do conceptual processes. Roediger and McDermott (1993) also suggested that large lists of study items should be used in order to make intentional retrieval strategies more difficult for participants. It was emphasized that filler tasks should also be used in order to make the implicit memory test appear to be unrelated to the material originally studied. They also suggested that the implicit memory test should begin with a series of filler items and should include less than 50% of the studied items in the test. Finally, the authors suggest including an explicit memory test to show dissociation between the two types of tests. It has also been suggested that norming of the stimuli occur prior to the test, because it ensures baseline performance of 25-35%. This allows for priming to be observed and avoids ceiling or floor effects (Roediger & Geraci, 2005).

In general, research has shown that priming increases when using low frequency words, although increases in presentation time have no effect on priming (Jacoby & Dallas, 1981). Research on massed repetition has shown that this variable has no effect on perceptual memory tests, but it increases priming in conceptual implicit memory tests (e.g., general knowledge questions) (Challis & Sidhu, 1993). Additionally, because performance on implicit memory tests relies on processing the surface information of the stimuli, changes in modality during the study and test episode affect priming (e.g., Roediger & Blaxton, 1987). Also, compared to material presented visually, auditory presentations of stimuli reduce priming on perceptual implicit memory tests (Rajaram & Roediger, 1993). Experiments demonstrated that modality changes have no effect on

priming with conceptual implicit memory tests such as general knowledge questions (Challis & Sidhu, 1989) or category exemplar generation (Srinivas & Roediger, 1990).

With perceptual implicit memory tests that ask participants to produce verbal responses, research has revealed that studied words produce more priming than does exposure to pictures at study (e.g., Weldon, 1991; Weldon & Roediger, 1987). This result implies that performance on implicit memory tests relies heavily on the data driven processes. Opposing results are found when participants are given a picture fragment completion test, with priming being higher when participants studied pictures than when they studied words (Weldon & Roediger, 1987).

Research has also found that encoding variables that normally affect explicit memory tests, such as directed forgetting and divided attention, have little or no effect on priming (Roediger & McDermott, 1993). Elaboration has been shown to lead to priming on conceptual implicit memory tests (Rappould & Hashtroudi, 1991). Usually, deep processing leads to more priming than shallow processing of the studied items with conceptual implicit memory tests like the category exemplar generation (Mulligan, Guyer, & Beland, 1999). Elaboration has shown mixed results with perceptual implicit memory tests; some researchers find no priming (Jacoby & Dallas, 1981; Graf & Mandler, 1984), and others see significant priming with blocked designs and between-subjects manipulations (see Challis & Brodbeck, 1992). Further, it has been shown that only moderate amounts of elaboration at study affects priming, but having more extensive semantic elaboration at study does not show greater increases in priming (Schacter & Graf, 1986).

CHAPTER VI

PRIMING IN NARRATIVES

In order to study product placement in novels it is crucial to understand the conditions under which people show memory for specific words contained within a text. Because implicit memory has been shown to affect attitudes and judgments, it is critical to see if people would show implicit memory for brands placed within a novel. The literature in psychology has examined this question, but the evidence has been mixed. Some studies have found no priming effects for individual words placed within a text (e.g., Oliphant, 1983; Levy & Kirsner, 1989), while other studies have found significant priming for words placed within the context of a passage (e.g., MacLeod, 1989; Nicolas, 1998).

In one of the early studies of priming for words in text, Oliphant (1983) gave each participant a list of words. These items were studied in one of three ways: repeated twice, within the context of a set of instructions, or as part of a questionnaire. At test, all participants were presented with a lexical decision task and recognition latencies were measured. Results showed that those participants who saw the words twice were faster to recognize the repeated stimuli on subsequent presentations than were members of the control group. This facilitation in identification was not seen with participants who saw the target items as part of the instructions or as part of the questionnaire. Based on these results it was posited that, in order for priming to occur, participants needed to be aware that the items are being repeated. However, this condition was shown to be unnecessary,

because amnesics, who are not aware of relations between exposures, still display facilitation in performance on a task due to previous exposure on that task (Levy & Kirsner, 1989).

Levy and Kirsner (1989) posited that the lack of repetition effects in the Oliphant (1983) study was due to the fact that participants saw the words in the context of an instruction or questionnaire in which the conceptual processing is more prevalent "and overrides the data-driven processes during reading" (p. 409). In their study, participants studied a list of 40 words in isolation or embedded in text. The texts in this study were long and very detailed. At study, words were presented in standard lowercase typescript, in uppercase letters, in handwritten form, and in heard with a tape recorder. At test, participants were given a perceptual identification task and recognition test for target items, with all items presented in lowercase typescript. Results for the words studied in isolation showed that auditory presentation led to significantly poorer identification compared to words presented in lowercase letters, and also that there were nonsignificant effects of identification with typescript changes (uppercase and handwritten words at study) which is expected with these types of materials (Richardson-Klavehn & Bjork, 1988). More importantly, there were no significant differences in perceptual identification when the words had been previously studied within a text as compared to identification of words that participants had not studied before. This led the authors to posit that people process texts holistically; individuals reading a passage focus on the meaning in the text, and the representations of the words are nested within the episodic representation of the passage. Therefore, individual words from the passage cannot help

retrieve the stored memory of the passage and cannot be used in isolation, leading to a lack of priming for individual words in text. A more current study using different passages but the same implicit memory test failed to replicate the results from this study. It instead found large priming effects for words contained in texts (Nicolas, 1996). Additionally, other researchers have stated that the idea that reading texts involves conceptually driven processes that prevent, or reduce priming effects for individual words is incorrect because experiments have found no difference in priming effects between participants reading a coherent text and participants exposed to incoherent texts (Masson & MacLeod, 2000).

While some studies have found no priming for words embedded in texts, others studies have found small, but inconsistent effects of priming for words embedded in passages (Wippich & Mecklenbraucker, 1995). One experiment presented participants with two passages to read, a recipe and instructions for changing a wheel. Some of the participants were asked to simply read the instructions aloud and the remaining participants were asked to read some of the activities and imagine doing the other half. At test, some of the participants were given a word stem completion task and others were given a verb association task. Results showed that with the verb association task there was a greater priming effect when readers were engaged in imagery. Results from the word stem completion task showed a significant effect of priming, but no effect of study condition on priming. A second experiment asked some participants to perform the actions, or to detect orthographic errors. At test, participants were given a verb association task or a word stem completion task. Results showed that participants in the

error detection group displayed a significant priming effect on word stem completion task but not in the association task, while the reading study condition generated no effects of priming on either implicit test. The group that performed the actions showed significant priming in the verb association task and a smaller but significant priming effect in the word stem completion task.

Some have posited that reasons for the absent or small priming effects in previous experiments could be attributed to the fact that priming effects are smaller with high frequency words, and the fact that some experiments have used perceptual identification tasks at test as opposed to more sensitive tests such as a fragment completion (MacLeod, 1989). In support for this idea, other experiments have found significant priming effects for embedded words within a set of instructions using word fragment completion tasks (e.g., Madigan, McDowd, & Murphy, 1991; MacLeod, 1989). Priming for individual words in texts has also been found using a noun association task and word stem completion tasks (Nicolas, 1998).

Researchers have also posited that surface processing of the text is most important when assessing priming for individual words placed in text (Nicolas, Carbonnel, & Tiberghien, 1994). So, increasing the perceptual difficulty of the text can create more robust perceptual priming effects because this increases data-driven processing of the text (e.g., Nicolas, 1998). Perceptual difficulty in experiments has been manipulated by either having the words in a passage presented in uppercase letters and the spaces between the words filled with the number eight (e.g., THIS888IS888888888AN8EXAMPLE), or just presenting the text in uppercase letters.

Results have shown that increasing the perceptual difficulty leads to greater priming effects (e.g., Nicolas, 1998; Nicolas et al., 1994).

The effect of modality (reading vs. hearing) on priming using a word stem completion task has also been studied with passages (Nicolas & Soderlund, 2000). The results from this experiment showed significant priming effects for words with both presentation types, although passages that were read led to more priming on the word stem completion task. Word frequency (high vs. low) also led to significant priming effects for passages presented visually. However, results showed that priming was significant only for low frequency words when passages were heard. The authors posited that priming in these cases occurred because reading low frequency words led to more conceptual and perceptual processing of those words. Like previous experiments using perceptual priming tests, the results showed that participants performed better when study and test modalities matched.

Studies have also investigated the effects of word presentation context (either words presented in isolation or within a passage) and the number of presentations (1 vs. 4) on priming for words in a passage. The results showed that repetition of target words led to significantly more priming than words presented only once. Like many other experiments (e.g., Masson & MacLeod, 2000), this study also found that presenting words in isolation led to more priming than presenting words in the context of a passage (Speelman, Simpson, & Kirsner, 2002).

While many studies have looked at priming for words embedded in a set of instructions or passages, others have investigated priming for individual words

embedded in a short story (e.g., Nicolas et al., 1994; Nicolas & Leroux-Ziegler, 2000). This is of special interest for the experiments conducted in this paper, which inserted a brand name within a short story, and investigated memory for those brand names. While it is important to see if priming occurs for individual words presented in short passages and instructions, the length of these stimuli is clearly different from the length of a novel or short story (the stimulus used in the present experiments). So, of more importance to the current experiments were the following studies that have looked at priming for individual words presented in short stories and novels. One study manipulated the perceptual difficulty of the story by inserting symbols instead of spaces between words, or by presenting the story in uppercase letters (Nicolas et al., 1994). Results showed a significant priming effect when readers were presented with a story typeset in uppercase letters with symbols substituted for spaces between words. Unlike previous experiments (Madigan et al., 1991), this experiment found that reading words in all uppercase letters led to more priming than reading text in lowercase letters, although this effect did not reach significance.

Another study that looked at priming using a word stem completion task for words in short stories manipulated word frequency, processing task (paying attention to content vs. looking for symbol in story), and text perceptual difficulty (Nicolas & Leroux-Ziegler, 2000). Like previous studies (e.g., MacLeod, 1989), results showed more priming for low frequency words compared to high frequency words. This study posited that this effect might be due to the fact that low frequency words read in text are more difficult to process and that the identification of those words is slightly more

difficult than the processing of the high frequency words. As a result, low frequency words receive more perceptual processing than high frequency words. Like other studies (e.g., Nicolas, 1998, Nicolas et al., 1994), results also showed significantly more priming in the more perceptually difficult condition as compared to the normal passage though no effects were found based on the processing task performed at study.

Another study important for the present experiments tested priming for words read in a novel. Participants included people who had read the novel before and people who had not. The inconclusive priming results obtained in this experiment led the authors to suggest that the priming effects obtained by comparing words in novels and words in isolation are smaller than the effects found by comparing priming in passages and words in isolation, and that priming in novels might not occur at all (Speelman et al., 2002).

Overall, research in priming for individual words in text seems to show that increasing the perceptual difficulty of the text by making the text difficult to read or by using low frequency words leads to more priming for words in texts (e.g., Nicolas et al., 1994). Based on the research previously discussed, factors such as repetition (Speelman et al., 2002) and modality of presentation (Nicolas & Soderlund, 2000) are also expected to lead to better memory for brands placed in books. Additionally, based on previous results (Nicolas, 1998), priming should be observed in the present experiments with both, conceptual and perceptual tests.

CHAPTER VII

INTRODUCTION TO THE PRESENT EXPERIMENTS

The main goal in advertising is to make sure that consumers are aware of your product and that they ultimately purchase *your* product over a competitor's. The advertising literature has found that memory can affect consumer choices and evaluations of a particular brand (Alba et al., 1991). Naturally, researchers in the marketing literature have gravitated toward explicit measures of memory to evaluate advertising effectiveness. The product placement literature is no different, and most of the existing research is predominantly based on explicit memory measures of effectiveness (e.g., DAR, recognition, recall). The problem with using this sole measure of effectiveness is that it fails to provide a full assessment of the effects that product placement can have on consumer behavior.

The advertising literature has found that assessing memory with implicit memory tests can lead to preference for an item, a belief in a particular advertising claim, or false familiarity effect for a particular brand name. Additionally, research has found that consumers often make their purchasing decisions in a very short amount of time (5 s) which leaves very little time for deliberation and conscious recollection about a particular product's attributes. Therefore, implicit memory measures are better suited for gauging the effect of brand exposure on consumer behavior.

Product placement research has only recently begun assessing implicit memory to measure the effectiveness of the placements (e.g., Law & Braun, 2000; Yang &

Roskos-Ewoldsen, 2007), and findings from these studies have shown that product placement can affect brand preference even without conscious recollection of the exposure. In fact, implicit memory measures are better suited for assessing product placement effectiveness because when a product is placed within any medium, people are not actively attempting to encode the product information. Although product placement research has begun using implicit memory measures, it has not used the strict methodology that psychology researchers have employed. There are important steps that researchers in the product placement literature should take when incorporating implicit memory measures in experiments.

The first distinction that should be applied in the product placement literature when studying implicit memory is that of perceptual implicit memory tests versus conceptual implicit memory tests. These two tests are different from one another in terms of application (the types of tests used), and they often behave differently based on the variables manipulated during encoding. While perceptual implicit tests are affected by changes in surface structure, conceptual implicit tests are affected by changes in meaning, and other variables affecting explicit memory. These two tests may assess effectiveness differently depending on how people encode information and how they are being asked to "retrieve" the information. To assess implicit memory for a visual product placement in a television show, people should be tested with a picture fragment completion, a picture identification task, or can be asked to choose from among a set of items to accurately assess preference after exposure; this is especially important since consumers will be encountering the actual products at the grocery store. If looking for

perceptual priming for brand names placed in narratives, testing materials should include a word stem completion task, a word fragment completion task, or word identification task. If a product were heard (either placed in a movie, or in audio books), it would be best to use auditory testing.

It is possible to test conceptual priming with product placements. Conceptual priming is affected by elaboration. Would a placement with high plot connection (as compared to a placement with low plot connection) affect your decision of what gum brand to buy when you make your shopping list? This could be tested by providing participants with a category exemplar generation task, and seeing how plot connection affects priming.

Another methodological necessity when using implicit tests is norming of the stimuli prior to the test, in order to ensure a low enough baseline that allows for priming to be observed and avoids ceiling or floor effects (Roediger & Geraci, 2005). Additionally, if using stem completion tasks, it is important to ensure that stems with several possible completions are used. For example using the stem "CL_____" to test implicit memory for the brand Clinique would be appropriate because that stem has several completions (e.g., Claritin, Claire's, Clorox, Clif bar, Clove gum). On the other hand, using the stem "CV_____" to test implicit memory for CVS Pharmacy would be inappropriate because this stem only has one possible completion.

To ensure that implicit memory tests are not assessing intentional retrieval it is crucial that test items are presented rapidly. Weldon (1993) demonstrated that picture and auditory primes only showed priming when word fragments were shown for longer

intervals (5 s & 12 s), but not for shorter intervals (500 ms & 1 s), indicating that perceptual information becomes available before conceptual information, and it is accessed faster.

Finally, it is important to employ posttest awareness questionnaires when measuring implicit memory. Although implicit memory tests are said to evaluate nonconscious memory processes, it is possible that some participants may become aware of the purpose of the test or use intentional retrieval strategies to complete the implicit tasks. To ensure that these tests are assessing incidental retrieval, questionnaires should be employed, as they have been shown to be valid with both perceptual and conceptual implicit tests (Barnhardt & Geraci, 2008). They should also be used because research has shown that test-aware participants usually show levels of priming different from test-unaware participants (e.g., Barnhardt, 2004; Bowers & Schacter, 1990; Geraci & Rajaram, 2002), sometimes eliminating priming altogether, depending on the conditions at study (e.g., Mulligan et al., 1999). Awareness questionnaires are also of important methodological concern when dealing with brand names. Other studies using awareness questionnaires have shown that more "test awareness" occurs the more unique words become (Barnhardt, 2004). Brand names, like distinctive words, are likely to engender more awareness at test.

The second goal of the present research was to bring better theoretical principles and more detailed experimental methods to bear on product placement research. Product placement effectiveness has been evaluated in several media (e.g., music, video games, movies, television, music videos), but product placement in books is extremely

controversial, and has yet to be evaluated. One of the goals of the present paper, therefore, is to investigate the cognitive processes associated with product placement in books. The present research used these guidelines to study implicit memory for products placed in a short story. Experiment 1 made the distinction between perceptual and conceptual implicit memory tests to investigate the cognitive processes associated with product placement in books. More specifically, this experiment investigated whether centrality of placement (prominent placements vs. subtle placements) affects perceptual and conceptual priming.

Furthermore, because advertisers are often more interested in how a brand placement will affect consumers' product choices, Experiments 2 and 3 used applied measures (preference judgments) to see how these placements impact consumer choice. Two consumer behavior measures were used, a forced choice scenario (Experiment 2) and a shopping list scenario (Experiment 3). The processes used in the forced choice scenario were expected to map on to the processes used in the perceptual implicit task; whereas the processes involved in the shopping list scenario were expected to map on to the processes used in the category exemplar generation.

CHAPTER VIII

EXPERIMENT 1

The main goal of Experiment 1 was to examine the effects on memory of prominence of placement for products placed in books. More specifically, this experiment investigated whether centrality of placement affected perceptual and conceptual priming. It was predicted that the centrality of placement manipulation would have no effect on perceptual priming (e.g., Jacoby & Dallas, 1981). Prominent and subtle placements should display equivalent levels of priming on the word stem completion task. However, other research has shown an effect of LOP with word stem completion (e.g., Graf & Mandler, 1984; Bowers & Schacter, 1990; Challis & Brodbeck, 1992). Results might show that prominent placements lead to more priming on the word stem completion task as compared to subtle placements (see Srinivas & Roediger, 1990 Experiment 3 & Bowers & Schacter, 1990 Experiment 1 study-uninformed/test-informed for a reversal of effects).

In Experiment 1 participants were asked to read a short story with 15 target brands followed by either a word stem completion test, or a category exemplar generation test. At study, brand names were placed within the story. The brands came from 15 different categories of products (e.g., gum brand, soft drink brand, pen brand) and all of the brand names were normed and had equivalent baselines. Centrality of placement (prominent vs. subtle) of brand names was manipulated. One group of participants saw elaborate brand placements in the story (e.g., "… and this killer Mac

'resolutely red' lipstick that gave her lips a sleek and lush color and looked great with her skin tone.") while another group saw subtle brand placements in the story (e.g., "… and a Mac lipstick.").

The two lists of brands were compiled from the 15 different product categories. One group of participants were shown one set of products at study (List A); another group of participants were shown a different set of products from the same product categories (List B) at study.

To ensure incidental encoding, participants were told that they would be participating in a reading comprehension experiment and that they would be given a set of questions to answer after reading the story. The group of participants taking the word stem completion test were asked to complete 40 two-letter stems with the first brand or product name that came to mind. The participants taking the category exemplar generation task were given a set of 35 different product categories including the 15 target categories and were asked to write down the first three product names or brand names that came to mind. Participants were then given a posttest questionnaire to gauge awareness and intentional retrieval strategies followed by a free recall test for the 15 brands placed in the story.

A significant conceptual priming effect was predicted with the centrality of placement manipulation (e.g., Hamann, 1990). Prominent placements were expected to show significantly more priming on the category exemplar generation task as compared to priming with the subtle brand placements.

Research on explicit memory has also shown that elaboration leads to better memory performance (Craik & Lockhart, 1972). Therefore, free recall was expected to vary according to the centrality of placement (prominent vs. subtle). Participants were expected to demonstrate better memory for prominent product placements as compared to subtle product placements.

Method

Participants

A total of 304 Texas A&M University undergraduate students participated in this experiment in return for partial course credit. Participation was voluntary, and other options were available to earn equal credit. Participants self-enrolled in the different conditions. The number of participants in each experimental session depended upon the random enrollment of participants, and varied in number with up to 20 participants per session. There were 152 participants in the in the perceptual implicit memory test group, 76 saw List A items, and half of these participants (N = 38) saw prominent brand placements; the remaining participants (N = 38) saw subtle brand placements. Another 76 participants saw List B items and half of these participants (N = 38) saw prominent brand placements and the remaining participants (N = 38) saw subtle brand placements.

In the conceptual priming test, there were 152 participants. Seventy-six participants saw List A items and half of these participants (N = 38) saw prominent brand placements while the remaining participants (N = 38) saw subtle brand placements. The remaining participants (N = 76) saw List B items with half of these

participants (N = 38) seeing prominent brand placements and the remaining participants (N = 38) seeing subtle brand placements.

Design

The experiment used a 2 X 2 X 2 between-subjects design. Centrality of placement (prominent vs. subtle), test type (perceptual vs. conceptual), and list type (List A vs. List B) served as the between-subjects variables. For the test type manipulation half of the participants received a two-letter word stem completion task, the other half of the participants received a category exemplar generation task. For the centrality of placement manipulation participants studied the brands under either prominent study conditions (e.g., "… and this killer Mac 'resolutely red' lipstick that gave her lips a sleek and lush color and looked great with her skin tone."), or under subtle study conditions (e.g., "… and a Mac lipstick."). The proportion correct on the recall test and priming scores served as the dependent variables.

Materials

Two lists of 15 brand names each were derived from 15 different product categories (e.g., makeup brand, beer brand, pen brand, car maker). They were used to counterbalance the studied list (List A vs. List B) for the different groups of participants. All of the items on the lists were selected because a norming study showed them to be generated with relatively low frequency, with each list having a mean production frequency of about 10%. The product brand names were ranked ordered according to the production frequency within each brand category from the most frequently produced brands to the least frequently produced brands. The two most common brand names

produced by participants were dropped, along with any brands that had less than 5% production rates. The two brands included from each product category were chosen because they had relatively equivalent generation rates within the given category. The brand names were all single word brand names with the exception of the video game name category, which included game names that were three words long. Each brand name in both lists began with a unique two-letter stem that had multiple solutions. A list of the product categories and the corresponding items can be found in Appendix A. The 15 target brands were interspersed throughout the short story, *The Vulnerable Hours*. This short story can be found in the book *Up All Night: A Short Story Collection*. The brand names were inserted in places throughout the narrative where the author had previously mentioned a generic product category, or where they could naturally be inserted into the narrative.

For the centrality of placement manipulation brands in the subtle condition were either simply named, or in the case of the prominent placements, a sentence was added that elaborated upon the characteristics of the product. These characteristics were found by going to the websites of the corresponding products and finding descriptors of the products. At test, some participants received a word stem completion test. The test contained a total of 40 two-letter brand name stems: 15 stems from the studied list items, 15 stems from the nonstudied list items, and 10 buffers placed in the beginning and at the end of the stem completion task.

The conceptual implicit memory test included 35 product categories, 15 of these were target categories, and the remaining 20 were filler product categories. The

participants were presented with the 35 product categories in a semi-randomized order so that no more than two product categories appeared in a row.

Procedure

For the word stem completion task condition participants were tested in groups of up to 20 people, depending upon participant enrollment, and were seated in front of a large projector with instructions provided up on the screen. Participants were told that they would be participating in two separate experiments. They were told that the first experiment would be a reading comprehension experiment and that the second experiment would begin once everyone had finished the first experiment. Participants were given an average of 30 minutes to read a short story. When they finished reading the story, they were asked to raise their hand, the experimenter then took the story from the participant and handed them a packet with ten reading comprehension questions. Participants were told to work only on the three pages with the reading comprehension questions. Once they finished answering the questions, they were asked to sit quietly and wait for everyone else to catch up. All participants were stopped at the 33-minute mark; participants who did not finish reading were given the test packet, but were not included in any of the analyses.

After the 33-minute mark all participants were told that the second experiment would begin, they were told that if they had not finished answering all of the reading comprehension questions that there would be some time available at the end of the experiment to answer those questions. Most participants were able to finish reading the story and answer all of the reading comprehension questions.

Participants were then told that they should turn to the green page in their test packet, the page labeled "Experiment 2." They were told that the purpose of the second experiment was to gather norming data for future experiments in the cognition laboratory. Participants were told that we were interested in finding the most common products that Texas A&M University students could think of. They were told that they would be given a set of two letter stems and that they would be asked to fill in each stem with the first product or brand name that came to mind. They were also told that they could write product names made up of more than one word. If they could not come up with an answer, participants were asked to leave that stem blank. Participants were asked to work quickly because they would only be given 7 s to respond with the first brand name that came to mind. This interval was attained after testing several different durations and finding the interval that gave just enough time for participants to arrive at a reasonable number of responses on the stem completion task. Participants were asked to spend the full 7 s on each stem, and were prompted to move on to the next stem with a tone.

Once the stem completion task ended, participants were given an awareness questionnaire adapted from Barnhardt and Geraci (2008). They were asked to answer the questions in order and were told that they could not go back to change their answers on any question. Finally, participants were given a free recall test for the brands placed in the story. They were given a blank sheet of paper and were asked to think back to the story that they had read in Experiment 1. Participants were then instructed to write

down as many brand names as they could remember from the story. Participants were given 90 s to complete the test.

For the category exemplar generation task condition participants in the conceptual implicit memory test were given the same incidental study instructions provided above. For the category exemplar generation test participants were told that the purpose of the experiment was to gather norming data for future experiments in the cognition lab. They were told that we were interested in finding the most common products that Texas A&M University students could think of and that they would be given a set of 35 product categories. Participants were asked to fill in each category with the first three products or brand names that came to mind. If they could not think of any brands for a given category, they were asked to leave that category blank. If they could only think of one or two brand names, participants were asked to write those brand name(s) down and leave the remaining spaces blank. Participants were told that they could use brand names made up of more than one word. Participants were asked to work quickly because they would be given only 10 s for each product category: 1 s to read the product category and 3 s to write down each of the three brand names; this interval was attained after testing several different time intervals and finding one that gave participants just enough time to fill in three brand names before having to move on to the next product category. Participants were asked to spend the full 10 s on each product category, after the 10 s elapsed, participants were prompted to move on to the next category with a tone. The order of the product categories was semi-randomized. After

participants completed all of the 35 product categories they were given the same awareness questionnaire and free recall test described above.

Results

Overall Priming Results

Participants that did not finish reading the story were excluded from all analyses. Two paired samples t-tests were computed to see if there was a priming effect compared to the nonstudied baseline in each of the two test conditions regardless of awareness. The items from the nonstudied list served as the nonstudied baseline for all of the following analyses. The mean production rate for each of the brands within a product category was normed, as mentioned earlier, to have relatively equivalent production rates. With the perceptual test, completion rates of studied brands were significantly greater (M = .12, SD = .09) than completions rates of nonstudied brands (M = .05, SD = .06), $t(151) = 8.85$, $p < .001$, Cohen's $d = .92$[1].

A separate paired samples t-test was computed to assess conceptual priming. Only the first brand name provided for each product category was used in all of the analyses. Completion rates of studied brands were significantly greater (M = .24, SD = .12) than completions rates of nonstudied brands (M = .07, SD = .06), $t(151) = 14.96$, $p < .001$, Cohen's $d = 1.79$.

A 2 X 2 X 2 between-subjects ANOVA then examined the effect of centrality of placement (prominent vs. subtle), type of test (conceptual test vs. perceptual test), and study list (List A vs. List B) on priming (difference scores). It was predicted that there

[1] Cohen (1992) suggested the following cut-off for effect sizes: .20 small effect, .50 medium effect, .80 large effect

would be a significant interaction of centrality of placement (prominent vs. subtle) by test type (perceptual vs. conceptual), showing that with conceptual tests, prominent placements would lead to more priming than subtle placements; with perceptual tests, there should be equal priming regardless of centrality of placement. It was also predicted that priming would differ as a function of type of test provided. The ANOVA showed only a significant main effect of test type $F(1, 296) = 50.55$, $p < .001$, $\eta_p^2 = .146$[2], with greater priming on the conceptual test ($M = .17$, $SD = .14$) as compared to priming on the perceptual test ($M = .07$, $SD = .10$). The interaction between centrality of placement and test type was not significant, $F(1, 296) = .50$, $p > .05$, $\eta_p^2 = .002$.

Test-unaware Participants and Priming

There were a total of 94 participants classified as test-unaware: 62 participants in the perceptual test condition, and 32 participants in the conceptual test condition. Two paired samples t-tests were computed to see if there was a priming effect compared to the nonstudied baseline in each of the two test conditions with test-unaware participants. With the perceptual test, completion rates of studied brands were greater ($M = .06$, $SD = .06$) than completion rates of nonstudied brands ($M = .04$, $SD = .06$), $t(61) = 1.93$, $p = .06$, Cohen's $d = .33$, showing a marginally significant priming effect.

A separate paired samples t-test was computed to assess conceptual priming. Completion rates of studied brands were significantly greater ($M = .18$, $SD = .12$) than completions rates of nonstudied brands ($M = .09$, $SD = .06$), $t(31) = 3.89$, $p < .001$, Cohen's $d = .95$.

[2] Partial eta squared- small effect size: $0.01 \leq \eta_p^2 \leq 0.06$, medium effect size: $0.06 \leq \eta_p^2 \leq 0.14$, large effect size: $\eta_p^2 \geq 0.14$.

A 2 X 2 X 2 between-subjects ANOVA then examined the effect of centrality of placement (prominent vs. subtle), type of test (conceptual test vs. perceptual test), and study list (List A vs. List B) on priming (difference scores) for unaware participants. The ANOVA showed only a significant main effect of type of test, $F(1, 86) = 8.21$, $p < .01$, $\eta_p^2 = .087$, with significantly more priming in the conceptual test ($M = .09$, $SD = .13$) than in the perceptual test ($M = .02$, $SD = .08$). No other comparisons were significant.

Test-aware Participants and Priming

A total of 115 participants were classified as test-aware. There were 52 participants in the perceptual test condition and 63 participants in the conceptual test condition. Two t-tests were computed to see if there was a priming effect compared to the nonstudied baseline in each of the two test conditions for test-aware participants. With the perceptual test, completion rates of studied brands were greater ($M = .14$, $SD = .08$) than completions rates with nonstudied brands ($M = .05$, $SD = .06$), $t(51) = 7.14$, $p < .001$, Cohen's $d = 1.27$, showing a significant priming effect.

A separate paired samples t-test was computed to assess conceptual priming. Completion rates of studied brands were significantly greater ($M = .24$, $SD = .12$) than completions rates with nonstudied brands ($M = .06$, $SD = .05$), $t(62) = 10.50$, $p < .001$, Cohen's $d = 1.96$.

A 2 X 2 X 2 between-subjects ANOVA then examined the effect of centrality of placement (prominent vs. subtle), type of test (conceptual test vs. perceptual test), and study list (List A vs. List B) on priming (difference scores) for test-aware participants.

The ANOVA showed a main effect of type of test, $F(1, 107) = 15.84$, $p < .001$, $\eta_p^2 = .129$, with more priming in the conceptual test ($M = .19$, $SD = .14$) than on the perceptual test ($M = .09$, $SD = .09$). Additionally, the interaction of centrality of placement (prominent vs. subtle) and type of test (conceptual vs. perceptual) was significant, $F(1, 107) = 5.79$, $p < .05$, $\eta_p^2 = .051$. Two follow-up independent samples t-tests showed that for test-aware participants in the perceptual test condition priming with prominent placements was not significantly different ($M = .07$, $SD = .10$) than priming with subtle placements ($M = .12$, $SD = .09$), $t(50) = -1.66$, $p > .05$, Cohen's $d = -.47$. Means were slightly higher with subtle placements than prominent placements supporting the claim that participants may sometimes become involuntarily aware during an implicit test (Richardson-Klavehn et al., 1994). However, with the conceptual test, the independent samples t-test revealed that as expected, priming was significantly greater with prominent placements ($M = .22$, $SD = .15$) than with subtle placements ($M = .15$, $SD = .12$), $t(61) = 2.16$, $p < .05$, Cohen's $d = .55$.

Intentional Retrieval Participants and Priming

A group of 95 participants were classified as intentionally retrieving brands. There were 38 participants in the perceptual test and 57 participants in the conceptual test. Two t-tests were computed to see if there was a priming effect compared to the nonstudied baseline in each of the two test conditions for participants claiming intentional retrieval. With the perceptual test, completion rates with studied brands were greater ($M = .19$, $SD = .09$) than completions rates with nonstudied brands ($M = .06$, $SD = .07$), $t(37) = 8.17$, $p < .001$, Cohen's $d = 1.61$, showing a significant priming effect.

A separate paired samples t-test was computed to assess conceptual priming. Completion rates with studied brands were significantly greater (M = .27, SD = .11) than completion rates with nonstudied brands (M = .06, SD = .06), $t(56) = 11.48$, $p < .001$, Cohen's $d = 2.37$.

A 2 X 2 X 2 between-subjects ANOVA then examined the effect of centrality of placement (prominent vs. subtle), type of test (conceptual test vs. perceptual test), and study list (List A vs. List B) on priming (difference scores) for participants claiming intentional retrieval. The ANOVA showed a main effect of type of test, $F(1, 87) = 9.14$, $p < .01$, $\eta_p^2 = .095$, with significantly greater priming with the conceptual test (M = .21, SD = .14) as compared to priming on the perceptual test (M = .13, SD = .10). There was also a significant interaction of centrality of placement and type of test, $F(1, 87) = 4.34$, $p < .05$, $\eta_p^2 = .047$. A follow-up independent samples t-test with participants in the perceptual test condition showed significantly greater priming with prominent placements (M = .16, SD = .09) as compared to priming with subtle placements (M = .09, SD = .09), $t(36) = 2.39$, $p < .05$, Cohen's $d = .80$. A second follow-up independent samples t-test for participants in the conceptual test condition showed no difference in priming with prominent placements (M = .19, SD = .13) as compared to subtle placements (M = .22, SD = .14), $t(55) = -.92$, $p > .05$, Cohen's $d = -.25$.

Overall Free Recall Results

Free recall for all of the participants was analyzed with a 2 (prominent vs. subtle) X 2 (conceptual vs. perceptual) X 2 (List A vs. List B) between-subjects ANOVA. A main effect of centrality of placement was predicted because previous studies have

shown that elaboration leads to better memory performance. The ANOVA confirmed this prediction with prominent placements leading to a significantly higher proportion of recalled items (M = .31, SD = .14) as compared to proportion of items recalled with subtle placements (M = .27, SD = .15), $F(1, 296) = 4.33$, $p < .05$ $\eta_p^2 = .014$. The remaining comparisons were not significant.

Free Recall Results by Test Type

Recall was also analyzed based on the type of implicit test that participants were given. Because completion rates were overall much higher with the conceptual task than the perceptual task, this might have affected the free recall results giving participants in the conceptual task more exposure time to the target items. An independent samples t-test with participants in the perceptual test condition showed no difference in free recall rates with prominent placements (M = .31, SD = .14) and recall rates with subtle placements (M = .28, SD = .13), $t(150) = 1.40$, $p > .05$, Cohen's d = .23. A second independent samples t-test for participants in the conceptual test condition showed no difference in free recall rates with prominent placements (M = .31, SD = .15) as compared to subtle placements (M = .27, SD = .16), $t(150) = 1.56$, $p > .05$, Cohen's d = .25.

Free Recall Results by Awareness Classification

Finally, recall performance was also analyzed based on participants' awareness classification. This analysis was important because test-aware participants and participants using intentional retrieval strategies might have received additional study opportunities that test-unaware participants did not have. An independent samples t-test

with test-unaware participants showed a marginally significant difference in free recall rates with prominent placements (M = .26, SD = .12) and recall rates with subtle placements (M = .21, SD = .15), $t(92) = 1.77$, p = .08, Cohen's d = .37. A second independent samples t-test for test-aware participants showed a significant difference in recall rates with prominent placements (M = .32, SD = .15) as compared to subtle placements (M = .26, SD = .12), $t(113) = 2.15$, $p < .05$, Cohen's d = .40. Finally, a third independent samples t-test with intentional retrieval participants showed no difference in recall rates with prominent placements (M = .34, SD = .15) as compared to subtle placements (M = .35, SD = .14), $t(93) = -.28$, $p > .05$, Cohen's d = -.06.

Discussion

The results form Experiment 1 significant priming for both, the perceptual and conceptual implicit memory tests, showing that presenting participants with brands in a narrative can lead them to remember those brands better. This occurs even in situations when participants were not trying to consciously recollect the brands. These results were similar to results found in previous psychology studies that have found priming for individual words presented in passages (e.g., Nicolas, 1996). This is important information for advertisers whose goal is often to make their product more memorable. This finding is also important because people have often been found to spend only a few seconds (5 s) when making shopping decisions and participants in this experiment were forced to make their decisions under a strict time constraint. Results from all of the analyses also demonstrated greater priming with conceptual implicit tests than with

perceptual implicit tests, though this is probably largely due to the awareness level increasing with the conceptual test.

The conditional analyses also showed some interesting results. Much like previous research in psychology, the results showed that difference scores increased with awareness (unaware: .04, aware: .14, intentional: .17), showing support for the idea that large priming scores may actually sometimes be due to explicit contamination (see Figure 1 and Figure 2). In general, awareness was higher with the conceptual test than in the perceptual test (N = 63; N = 52, respectively), as was intentional retrieval (N = 57; N = 38). Unawareness occurred almost twice as often with the perceptual test (N = 62) than with the conceptual test (N = 32).

The predicted interaction between centrality of placement and type of test became apparent only with test-aware participants and those participants claiming intentional retrieval (see Figure 3 and Figure 4). These results were expected since previous findings have shown that LOP effects often only arise with test awareness (see Barnhardt & Geraci, 2008). This demonstrates that the kind of placement in a book (prominent or subtle) will not differentially affect performance on perceptual or conceptual implicit tasks when using purely nonconscious processes. In other words, brands are likely to be nonconsciously remembered regardless of the mention of the product attributes. It is extremely important to investigate the role of awareness because while explicit memory has been shown to be a poor index of consumer behavior, implicit memory and nonconscious processes have been shown to more closely reflect how consumers actually behave when shopping. So, to more accurately predict consumer

choice at the point-of-purchase, you need to make sure that your prescriptions are based on data gathered from those participants classified as test-unaware on the post-test questionnaire.

The overall free recall results showed a significant effect of centrality of placement showing that the prominent placements were remembered better than subtle placements. This corresponds with previous research showing that elaboration aids conscious recollection and shows that the prominence manipulation, as it was adapted for this medium, was effective. Two independent-samples t-tests looking at memory performance for participants in the perceptual test condition and participants in the conceptual test condition did not show the predicted pattern of results. Although mean differences for prominent and subtle placements were in the predicted direction, neither effect reached significance when the groups were analyzed separately. Apparently, when the groups were separated there was no longer enough statistical power to detect the effect.

Finally, awareness and intentional retrieval strategies during the implicit memory test might have given some participants additional exposure and study time with target items. So, a series of independent samples t-tests were conducted to see how recall was affected by awareness classification. While participants classified as test-unaware showed a marginally significant centrality of placement effect and test-aware participants showed a statistically significant effect of centrality of placement, participants classified as using intentional retrieval strategies during the implicit memory test did not show a difference in recall rates between prominent and subtle placements.

It is not clear why this occurred. It may be that participants using intentional retrieval strategies during the implicit memory tasks improved their subsequent memory for the brands regardless of the placement centrality (prominent vs. subtle) because they had practice retrieving the brand name. Because even unsuccessful retrieval practice can provide an increment in retrieval strength (Kornell, Hays, & Bjork, 2009), all of the participants classified as using conscious recollection during the implicit task might have benefitted from this strategy and shown good memory for the placed brands.

CHAPTER IX

EXPERIMENT 2

The purpose of this experiment was to use a measure that is more relevant to consumer behavior, a preference judgment. The consumer behavior measure used in this experiment was a forced choice task. At test, participants were asked to make a speeded, forced choice between two products in the same product category simulating stimulus-based choices that are made with low involvement (i.e. impulse-buy situation).

It was predicted that participants exposed to products in the story would be more likely to choose those brands presented in the novel compared to preference judgments made without prior exposure to the brands. This was predicted because previous exposure to the brands should make those items more perceptually fluent (e.g., Lee, 2002). It was also predicted that the centrality of placement manipulation (prominent vs. subtle) would have no effect on participants' choices. Participants were only given a brief amount of time to make their decision (2.5 s) so, conceptual processing would be unlikely to occur and elaboration of the products' characteristics should not affect product choice. Finally, like the previous study, it was predicted that elaboration of product characteristics would lead to better explicit memory performance for the prominently placed brands than subtle brand placements (Craik & Lockhart, 1972).

Results from this experiment can have important implications for advertisers showing that the placement of brands in books is a viable industry for marketing. Additionally, this research can help advertisers determine the types of placement (subtle

or prominent) that would be most beneficial when consumers are making perceptually driven decisions in situations where possible product alternatives are available.

Method

Participants

A total of 288 Texas A&M University undergraduate students participated in this experiment in return for partial course credit. Participation was voluntary, and other options were available to earn equal credit. Participants self-enrolled in the 16 different conditions. The number of participants in each experimental session depended upon the random enrollment of participants, and varied in number with up to 18 participants per session. A total of 144 participants studied List A items, and half of these participants (N = 72) saw prominent brand placements; the remaining participants (N = 72) saw subtle brand placements. Another 144 participants studied List B items and half of these participants (N = 72) saw prominent brand placements and the remaining participants (N = 72) saw subtle brand placements.

Design

There experiment used a 2 X 2 X 2 X 2 between-subjects design. Centrality of placement (prominent vs. subtle), study list (List A vs. List B), category presentation order (Order X vs. Order Y), and sequential order of individual item presentation (Order 1 vs. Order 2) served as the between-subjects variables. For the centrality of placement manipulation participants studied the brands under either prominent study conditions (e.g., "… and this killer Mac 'resolutely red' lipstick that gave her lips a sleek and lush color and looked great with her skin tone."), or under subtle study conditions (e.g., "…

and a Mac lipstick.”). There were two different presentation orders of the 35 product categories. Additionally, the sequential order in which the two choices came up was counterbalanced (Order 1: A. MAC B. CLINIQUE vs. Order 2: A. CLINIQUE B. MAC). The proportion correct on the recall test and priming served as the dependent variables.

Materials

The study items included the same the story with 15 brands embedded in it from Experiment 1. At test, participants received a forced choice task. This task consisted of 35 product categories, 15 of the product categories were studied and the remaining 20 were filler categories. For each product category, participants were given two products to choose from (one studied, one nonstudied).

Procedure

Participants were tested in groups of up to 18 people, depending upon participant enrollment, and were seated in front of a large projector. The incidental encoding instructions were the same instructions used in Experiment 1. After Experiment 1 was completed, participants were told that they should turn to the green page in their test packet, the page labeled “Experiment 2.” Participants were told that we were interested in students’ shopping habits and the choices that they made when they went shopping. Participants were told that this experiment was trying to simulate “impulse-buy” situations where students made choices about what to buy, or what stores to visit in a very short amount of time. Participants were provided with a sheet numbered from 1-35 and were told that they would be making 35 different choices. Participants were

informed that they would be choosing between two products or two stores. The items were all presented on the projector. On the top of the screen participants were given a broad category of an item or a type of store and below that, they saw two different pictures of things to choose from: either item/store A or item/store B. Participants were asked to look at the two items and quickly circle their choice on the answer sheet provided for them. Participants were asked to choose an item for all 35 product categories. They were given 2.5 s to make each choice and circle their answer, and they were cued by a tone when the next choice came up. Participants were first given two examples of the types of choices they would be making in order to give them an idea of how quickly they had to make their choices. The forced choice task began immediately after the examples. After the forced choice task participants were given the awareness questionnaire and free recall test described in Experiment 1.

Results

Overall Priming Results

Participants that did not finish reading the story were excluded from all analyses. A paired samples t-test was computed to see if there was a significant priming effect compared to the nonstudied baseline. The nonstudied baseline was attained by having a separate group of 144 participants complete the forced choice task without previous exposure to the brands in the novel. There were 36 participants in each of the four counterbalancing conditions (X1, X2, Y1, Y2). This baseline preference group was required because the goal of this experiment was to investigate how exposure to a brand in a novel would affect a participant's typical choice for that brand.

It was predicted that previous exposure to the brands would lead studied brands to be more perceptually fluent, making them more likely to be chosen by participants regardless of awareness. However, the t-test showed no difference in choice preference between studied items (M = .50, SD = .14) and the nonstudied baseline (M = .50, SD = .15), $t(287) = .31$, $p > .05$, Cohen's d = .02.

Test-unaware Participants and Priming

There were a total of 91 participants classified as test-unaware. A paired samples t-test was conducted to see if there was a significant priming effect compared to the baseline. The t-test showed no effect of exposure on choice. Participants' choices when they studied the brands (M = .50, SD = .13) were not different from participant choices when they did not study the brands (M = .50, SD = .15), $t(90) = -.21$, $p > .05$, Cohen's d = -.03.

Test-aware Participants and Priming

There were a total of 165 participants classified as test-aware. A paired samples t-test was conducted to see if there was a significant priming effect compared to the nonstudied baseline. The t-test showed no effect of brand exposure on choice. Participants' choices when they studied the brands (M = .49, SD = .15) were not different from participants' choices when they did not study the brands (M = .49, SD = .15), $t(164) = -.01$, $p > .05$ Cohen's d = -.01.

Intentional Retrieval Participants and Priming

Finally, a group of 32 participants were classified as intentionally retrieving brands from the novel. A paired samples t-test was computed to see if there was a

significant priming effect compared to the nonstudied baseline. The t-test showed no difference in choices of studied brands (M = .59, SD = .13) and nonstudied brands (M = .54, SD = .17), $t(31) = 1.39$, $p > .05$, Cohen's d = .32.

Free Recall Results

A 2 X 2 X 2 X 2 between-subjects ANOVA examined the effect of centrality of placement (prominent vs. subtle), study list (List A vs. List B), category presentation order (Order X vs. Order Y), and sequential order of individual item (Order 1 vs. Order 2) on free recall. A main effect of centrality of placement was predicted because previous studies have shown that elaboration leads to better memory performance. The ANOVA showed no effect of centrality of placement $F(1, 272) = 2.58$, $p > .05$, η_p^2 = .009. There was a significant effect of counterbalancing $F(1, 272) = 8.42$, $p < .01$, η_p^2 = .030, apparently due to the fact that preference for List A items was greater (M = .32, SD = .16) than preference for List B items (M = .29, SD = .15). There was also a significant interaction between centrality of placement X counterbalancing X category presentation order X individual item presentation order, $F(1, 272) = 8.34$, $p < .01$, $\eta_p^2 = .030$.

Priming: Conditional Analyses

A more careful analysis of the baseline judgments revealed that some items were being chosen at very high rates. As a result, those items that showed greater than 72% preference judgments in any of the four counterbalancing orders were removed to avoid the possibility of ceiling and floor effects. This eliminated five product categories from all analyses: beer brand, cell phone maker, discount store, pen brand, and gum brand leaving a set of 20 brands as opposed to the original 30.

It was predicted that previous exposure to the brands would lead studied brands to be more perceptually fluent, making them more likely to be chosen by participants. The t-test showed no difference in preference judgments between studied brands (M = .50, SD = .17) and nonstudied brands (M = .50, SD = .17), $t(287) = -.01$, $p > .05$, Cohen's d = -.01.

Test-unaware Participants and Priming

There were a total of 91 participants classified as test-unaware. A paired samples t-test was conducted to see if there was a significant priming effect compared to the nonstudied baseline. The t-test showed no effect of exposure on choice. Participants' preferences when they studied the brands (M = .48, SD = .16) were no different from participants' choices when they did not study the brands (M = .50, SD = .17), $t(90) = -.80$, $p > .05$, Cohen's d = -.12.

Test-aware Participants and Priming

There were a total of 165 participants classified as test-aware. A paired samples t-test was conducted to see if there was a significant priming effect compared to the nonstudied baseline. The t-test showed no effect of prior brand exposure on choice. Participants' choices when they studied the brands (M = .49, SD = .17) were not different from participant choices when they did not study the brands (M = .49, SD = .16), $t(164) = -.35$, $p > .05$, Cohen's d = -.04.

Intentional Retrieval Participants and Priming

Finally, a group of 32 participants were classified as intentionally retrieving brands from the novel. A paired samples t-test was computed to see if there was a

significant priming effect compared to baseline preferences. The t-test showed no significant differences in preference between studied brands (M = .61, SD = .16) and nonstudied brands (M = .53, SD = .20), though there was a trend in the right direction, $t(31) = 1.82$, $p = .08$, Cohen's $d = .44$.

Free Recall Results

A 2 X 2 X 2 X 2 between-subjects ANOVA examined the effect of centrality of placement (prominent vs. subtle), study list (List A vs. List B), category presentation order (Order X vs. Order Y), and sequential order of individual item (Order 1 vs. Order 2) on free recall for participants classified as intentionally retrieving only. A main effect of centrality of placement was predicted because previous studies have shown that elaboration leads to better memory performance. The ANOVA showed no effect of centrality of placement, $F(1, 272) = 1.28$, $p > .05$, $\eta_p^2 = .005$. There was a significant effect of counterbalancing $F(1, 272) = 14.29$, $p < .001$, $\eta_p^2 = .050$, apparently due to the fact that preference for List A items was greater (M = .39, SD = .19) than preference for List B items (M = .30, SD = .18). There was also a significant interaction between centrality of placement X counterbalancing X category presentation order X individual item presentation order, $F(1, 272) = 10.65$, $p < .01$, $\eta_p^2 = .038$.

Discussion

Experiment 2 used forced choice preference judgments to see how the placement of brands in a narrative would affect consumer choice. In this experiment, an impulse-buy situation was simulated where participants made snap judgments for what product they preferred. Research has shown that preference can sometimes be influenced

through perceptual fluency. It was predicted that choice would be influenced by the presence of the brands in the novel regardless of the mention of the product attributes because those attributes would not further enhance the perceptual fluency of an individual brand name.

The results actually showed that the presence of the brands in the novel did not influence choice. In fact, preference judgment means were equal when participants did not see the brands in the novel (M = .50) compared to preference judgments of participants who saw those same brands placed in the novel (M = .50). Conditional analyses showed that preference was not influenced by awareness. In fact, there was no difference in preference for test-unaware participants, or test-aware participants. Participants claiming intentional retrieval did show a trend in the right direction with those participants who saw brands placed in the novel showing more preference for those placed brands (M = .59) than preference judgments of participants who did not see the brands placed in the novel (M = .54).

Some of the brands had a much larger baseline preference so, ten polarizing brands were removed and the same analyses were computed. These results showed no priming although participants classified as intentionally retrieving brand information during the forced choice test did show a trend in the right direction. Preference judgment means for these participants were smaller when participants did not see the brands in the novel (M = .53) compared to preference judgments of participants who saw those same brands placed in the novel (M = .61).

Though a significant effect of centrality of placement was expected in the free recall analysis, the results showed no effect of this manipulation with either configuration of the items. Taken together, these results showed that preference judgments with a two-item forced choice task were unaffected by previous exposure to the brands in the novel. Perceptual fluency did not affect choice in this experiment, and placement of brands in books might not be a good avenue to pursue when consumers are making rapid, stimulus-based choices. Previous research has shown stimulus-based choices to be affected by previous exposure to study material (e.g., Lee, 2002), but this could be the result of explicit contamination. As seen in this experiment, only those participants classified as intentionally retrieving brands from the story showed that prior exposure could affect preference, though this effect did not reach significance.

CHAPTER X

EXPERIMENT 3

The purpose of this experiment was to use another applied measure to investigate how product placement in books impacts consumer choices. The consumer behavior measure used in this experiment was a shopping list scenario where participants would have to think of their product choices in the absence of the products. This shopping list scenario, like the forced choice scenario, was an implicit behavioral measure of consumer choice. Participants in this experiment were given a product category and were given a limited amount of time to make their choice. Unlike the forced choice scenario, which provided participants with the items to choose from and required perceptual processing, the processes used when trying to come up with a shopping list of products were expected to map on to conceptual processes.

Participants in Experiment 3 were asked to read the same story used in Experiment 1. At test, they were given a shopping list scenario where they had to make a decision for what product they would choose when brands were not physically available. Participants were given a product category and were asked to write down the brand they would choose to purchase. Time was constrained in the experiment: participants were given a short amount of time (4 s) to respond, thereby testing the products that were accessible in memory, but were not consciously being recollected.

It was predicted that studied brands would be more likely to be included in shopping lists as compared to nonstudied brands. This was expected because the brand

names that participants saw in the story should be more accessible compared to the nonstudied brands.

Research has also shown that elaboration can increase priming on conceptual tasks. In this task, participants engage in conceptual processing when making their choices, so, a centrality of placement effect was predicted. Prominently placed brands should be chosen more often than subtle brand placements. If selection of the products varied according to centrality of placement, it would help advertisers ascertain the types of placements (prominent or subtle) they need to include in novels if they want to influence consumers making conceptually driven choices. Finally, like Experiment 1, it was predicted that prominently placed products would be consciously remembered better than subtle brand placements.

Method

Participants

A total of 144 Texas A&M University undergraduate students participated in this experiment in return for partial course credit. Participation was voluntary, and other options were available to earn equal credit. Participants self-enrolled in the eight different conditions. The number of participants in each experimental session depended upon the random enrollment of participants, and varied in number with up to 18 participants per session. Seventy-two participants saw List A items and half of these participants (N = 36) saw prominent brand placements while the remaining participants (N = 36) saw subtle brand placements. Another 72 participants studied List B items and

half of these participants (N = 36) saw prominent placements while the remaining participants (N = 36) saw subtle product placements.

Design

The experiment used a 2 X 2 X 2 between-subjects design. Centrality of placement (prominent vs. subtle), list type (List A vs. List B), and product category order (Order X vs. Order Y) served as the between-subjects variables. The proportion correct on the recall test and priming (difference score) served as the dependent variables. For the centrality of placement manipulation participants studied the brands under either prominent study conditions (e.g., "… and this killer Mac 'resolutely red' lipstick that gave her lips a sleek and lush color and looked great with her skin tone."), or under subtle study conditions (e.g., "… and a Mac lipstick.").

Materials

The study items included the same the story with 15 brands embedded in it from Experiment 1. The shopping list scenario presented participants with a list of blank spaces organized according to four categories. The categories included: miscellaneous stores, grocery store items, at the electronic store, and at the mall. Under the "miscellaneous stores" grouping, participants were asked to make eight store choices (e.g., movie store, fast food restaurant, department store); in this group, there were three studied categories. In the "grocery store items" grouping, participants were asked to make 22 different choices, and six of these came from studied brand categories. In the "electronic store" grouping, participants were asked to make six different choices, and three of these came from studied brand categories. Finally, in the "at the mall "

grouping, participants were asked to make ten different choices, and four of these came from studied brand categories.

Procedure

Participants were tested in groups of up to 18 people, depending upon participant enrollment, and were seated in front of a large projector. The incidental encoding instructions were the same instructions used in Experiment 1. For the shopping list scenario participants were told that we were interested in students' shopping habits and the choices that they make when they go shopping and running errands on the weekends. Participants were told that we were trying to simulate situations where people have to run many errands at one time with only a small amount of time to complete them. They were asked to pretend that they had a final exam in a couple of hours, but had decided to run some errands first, which included stopping at some stores along the way and picking up some food items at the grocery store. Participants were given a sheet of paper with a set of blanks spaces that simulated their errands list: the list of the places that they had to visit and the food items that they needed to buy. On the projection screen, participants were given a broad category of grocery items that they had to pick up and different types of stores that they had to visit. Participants were asked to write down the brand name of the item that they would choose, or the name of the particular store that they would choose to visit. They were asked to write in a brand or store name quickly because they would only be given 4 s to make each decision and write that answer on the blank spaces provided for them. If participants could not think of a brand name, or store name, they were asked to leave that space blank and not go back to it.

After the shopping scenario task, participants were given the same awareness questionnaire and free recall test described in Experiment 1.

Results

Overall Priming Results

Participants that did not finish reading the story were excluded from all analyses. A t-test was computed to see if there was a priming effect compared to the nonstudied baseline regardless of awareness. The items from the nonstudied list served as the nonstudied baseline for all of the following analyses. Completion rates with studied brands were significantly greater (M = .18, SD = .11) than completions rates with nonstudied brands (M = .06, SD = .06), $t(143) = 11.18$, $p < .001$, Cohen's $d = 1.35$.

A 2 X 2 X 2 between-subjects ANOVA then examined the effect of centrality of placement (prominent vs. subtle), study list (List A vs. List B) and product category order (Order X vs. Order Y) on priming (difference scores). It was predicted that priming would differ as a function of the centrality of placement. The ANOVA showed no effect of centrality of placement on priming, $F(1, 136) = .18$ $p > .05$, $\eta_p^2 = .001$, but means were in the expected direction with prominent placement priming being greater (M = .12, SD = .12) than subtle placement priming (M = .11, SD = .13). No other analyses were significant.

Test-unaware Participants and Priming

Three separate analyses were conducted to see how awareness and intentionality affected priming. A total of 47 participants classified as test-unaware. A paired samples t-test showed a marginally significant priming effect and completions with studied

brands were greater (M = .10, SD = .07) than completion rates with nonstudied brands (M = .07, SD = .07), $t(46) = 1.99$, $p = .05$, Cohen's $d = .43$.

A 2 X 2 X 2 between-subjects ANOVA then examined the effect of centrality of placement (prominent vs. subtle), study list (List A vs. List B) and product category order (Order X vs. Order Y) on priming (difference scores) for test-unaware participants. The ANOVA showed no main effect of centrality of placement, $F(1, 40) = .02$, $p > .05$, $\eta_p^2 = .000$., but means were in the expected direction with higher priming with prominent placements (M = .04, SD = .09) as compared to subtle placement priming (M = .02, SD = .11). No other comparisons were significant.

Test-aware Participants and Priming

A total of 47 participants were classified as test-aware. A paired samples t-test showed a significant priming effect and completions with studied brands were significantly higher (M = .20, SD = .10) than completion rates with nonstudied brands (M = .05, SD = .05), $t(46) = 9.71$, $p < .001$, Cohen's $d = 1.90$.

A 2 X 2 X 2 between-subjects ANOVA then examined the effect of centrality of placement (prominent vs. subtle), study list (List A vs. List B) and product category order (Order X vs. Order Y) on priming (difference scores) for test-aware participants. The ANOVA showed no main effect of centrality of placement, $F < 1$, $\eta_p^2 = .000$. Prominent placement priming mean did not differ (M = .15, SD = .11) from the subtle placement priming mean (M = .14, SD = .10). The analysis did show a significant interaction of centrality of placement and order, $F(1, 39) = 5.61$, $p = .02$, $\eta_p^2 = .126$.

Intentional Retrieval Participants and Priming

A group of 50 participants were classified as intentionally retrieving the brands from the novel. A paired samples t-test showed a significant priming effect and completion rates with studied brands being significantly higher (M = .23, SD = .10) than completion rates with nonstudied brands (M = .05, SD = .05), $t(49) = 9.87$, $p < .001$, Cohen's $d = 2.28$.

A 2 X 2 X 2 between-subjects ANOVA then examined the effect of centrality of placement (prominent vs. subtle), study list (List A vs. List B) and product category order (Order X vs. Order Y) on priming (difference scores) for participants classified as intentionally retrieving. The ANOVA showed no main effect of centrality of placement, $F < 1$, $\eta_p^2 = .014$; the prominent placement priming mean was slightly lower (M = .16, SD = .12) than the subtle placement priming mean (M = .19, SD = .13). No other comparisons were significant.

Free Recall Results

Free recall was analyzed with a 2 (prominent vs. subtle) X 2 (List A vs. List B) X 2 (Order X vs. Order Y) between-subjects ANOVA. A main effect of centrality of placement was predicted because previous studies have shown that elaboration leads to better memory performance. The ANOVA confirmed this prediction with prominent placements leading to a significantly higher proportion of recalled items (M = .31, SD = .14) as compared to proportion of items recalled with subtle placements (M = .24, SD = .15), $F(1, 136) = 10.14$, $p < .01$, $\eta_p^2 = .069$. The remaining comparisons were not significant.

Free Recall Results by Awareness Classification

Free recall was also analyzed based on participants' awareness classification. This analysis was important because test-aware participants and participants using intentional retrieval strategies might have received additional exposure time to target items that test-unaware participants did not have. An independent samples t-test with test-unaware participants showed a significant difference in free recall rates with prominent placements leading to greater recall (M = .27, SD = .11) as compared to recall with subtle placements (M = .16, SD = .12), $t(45) = 3.17$, $p < .01$, Cohen's d = .94. A second independent samples t-test for test-aware participants showed no difference in recall rates with prominent placements (M = .31, SD = .14) as compared to subtle placements (M = .26, SD = .15), $t(45) = 1.12$, $p > .05$, Cohen's d = .33. Finally, a third independent samples t-test with participants classified as using intentional retrieval strategies showed no difference in recall rates of prominent placements (M = .35, SD = .15) as compared to subtle placements (M = .30, SD = .14), $t(48) = 1.13$, $p > .05$, Cohen's d = .33.

Discussion

The present experiment simulated memory-based choices that were made under low involvement (i.e. little time given to make choice) conditions. The results showed that the presence of brands in the novel increased the likelihood of selection when compared to the likelihood of including nonstudied brands. Like Experiment 1, the results of this experiment showed that difference scores increased with awareness (unaware: .03, aware: .15, intentional: .17), once again showing that some of the robust

priming scores in the literature may in part be due to explicit memory contamination (See Figure 5). Unlike the conceptual implicit test condition in Experiment 1, the number of participants labeled aware (N = 47), unaware (N = 47), and intentional (N = 50) was evenly distributed in this experiment, showing that this task, though conceptual in nature, did not engender a large amount of participant awareness.

A main effect of centrality of placement was predicted because this preference task required conceptual possessing to complete and previous research has shown that conceptual processing is affected by elaboration. The results showed that elaboration of the placements did not enhance preference for the studied products. These results imply that if advertisers are concerned with influencing consumers' memory-based choices they simply need to mention the brand without any mention of its attributes.

Additionally, as in Experiment 1, the free recall analysis showed that those brands that prominent placements showed better memory performance than subtle placements, and this was also true with test-unaware participants. However, participants classified as test-aware and participants using intentional retrieval strategies did not show the same pattern of results, though means were in the predicted direction, with prominent placements leading to better memory than subtle placements. This might have occurred because test-aware and intentional retrieval participants in the subtle placement condition boosted their free recall performance by writing down many of the target items during the shopping list scenario task. These participants benefitted from the retrieval practice of the study items, and the advantage that prominent placements held over subtle placements disappeared.

CHAPTER XI

CONCLUSION

The present experiments studied memory of products placed in books to determine whether people have both explicit and implicit memory for brands placed within a textual narrative, and whether these different forms of memory are affected by prominent and subtle placements. Three experiments found good explicit memory and robust levels of implicit memory for brand names places in stories. Prominent placement affected explicit memory, with more elaborate placements recalled better than subtle placements. Implicit memory, however, was not affected by prominence. Both conceptually driven and perceptually driven implicit memory tasks showed clear effects of placement, but prominent placements showed no more priming than did subtle placements in either of these tasks. Furthermore, the present experiments showed that placements in a narrative affected consumers making memory-based choices, but not stimulus-based choices.

The results showed that participants had good memory for placed brands. In Experiment 1 the overall mean recall rate was .29, in Experiment 2 recall was .31, and in Experiment 3 it was .27. Advertisers consider recognition rates above .25 to be successful (Karrh, 1998), so with recall typically poorer than recognition, the present rates are quite good.

The placement centrality was manipulated in the present experiments. Prominent placements were elaborate in the sense that the attributes of the products were mentioned

in great detail. An example of a prominent placement can be found in the novel *Cross* where a character says, "So we stopped at the Mercedes dealer…. Jannie and Damon ogled a silver CLK500 Cabriolet convertible, while Ali and I tested out the spacious front seat of an R350. I was thinking family car — safety, beauty, resale value. *Intellect and emotion*" (emphasis in original). It was expected that prominence would affect recall and the results from Experiments 1 and 3 showed support for this hypothesis. In both experiments prominent placements were remembered better than subtle ones on explicit memory tests. This implies that if advertisers want consumers to consciously remember their product at the point-of-purchase, it would better to use prominent, elaborate placements. These should be employed, however, only when and where the novel allows for seamless inclusion of the brand name and attributes. Product placement research in films and television has found that seemingly incongruous inclusions prompt consumers to evaluate products more negatively (Russell, 2002), and this effect should be true for placements in novels. Nonetheless, it is important to note that subtle placements were recalled relatively well, with rates of .27 (Experiment 1) and .24 (Experiment 3). Contrary to the hypothesis, Experiment 2 found no difference in recall rates between prominent and subtle placements. It is not very clear why this occurred. It may be that, because the recall test in Experiment 2 was conducted after the forced choice task, presentation of all of the pictures and items strengthened every previously studied brand in the participants' memories, regardless of centrality of placement presentation.

One of the main goals of Experiment 1 was to determine if participants displayed implicit memory for the brands mentioned in the story, because studying only explicit

memory of ads and products neglects implicit memory. Explicit tests do not allow researchers to examine the effects of unconscious processes on brand awareness, choice, or affect toward the product (Krishnan & Chakravarti, 1999). Additionally, research has shown that consumers use effortful retrieval only when it is necessary, with consumers spending as little as 5 s to make some decisions about which products to purchase (Park & Hastak, 1994). It had been predicted that participants would show better implicit memory for the studied brands in the novel compared to the nonstudied baseline. Results from the first experiment confirmed these results and showed that overall completion rates with studied brands were three times higher than nonstudied brands (studied M = .18, nonstudied M = .06). The difference in means was attenuated when the sample consisted of only test-unaware participants, but completion rates with studied brands were still about one and a half times higher than completion rates with nonstudied brands (studied M = .10, nonstudied M = .06), although the differences in means with test-aware participants were much more pronounced (studied M = .20, nonstudied M = .05). These findings were in line with previous research in the psychology literature showing that priming increases with test awareness (e.g., Barnhardt, 2004). It is also important to note that participants classified as intentionally retrieving did not display better memory for prominent placements as would be expected based on their answers to the awareness questionnaire. While these participants claimed to be thinking back to the story to answer the word stems and generate exemplars, clearly this was not the case.

Experiment 1 tested both conceptual and perceptual priming. It was predicted that perceptual priming would be unaffected by the centrality of placement. Previous

research has shown that perceptual priming occurs through enhanced perceptual fluency of the stimulus due to prior presentation (e.g., Nicolas, 1998). Elaboration based on additional information about the brand does not further strengthen the perceptual representation of the stimulus because, regardless of the centrality of placement manipulation, both groups are exposed to the brand name to the same degree. On the other hand, it was possible that a levels-of-processing (LOP) effect could have been obtained, as was found by Challis and Brodbeck (1992). The results from Experiment 1 showed no difference in perceptual priming based on centrality of placement. This shows that for implicit memory of a brand name placed in a novel in low involvement situations (i.e. when participants spend very limited time to think about answers), all that is needed is a mention of the brand name.

Some research has found that variables that normally affect explicit memory (e.g., elaboration) also affect conceptual priming. It was expected that a presentation context encouraging more elaboration at the time of encoding would result in greater conceptual priming. On the other hand, studies of conceptual priming for words placed in narratives have sometimes found that elaboration has no effect on priming (e.g., Nicolas, 1998). The overall conceptual priming results of Experiment 1 showed no effect of prominence of placement. Test-unaware participants also showed no effect of elaboration. However, consistent with implicit studies using awareness questionnaires, a significant effect of elaboration did emerge with participants classified as test-aware on the conceptual priming task (e.g., Mulligan et al., 1999). The results from the first experiment suggest that participants displayed implicit memory for the brands

mentioned in the novel. Because the LOP effect was apparent only for participants classified as test-aware, it implies that advertisers need to have the novel merely mention the brand, without elaboration, to make the brand more accessible in memory.

The present experiments also investigated whether presence of brand mentions in a novel would affect consumer choices. Experiment 2 employed a stimulus-based choice scenario in which participants were given a small amount of time to select from among two items, in a simulation of an impulse-buy/least-effort choice situation. It had been expected that enhanced perceptual fluency through previous exposure of the brands in the novel would encourage participants to choose these brands because they would seem more familiar. Previous studies in product placement (e.g., Yang & Roskos-Ewoldsen, 2007; Law & Braun, 2000) and consumer psychology (e.g., Krishnan & Shapiro, 1996; Shapiro & Krishnan, 2001) have shown that choice can be positively affected by brand name exposure. Contrary to the prediction, the results from Experiment 2 showed that previous exposure to brands did not affect choice. Mean choice for the brands was the same whether brands were encountered in the novel or not. The cause for these results is uncertain, but it could be that during the test, participants might have processed only the packaging (image) of the product because of the time constraints and felt no need to process the brand name, in which case perceptual fluency for the brand name would not have influenced choice. It could also be that the limited number of alternatives (only two options) encouraged participants to base their choices on packaging. Future research needs to address this question and investigate the circumstances under which placement in books might affect stimulus-based choices.

Experiment 3 employed a memory-based choice scenario in which participants were asked to make a shopping list that included brands they would choose for given product categories. This experiment examined how placement of a product in a novel might affect a decision about which brand to include in a shopping list. Exposure to a product placement has been shown to implicitly affect choice, even though the consumer may be unaware of that influence. Exposure to the brand in the novel was expected to lead to increased accessibility of the brand in memory, thereby leading participants to include the studied brands in their shopping list. Results from the experiment supported this hypothesis and showed that participants were more likely to include studied brands than nonstudied ones in their shopping lists.

Because participants were given a conceptual cue (a product category) and slightly more time to make their choices, it was expected that their decisions would be conceptually based, thereby benefiting from elaborate processing at encoding. The overall priming results from this experiment showed that this was not the case. Prominent placements did not lead to greater priming (or choice of studied brands over nonstudied brands) than did subtle placements. These results suggest that when consumers make memory-based choices such as a shopping list, it makes no difference whether a brand and its attributes are mentioned. Instead, simply mentioning the brand is enough to increase brand accessibility. Advertisers, therefore, have no need to pay for elaborate brand mentions. The results from this experiment also demonstrated the importance of using awareness questionnaires. As with Experiment 1, Experiment 3 showed that priming with participants classified as test-unaware was only marginally

significant. The difference in means between studied and nonstudied brands instead seemed to be driven by participants classified as test-aware and participants claiming intentional retrieval.

There were some limitations to the current experiment. The forced choice scenario (Experiment 2) presented participants with only two items to choose from, and this may not translate well into real-life shopping scenarios in which people select items from among many more in a given product category. Future research should be sure to incorporate several items from a product category to study the impact of brand mention on consumer behavior more realistically. Furthermore, it would be interesting to see how verbal brand mentions in a novel would affect picture fragment completion. Brand names are unlikely to be encountered in isolation, without packaging. In most shopping situations (i.e. the grocery store, the makeup counter), consumers are confronted with actual products, not lists of product names. It is likely that priming would still be observed in these situations because when the brand name is encoded in the process of reading a novel, it probably not only activates the brand name but also the product packaging information. This is likely to occur because brand names are likely encoded in conjunction with its associated packaging. A reduced priming effect could be observed, however, because changing the modality of the stimuli from study to test has been shown to affect perceptual priming (e.g., Roediger & Blaxton, 1987).

The present study tested implicit and explicit memory with only a short (10 min) time delay. With longer delays, it is expected that participants would show deterioration in explicit memory because explicit memory decays quickly with time. As mentioned

earlier, perceptual implicit memory has been shown to remain intact for longer periods of time (Roediger & McDermott, 1993). Participants should therefore still display perceptual implicit memory for brands mentioned in the novel they were reading.

While the focus of the present experiments was to investigate how well the brand *names* were remembered, there are certainly cases where it might be equally, if not more important, for people to remember the claims about a product. This might be especially important with new brands trying to gain consumer awareness. Future research should investigate how well the claims (in the case of the prominent placements) are remembered.

Future studies should also examine implicit and explicit memory for brands placed in audio books. The proliferation of digital music players such as the iPod and the Zune, along with their accessories, have afforded people with a simple and straightforward means to *listen* to their books on their commute to work or while driving their vehicles. Therefore it is important to test whether hearing the brand mentioned in the context of a novel will have an impact on memory and consumer behavior. It is possible that hearing brand names will affect perceptual priming. Experiments testing perceptual priming should test participants with auditory material: consumers will be encoding the brand name in auditory form, and research has shown that perceptual priming suffers when people are tested in a different modality; conceptual priming, on the other hand, should remain unaffected.

Overall, the present experiments showed that participants demonstrated both explicit and implicit memory for brand mentions in books. However, the centrality of the

placement was shown to be important only for those participants employing conscious recollection (during the explicit memory test and test-aware participants). Therefore, these experiments demonstrated that product placement in books is yet another tool that advertisers can use to make consumers aware of their brand. The present experiments also showed that regardless of the centrality of placement, consumer choice remained unaffected by the mention of a brand when participants were given a two-item forced choice task. However, when participants made shopping lists, the mention of the brands in the novel, regardless of centrality of placement, made it more likely that these same brands would appear in their shopping lists. Apparently, advertisers need only have their brand included inconspicuously in a novel.

Researchers have spent a lot of time evaluating product placement in other media (films, television, videogames, music videos), but product placement in books is an advertising trend whose effectiveness has not been thoroughly examined. The present research adopted the concept of prominence from product placement in films and television shows, and applied it to novels. Future researchers should look at other factors that affect placement effectiveness to see if they would have the same effects in the context of books. More careful examination of advertising in this medium is critical because this advertising strategy clearly has consequences for adults. But more importantly, it might also impact adolescents reading *Cathy's Book* and *Mackenzie Blue*, and even younger readers that are completely unaware of the advertisers' intent when reading *The Cheerios Counting Book*. Because the practice in this medium is so easily

apparent with for example, *The Oreo Cookie Counting Book,* it may warrant some regulation when it is targeted toward more vulnerable populations.

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APPENDIX A

Brand names used in the story with corresponding production rates.

Category	Brand Name	Proportion Responses	Brand Name	Proportion Responses
Makeup Brand	Clinique	0.12	Mac	0.13
Dept. Store	Kohls	0.06	Nordstrom	0.07
Magazine Name	Seventeen	0.11	Vogue	0.08
Beer Brand	Keystone	0.09	Miller	0.06
Perfume Brand	Burberry	0.05	Juicy	0.09
Discount Store	Goodwill	0.08	Ross	0.07
Clothing Brand	Abercrombie	0.06	Lucky	0.06
Cell Phone Maker	Samsung	0.14	Apple	0.13
Pen Brand	Papermate	0.15	Pilot	0.05
Jewelry Store	Zales	0.09	Kay	0.15
Soft Drink Brand	Sprite	0.08	Pepsi	0.07
Video Game	Grand Theft Auto	0.09	Call of Duty	0.11
Gum Brand	Stride	0.10	Wrigley	0.10
Car Maker	Toyota	0.11	Chevrolet	0.12
Water Brand	Evian	0.08	Fiji	0.08
Overall Rates		0.09		0.09

APPENDIX B

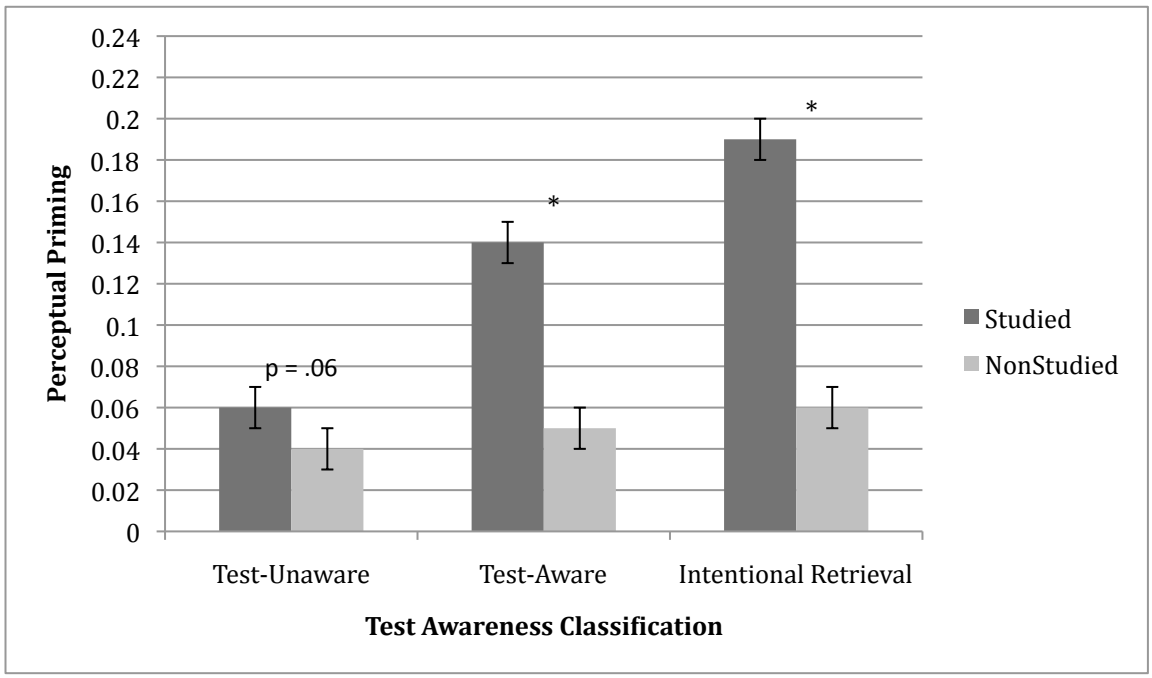

Figure 1. Experiment 1: Perceptual Priming by Awareness Classification

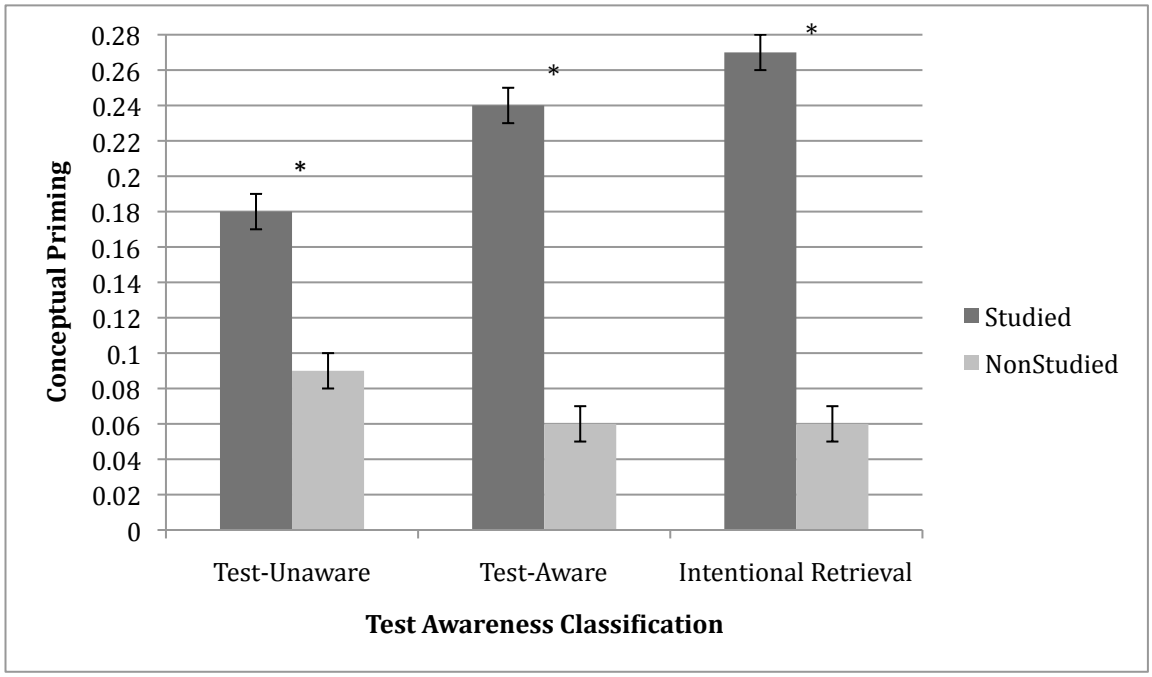

Figure 2. Experiment 1: Conceptual Priming by Awareness Classification

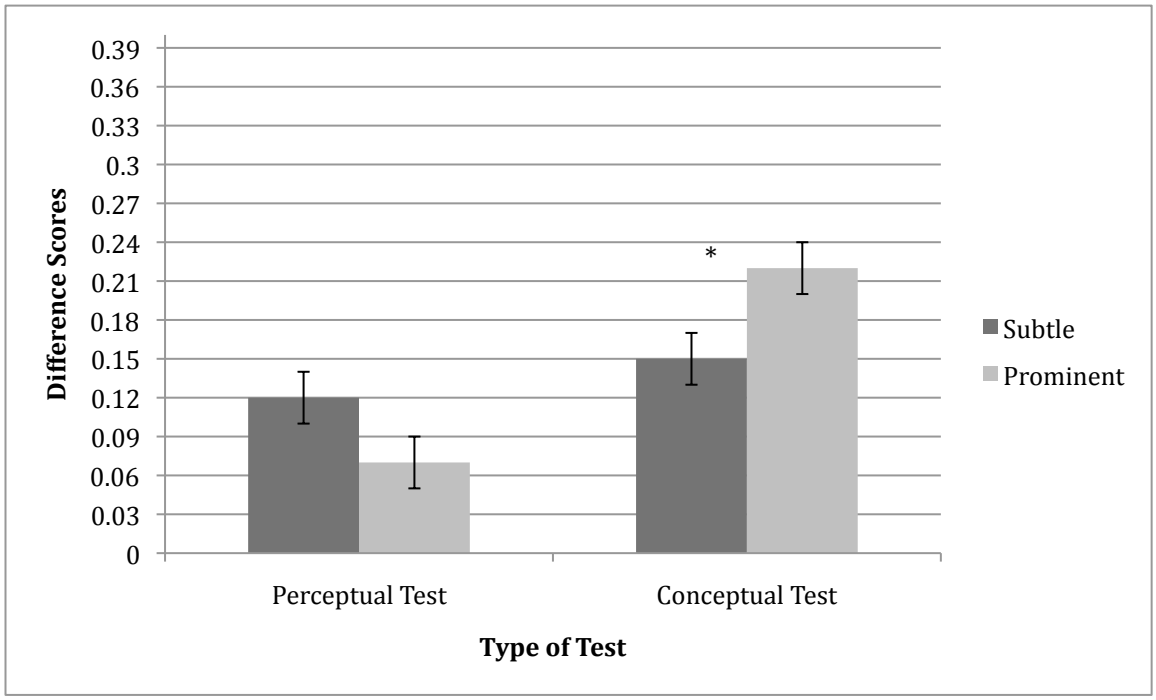

Figure 3. Experiment 1: Test-Aware Participants

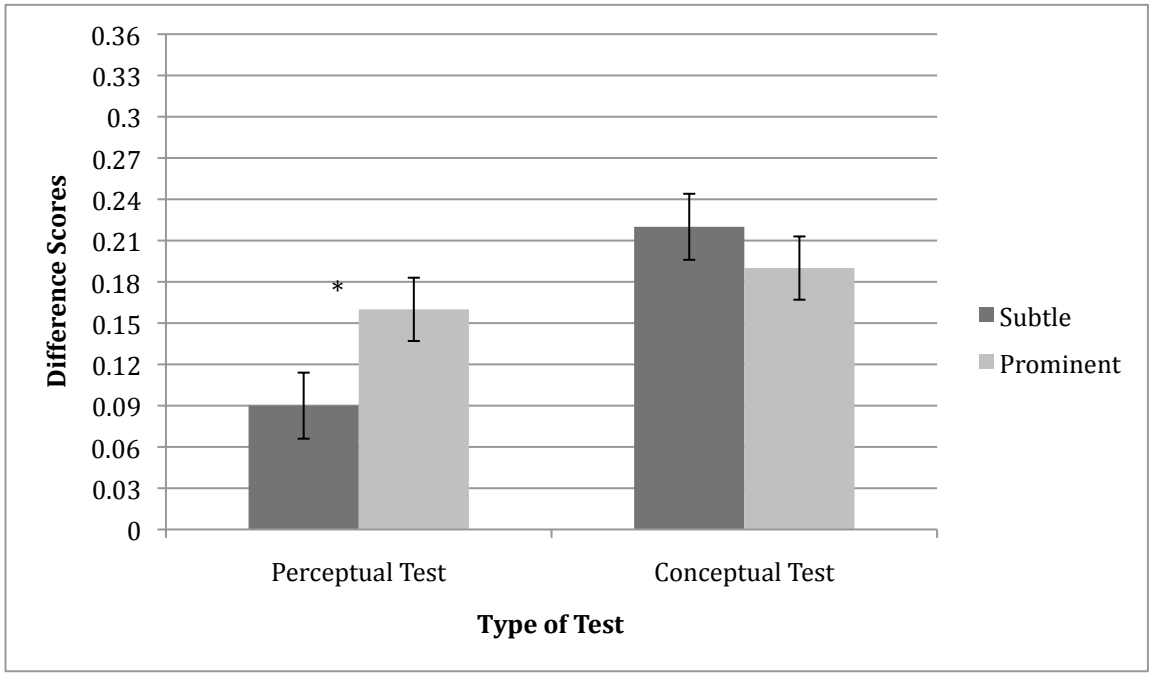

Figure 4. Experiment 1: Intentional Retrieval Participants

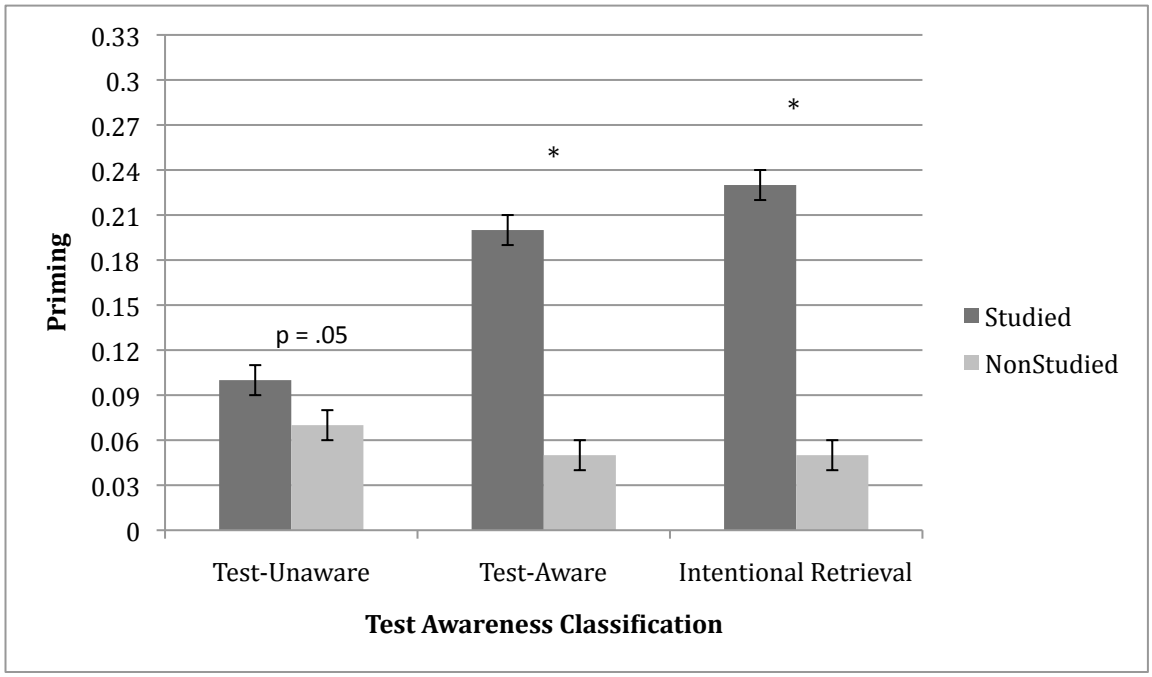

Figure 5. Experiment 3: Priming by Awareness Classification

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Under review: Smith, S.M. & Manzano, I. Decoupling time and context in long-term recency effects.
In preparation: Smith, S. M., Manzano, I., & Kohn, N. Recovering experimentally blocked memories: Effects of context cues and recall instructions

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Manzano, I. & Smith, S. M. (2009). Cue-overload in context dependent recall. Psychonomic Society annual meeting, Boston.
Smith, S. M. & Manzano, I. (2009). Effects of context similarity on contextual cuing. Psychonomic Society annual meeting.
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