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THE INFLUENCE OF PACKAGING COLOR ON CONSUMER PURCHASE INTENT: THE INFLUENCE OF COLOR AT THE POINT OF PURCHASE

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VICKIE LYNN VANHURLEY

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Lulinda S Davenport
Major Professor's Signature

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THE INFLUENCE OF PACKAGING COLOR ON CONSUMER PURCHASE INTENT: THE INFLUENCE OF COLOR AT THE POINT OF PURCHASE

By

Vickie Lynn VanHurley

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ABSTRACT

THE INFLUENCE OF PACKAGING COLOR ON CONSUMER PURCHASE INTENT: THE INFLUENCE OF COLOR AT THE POINT OF PURCHASE

By

Vickie Lynn VanHurley

This study was designed to add the body of literature that investigates the influence of packaging design, specifically color, on consumer decision-making. This study is unique because it used original three-dimensional packaging as stimuli to collect data. Cue utilization theory was used to guide the investigation of packaging design color as a cue for product quality and product performance as an influence on consumer purchase intent.

This benchmark study exploratory in nature synthesized color, packaging design as an influence on consumer decision-making as an introductory mean of investigating packaging design as the new advertising.

Approximately 80% of purchase decisions are made at the point of sale and the role of packaging has shifted to include advertising the contents becoming the "silent salesman." With a new reliance on packaging design to persuade consumers at the shelf, it is important for packaging design to be studied as an influence on consumer behavior.

Tangible three-dimensional packaging was used along with a 72-item questionnaire to investigate the general research question: Do surface graphics/packaging color (extrinsic cue) influence consumer decision-making and the intent to purchase?

Results indicated that consumers utilize packaging color to make purchase decisions. Consumers receive non-textural information about the product from the packaging that helps the decision-making process. When consumers are faced with a multitude of product choices, especially in an unfamiliar product category, the packaging is a source of information. Blue and red packaging was more likely to be purchased than yellow, orange, green, or purple packaging. Yellow packaging was the least likely to be purchased, and its contents were perceived to have poor quality, poor shelf visibility, and low purchase intent.

Results also showed that color and product associations have an influence on the intent to purchase. Although red was indicated overall as a packaging color most likely to be purchased, red was the color packaging least likely to be purchased in the case of toothpowder.

Results indicated packaging color influenced consumer purchase intent and therefore color has an effect on product sales, market share, and profits.

More research is needed to augment these results that indicate color does influence the consumer's intent to purchase. Also, additional research could strengthen the results that the consumer's intent to purchase may be influenced by product and color association. And more research could solidify the relationship of color and product associations for products.

This manuscript is dedicated in memory of my grandmother, Mary Patton who instilled in me at an early age the importance, value and power of a good education. This accomplishment is dedicated to all who had a desire for higher education but were denied. This is also dedicated to my mother, Joan VanHurley and sister, Rhonda VanHurley-Wilson. For without your unwavering love and support this accomplishment would not have been possible.

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CHAPTER ONE

INTRODUCTION

Market research has shown consumers use information on packaging to assist with purchase decision-making. Consumers are faced with several product choices when shopping and assist with product selection; a shopper may turn to the information on the product to solidify the final product choice. It is estimated that between 73 and 85% of purchase decisions are made at the point of sale and that packaging design plays a key role because it is often the only factor that differentiates two products (Sutton and Whelan 2004; Wallace 2001; Buxton 2000; Rettie and Brewer 2000). For many brands, packaging design has acquired the responsibility of advertising (Furness 2003, The Silent Salesman 2003).

Color may assist consumers with their purchasing behavior (Van De Laar and Van Den Berg-Weitzel 2003). For example, when a consumer replaces a used item, the he or she will scan the supermarket shelves for the familiar packaging color then confirm the correct product choice by reading the brand name. Colors and shapes convey about 80% of all visual communication (LaCroix 1998). Therefore, consumers have developed a habit of using color as a means of gathering information. Thus, color must have an important role in marketing and advertising.

Humans sustain a long relationship with color. Historically, meanings are associated with color (Cheskin 1954; Schaie and Heiss 1964; Sharpe 1974). For

instance, the color blue represents clean, calm, and the heavens, while the color red represents hot, danger, and blood. These color associations and perceptions have extended into sociology and have been incorporated into the marketing of consumer goods (Lester 2000; Grossman 1999; Triplett 1995; Lane 1991). For example, a popular powder laundry detergent added blue crystals to the white detergent and employed an advertising slogan "with added bluing for extra whiteness." A survey of supermarket shelves lends support to color associations with a multitude of blue colored detergents and packaging. Some industry creative directors consider color the most important element of a package (Shell 1996). Often, color identifies and distinguishes a company's goods from its competitors. For example, Owens-Corning's pink home insulation has U.S. Trademark protection (Samuels and Samuels 1996). In 1995 the federal court ruled that Owens-Corning was entitled to trademark registration for the color pink. The court was convinced by evidence provided which showed that the color pink has been used in Owens-Corning's advertising since 1956 and that more than $42 million in consumer advertising has been spent to emphasize the distinctive color of the product (Samuels and Samuels 1996).

Researchers have spent the last four decades examining the behavior of consumers in the market place (Petty, Cacioppo, and Shumann 1983). More specifically, researchers have examined the effect media advertising has on consumers' attitudes and evaluations of products and social issues. This area of study is consumer behavior.[1] When consumers enter a market place or

[1] Consumer behavior involves the thoughts and feelings people experience coupled with the actions performed during the shopping process (Peter and Olson 1999).

supermarket, they make decisions on what to purchase. Consumer behavior has been treated as a decision-making process. The assumption regarding consumer decision-making is consumers have goals they seek to satisfy. Consumers use an evaluation process when considering which product to purchase that highlights the importance of investigating what impacts their evaluation of products that influence their purchase intent.

The success of many companies is a result of serving the needs of their consumers in addition to creating and maintaining relationships with those consumers. In the 1980s Coke® decided to change the original formula of the cola and marketed it as "New Coke®" as an attempt to compete with the rising rival Pepsi®. Coke consumers' attitude toward the new product was unfavorable and their shopping behavior reflected their attitude. As an attempt to make amends Coke returned to the original formula and marketed it as "Coke Classic®". The "New Coke®" was not successful and eventually vanished from supermarket shelves. The behavior of Coke® consumers alerted manufacturers and marketers to the connection of consumers and success. Learning from Coke's® experience, most companies consult consumers regarding their desire for a product and how much they are willing to pay for such a product prior to launching it (Peter and Olson 1999). Examining how consumers behave during their shopping experience and what influences their shopping behavior continues to intrigue both academic and market researchers.

Marketing research has shown consumers use cues to assist with purchase decisions (Richardson 1994; Richardson, Dick, and Jain 1994; Rao and Monroe

1988; Cox 1967). When faced with making a decision between two similar products a consumer may use the cues of size, color, texture, shape, price, or ingredients to make the decision of which product to purchase. Cue utilization theory suggests that consumers depend on external or extrinsic cues (packaging, price, brand name) when making a decision among products, especially when determining quality (Richardson 1994). With packaging performing as the "silent salesman" and influencing consumers at the shelf, cue utilization theory provides a theoretical framework regarding the influence of the color on consumers' perception of the product and their purchase intent.

The objective of this research is to create a benchmark study (exploratory in nature) that synthesizes color, packaging design[2] and advertising as influences on consumer decision-making. This is an introductory mean of investigating packaging design as a new type of advertising. Thus, the purpose of this objective is to investigate the influence of packaging color on consumer purchase intent.

This study focuses on packaging design from a communication aspect not an engineering aspect. More specifically, this research investigates the use of packaging color as a cue. For example, let's say a business executive travels to another city discovers he failed to pack his razor. He goes to the hotel gift shop and does not see his normal brand. This consumer will rely on the cues on the razor packaging to make a purchase decision. In this situation, the cue of color may provide additional information that influences his purchase intent. This study

[2] "The combination of materials, structure, typography, imagery, color and other visual design components for the purposes of communicating the marketing objectives and strategies of a particular brand or product" (Klimchuk 2004).

investigates the influence of color at the point of purchase on the consumer decision-making process by examining packaging design color.

The second chapter, *Justification,* further explains the need for academic research to study the effect of packaging design, including color on consumer decision-making and consumer purchase intent. This chapter also discusses the impact of this type of research on the marketing and advertising industry and on advertising design and packaging design academic research. The theoretical framework for this research, cue utilization theory is introduced in this chapter.

The third chapter, *Consumer Behavior,* contains a review of literature regarding the consumer decision-making process and where packaging design is positioned as part of this process. Chapter three also highlights packaging design as an influence on consumer behavior.

The fourth chapter, *Color,* contains a review of literature regarding color, color association, and color practices in marketing. Chapter four provides an in depth look at the overarching question of this research: Does surface graphics color applied on packaging influence consumer decision-making by providing cues associated with quality, performance, and purchase intent?

The fifth chapter, *Advertising, Packaging Design, and Purchase Intent,* examines packaging design as advertising, and builds support for an emphasis on shelf impact. In other words, creating packaging design that attracts the consumer from the shelf with the goal to be the last attempt during decision-making to influence consumer purchase intent should be implemented over the

traditional broadcast or print advertisement. This chapter also examines the use of packaging design as a source for information.

The sixth chapter, *Cue Utilization Theory,* presents the theory that governs the methodology for this study. Cue utilization theory, one facet of consumer decision-making, guide the investigation of surface graphics color and its impact on consumer decision-making. The chapter will show how this theory has been used in previous studies and how the theory was adapted for this exploratory research.

The seventh chapter, *Research Questions and Methodology,* outlines the research questions and the methodology of this study. This chapter presents an in-depth look at the research questions. It explains the survey questions used for data collection coupled with the application of cue utilization theory.

The eighth chapter, *Results and Discussion,* provides the results and statistical significance of the data collection, and a discussion of the results.

The ninth chapter, *Conclusion,* restates the goal of this research, provides a summary of the research and discusses the conclusions as they relate to: 1) packaging design as the new advertising, 2) the marketing and advertising industry, and 3) advertising design and packaging design educators. This chapter contains limitations of the study, suggestions for future research, reflection on the study for future replication, and how this study adds to the body of knowledge regarding the influence of surface graphics color on the consumer decision-making process.

CHAPTER TWO

JUSTIFICATION

Consumers are bombarded with about 3,600 selling messages a day (Rumbo 2002). Yet, because of technology allowing TV watchers to omit commercials and declining advertising budgets, there has been an emphasis on influencing the consumer at the store shelf (Furness 2003). For many products, such as seasonal items, packaging design has acquired the responsibility of advertising (often being the only advertising the product will receive) and has evolved into the "silent salesman" (Furness 2003; Rettie and Brewer 2000; Shell 1996). It is estimated that between 73% and 85% of purchase decisions are made at this point and the packaging design must play a key role because it is often the only factor that differentiates two products on a shelf (Sutton and Whelan 2004; Wallace 2001; Buxton 2000; Rettie and Brewer 2000). With a new reliance on packaging design to persuade consumers at the shelf, it is important for packaging design to be studied academically as an influence on consumer behavior.

Research in the area of consumer response to packaging design is being encouraged to assist with increased product sales and increased benefits to the integrated marketing communications (IMC) mix (Tobolski 1994). IMC refers to the channels (advertising, packaging, personal selling, sales promotion, public relations and direct marketing) used by companies/manufacturers to

communicate product information to the target audience or intended users of the product (BNET 2004).

Packaging is expected to protect and preserve its contents, differentiate from its competitors, grab the attention of the consumer, and persuade the consumer to purchase (Packaging: good shelf image 2003; Product packaging: empty promises? 2000). The vast consumer packaged goods industry continually relies upon color as a method of differentiation. Research has shown color (especially nontraditional color) attracts the attention of the consumer (Voight 2003). Nontraditional color increases the ability to separate a product from its competitors and enhance brand identity (Voight 2003). According to marketing research, colors allow marketers to build brand loyalty at a time when consumer loyalty has declined (Selame and Koukos 2002). With crowded product categories, manufacturers desire brand loyal consumers.

More attention is now being devoted to influencing consumers at the point-of-purchase. According to brand managers, packaging acts as an advertising medium and is cheaper than TV commercials (Selame and Koukos 2002). When packaging doubles as a container and advertising, the packaging may be the manufacturer's last chance for reaching shoppers (Selame and Koukos 2002). This researcher's informal review of supermarket shelves support the marketing trend of updating packaging designs of products [e.g., ReaLemon™ and ReaLime™, Polar Ice vodka, Kellogg's® pop-tarts®, Tyson® chicken, Canada Dry® ginger ale, ACT II® popcorn, Dole® salad blends, Starbucks® coffee, and Van de Kamp's® frozen seafood entrées] as a strategy to garner more attention

to the product at the shelf and to generate more influence on purchase intent (packworld.com 2004; Pigeon 2001). Market research has discovered that the supermarket shelf is more effective with influencing consumer purchase than advertising, and advertising is more effective with heightening product recall (Selame and Koukos 2002; Wallace 2001). Thus, more emphasis should be placed on packaging design, the point-of-purchase for consumer-packaged goods, as a strategy to influence consumer purchase intent.

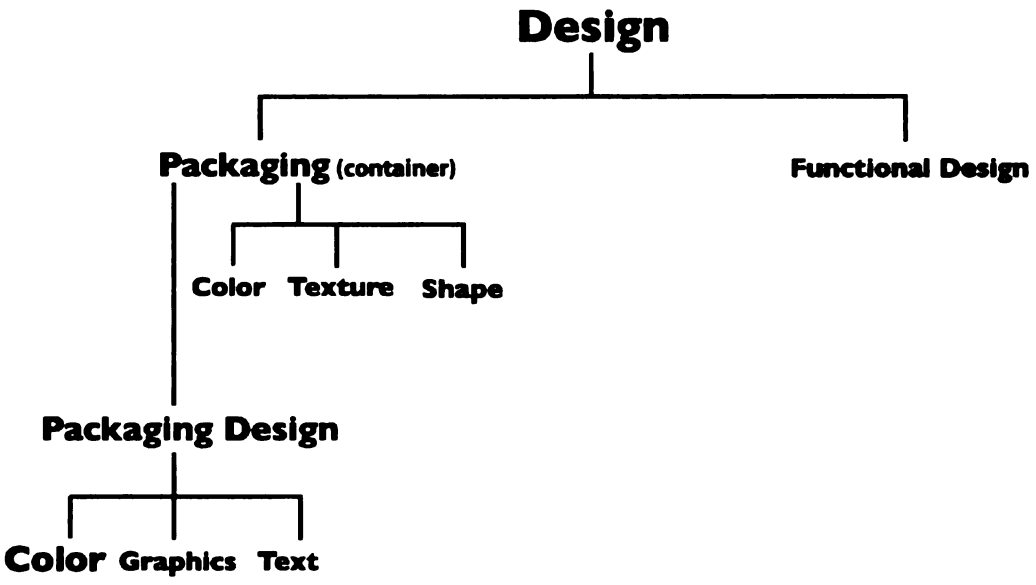
With marketers beginning to devote more attention to influencing consumers at the point-of-purchase, cues on packaging (color being one) have moved to the forefront as a means of consumer influence as a link to increased market revenue. Apple offered colorful computers (the iMac) as an alternative to the traditional beige colored computer. The bright colors and unique shape increased the noticeability of the iMac in a showroom of beige personal computers. The strategy of offering an array of colors coupled with a unique design saved Apple from financial ruin (Gibney and Luscombe 2000).

As the desire increases to influence consumers at the point-of-purchase, the role of packaging design emerges to the forefront of advertising. Packaging now assumes the role of advertising in addition to protecting and preserving its contents. Considered young industries, packaging emerged near the end of the nineteenth century and packaging design surfaced (in the late 1930s) as a result of mass production. Much research is needed in these understudied areas regarding their effect on consumer purchase intent. (Selame and Koukos 2002). Understanding the effect packaging color has on consumer decision-making

would be as an introductory mean of investigating packaging design as the new advertising.

The objective of this research is to investigate the influence of packaging design color on consumer decision-making. More specifically, this research investigates the use of surface graphics[3] color as a cue by consumers for product quality and product performance. This study also examines how different colors influence consumer decision-making, and ultimately, the consumer's intent to purchase. It focuses on packaging design from a communication aspect, not an engineering one. In an attempt to properly frame this research, a diagram is presented to position packaging design as a separate entity from other aspects of packaging, such as structure, materials, and functional design or engineering (Figure 1.).

Figure 1. Study Positioning



[3] Surface graphics refers to the photographs, illustrations, and typography that appear on the packaging. Surface graphics is exclusionary of the color, shape, and size of the product.

Cues are product information consisting of price, color, taste, feel, scent, and the opinion of friends, family, and retail sales consultants (Cox 1967). A package can be made up of a variety of cues. Thus, this research is guided by cue utilization theory. There are two types of cues (intrinsic and extrinsic) and cue utilization theory suggests that consumers depend on extrinsic cues when faced with making a decision between products especially when determining quality (Richardson 1994).

The results of the present study have the potential to alter design practices regarding color use on packaging design and its influence on consumer purchase intent and, results have the potential to reposition packaging graphic design to the forefront of marketing strategy. At best, packaging design is included as a significant part of the entire marketing program (Calver 2004). The budget for packaging design pales in comparison to advertising and sales promotion budgets (Calver 2004). A 2005 market study conducted by *Shelf Impact* reported of those surveyed 35% of packaging design decisions are made by the marketing department and 11% of packaging design decisions are made by the packaging design manager. With a shift occurring from advertising as an influence on consumer behavior to packaging design as an influence on consumer behavior it is plausible that packaging design elevates to a higher level of importance in a marketing program.

CHAPTER THREE

CONSUMER BEHAVIOR AND DECISION-MAKING

Shoppers in the United States spend about $6.5 billion on consumer goods (Peter and Olson 1999). A company's continued success is correlated with a successful relationship with the consumer. Finding out as much information as possible on consumer shopping choices and behavior provides companies the tools to produce goods and services to strengthen their relationship with the consumer. In other words, companies have discovered that information obtained from customer data bases[4] and in-store observation have proved valuable in regard to earning consumers' repeat purchases or business.

The phrase "consumer behavior" refers to a discipline of social science research that examines how the consumer acts in the marketplace. More specifically, consumer behavior research focuses on: 1) what influences the consumer's actions in the marketplace and 2) how those influences affect the purchase behavior of the consumer. This chapter will examine consumer behavior and consumer decision-making as well as position this study of packaging design color as an influence on consumer decision-making within the discipline of consumer behavior.

[4] Database refers to information collected from consumers via product registration forms, sweepstakes entry forms, catalog orders, and in store observation usually compiled of consumer demographics and past purchase behavior.

CONSUMER BEHAVIOR

Consumer behavior[5] refers to the feelings and thoughts people experience, and the actions they take while engaging in the consumption process (Peter and Olson 1999). Consumer behavior also includes the things in the environment (product appearance, price information, advertisements, packaging, consumer comments, shelf positioning, etc.) that influence the feelings and actions of the consumer. In addition, consumer behavior involves a process of exchange between buyers and sellers. People exchange money to obtain products or services. In short, consumer behavior involves the study of what things in the marketplace environment influence the feelings and actions of people while shopping.[6]

The behavior of consumers is constantly changing. The wants and needs of individual consumers, society as a whole, and specific consumer groups change at different times due to the constant evolution of feelings and attitudes. For example a 1997 study discovered the reason 60% of United States households did not own a personal computer was because they felt they did not need one (Peter and Olson 1999). This dynamic nature of consumer behavior represents the need for continual research regarding the influences on people's attitudes and feelings that affect their shopping behavior.

Consumer behavior is a complex and diverse field (Peter and Olson 1999). Consumer behavior research is based on methods and theories from cultural

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[5] "Behavior refers to the physical actions of consumers that can be directly observed and measured by others" (Peter and Olson 1999).

[6] Shopping is defined as: to visit shops and stores, or view catalogs for the purpose of purchasing or examining goods (Random House Webster's College Dictionary 2000).

anthropology, sociology, as well as cognitive, social and behavioral psychology, and economics and statistics. Table 1 shows the origins of current consumer behavior methodologies (Peter and Olson 1999).

Table 1. Consumer Behavior Research Methodology Origins

Core Discipline	Primary Method	Primary Research Objective
Cultural Anthropology	Long Interviews and Focus Groups	Understand consumption and its meanings
Psychology and Sociology	Experiments and Surveys	Explain the decision-making and behavior of the consumer
Economics and Statistics	Math modeling testing and shopping simulation	Predict consumer behavior and consumer choice

Methodologies used to study consumer behavior are focus groups, interviews, observations, experiments, and surveys. The qualitative methods (focus groups, interviews, observations) generally are used to investigate what a product or service mean to consumers, what consumers experience when they purchase a product or service, what influences their decision to buy a product or service. The quantitative methods (experiments, surveys) generally are used to test theories, gain insight into how consumers process information, how consumers make purchase decisions, and how social issues influence consumer behavior. Other areas of interest include the depiction of women and minorities in advertising, how consumers' possessions influence their self-image, and how art and film influence consumption meanings.

The present study uses the primary method of a survey to gain insight into the influence of packaging design color on consumer decision-making. The purchase decision is influenced by the consumer's need to process the information found at the supermarket shelf (Peter and Olson 1999).

Information processing is requisite in the examination of consumer behavior. Prior to making a purchase decision, the consumer must process or make sense of the information presented. Thus, it is necessary to discuss consumers' information processing and its relationship to consumer decision-making.

INFORMATION PROCESSING AND CONSUMER DECISION-MAKING

A present-day superstore[7] may stock more than 50,000 items in its 200,000-square foot retail space. Research has revealed that the average amount of time a consumer spends in a supermarket is 25 minutes (Philips 2005). On average a consumer will purchase 17 items at a cost of $23 during this 25-minute shopping experience (Philips 2005). Based on this theory, the consumer would have to sort through the superstore stock at an average rate of 33 items per second to find the desired 17 items.

Memory is a pivotal aspect of consumer decision-making. Memory plays an important role in recalling previous shopping behavior and experiences. Different types of memory storage systems exist, each with its own properties and functions (Bettman 1979). The normal memory system used in research possesses two types of memory: short term and long term (Bettman 1979). A

[7] A very large store, especially one stocking a large variety of merchandise (Random House Webster's College Dictionary 2000).

basic processing sequence using the short-term and long-term memory system has information attended to passing from the sensory organs (eyes, nose, hands, mouth, ears) and transferred to short-term memory. Short-term memory has limited capacity. A consumer is able to process approximately seven chunks[8] of information at a time (Bettman 1979; Philips 2005). The limit of short-term memory is seven chunks plus or minus two which yields a range of five to nine chunks of information for processing at one time. For example, a telephone number minus the area code is seven digits or seven separate chunks of information. There are various ways an individual may reduce the number of chunks. An individual may reduce the seven chunks of 777-9311 to three ("777", "93", and "11"). With one property of short-term memory being limited capacity, another property is the time it takes for information to transfer from short-term to long-term memory. Research suggests about five to ten seconds is required to rehearse one chunk of information into long-term memory if the information must be recalled (Bettman 1979). If recognition of the information is needed instead of recall then about two to five seconds is required to transfer the information from short-term to long-term memory (Bettman 1979). However, active information stored in short-term memory can be retrieved quickly, almost automatically (Bettman 1979). Information in short-term memory can be processed further into long-term memory.

Long-term memory is believed to have unlimited capacity thus becoming a permanent storage for information. An integral part of the information stored in

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[8] A chunk is a single piece of information; an understandable seven-word phrase constitutes one chunk of information. Where as seven unrelated words constitute seven chunks of information.

long-term memory is concepts and the associations between them. Concepts may include attributes of objects, events, and information processing rules. Another crucial part of long-term memory is memory schemata[9]. A consumer may have schemata regarding sales associates. For example a consumer's sales associate schemata may be that most sales associates work on commission and it is their job to sell the most expensive items or persuade the consumer to spend as much money as possible on items. In conjunction with schemata, scripts exist in long-term memory as expectations regarding the manner in which various events will occur. Based on the previous example of the consumer's schemata of sales associates, an example of a script would be the consumer is shopping for a dishwasher and the sales associate will constantly persuade the consumer to purchase the latest, most expensive model along with the extended warranty.

Short-term memory and long-term memory do not operate independently but simultaneously (Bettman 1979). Information stored in long-term memory must be retrieved and used to interpret active information in short-term memory. For example a consumer is inside a superstore shopping for a cordless can opener. The consumer is presented with several cordless can openers and is processing the information regarding each can opener. After processing the information for each can opener, the consumer remembers the poor performance and the difficulty of use a family member experienced with Brand C and decided that Brand C is not a purchase option. The consumer retrieves information from long-

[9] A schemata is a structure developed based on living experiences that organizes incoming information as it relates to previous experiences (Bettman 1979). A schema is an organized pattern of expectations about an environment.

term memory that determined the active information regarding Brand C should not be processed further.

In addition to the basic structure of memory, there is the consideration of how consumers use memory. Consumers utilize different strategies for what information to process and how to process it (Bettman 1979). In other words, the consumer has to decide what information is worth maintaining and if so, whether the information is placed in short-term memory or long-term memory. This process also includes the decision of how to retrieve information from long-term memory.

Another memory system often used by consumers during the decision-making process is external memory. External memory refers to information available to consumers that do not need to be stored in their memory thus reducing the burden placed on consumers' memory. Examples of external memory are shopping lists, coupons clipped by the consumer, in-store advertisements, and packaging information. It may be easier for the consumer to process information from packaging when conducting product comparisons than to try to retrieve and process the same information from internal memory (Bettman 1979).

Memory Control Processes. Memory control processes are ways consumers control the information that comes in and out of memory. There are six schemes used in the memory control process: 1) *rehearsal* 2) *coding* 3) *transfer* 4) *placement* 5) *retrieval* and 6) *response generation* (Bettman 1979).

Rehearsal is employed after information has entered short-term memory.

The role of rehearsal is to maintain the information (keeping it active) and transfer the information to long-term memory. The prime concept behind the rehearsal strategy is the repetition of information. The amount of time spent with repeating the information is directly related to the transfer of information to long-term memory. For example an individual continues to repeat a phone number until he or she finds a piece of paper and pencil to write it down. The individual continues to look at and recite the phone number written on the piece of paper. Depending upon the amount of time the individual rehearses the phone number, the piece of paper may no longer be required thus the phone number is transferred to long-term memory.

Coding is a strategy used to arrange information for rehearsal. Some coding techniques commonly used in verbal learning are mnemonics, images, and associations. For example a consumer may associate a symbol or image (stars in the sky) with a product name (Celestial Seasonings Tea®) to assist with remembering the product name. It is a common advertising practice for products to use such associations to facilitate the coding process because they want consumers to remember the product (Bettman 1979). Another example is the creation of a mnemonic (COTS) to assist with remembering a product name (Chicken of the Sea®).

Transfer is a control process that manages what information is stored as well as in which form (short-term, long-term) the information is stored. What the consumer expects to do with the information will determine what is stored and in which form the information is stored. Depending upon the task or goal to be

performed by the consumer, more or less information may be required for transfer. For example, if a consumer is interested in the nutritional information of a product and is unable to store the USFDA nutrition guidelines perhaps the information the consumer needs to store for this task is simply if the product is nutritious or not. In the event that the consumer is comparing food products in the superstore based on nutritional value taken from the packaging, the only information transferred into memory are the brands to be compared. Information deemed important by the consumer for accomplishing tasks will most likely be given high priority. Information easily stored will most likely be given high priority also.

Placement is a process that deals with where information is stored. The "where" does not refer to an actual location but the association (coding) created when the consumer processed the information. The placement decision is crucial because retrieval of the information may depend upon the reconstruction of the specific placement strategy. For example if a group of names are placed a specific order then the recollection of the names tend to be grouped in the same specific order. If the specific order is not recalled it is highly likely that the group of names remembered will be incomplete.

Retrieval is considered principal in the memory control process. This process can range from immediate access for familiar items to an involved search process for other items. Forgetting, in relationship to retrieval (from long-term memory) is considered a failure rather than a loss of information due to the permanence of long-term memory. For example a consumer may remember the

need to purchase an additional item not found on his or her shopping list but seeing a product display for a similar item provides a stimulus that assists with retrieval. A failed retrieval process of information is possibly the result of searching the wrong set of associations, running out of time to conduct the search for the association, or losing focus during the search.

Response generation is the last memory control process. Theorist believe remembering is a constructive process because items of information are reconstructed from memory. Items of information are not stored in memory precisely as entered into memory nor are they retrieved completely (Bettman 1979). Reconstructive information may be biased because the information is partly based upon the consumer's expectations of "what must have been" (Bettman 1979). For example, a biased reconstruction may occur when a consumer does not remember the exact details of an interaction with a sales associate but decides "the sales associated did not explain this to me" if he or she is not pleased with the purchase.

Consumers use these six schemes (rehearsal, coding, transfer, placement, retrieval, and response generation) of the memory control process to determine what information comes in and out of memory.

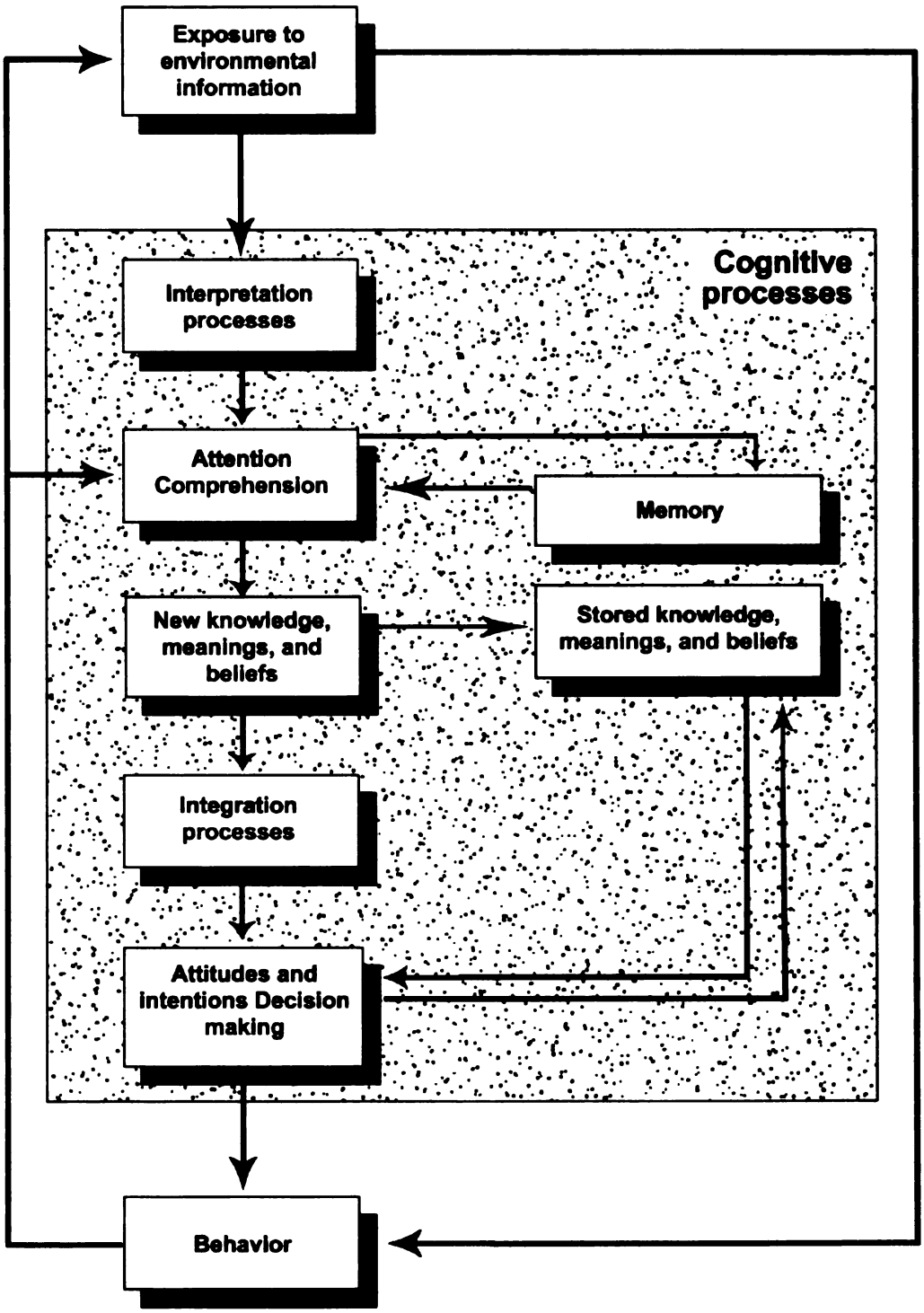
Consumer Decision-Making. Consumer decision-making is viewed as a problem-solving process. A decision is defined as the act or process of deciding, the act of making up one's mind (Random House Webster's College Dictionary 2000). A decision involves a choice between two or more alternative behaviors or actions. For example, an individual is considering whether or not to go bowling.

The choice or decision is based on the behaviors involved in bowling versus the behaviors involved in staying home, shopping, dining out, or attending a movie. In the marketplace, consumers choose between alternative behaviors involving products, brands, or stores instead of the objects themselves. Figure 2 shows a cognitive[10] processing model of consumer decision-making (Peter and Olson 1999). Figure 2 shows that all aspects of emotions and attitudes along with the process of knowing and perception are involved in interpreting new information in the environment. Consumer decision-making at the fundamental core involves three cognitive processes: interpret, integrate, and retrieval (Peter and Olson 1999). First, the consumer must interpret or make sense of relevant information in the environment to create meaning or personal knowledge. The consumer's next process is to integrate or combine the new knowledge to evaluate possible actions to make a decision or choose between alternative behaviors. The third and final process is the consumer must retrieve knowledge from memory. The retrieval process is necessary to assist with the first process of interpreting the relevant information in the environment and the second process of integrating the relevant knowledge to ultimately choose between alternative behaviors. For example, a consumer is in a convenience store and while in the process of deciding which caffeine drink to purchase, she notices an advertisement on the drink cooler door for a version of an espresso drink with less sugar and cream. The consumer interprets this information as relevant because the original

[10] Pertaining to the mental processes of memory, perception, judgment, and reasoning (Random House Webster's College dictionary 2000).

espresso drink had been purchased previously but thought it was a bit too strong and sweet. The consumer has now added or integrated the new light espresso

Figure 2. Cognitive Processing Model of Consumer Decision-Making



drink as a consideration for purchase along with the other caffeine drinks. The consumer remembers (retrieves product knowledge from memory) liking the previously purchased original espresso drink. But she ultimately decides to purchase the light espresso drink. Figure 3 takes the espresso drink example through the entire process decision-making process. Figure 3 illustrates the thought processes Jane the consumer goes through to make a decision regarding which caffeine drink to purchase. In short, Figures 2 and 3 show consumer decision-making includes both cognitive processes interpretation and integration and these processes are influenced by product knowledge[11], meanings, as well as beliefs.

Decision Heuristics and Consideration Sets. In conjunction with the decision-making process, consumers may use decision heuristics[12] to help form their consideration set[13]. Heuristics are often employed during the integration process (see Figure 2). Heuristics are referred to as "if, then" processes that link a behavior with an appropriate action (Peter and Olson 1999). A heuristic is a simple procedure that combines beliefs regarding the consequences of alternative choices to assist with forming an evaluation toward each behavior alternative. Heuristics are applied only to small bits of knowledge at one time and are extremely applicable to specific situations. Because of this, heuristics are not

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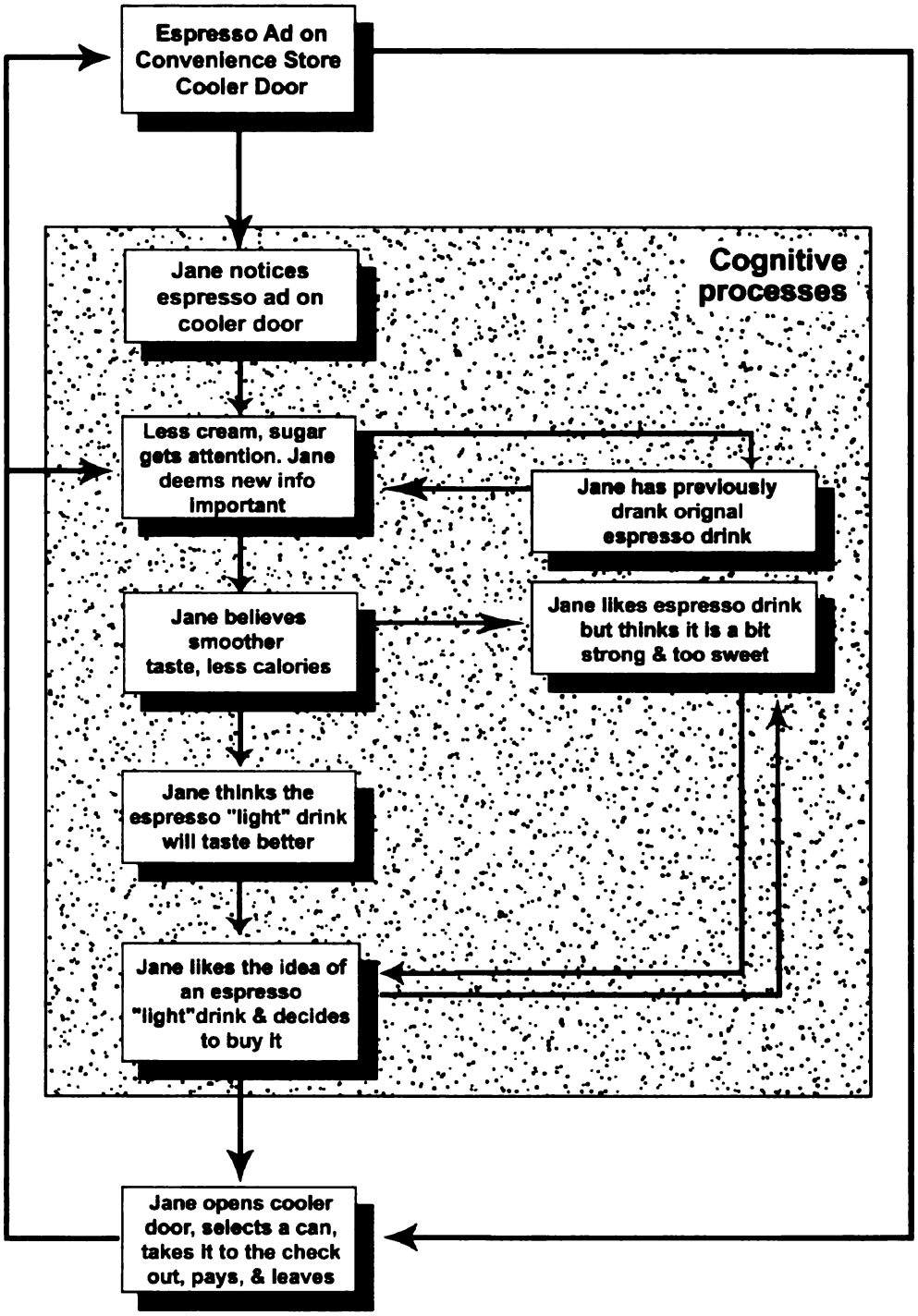
[11] The characteristics or attributes of a brand of household cleaner (contains bleach), the outcomes of using the brand (my kitchen counter will be germ free), or the ability of the household cleaner to meet the objective (my kitchen counter is sanitary and clean) (Peter and Olson 1999).
[12] Encouraging a person to learn, or solve problems on their own by evaluating possible answers or solutions, or by trial and error (Random House Webster's College Dictionary 2000).
[13] Brands consumers consider acceptable for the next purchase (Laroche, Kim, and Matsui 2003).

Figure 3. Espresso Decision-Making Model



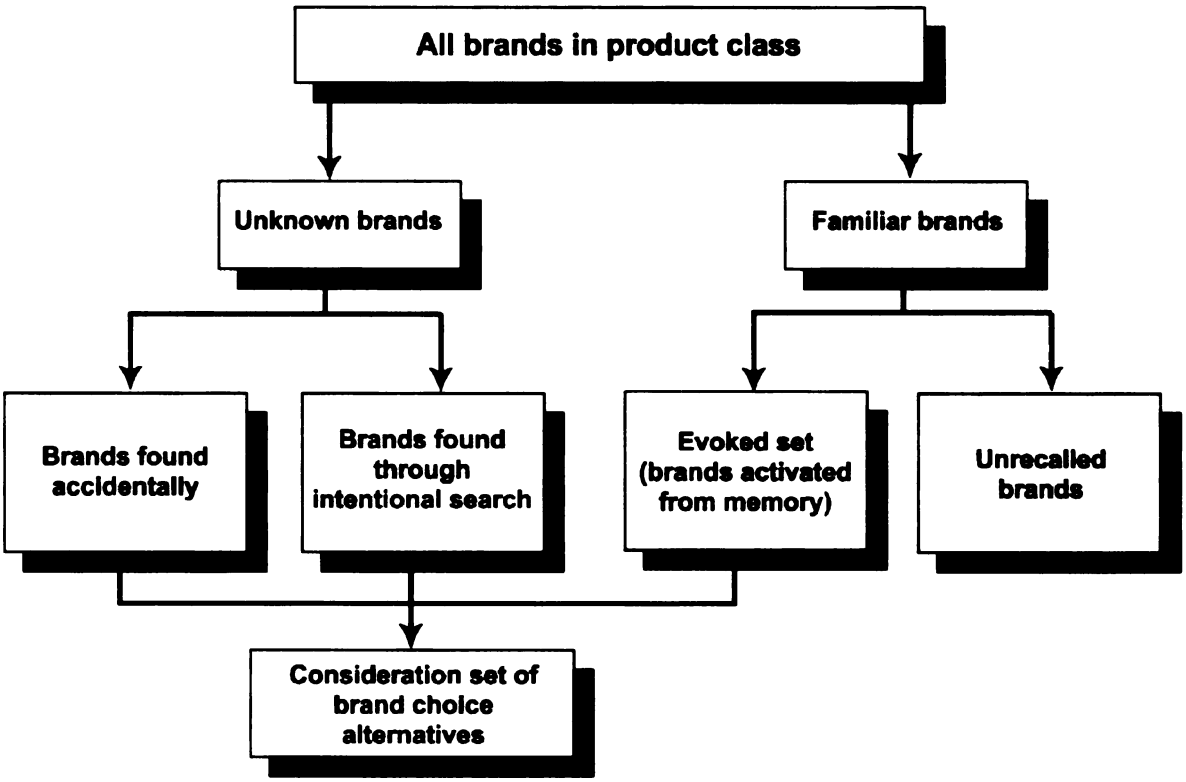
likely to exceed memory capacity and can be constructed instantaneously to respond to the immediate environment. There are three heuristics that are most

important to consumer problem solving: search, evaluation, and choice. Search heuristics are simple procedures used for finding information relevant to a goal. For example, the goal of a consumer is to purchase a new 5-disc CD changer. The *search heuristic* for where to purchase a new 5-disc CD changer may be "if I am buying audio equipment, always go to Best Buy®." *Evaluation heuristics* are procedures for assessing and weighing beliefs relevant to the goal. While at Best Buy® the consumer may compare various brands of CD changers based on the criteria of having a 5-disc changer and eliminate any brands that do not accommodate 5 CDs. *Choice heuristics* simply compare the evaluations of alternative actions in order to choose one. The consumer may simply choose the 5-disc CD changer brand purchased previously or choose the 5-disc CD changer in the price range that best correlates with his or her belief regarding price and quality.

Consideration sets are usually a subset of all possible alternatives. Some choice alternatives that comprise considerations sets are product classifications, brands, stores to visit, payment methods, times of the day to go shopping, and day of the week to go shopping. Because of the limited amount of time and memory capacity, consumers rarely consider every possible choice alternative. Figure 4 illustrates the formation of a consideration set (Peter and Olson 1999). For instance, Jane has a goal of replenishing her supply of shampoo. The first thing Jane may do is use a heuristic such as "I always purchase hair care products at my local discount supermarket." Once inside her local discount

supermarket in the health and beauty aisle, she may retrieve a consideration set directly from memory (an evoked consideration set) of familiar brands. Jane

Figure 4. Consideration Set Formation



retrieves three brands of clarifying shampoo from memory (evoked set) and makes a purchase decision based on those three brands. In the situation of highly familiar decisions, such as Jane's shampoo, a consumer may not consider brands beyond the evoked set. With familiar decisions, the consumer may possess the confidence in knowing the important choice alternatives therefore declining to search for additional ones. In the situation of unknown brands, a consumer may consider a brand that is found by happenstance (in store sale, coupon, recommendation by a sales person or fellow shopper), or through an

intentional search (reading a beauty magazine, finding a brand while shopping, talking with someone knowledgeable).

Other Strategies. Advertisers and marketers develop strategies to increase the potential for brands to be activated from memory to become part of an evoked set of choice alternatives. This is referred to as "top of mind awareness" and is influenced by many factors. One factor that influences top of the mind awareness is the previous experience consumers have with purchasing or using the brand. Other factors influencing top of mind awareness are high market share products (popular brands), advertising campaigns[14], distribution strategies (manufacturing, shipping, and stocking of products on shelf), and packaging design. For example a popular brand such as Pepsi® may use advertising campaigns to keep the consumer aware of the brand. It is rare to walk into a supermarket or convenience store and find Pepsi® absent from the shelf or soft drink cooler. Popular brand manufacturers such as Pepsi® employ people to drive mass quantities of Pepsi® products to each supermarket or convenience store and place the product directly on the shelf or in the soft drink cooler. This distribution strategy removes the stocking burden from the supermarket manager and employees and convenience store owner increasing the probability that the product is always on the shelf. The bright blue packaging design of the Pepsi® bottle or carton and the product logo[15] has the ability to attract the consumer's attention with the potential of transferring into the consumer's consideration set.

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[14] A systematic course of aggressive advertisements in various formats such as television, magazine, newspaper, radio appearing during a specific time period.

[15] An identifying mark that separates a product or service from its competitors

Marketers and product manufacturers understand that collecting as much information as possible regarding consumer shopping choices and consumer shopping behavior provides invaluable tools to produce goods, and services to satisfy the consumer therefore strengthening the consumer/product relationship. Consumer information is most commonly collected via product registration forms, sweepstakes entry forms, catalog orders, and in-store observation. Consumer behavior research focuses on what influences the consumers actions in the marketplace as well as how those influences effect the purchase behavior of the consumer.

The objective of this research is to create a benchmark study (exploratory in nature) that synthesizes color, packaging design[16], and advertising as an influence on consumer decision-making as an introductory mean of investigating packaging design as the new advertising. The purpose of this objective is to investigate the influence of packaging design color on consumer purchase intent. With the scope of this study on the influence packaging design color has on consumer purchase intent, the consumer research literature explores consumer behavior as it relates to packaging in a retail or supermarket environment.

PACKAGING AND CONSUMER DECISION-MAKING

Currently marketers and manufacturers are devoting more attention to influencing consumers at the point-of-purchase. According to brand managers packaging doubles as an advertising medium and is cheaper than TV

[16] "The combination of materials, structure, typography, imagery, color and other visual design components for the purposes of communicating the marketing objectives and strategies of a particular brand or product" (Klimchuk 2004).

commercials (Selame and Koukos 2002). In fact, when packaging doubles as advertising, the packaging may be the manufacturer's last chance for reaching shoppers (Selame and Koukos 2002). With more than 50,000 items to choose from in a shopping environment, it is plausible that research needs to include packaging and packaging design as an influence on consumer behavior and decision-making.

Investigating consumer behavior and consumer decision-making has been the focus of many researchers. However, the role packaging and packaging design plays in consumer decision-making has been virtually overlooked (Maule 2004). The area of academic research is also delinquent in investigating packaging design and its influence on consumer decision-making. Only a few recent academic studies explored the packaging design and consumer decision-making relationship.

Lawrence Garber (1995) proposed the visual perception of package appearance plays a role in the formation of a consideration set. In the situation of the consumer purchasing a familiar or preferred brand, package appearance is used to expedite search and identification of the desired brand. Package appearance may also interrupt a search, and in doing so reshape the choice process. This study presented two strategies, visual typical packaging, and visual atypical packaging to increase the likelihood of inclusion in the consumer's attention set. A visually typical package is defined as "the look consumers would associate with a product category, and by which they identify brands that belong to the category" (Garber 1995, pg. 656). In contrast, a visually atypical package

would look different from the typical packages associated with a product category and those brands identified in the category. The study suggested that attention to a visually atypical package appearance is involuntary because the eye is unable to ignore the sensation of an unexpected visual element that enters the field of vision. However, in order for a visually atypical package to move beyond the attention set and move into the consideration set, the novelty of the package must be appropriate to the product category, product performance, and product benefits.

A recent study by Pinya Silayoi and Mark Speece (2004) investigated the packaging and purchase decision relationship by concentrating on the impact of time pressure and level of involvement[17]. Involvement normally is comprised of two levels, high and low. High involvement is characterized by an intentional search for information (reading magazines, in-store search, or talking with someone knowledgeable), the evaluation of characteristics, and spending time on which one to buy. High involvement is also associated with a high level of importance or relevance. Low involvement is associated with a low level of importance or relevance and often the choices (brands, stores, services) are indistinguishable. Focus groups were used to obtain in-depth insights regarding shopping behaviors for packaged food products. The focus groups were comprised two groups: 1) of women who work outside the home, married with no children and 2) women who work inside the home, married with children. Both groups of participants agreed the packaging elements (graphics, color, shape,

[17] Refers to the consumer's perception of importance or personal relevance for an object, activity, or event (Peters and Olson 1999).

size, and product information) were the primary factors in their evaluations and decisions on household purchases. The participants defined involvement level as the perceived importance of the product. For lower level products, the participants indicated the most familiar product brand would be purchased and relied upon the look of the packaging for information on quality. For higher level products, such as those directly affecting health, the participants indicated a stronger reliance on product characteristics as well as brand loyalty. One participant reportedly postponed a purchase if the desired brand is unavailable or will visit another store in search of the desired brand. Participants from both focus groups reported that they make quick purchase decisions without careful evaluation when shopping under high time constraints. Overall, this study indicated that packaging is important for marketing food products. More specifically graphics, shape, and size of the packaging influenced the purchase decision of a product, and attractive packaging breaks through the array of competitive products. In regard to low involvement, visual elements (graphics, shape, and size) positively influenced decision-making. However, high involvement was less influenced by visual elements (graphics, shape, and size) but was positively influenced by informational elements. In regards to time constraints, decision-making under high time constraints were influenced by visual elements on the packaging in contrast to decision-making under low time constraints.

Previous academic research revealed that packaging has a strong effect on consumer response to a product by its form, appearance, and function

(Underwood 2002). In a study conducted in 2001, Robert Underwood investigated the effect of package design (visual product imagery) and buyer behavior. More specifically, he investigated whether brands with visual information have a strategic advantage over competitive brands (high familiarity versus low familiarity) containing only textual information. An additional consideration for this study is whether the effects of product pictures change across products and brands. Underwood used a simulated shopping software system named Visionary shopper providing a virtual shopping experience. This study indicated the use of pictures on low familiarity brand packages was significant with gaining attention for the brand in the store. An additional finding was that package design information may serve as an identification or attention cue helping to shape the products being considered for purchase rather than determining a brand choice.

Another study by Robert Underwood and Noreen Klein (2002) extended the academic literature with exploratory research investigating the informational effect of placing a picture on a product. This study exposed participants to a stimulus book that contained computer-generated images of packaging designs. The results of the study indicated the package design does alter consumers' attitudes toward the package. The packages with pictures were preferred over the packages without pictures, and consumers prefer a familiar brand versus an unfamiliar brand. The results of this study also revealed consumers believed the product with the picture on the package had better taste than the product without

the picture on the package. There was no effect of package pictures on brand evaluation.

In 2001, the Paula Bone and Karen France investigated the influence of packaging graphics (colors and pictures) on consumer beliefs regarding important product characteristics. Specifically, this study examined how the packaging graphics influenced consumer beliefs when the textual information on the packaging provides accurate product attribute information. This study was guided by the principle that packaging graphics can be used to strengthen or weaken the product manufacturer's textual claims or generate inferences that could conflict with the textual claims. The results of this study revealed that packaging graphics were more vivid and garnered more attention than textual information and as a result, the packaging graphics significantly influenced product attribute beliefs and, therefore, influenced consumer purchase intentions.

In summary, consumer behavior investigates the way consumers perform in a retail environment and examined what influences their behavior. Information processing and memory usage are an integral part of consumer behavior research. Due to the limited capacity of short-term memory, consumers rely on heuristics to simplify the vast amount of information in the market place. Heuristics may include a specific store, brand, size, shape or color. Although it may appear that consumer behavior and consumer decision-making processes are sequential, they are not. Consumers are making decisions based on their constantly fluctuating thinking, feelings, and actions. Researchers recently have noted that the color, size, shape, and graphics on packaging have an impact at

the point of purchase on consumer decision-making and purchase decisions (Silayoi and Speece 2004; Underwood 2002; Bone and France 2001; Garber 1995). With packaging influencing consumers at the point of purchase, additional research is needed to delve deeper into the visual elements of packaging design that influence consumers. More specifically, the visual element of color and its influence on consumer purchase intent.

CHAPTER FOUR

COLOR

The purpose of this chapter is to examine color and its relationship to consumer behavior. The focus of this chapter is on the human perception of color and color associations (not on the scientific aspects of color) as it relates to consumer purchase intent. More specifically, this research investigates the use of surface graphics[18] color as a cue by consumers for finding out 1) perceived product quality, 2) perceived product performance, and 3) which colors influence consumer decision-making, on the consumer's intent to purchase.

Color selections and their application may assist consumers with their purchasing behavior (Van De Laar and Van Den Berg-Weitzel 2003). For example, when a consumer needs to replace a routinely used item, the consumer scans the supermarket shelves for the packaging color then confirms the correct product choice by reading the brand name. Colors and shapes convey about 80% of all visual communication (LaCroix 1998). Consumers have developed a habit of using color as a means of gathering information. Thus, color must be considered as having an important role in marketing, advertising and academic research.

Color in its basic nature refers to what the human eye sees when light passes through a prism and produces what is commonly referred to as violet, blue, green, yellow, orange, and red and is collectively referred to as the

[18] Surface graphics refers to the photographs, illustrations, and typography that appear on the packaging. Surface graphics is exclusionary of the color, shape, and size of the product.

spectrum (Cheskin 1954). In 1666, physicist Isaac Newton broke a ray of light with a prism and named a seventh color, indigo. Indigo is rarely seen by the naked eye, only the aforementioned six are commonly seen by the naked eye. Color is also described as the relationship between an object's pigmentation and light. The type of light has the ability to affect surface color. For example, a white piece of paper will appear blue in a room filled with blue light (Cheskin 1954). Natural light also affects surface color. The time of day plays a role in the proportions of the spectrum in natural light. North light (the sun at rising) contains more violet, blue, a bit more green, less yellow, and much less orange and a minimal amount of red than ordinary daylight (Cheskin 1954). A daylight florescent tube mimics the spectral colors of ordinary daylight. An incandescent light bulb has less violet, green and blue therefore producing a yellow or warm light. Light from various sources is known to create differences in the color distribution of the spectrum (Cheskin 1954). The uneven distribution in the spectrum of colors is responsible for some light being classified as cool and warm. Light containing a large amount of red, yellow, and orange is referred to as warm. Light containing large amounts of blue, violet, and a moderate amount of green is referred to as cool. There is a direct relationship between cold and warm light and cold and warm pigmentation. For example, a cold light makes an object appear cooler regardless of the actual color of the object and warm light makes an object appear warmer. The difference in light has the ability to affect the color of an object. For instance a rug in a store under daylight florescent tubes looks blue-green. The same blue-green rug looks less blue more yellow-green under

an incandescent light bulb at home. The terms "warm" and "cool" are not referring to temperature but visual and psychological experience.

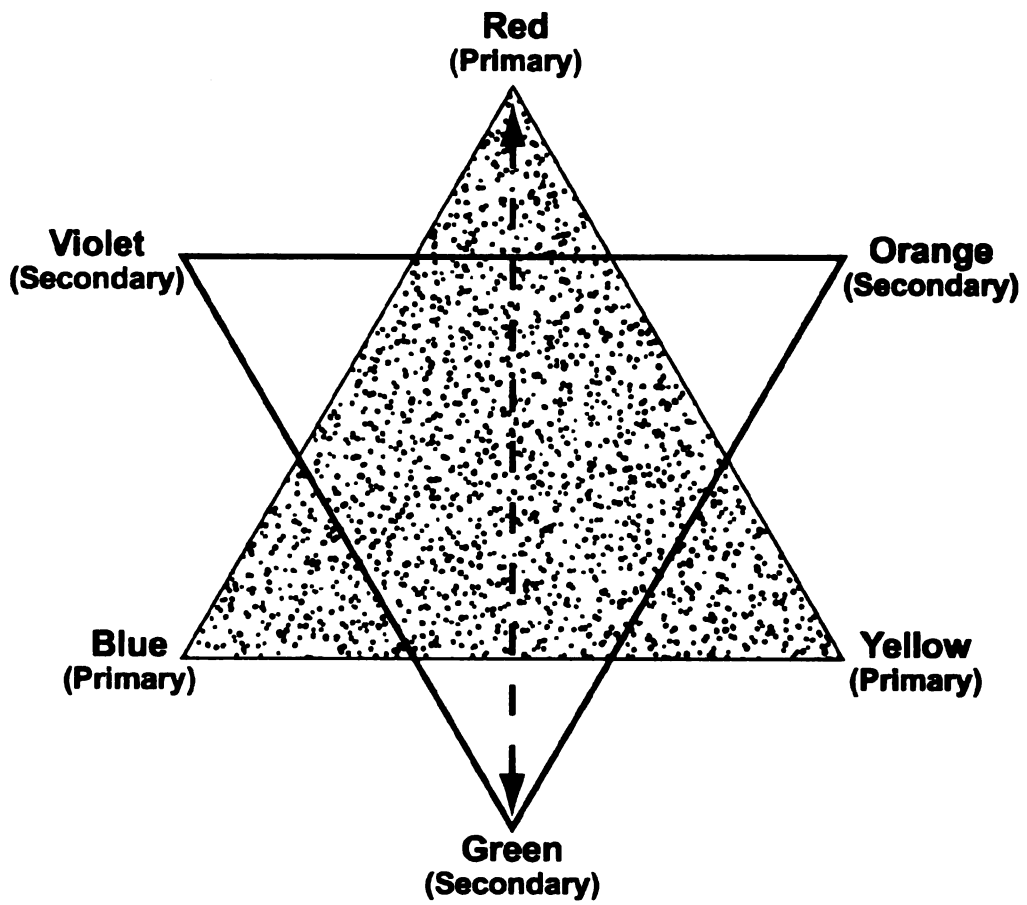
The color of an object is contingent on pigmentation and light. Due to this relationship there are primary colors of light (red, blue, green), and primary colors of pigment (red, yellow, blue). For the purpose of this study the primary colors referred to are pigmentation. All objects or surface colors subtract light (absorb parts of light) and reflect the rest (Cheskin 1954). For example, the human eye sees red because the green has been absorbed. In other words, red can be likened to white light minus green. The absorbed hue is the exact complement[19] to a reflected hue. Therefore, the complement of red is green. To experience this phenomenon, one can simply stare at a solid red object at least 30 seconds and then look at a completely white piece of paper. The eye will see green on the white piece of paper. This phenomenon is referred to as afterimage. Figure 5 illustrates a simplified artist's color wheel to show a complementary color relationship.

In actuality, when people characterize color, it is perceived color or reflected color. Because color memory changes some individuals perceive colors differently (Sharpe 1974). For example one person may see a pure red and another person may see that same red as having a hint of blue or yellow. There are numerous scientific studies examining the physical aspect of how individuals view color including those individuals with color deficiencies (Sharpe 1974). This

[19] Two colors opposite each other on the artist's color wheel; Any two hues composed of equal amounts of all three primaries

study does not examine the scientific aspects of color, only color as it is applied to packaging design in the marketplace.

Figure 5. Complementary Relationship Based on the Artist's Color Wheel[20]



The identification of primary colors was the result of studies of the human eye. Herman von Helmholtz in 1859 and James Maxwell in 1867 found that only three receptors--red, yellow, and blue--are required to explain color mixing (Colorsystem 2004; Lester 2000). von Helmholtz published The Handbook of

[20] An artist's color wheel displays 12 colors and is a tool used for color mixing and demonstrating the relationship of one color to another.

Physiological Optics in 1851. The text contained empirical theories regarding spatial and color theory and was the traditional reference for the field of researching the human eye (Colorsystem 2004). It is the mixture of these primary colors that constructs the color wheel that is used for color selection and mixture in art and design, architecture, interior design, advertising, packaging, and industrial design (Grossman 1999; Triplett 1995; Lane 1991; Schindler 1986; Sharpe 1974). An artist's color wheel (see Appendix B) displays 12 colors and is a tool used for color mixing and demonstrating the relationship of one color to another. The artist's color wheel is source for colors used throughout the course of this study.

The Power of Color

Individuals are often unaware of the tremendous influence colors have on them (Cheskin 1954). Color attracts attention mostly because they are more vibrant than black and white. In regard to visual communication,[21] there is power in the visibility of color. Color attracts attention based on visibility (Cheskin 1954). Colors seen from the greatest distance attracts the eye quicker. When testing for color visibility ratings the colors are often presented on a gray background (Cheskin 1954). The maximum visibility and attraction power of a color can be strengthened when it is used or placed with its compliment. However, pure complementary colors vibrate making them difficult to view. For example, it is believed that the color yellow-orange has the greatest visibility and is most powerful when placed with its compliment of blue-violet. To gain maximum

[21] Information (words, images) printed on a page, billboard, wall, or packaging

visibility with complementary colors, one of the colors should be deepened or the two colors should be separated by white. To ensure maximum visibility a color should not be mixed with its complement or mixed with white (tint) or black (shade) (Cheskin 1954). Mixing one color with another even slightly changes the character of the first color thus changing its power of visibility. For example red mixed with a slight amount of blue will alter the visibility of the red. Adding blue results in the red looking less like a pure red but more of a red-violet.

The degree of coolness and warmth of a color is an important component in visibility. Warm colors[22] possess more visibility and the higher the warmth the higher the visibility. Cool colors[23] possess less visibility, and the higher the coolness the lower the visibility. It is plausible that pure warm colors should be used for maximum visibility for visual communication. When determining which color to use for maximum visibility the color of the background (the color that the highly visible color is placed on) should be considered. For example a yellow-orange has good visibility against a dark blue-violet background but will have poor visibility against an orange background. When creating visual communication the background must be considered to achieve maximum visibility. Colors with maximum visibility should not be used for text. Highly visible colors are difficult to view for a prolonged period of time. The relationship between color and text or legibility is not explored in this study. This study is concerned with the visibility of the packaging from the shelf.

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[22] Warm colors are colors with a predominance of yellow

[23] Cool colors are colors with a predominance of blue

Tests have demonstrated that color has the power to increase the retention of an image in one's memory (Cheskin 1954). In the market place image retention is an important factor in developing brand identity. The trademark[24] of a business, product, or service serves the purpose of getting consumers accustomed to seeing the trademark image associated with the business, product, or service. The trademark with the greatest retention power is considered the best brand identity builder and has the potential to gain popularity over its competitors. For example, the trademark of the fast food chain McDonalds is yellow arches and the phrase the "golden arches" is often used in place of the name McDonalds. The phrase "golden arches" is a visual description of the trademark and color and is used interchangeably with the restaurant name.

In the market place, especially the supermarket, highly visible colors placed on packaging play an important role in catching the consumer's eye. The purpose of color in the market place is to catch the buyer's eye. If packaging does not catch the buyer's attention there is little chance the product within the packaging will end up in the consumer's home (Cheskin 1954). High color visibility on packaging assists packaging with its role of the "silent salesman" as well as influencing the consumer at the point-of-purchase.

[24] An identifying mark that distinguishes a business, product, or service from its competitors; it may also be descriptive in nature regarding the business, product, or service; another name for a logo

Color and Perception

Research has revealed that certain colors spark specific brain activity and evoke emotions (Lukiesh 1925; Schaie and Heiss 1964; Sharpe 1974). As early as 1925, Matthew Lukiesh explained color associations in *The Language of Color*. Through experiments and references to art and literature Lukiesh discovered an association of color to events, emotions, objects, and ideas that created a foundation for a language of color. The color associations, as explained by Lukiesh, are red--danger and blood; yellow or orange--warmth and sunlight; green--nature, springtime, and youth; blue--the sky or heavens and divinity; purple--royalty, superiority, and dignity; white--purity and innocence; black--fear, crime, and danger; and gray--age and maturity. Lukiesh conducted an experiment to test color preference. He determined that a color preference is influenced by factors of association and environment or influenced by aspects of everyday life. For example, the color yellow could be preferred because it releases a reminder of the color of grandma's kitchen and the cookies she used to bake. The results revealed men have a propensity toward blue and women have a propensity toward red. Lukiesh's experiment also revealed that both men and women prefer pure colors to tints (colors with white added, i.e. pastels) or shades (colors with black added, i.e. burgundy, dark blue).

In their 1964 text *Color and Personality: A Manual for the Color Pyramid Test* researchers K. Warner Schaie and Robert Heiss conducted a series of experiments supporting the idea that colors have meaning. Their color associations differed slightly from Lukiesh's and resulted in the following: red--

agitation, aggression, hostility, happiness, stimulation, exciting, hot, and powerful; both yellow and orange--stimulating, pleasant, warmth, cheerfulness, exciting, stimulating and joyful; and blue--dignity, pleasant, social, strong, and secure.

A survey of current packaging designs suggests Lukiesh's, Schaie and Heiss' traditional color associations appear to be evolving over time, but remain cited within academic research regarding color associations. For example, yellow-green on food packaging was discouraged because yellow-green may be associated with spoiled or molded food (Russell 1990) but based on yellow-green is used on food packaging. Another example is the informal, societal yellow/coward association. Yet, yellow has an alternate association of patriotic support (i.e., yellow ribbons around trees to support fighting troops) (Sutton and Whelan 2004). The majority of the color associations for red, yellow and blue, remain the traditional citations although the color associations appear to be evolving. Maybe after 40 years it is time to test the color associations against today's society.

Packaging Design Color and Consumer Decision-making

Some researchers have determined color is crucial in capturing the attributes of a product, and packaging color is a dominant visual attribute that can be seen from a considerable distance by shoppers (Rex, Wai, and Lobo 2004; Garber, Burke, and Jones 2000; Cheskin 1954). Studies suggest that redesigned packaging color that are moderately to very dissimilar to the original packaging color are considered novel and attract the consumer's attention and increase the

consideration for purchase (Garber, Burke, and Jones 2000; Schoormans and Robben 1997). Garber et al. (2000) study indicates that a change in package color can enhance brand consideration for consumers who are not loyal to a particular brand. Other researchers have determined that packaging redesigns that apply color and graphics extremely different from old packaging designs so much that it pushed the product beyond the acceptable regions of the product category, have negative effects on the attitude toward the package and the intent to purchase (Schoormans and Robben 1997).

Color in Advertising and Consumer Influence

It is a common practice to use color in advertising to influence emotional and consumer behavior (Lee and Barnes 1989; Schindler 1986). Unfortunately, there is limited empirical research investigating color in advertising (Lee and Barnes 1989).

Researchers discovered that attention to advertisements increased when advertisements were printed in color rather than black and white (Guest 1966; Lee and Barnes 1989; Schindler 1986). Also, advertisements printed in color did not elevate consumers' regard for the product or service advertised but did elevate their regard for the manufacturer or company (Guest 1966). In other words, the advertiser or manufacturer yields a greater chance of gaining prestige in the market by printing advertisements in color and, thus, has an increased chance of being remembered.

By citing old studies, research has perpetuated the concept that color preferences differ between men and women. Yet, more recent research refutes color preference differences in gender when speaking more from a physiological aspect and less from a social, environmental, and cultural aspect (Schindler 1986). For example, exposure to certain colors (e.g., red) yield virtually identical responses (increased blood pressure, eye blink frequency, and respiratory rate) for men and women (Bellizzi and Hite 1992).

In addition, there may be color preference differences between ethnic groups based on the differences in color usage in print advertisements appearing in magazines that target black audiences or white audiences (Lee and Barnes 1989). It has been concluded that advertisers are not utilizing color to improve advertising response, and further research is needed regarding color preferences according to race and gender (Lee and Barnes 1989). Furthermore, there is a need to examine ethnic and cultural differences in color preferences and color associations (Madden, Hewett, and Roth 2000).

There have been studies on environmental color and its influence on shopping behavior. One study examined color in a retail store design and the ability of color to attract consumers toward a retail display. Warm colors yielded a stronger attraction and pulled consumers further into the retail store than cool colors (Bellizzi, Crowley, and Hasty 1983; Bellizzi and Hite 1992). Warm colors may be an optimal choice when the desire is to attract consumers into a retail establishment; however, some warm colors such as red were found to be negative and intense (Bellizzi, Crowley, and Hasty 1983).

Color Associations and Consumer Influence

Consumers use packaging cues to give meaning to products and brands. For example, research indicates that a shiny label on a wine bottle indicates a less expensive product, and consumers will pay a higher price for gold foil wrapped candy boxes (Tom, Barnett, Lew, and Selmanis 1987). Color is a commonly used cue to identify brands and shape perception of products. Research supports consumers use color to perceive weight as well as temperature (Tom, Barnett, Lew, and Selmanis 1987). The Tom et. al. (1987) study indicates that product perception is more influential than the product's objective reality. Consumers were given three different "flavors" of pudding. The three flavors were vanilla pudding with food coloring added (dark brown, medium brown, and light brown) to create the three pudding flavors. In their study it was concluded that color proved to be more critical than taste in the consumer's identification and evaluation of the product. Of the participants, 62% perceived the darkest brown pudding as having the best chocolate flavor and 61% of the participants perceived the darkest brown pudding as being the thickest. Tom et al. (1987) conclude it's not the product's objective reality that influences the consumer but their own subjective perception, and ultimately, consumers buy what they perceive.

Unfortunately, few industry and academic studies on the impact of colors in packaging design exist. Perhaps commercial research was conducted on color and packaging but remained unpublished for proprietary reasons (Bellizzi, Crowley, and Hasty 1983). This assumption is based upon the numerous

marketing reports that appear in the public domain (i.e. trade magazines, newspapers, and popular magazines) that forecast color trends for the marketplace. Yet, academic studies on color, packaging design, and consumer behavior utilize foundational color associations established 80 years ago. The commercial studies overwhelmingly rely on sales trends (Triplett 1995). A sound theory of color for marketing has not been established, hence the continual use of old foundational color theory and color association. The study of color in the arena of marketing remains in an infant state (Grossman and Wisenblit 1999).

It is proposed that future research be conducted regarding color as it is used in the market place. More specifically, investigate the influence of packaging color on consumer decision-making. Future research on color should specifically address the ways color is used for marketing. This future research should include developing color theory unique to marketing and consumer influence.

CHAPTER FIVE

ADVERTISING, PACKAGING DESIGN AND PURCHASE INTENT

The purpose of this chapter is to examine packaging design as advertising and build support for a concentration on shelf impact. In other words, creating packaging design that attracts the consumer from the shelf with the goal to be the last attempt to influence consumer purchase intent. This chapter also examines the use of packaging design as a source for information as it relates to purchase decisions.

It is estimated that between 73 and 85% of purchase decisions are made at the point of sale and the packaging design must play a key role at the point of sale because it is often the only factor that differentiates two products (Sutton and Whelan 2004; Wallace 2001; Buxton 2000; Rettie and Brewer 2000). Market research has shown that the supermarket shelf is more effective with influencing consumer purchase than advertising (Fitzgerald 2003; Selame and Koukos 2002; Wallace 2001). Research has shown that advertising is more effective for product recall and less effective at influencing purchase decisions (Selame and Koukos 2002; Wallace 2001). There is growing awareness that marketing and research should shift packaging to the forefront as the primary method for product awareness and consumer influence.

A recent visual survey of supermarket shelves supports the marketing trend of updating packaging designs of products (e.g., ReaLemon™ and ReaLime™, Polar Ice vodka, Kellogg's® pop-tarts®, Tyson® chicken, Canada

Dry® ginger ale, ACT II® popcorn, Dole® salad blends, Starbucks® coffee, and Van de Kamp's® frozen seafood entrées) to create stronger shelf impact. Packaging is not a new phenomenon to the common marketing strategy however, using packaging design as means to influence consumer purchase intent is. Packaging is one third of the typical marketing strategy and execution (advertising, promotion, packaging). Packaging was habitually thought of as part of the product, the protector of its contents, part of the distribution system (shipping, storage, and display) and costly to change. However, the packaging of a product provides information to the consumer to assist with purchase decisions. Packaging is no longer considered a container for a product but a sign or billboard (Heller 1999). The packaging is what separates a product from its competitor. A product's packaging is seen on the shelf at the moment when consumers are in the midst of making a buying decision. The money spent on advertising, promotions, and education is irrelevant in the midst of the consumer's purchase decision because the packaging is the only thing available at the supermarket shelf (Hilton 2005). Therefore the message on the packaging is considered to reach more consumers than conventional advertising (Lazarus, Pollock, Marney, and Racette 1997). The critical difference between packaging and advertising is the packaging communicates the brand or product's final chance to make a sale (Prone 1993). With the recent practice of packaging replacing television advertising, it is proposed that the phrase "packaging as the new advertising" be a descriptor for this new marketing strategy. The phrase

"packaging as the new advertising" is also proposed as a new area of research concentration into consumer influence at the point of purchase.

Packaging As the New Advertising

The reduction in advertising budgets has elevated the expectations of packaging to perform as compensation for the diminished quantity of advertisements. Packaging is expected to influence the consumer purchases as well as increase revenue for the product. According to market research the increasing importance of packaging design has become a fact of life within the marketing arena (Chilton 1998). Market research cites packaging design as the "single most sales-effective and cost efficient marketing tool" (Wallace 2001, pg. 20). This belief mirrors the results of outstanding return on investment (ROI) for money spent on packaging design. It is a growing marketing principle that a well-designed package is the key to a successful product (Wallace 2001; Chilton 1998; Lindsay 1997; Prone 1993).

In the current marketplace of beverages the product with the best taste for most people is not necessarily the market leader. The ultimate driver of success is the package design (Farlander 2000). For example, the contour design of the Cocoa-Cola® bottle was the key driver of the brand. Although the bottle shape was retired in the 1970s, it was brought back in the 1990s to generate excitement for the brand (Farlander 2000). The success of Arizona® Tea is not a result of advertising and promotions but a result of packaging. Its manufacturer Ferolito Vultaggio & Sons stated, "packaging is everything" (Holleran 1998, pg. 30) and

invested a substantial amount of money into the packaging. This brand of "new age" drink was the first to appear in the tall 25-ounce can and the first to appear in the long-neck widemouth bottle (Holleran 1998). In addition to the unique containers, the Arizona® Tea continue to stand out on the shelf because of their bold, award-winning graphics. The popular product Rice-A-Roni® was losing market share to new products in its category. The packaging was redesigned to focus on the quality and appetite appeal, and true personality of the product. The Rice-A-Roni® brand experienced a 20 percent increase in sales (compared to the previous year) when the revitalized packaging appeared on the shelf (Prone 1993). Del Monte experienced a similar return on investment when it redesigned its tomato product line. With both brands the only change in marketing strategy was the packaging redesigns (Prone 1993). Aquafresh® Extreme Clean toothpaste packaging helped improve the brand's market share. The clear plastic box and stand-on-head lid elevated the Aquafresh® market share from 9.5 percent to 10 percent (Yeomans 2003).

Several market studies have concluded that shopping behavior is an irrational process and packaging is effective because it appeals to the subconscious (Hine 1995). Packaging often connects to the emotional needs of the consumer. Thus, many consumer purchases are driven by emotion. For some product categories (neutraceuticals[25], cosmetics, perfume, personal hygiene) the consumer is purchasing an image not just the product (Hilton 2005). Research indicates that 85 percent of women recognize the fragrance they use

[25] refers to nutrition products such as vitamins, weight loss aids, energy supplements and herbal health remedies that are not regulated by the USFDA

by the packaging not the scent ("The shape of things to come" 2002). When consumers first look at an appealing package, their concentration is often not on the product but creating a dream, an image (Shell 1996). For example the brand Fiji® Natural Artesian water uses graphics to depict the waterfalls of Fiji suggesting that drinking it would be akin to having a refreshing drink in a tropical paradise. For some consumers packaging is everything. A survey of shoppers indicates that consumers purchase products solely for the packaging. Others purchase products for the packaging with no intention of using its contents. Case in point, consumers were bombarding a display of imported beer from South Africa. The beer cans had vibrant illustrations of wild animals native to Africa, 17 different designs total. Several consumers were searching for the complete can design collection to take home in spite of the price of $3 per can (McMath 2004). If a consumer is looking to try something new (e.g., a new dishwashing liquid) then the consumer may purchase the brand with the most innovative packaging or the packaging that he or she likes. Packaging that looks good on the shelf at home may continue to influence future product purchases. Research has shown that packaging viewed daily in the home becomes an intimate part of the consumer's life. The packaging becomes the brand, reinforcing the brand's personality and building brand equity (Lindsay 1997). Some packaging especially food products are designed to appeal to the consumer's lifestyle, social and health concerns (Heller 1999). The packaging for spirits (liquor) must communicate brand values. Often consumers have sampled a specific brand of liquor at a bar or restaurant before purchasing so the package identification is

crucial because there are few spirit advertisements on television (Holleran 1998). The makers of Wild Turkey®, a high-end Kentucky spirit, was launched in a dramatic bottle that resembles turkey feathers as a strategy to differentiate itself from other brown spirits. Since the launch of Wild Turkey® in 1994 the packaging has been awarded a Clio[26] for packaging design and product sales have been very good (Holleran 1998).

Some cereal marketers are using short-term package redesigns as marketing tools. Such marketers as Kellogg, Post, and Quaker Oats have redesigned packaging to include athletes, and movie characters. Although considered a risky practice by some marketers, short-term package redesigns are an opportunity to boost short-term product sales and attract new consumers. Kellogg has found this practice so successful that it runs a minimum of four short-term package redesigns a year (Lahey 1996).

In an effort to increase milk consumption by children the St. Louis school system, the St. Louis Dairy Council the and Prairie Farms Dairy teamed up to test the relationship between milk packaging and consumption. Market reports indicated that children consume more milk if the milk container is more appealing (Smith 2005). Students were introduced to multi-colored paperboard packaging, improved flavor formulas and new flavors. A control group with no changes in milk flavors or packaging was included in the study. After three months milk sales increased almost 20 percent. There was no increase in milk sales in the control group. To test the influence of the packaging one group of students was offered

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[26] annual awards presented by the advertising industry for outstanding achievement in TV and radio commercials, and packaging

milk in packaging with more sophisticated graphics that featured active kids than the other two colorful, "kid-friendly" packaging groups. The group with the most sophisticated packaging (active kids graphics) had the largest increase in overall milk sales (Smith 2005).

Packaging As Information

Packaging involves communication and persuasion. Packaging has much more communication power than marketers and researchers realize. Packaging is engaging. It is the part of the product that the consumer touches. In addition to the textural information packaging provides other types of information. For example in 1992 Planters introduced a new packaging concept for its fresh roasted peanuts. The new packaging resembled the vacuum-packed bricks normally used for coffee. The text on the packaging clearly stated "Planters Fresh Roasted Salted Peanuts" and was positioned near the Mr. Peanut® character. However, customers were taking the vacuum-packed peanuts and attempting to grind them in the coffee grinder. The appearance of the new fresh roasted peanuts resulted in incorrect information regarding the product. Packaging design provides information that defines the product, the benefits, and usage. In 2001 a marketer in Florida introduced a product called White Soda, a shelf-stable carbonated milk drink. White soda was packaged in a slim 8.5 ounce metal can similar to the cans used for energy drinks. The stylized graphics of human figures holding a can (in various poses) did not reflect the contents of the can and the product failed. Crazy Cow Company introduced a similar product in

the same slim can as White Soda but with different graphics. The can features a cartoon cow sipping milk through a straw from a small traditional gable-top carton of milk. The words "delicious, nutritious sparkling milk" enclose the cow in a circular manner on the can. Crazy Cow Sparkling Milk has been projected to be a leader in the new hybrid beverage category of milk-based carbonated beverages as well as the most exciting drink since Red Bull®, according to leading trade beverage magazines *Beverage Industry* and *New Products* (The Sparkling Milk Company 2003).

The overall appearance of packaging may speak volumes about its contents. For example, a marketing manager in charge of redesigning gift boxes for a chocolatier was pleasantly surprised when he tasted the product from the current "cheap looking" gift box. The taste of the chocolate and the packaging did not agree. The cheap looking box sent the message of cheap quality, poor tasting chocolate although the chocolatier is recognized as manufacturing superior quality chocolates. Consumers perceive a gold metallic box of chocolates wrapped with ribbon to be expensive and high quality (Fuhrman 2003). The appearance of packaging does influence consumer opinions (Scully 2001). Packaging gives information that leads to brand or product perception by the consumer. A classic example of packaging speaking about its contents is the Tiffany® box. The Tiffany® blue box communicates the perception that love and quality, commitment and consistency, respect and reputation are included inside the box (Gomelsky 2003). Over time the blue box and the Tiffany® company developed a correlation that signifies elegance and quality. Tiffany chose to

include the packaging in the merchandising plan instead of assigning it strictly for utilitarian purposes in which the consumer discards the box in the trash.

Research has shown that packaging design is an important part of the marketing process, possesses the ability to generate a return on investment, and improve market share. With this evidence in mind, it is reasonable to infer that packaging design has is compatible with advertising in the ability to influence consumers at the point of purchase. Packaging design deserves more attention and credibility in the integrated marketing communication (IMC) mix. In the cluttered supermarket aisle it is the packaging's shelf impact that gets the product noticed by the consumer and into the home. The shelf impact of packaging is powerful and continuous. Although packaging does not reach audiences of over million consumers simultaneously, it does reach them for longer periods of time in a more intimate way. In other words, once a consumer purchases a product the packaging remains an influence inside the home (Wallace 2001). Each time the consumer uses or removes the product from the packaging a relationship is developing as well as influence for future purchase. Packaging design should not be considered mere decoration but a powerful, persuasive force for developing a relationship with the consumer and establishing a successful brand.

CHAPTER SIX

CUE UTILIZATION THEORY

This chapter presents the theory that governs the methodology for this study. Cue utilization theory, one facet of consumer decision-making guides the investigation of surface graphics color on packaging and its impact on consumer purchase intent. This chapter will show how cues have been used in previous studies when investigating influence on consumer decision-making and how this theory was adapted for this exploratory study.

Research has established that packaging has evolved into the "silent salesman" (Furness 2003; Rettie and Brewer 2000; Shell 1996). Packaging has information consumers use to make purchase decisions. When shopping, consumers often look for the packaging before looking for the brand name. Market research has shown that shoppers often utilize the information on packaging to assist with purchase decision-making. The USFDA's Nutrition Labeling and Education Act (NLEA) mandated the use of nutrition facts on all food and beverage packaging (American Heart Association 2005; U.S. Food and Drug Administration Center for Food Safety and Applied Nutrition 2004; Bone and France 2001)). A recent survey of food packaging has revealed the practice of including allergy warnings at the end of the product ingredients list. Consumers have learned to consult the information on packaging to make purchase decisions. For example, packaging information may assist a shopper with making a final decision between artificial flavor and natural flavor or which

product has the best health benefit by listing sodium content and saturated fat found in the nutrition facts.

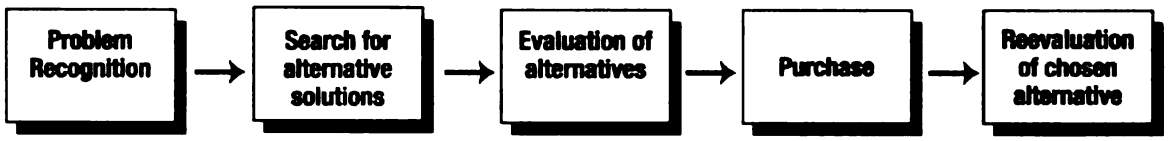
Academic research has shown that consumers use packaging attributes such as text, shape, colors, size, scent, and texture to assist with decision-making (Product packaging: empty promises? 2000; Sherwood 1999; Grossman and Wisenblit 1999; Nancarrow, Wright, and Brace 1998). The present study concentrates on the packaging attribute of surface graphics color as a cue for decision-making and is guided by cue utilization theory, which addresses a specific segment of the consumer decision-making process.

Theoretical Framework

Consumer decision-making has been treated as a problem solving process. A decision involves choosing between two or more different behaviors (Peter and Olson 1999). Although consumers make choices between products, brands, or stores, they are actually choosing between different behaviors that concern the product, brand, or store. The assumption regarding consumer decision-making is that consumers have goals they seek to achieve or satisfy. In other words, consumer decision-making is considered a goal-directed, problem-solving process (Peter and Olson 1999). The basic model of the consumer problem solving process (Figure 6) contains five stages: (1) problem recognition, for example, while preparing dinner, a consumer discovers an empty container of pasta (2) search for alternative solutions-the consumer goes to the local grocery store (3) evaluation of alternatives- the consumer locates the pasta and surveys

the choices (4) purchase- the consumer selects a brand/ container of pasta and takes it to the check out counter (5) post-purchase use and reevaluation of chosen alternative- the consumer prepares dinner with the chosen pasta and determines if the choice was good one and considers a repeat purchase in the future (Peter and Olson 1999). Although the basic model of problem-solving is commonly used to introduce the process, it is considered imperfect because the consumer problem-solving process rarely occurs in a linear fashion. This basic model of problem-solving is adequate for an investigation of brand choice.

Figure 6. Basic Model of Consumer Problem-solving



Consumers use an evaluation process when considering which product to purchase. This occurs in the third stage of the basic model of consumer problem-solving. This process involves sorting out product information that serves as cues that influence consumer decision-making. A product can be thought of as a variety of cues. Cues are product information consisting of price, color, taste, feel, scent, and the opinion of friends, family, retail sales consultants (Cox 1967). The consumer evaluation process should recognize three characteristics. Cox (1967) defines these characteristics as: (1) a minimal number of cues or bits of information (color, sound, texture) (2) the predictive value of a cue (associating a given cue with product quality) (3) no need for an apparent logical relationship

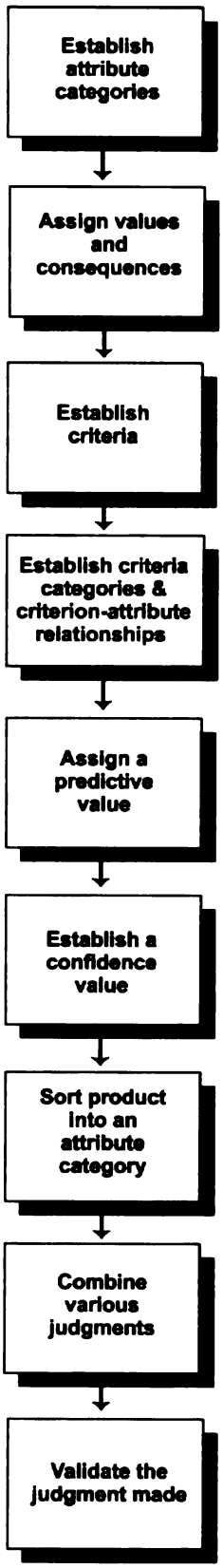
between the cues on which the product evaluation is based (the scent of a bath towel as an indicator of quality). In other words, the consumer evaluation process is unique to each consumer, product based on selected cues associated with quality, and driven by the relationship between the cue and the product evaluation.

Research suggests that consumers sort products into attribute categories to determine which cues are most meaningful when evaluating a product's quality when considering a purchase. The sorting rule model (Figure 7) for product evaluation (Cox 1967) suggests a consumer proceeds through the product evaluation stage in the following manner: Stage One is establishing attribute categories for product judgment (taste, size, color, weight). Stage Two is assigning values and consequences to each product attribute category (how important is taste in the evaluation of tomatoes and what is the consequence of a poor tasting tomato). Stage Three is establishing criteria by which the product is categorically defined (color and size). Stage Four is establishing criterion categories (specific cues similar in nature but varying by different degrees) and criterion-attribute relationships. For example, tomato color is a criteria category. The shade of red may vary but may predict the same attribute of taste. The criterion-attribute relationship may suggest the brightest red tomato is most ripe and indicates the best flavor and the palest red tomato is least ripe and indicates no flavor. Stage Five is assigning a predictive value to each criterion-attribute relationship. Stage Six is establishing a confidence value for each cue. Stage Seven is sorting the product into an attribute category. Stage Eight combines

various previously formed judgments resulting in a higher order judgment. Stage Nine is the final stage of the sorting rule evaluation process that validates the judgment made (tasting the tomato to determine the validity of the predictive value of the color/quality relationship).

Cox's 1967 study also determined that consumers assign information value to cues on at least two dimensions, predictive value and confidence value. The predictive value of a cue is "a measure of the probability with which a cue predicts a specific product attribute" (Cox, p. 331). For example, if a consumer knows that a brand of ice cream uses real vanilla beans instead of artificial vanilla in its ice cream, then there is a high probability that the brand of ice cream is of good quality. The confidence value of a cue is "the degree of confidence with which the cue can be categorized or evaluated" (Cox, p. 344). An example of the confidence value of a cue is the consumer has tasted vanilla ice cream with both artificial flavoring and natural vanilla bean flavoring and the consumer knows (tasted) the difference. Predictive and confidence value can be categorized as high and low. When confronted with two approximately equal predictive cues the consumer is more likely to select the cue with the highest confidence value (Richardson 1994, Richardson, Dick, and Jain 1994, and Cox 1967). For example, the consumer wants to buy fresh tomatoes, and considers color and size as attributes for quality but has difficulty in determining a color differentiation in the tomatoes available then color would be considered a low predictive cue. The tomato size becomes the cue (for quality) with the higher confidence value.

Figure 7. The Sorting Rule Model



Cue utilization theory provides a framework to examine the consumer's perception of a product. This theory is based on the sorting rule model of product evaluation (Cox 1967). There are two types of cues, extrinsic and intrinsic. Extrinsic cues are product-related but not part of the physical product such as packaging, price, and brand name (Richardson, Dick, and Jain 1994; Richardson 1994). Intrinsic cues are product-related such as ingredients, color, and shape (Richardson, Dick, and Jain 1994). Cue utilization theory suggests that consumers depend on extrinsic cues when faced with making a decision between products especially when determining quality (Miyazaki, Grewal, and Goodstein 2005; Richardson 1994; Bearden and Shimp 1982). Research has revealed evidence that extrinsic cues are more easily interpreted and recognized (Richardson, Dick, and Jain 1994).

Consumer's decisions are guided by their perception of a product (Tom, Barnett, Lew, and Selmants 1987). Their perception is heavily influenced by cues (brand name, packaging, color). Participants in a study were exposed to a nationally branded[27] product and a store brand[28] product of potato chips and chocolate chip cookies and completed a taste test. They determined that the brand with the better packaging was of better quality even though both the nationally branded product and the store brand product contained the same product (Richardson 1994). Study participants relied upon extrinsic cues (packaging) to determine which product had the better quality. Research has shown that extrinsic cues influence consumers' quality judgments of products

[27] National brand refers to products that are produced by one manufacturer and distributed nation wide.

[28] Store brand refers to all merchandise sold under a retail store's private label

even when intrinsic cues are present (Richardson, Dick, and Jain 1994). Research participants were exposed to nationally branded products and store brand products of cheese, potato chips, potato chip dip, chocolate chip cookies, and jelly. During the taste testing a list of intrinsic cues (ingredients, nutrition value) was placed next to each taste sample along with the price and brand name. The intrinsic cue (ingredients, nutrition information) list was enlarged and created to mimic the labels that would appear on each brand. Some participants received the store brand product coupled with national brand intrinsic cues (ingredients) or the national brand product coupled with store brand intrinsic cues (ingredients). After completing a taste test, participants assessed the national brand product of being higher quality although the national brand was coupled with the store brand intrinsic cues (ingredients). Participants also assessed the national brand intrinsic cues (ingredients) as being lower quality when coupled with the store brand extrinsic cues (packaging). The results of this study suggest the product expectations evoked by the packaging (extrinsic cues) influenced consumers' judgment of the product quality. The Richardson, Dick, and Jain (1994) study also indicates that consumers appear to be more interested in quality than value for the money. The researchers indicate that consumer assessment of store brand product quality is largely due to their reliance upon extrinsic cues. In other words, consumers determine product quality by the appearance of the packaging.

To illustrate the power of cues on consumer perception and decision-making, one study used color (extrinsic cue) as the principle cue to influence consumer

perception. This study was testing the extent color plays in influencing the consumer's taste or quality of a food. The product chosen for the study was chocolate pudding. The researchers believed that color is an important cue in the consumer's identification of the flavor of the pudding (Tom, Barnett, Lew, and Selmants 1987). It was also believed that consumers would make inferences about other product attributes based on the color of the chocolate pudding. For the study the chocolate pudding was actually vanilla pudding with food color added. The three "flavors" created were: dark brown, medium brown, and light brown. Participants were informed that the study was testing consumer preference for a new variation of chocolate pudding and were asked to taste each pudding sample and answer a short questionnaire. Of the participants, 62% perceived the dark brown pudding had the best chocolate flavor and 61% perceived the dark brown pudding was the thickest. The participants also perceived that the lighter color chocolate puddings were the creamiest (37% for the medium brown chocolate pudding and 36% for the light chocolate brown pudding). Based on these results, color was an important cue in the perception of the product. It looked like chocolate pudding so it tasted like chocolate pudding. The researchers concluded that in the consumer's identification and evaluation of the pudding the color was more important than the taste (Tom, Barnett, Lew, and Selmants 1987).

Research has shown that consumers use cues (intrinsic and extrinsic) to identify and give meaning to products and brands. Cues, more specifically, extrinsic cues are developed by the marketer of the product. Incorrect perception

of a product as a result of incongruent cues can result in a disaster as in the case of Sunlight® dishwashing liquid. The dishwashing liquid was developed to include lemon juice as an ingredient for extra cleaning. During the 1982 launch of Sunlight dishwashing liquid small packets containing the dishwashing liquid were mailed to households as part of a promotional campaign. The sample packet included the words "Sunlight dishwashing liquid" along with a large picture of lemons and the words "real lemon juice." Apparently the words "dishwashing liquid" was an inadequate cue for the contents because consumers thought the sample packet contained lemon juice. When the dishwashing liquid sample was opened, it smelled like lemon juice. Assuming it was lemon juice, several consumers used the liquid in their iced tea. Research should begin to explore the influence that specific cues have on the consumer's perception of products as well as how their perception influences their purchase intent.

CHAPTER SEVEN

RESEARCH QUESTIONS AND METHODS

The purpose of this chapter is to outline the research questions and methodology used in the investigation of packaging color and its influence on consumer decision-making. More specifically, this chapter contains a description of research questions, the methodology, study participants, stimulus choice, independent and dependent variables.

Previous research has shown the important role packaging plays in influencing consumers at the point of purchase (packworld.com 2004; Selame and Koukos 2002; Pigeon 2001; Wallace 2001; Chilton 1998). Research has also shown that consumers use cues to form a perception about a product and the perception of a product has more influence on consumer purchase than product reality (Tom, Barnett, Lew, and Selmants 1987). Academic studies investigating how consumers use cues to make purchase decisions are few. In fact, this area is largely neglected. This exploratory study investigates the influence of a specific extrinsic cue (color) has on consumer purchase intent.

Central Research Questions

The objective of this research is to investigate the influence of packaging color on consumer decision-making. This exploratory study focuses on packaging design as a communication aspect, not an engineering aspect. More specifically, this research investigates the use of extrinsic cues (packaging color)

to assess perceived product quality and perceived product performance. This study also examines how different color cues influence decision-making, and ultimately, the intent to purchase.

General Research Question. The general research question guiding this study is: Do surface graphics/packaging color (extrinsic cue) influence consumer decision-making and the intent to purchase? The following research questions guided the investigation on surface graphics colors as an influence on consumer decision-making. The general research question was inspired by a study that compared current color uses on packaging for gender-biased products with traditional color associations to discover an indication that traditional color association are outdated for the current marketplace (VanHurley 2004). It was this survey that directed attention toward a vast amount of information (cues) available to consumers for making purchase decisions and how cues influence consumer purchasing. Three specific research questions are derived from the general research question.

RQ1: Does the color of surface graphics on packaging increase shelf impact (visibility)?

RQ2: Does the color of surface graphics on packaging influence perceived product quality?

RQ3: Does the color of surface graphics on packaging serve as a cue for product information that influences purchase intent?

METHOD

Choice of Stimulus

Some marketers believe that testing packaging in a focus group is a poor indicator of purchase intent because participants are not in a shopping mode and one participant's opinion may influence the entire focus group (Murphy 1998; Lubliner 1996). It is based on this belief that tangible packaging was used as stimulus for the study. This study investigates the influence of packaging color on the store shelf on consumer decision-making. To investigate consumer shopping behavior in a controlled environment, that environment should be created to mimic shopping behavior. In an actual supermarket shopping situation consumers pick a product from the shelf and examine the surface graphics to formulate perceptions about the product.

This exploratory study is unique in that it uses real packaging as the stimulus for data collection. Only one study regarding color research is based on consumers evaluating color chips (Brengman and Geuens 2004). Prior research regarding packaging design effect on consumer behavior used a stimulus book (Underwood and Klein 2002), and a virtual shopper computer program (Underwood 2001) as the stimulus for data collection.

The independent variables for the study were the colors of the packaging surface graphics. The dependent variables were shelf impact, perceived product quality, and purchase intent.

Four product categories were selected (toothpowder, shaving powder, bacon-flavored potato rings, and spray-on pantyhose) to assess the possibility of

surface graphics color having influence on diverse product categories. These product categories were selected to reduce the possibility of prior product associations and create a situation where the consumer must rely on the extrinsic cues (color) of the packaging to assess the quality and effectiveness of the product. A total of 24 packaging designs (six per category) were created for this study (Appendix D). The choice to use unfamiliar product categories was the result of limiting prior effect to influence product choice. When a consumer is faced with an unfamiliar brand he/she is likely to evaluate the packaging more closely (Underwood 2002).

Stimulus Specifications

The product categories did influence the type of packaging necessary for each product. Since the focus of this study was on packaging color and not on structure or shape, it was determined that reassigning or redesigning packaging was beyond the scope of this study and the type of packaging established for each product category was acceptable. There are three slit-lock, top tuck folding cartons and one wrap around label on a prefabricated aluminum can. Products were purchased at a local supermarket that are similar in nature to each product used in the study. If a product similar in nature, size, and weight was not available locally, then specifications were obtained from various websites to assist with acceptable packaging dimensions. The dimensions of each carton were determined by the size and shape of its contents. Each carton was

fabricated according to the dimensions of that product. The label was created according to the dimensions of the prefabricated aluminum can.

The Artios® CAD computer program was used to select a template for the folding cartons. The template was modified for each container based on individual dimensions. The industry standard slit lock, top tuck folding carton was selected because it limits material waste and therefore reduces production costs. The material used for the all of the folding cartons was a sheet of 24 inches x 36 inches 14 point board, .25 mil thickness. Each folding carton template was transferred via computer disk to the electronic cutting table where the carton templates were cut and scored[29] simultaneously.

Toothpowder Packaging. The toothpowder carton (Appendix D, Figure 11) was based upon toothpaste that was similar in weight and size. Information obtained from a drug store website provided a picture and weight specifications per carton for a popular brand toothpowder since this product or one similar was not locally available. The folded dimension of the carton measured 2 inches in width x 1.625 inches in length x 1.625 inches in depth.

Bacon-Flavored Potato Rings Packaging. The bacon-flavored potato rings carton (Appendix D, Figure 10) was based upon a box of snack crackers that was similar in weight and size. Information obtained from an international snack website provided a picture and weight specifications per carton for a similar snack since this product or one similar was not locally available. The folded

[29] A printing term used to describe a technique of cutting shallow lines into thick paper or cardboard to ensure crisp folds.

dimensions of the carton measured 5.125 inches in width x 6 inches in length x 2.5 inches in depth.

Spray-on Pantyhose Packaging. The spray-on pantyhose carton (Appendix D, Figure 12) was based on an artificial tanning product that was similar in weight and size. Information obtained from a cosmetics website provided a picture and weight specifications for a similar product available only in limited areas in the United States. The folded dimensions of the carton measured 2.125 inches in width x 7 inches in length x 2.125 inches in depth.

Shaving Powder Packaging. Shaving powder is a product that was popular years ago as an alternative to razors for shaving a tough, curly, stubborn beard. This product still exists on some local supermarket shelves. In an attempt to create realistic packaging these prefabricated shaving powder cans were used and a wrap-around label covered the complete cans (Appendix D, figure 9). The wrap-around label measured 8.4375 inches in width x 3.75 inches in length.

Color and Surface Graphics. The colors used for the surface graphics (red, yellow, blue, orange, green, and purple) were selected because they are considered foundation colors in basic color theory. In addition, primary (red, yellow, blue) and secondary (orange, green, purple) colors were selected because prior color associations exist for these colors and these associations continue to be referenced in academic research (Lukiesh 1925; Schaie and Heiss 1964; Sharpe 1974). The decision to design the surface graphics using one color was to control the identification of the color of influence. Multiple colors would complicate identification of the color of influence. Also, placing two or more

colors adjacent to one another may change the perception of a color. The decision to use a white background was to prevent interference from another color that could complicate color perception. The surface graphics were designed with one color[30] and tints[31] of the one color to afford the maximum amount of surface graphic interest permitted with one color. The color yellow required a tint of black to prevent the color being absorbed by the white background (Appendix D, Figure 10). Yellow on a white background is barely visible. PMS[32] colors were assigned to match the established primary and secondary colors. PMS colors were used to mimic the professional process of specifying colors for printing surface graphics on a flexography[33] printing press.

The electronic cutting table used for cutting and scoring the slit lock, top tuck folding cartons did not have printing capabilities so the surface graphics were made separately and wrapped around each carton. Since the focus of this study was on the influence of surface graphics color on purchase intent the packaging must rely on color to control for other influences not being measured. The surface graphics do not contain photographs or illustrations. Photographs and illustrations introduce another element of packaging design that is not covered in this study. Other cues such as ingredients and content weight were held constant within each product category. The text (weight, ingredients, instructions, nutrition information) on the packaging was obtained from similar products purchased

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[30] identifies a monochromatic color palette used in graphic design

[31] refers to white added to a color; Pink is considered a tint of red.

[32] Pantone Matching System (PMS) refers to the comprehensive reference for selecting, specifying, matching, and controlling ink colors

[33] refers to the printing method most commonly used when printing food packaging, medical packaging, corrugated containers, and plastic bags.

from the local supermarket or from various websites if a product similar in nature, size, and weight could not be obtained locally. The graphics for each product was in part determined by the size of the packaging. In an effort to reduce an association bias, basic shapes or patterns were used to create the surface graphics. To further mimic the look of actual products, other elements such as weight, ingredients, nutrition information, directions, logo[34], and UPC[35] bar code were added to each package design. The template for each slit lock, top tuck folding carton was imported into Adobe InDesign (a professional design program) and surface graphics were created. The wrap around label for the prefabricated aluminum cans was also created in Adobe InDesign. The surface graphics for the folding cartons and prefabricated cans were printed using ink jet printers. The folding carton surface graphics were printed on premium grade bright white ink jet paper. The labels for the prefabricated can were printed on name brand large label paper with adhesive backing. Once the surface graphics were printed for all of the packaging, each surface graphic sheet was trimmed to size. The surface graphics for the slit lick, top tuck folding cartons were adhered to the unfolded carton with double stick Scotch® tape and then folded. The backing paper for the adhesive labels were removed and adhered to the prefabricated aluminum cans.

Each product category had six packages with the surface graphics being identical (with the exception of color) and unique to each category (Appendix D, Figures 9, 10, 11, and 12). Four different surface graphic designs (one per

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[34] refers to a symbol or name displayed in a unique manner that is used to separate a product or service from its competitors in the marketplace.

[35] an abbreviation for universal product code; UPC bar codes contains electronic information such as price used at checkout and product inventory.

product) were created to prevent comparison between product categories. A complete category includes one package with surface graphics using each primary color (red, yellow, blue) and secondary color (orange, green, purple).

Data Collection

In this study's attempt to provide a shopping mode for participants, tangible packaging was placed on a shelf (Appendix D, Figure 8). The room set-up was identical for every participating group and each participating group evaluated all packaging. Data was collected in groups to control the number of participants at the shelf at one time. The stimulus for this study was considered a three-dimensional stimulus book. Every product category packaging was placed on the shelf. The alignment of the packaging on the shelf was held constant according to color by category. The color arrangement is red, yellow, blue, orange, green, and purple. This color arrangement was consistent with the order of the color choices on the questionnaire. This consideration was made to help facilitate the ease of completing the questionnaire.

A 72-item questionnaire (Appendix C) was used to collect data. Participants first viewed the product shelf and then responded to the questionnaire. While viewing the product shelf, participants could remove the packaging from the shelf for closer examination. Participants were allowed to look at the product shelf while completing the questionnaire from their seat. The tables and chairs were positioned between the range of 7.4 feet and 10.9 feet from the product shelf. The distance was determined by the space needed to accommodate 10 to 15

participants at the product shelf at one time as well as allowing clear visibility of the product shelf from the seating area. Upon entering the data collection area, participants were directed to the product shelf and encouraged to handle the packaging for further examination. Collaboration between participants was not allowed. Participants were given a maximum of fifteen minutes to closely view the product shelf. The participants were allowed a maximum of 45 minutes to complete the questionnaire. Participants were allowed to complete the questionnaire at their own pace and each participant read a short debriefing statement about the experiment before leaving the lab setting.

Cue utilization theory is used to guide this study. Consumers use cues to assist with decision-making that often leads to a product purchase (Cox 1967; Underwood 1993; Richardson 1994; Richardson, Dick, and Jain 1994; Garber, Burke, and Jones 2000; Underwood, Klein, and Burke 2001; Underwood and Klein 2002; Underwood 2003). Cue utilization theory has two categories of cues (extrinsic, intrinsic). Extrinsic cues are those that are product-related but not part of the physical product such as packaging, price, and brand name. Intrinsic cues are things that are part of the physical product such as ingredients and are not part of this study. The independent variables in this study surface graphics/packaging color qualified as an extrinsic cue.

Research question 1 (Does the color of surface graphics on packaging increase shelf impact?) was designed to investigate the shelf impact of the packaging. Participants were asked to compare the packaging visibility against one another as well as select which packaging captured their attention first. In

conjunction there was an open-ended question asking participants to explain why the selected packaging grabbed their attention.

Research question 2 (Does the color of surface graphics on packaging influence perceived product quality?) was designed to investigate the notion that consumers use color to perceive information regarding a product. More specifically, this research question was created to measure the cue utilization of packaging color to make a decision regarding the perceived quality of each product in the four categories (shaving powder, bacon-flavored potato rings, tooth powder, spray-on pantyhose). Participants asked to rate each packaging color according to expected overall quality of each product in each of the four product categories. The responses were based on a Likert scale from 1 (excellent quality) to 6 (can't be determined). The response of "can't be determined" was included in the Likert scale to investigate if respondents would choose to form a judgment regarding product quality based on packaging cues.

Research question 3 (Does the color of surface graphics on packaging serve as a cue for product information that influences purchase intent?) was created to explore intent to purchase, Participants were asked to select one packaging of each product of which they would prefer to receive a free six-month supply. In conjunction there was an open-ended question asking participants to explain why they preferred to receive each selected packaging from the four categories.

The four product categories asked identical questions; although product specific questions addressed the products mentioned above. The questionnaire

asks the participants to evaluate each surface graphics color packaging within each category individually, encouraging product differentiation between each color. General shopping behavior questions and demographic questions were also asked of the study participants.

Participants

In 2006 there were approximately 69 million people in the United States aged 18 to 34 (*Spending Power of Young Adults* 2006). With in this age group, individuals 18 to 24 possibly pursuing an education and living at home have more discretionary income. This age group also enjoys shopping as a social activity. With these statistics in mind, subjects for this study were graduate and undergraduate advertising students from a large Mid-western university. Of the 39 participants, 23% (n=13) were male and 67% (n=26) were female. Of the participants, 82% (n=32) were between 17 and 22 years of age and 18% (n=7) are between 23 and 28 years of age. Of the 39 participants, 38 reported the ethnic group they most identified with. Of the participants, 53% (n=20) are Caucasian, 18% (n=7) are African-American, 5% (n=2) are Hispanic, 11% (n=4) are Asian-American, and 13% (n=5) are of other racial identities. "Other" was representative of international students. This identification was created to differentiate students who are citizens of another country and perhaps have different cultural and social values.

As encouragement for participation, each participant was entered in a raffle for gift certificates to various establishments (Cold Stone Creamery, Starbucks, and Best Buy).

CHAPTER EIGHT

RESULTS AND DISCUSSION

The purpose of this chapter is to provide the results from the data collection. The discussion of the significance of the data is reserved for this chapter.

Data was collected in a lab setting using tangible packaging as stimulus (Appendix, Figure 8) and a 72-item questionnaire (Appendix C) to explore the general research question: Do packaging colors (extrinsic cues) influence consumer decision-making and the intent to purchase? This experimental study was created to explore the following research questions to answer the general research question.

RQ1: Does the color of surface graphics on packaging significantly increase shelf impact (visibility)?

RQ2: Does the color of surface graphics on packaging significantly influence perceived product quality?

RQ3: Does the color of surface graphics on packaging serve as a cue for product information that influences purchase intent?

Data Interpretation. Results were first examined according to each product. Then results were examined according to color without regard to the product. The numbers in the tables represent frequency. Data was examined to investigate the influence packaging color had on consumer intent to purchase. Then, the data was examined to investigate if the product had any influence on

the color of packaging the participants intended to purchase. Because of the exploratory nature of this study the data collected from the survey was collapsed into categories (positive, neutral, negative) that reflected the participants' attitude toward the perceived quality, the likelihood of purchase, and shelf impact according to each product. Then, the data was collapsed into categories (positive, neutral, negative) that reflected the participants' attitude toward perceived quality, the likelihood of purchase, and shelf impact without regard to the product, but according to color.

Individual Product Results of Color on Packaging

Shaving Powder Packaging Color Results. Participants were asked to form quality judgments based on individual packaging color. **RQ 2: Does the color of surface graphics on packaging influence perceived product quality?** The data indicated the blue packaging was perceived by participants to have the highest quality, the red and green packaging were both perceived to have the second highest quality, orange and yellow packaging were perceived to have satisfactory quality and the purple packaging was perceived by the participants to have the poorest quality. Despite the quality judgments of good and poor, participants considered all packaging design colors to be of satisfactory quality (Table 2). The data also showed that participants used packaging color to infer information regarding shaving powder quality. Participants were not forced to formulate an opinion regarding quality because "can't be determined" was a response option on the questionnaire.

Table 2. Shaving Powder Packaging Expected Quality

Surface Graphics Color	Good Quality	Satisfactory Quality	Poor Quality	Can't Determine
Red	10	17	10	2
Yellow	5	17	14	3
Blue	16	14	7	2
Orange	6	22	8	3
Green	10	16	10	3
Purple	6	12	18	3

RQ 1: Does the color of surface graphics on packaging increase shelf impact (visibility)? Data showed participants made judgments about how visible each packaging was from the shelf. Participants determined the blue packaging had the strongest shelf visibility, the purple packaging the second strongest, then the green, orange, red packaging were perceived to have moderate visibility, and the yellow packaging was determined to have the worst shelf visibility (Table 3).

Table 3. Shaving Powder Packaging Shelf Impact

Surface Graphics Color	Good	Moderate	Poor
Red	11	16	12
Yellow	9	4	26
Blue	26	9	4
Orange	13	16	10
Green	15	16	8
Purple	18	13	8

RQ 3: Does the color of surface graphics on packaging serve as a cue for product information that influences purchase intent? The participant

perceived the green packaging to have little difference between good and moderate visibility. Although a few participants perceived yellow packaging to have good shelf visibility, the majority of the participants perceived yellow packaging to have the poorest shelf impact (visibility). When asked which shaving powder they would like to receive a free six-month supply participants selected blue most, and orange and green the least (Table 4).

Table 4. Shaving Powder Packaging Purchase Intent

Red	Yellow	Blue	Orange	Green	Purple
4	5	17	3	3	7

Bacon-flavored Potato Ring Packaging Results. Participants were asked to form quality judgments based on individual packaging color. The data indicated the red packaging was perceived by participants to have the highest quality, the orange packaging was perceived to have the second highest quality. Green packaging was perceived to have satisfactory quality and the purple, blue and yellow packaging was perceived by the participants to have the poorest quality. Despite the quality judgments of good and poor, participants considered all packaging design colors to be of satisfactory quality (Table 5). The participants perceived the orange packaging to have little difference between good and satisfactory quality. The data also showed that participants used packaging color to formulate information regarding bacon-flavored potato rings quality because participants were given the opportunity to ignore forming an opinion regarding quality by selecting can't be determined.

Table 5. Bacon-flavored potato rings Packaging Expected Quality

Surface Graphics Color	Good Quality	Satisfactory Quality	Poor Quality	Can't Determine
Red	19	11	6	3
Yellow	8	13	15	3
Blue	8	13	15	3
Orange	15	14	7	3
Green	9	13	13	4
Purple	5	13	17	4

Data showed participants made judgments about how visible each packaging was from the shelf. Participants determined the red packaging had the strongest shelf visibility, the blue packaging the second strongest shelf visibility. The orange, green, and purple red packaging was perceived to have moderate visibility, and the yellow packaging was determined to have the worst shelf visibility (Table 6). However, participants perceived the orange and green packaging to have little difference between good and moderate shelf visibility.

Table 6. Bacon-flavored potato rings Packaging Shelf Impact

Surface Graphics Color	Good	Moderate	Poor
Red	29	7	3
Yellow	7	11	21
Blue	21	13	5
Orange	18	19	2
Green	17	18	4
Purple	17	13	9

When asked which shaving powder they would like to receive a free six-month supply participants selected blue most, and orange and green the least (Table 7).

Table 7. Bacon-flavored potato rings Packaging Purchase Intent

Red	Yellow	Blue	Orange	Green	Purple
17	5	7	7	2	1

Toothpowder Packaging Results. Participants were asked to form quality judgments based on individual packaging color. The data indicated the blue packaging was perceived by participants to have the highest quality, the green packaging was perceived to have the second highest quality. Red packaging was perceived to have satisfactory quality and the yellow, orange and purple packaging was perceived by the participants to have the poorest quality. Despite the quality judgments of good and poor, participants considered all packaging design colors with the exception of yellow to be of satisfactory quality (Table 8).

Table 8. Toothpowder Packaging Expected Quality

Surface Graphics Color	Good Quality	Satisfactory Quality	Poor Quality	Can't Determine
Red	13	12	10	4
Yellow	8	5	22	4
Blue	18	10	7	4
Orange	7	10	18	4
Green	15	11	8	5
Purple	9	10	14	6

The participants perceived the red and purple packaging to have little difference between good and satisfactory quality. The data also showed that participants used packaging color to formulate information regarding toothpowder quality

because participants were given the opportunity to ignore forming an opinion regarding quality by selecting can't be determined.

Data showed participants made judgments about how visible each packaging was from the shelf. Participants determined the blue packaging had the strongest shelf visibility, the green packaging the second strongest shelf visibility. The orange packaging was perceived to have moderate visibility, and the yellow packaging was determined to have the worst shelf visibility (Table 9). However, participants perceived the orange and green packaging to have little difference between good and moderate shelf visibility.

Table 9. Toothpowder Packaging Shelf Impact

Surface Graphics Color	Good	Moderate	Poor
Red	18	17	4
Yellow	6	6	27
Blue	32	5	2
Orange	10	25	4
Green	28	8	3
Purple	15	15	9

When asked which shaving powder they would like to receive a free six-month supply participants selected blue most, and red and purple the least (Table 10).

Table 10. Toothpowder Packaging Purchase Intent

Red	Yellow	Blue	Orange	Green	Purple
1	3	19	2	13	1

Spray-on Pantyhose Packaging Results. Participants were asked to form quality judgments based on individual packaging color. The data indicated the orange packaging was perceived by participants to have the highest quality, the blue and red packaging was perceived to have the second highest quality. Purple packaging was perceived to have satisfactory quality and the yellow and green packaging was perceived by the participants to have the poorest quality. Despite the quality judgments of good and poor, participants considered all packaging design colors to be of satisfactory quality (Table 11).

Table 11. Spray-on pantyhose Packaging Expected Quality

Surface Graphics Color	Good Quality	Satisfactory Quality	Poor Quality	Can't Determine
Red	11	11	10	7
Yellow	7	8	17	7
Blue	11	10	11	7
Orange	12	9	12	6
Green	9	7	16	7
Purple	10	13	10	6

The participants perceived the red packaging to have no difference between good and moderate visibility. The participants perceived the yellow and blue packaging to have little difference between good and satisfactory quality. The data also showed that participants used packaging color to formulate information regarding spray-on pantyhose quality because participants were given the opportunity to ignore forming an opinion regarding quality by selecting can't be determined.

Data showed participants made judgments about how visible each packaging was from the shelf. Participants determined the red packaging had the strongest shelf visibility, the blue packaging the second strongest shelf visibility. The orange, green, and purple red packaging was perceived to have moderate visibility, and the yellow packaging was determined to have the worst shelf visibility (Table 12).

Table 12. Spray-on pantyhose Packaging Shelf Impact

Surface Graphics Color	Good	Moderate	Poor
Red	19	17	3
Yellow	3	7	29
Blue	24	12	3
Orange	18	14	7
Green	12	19	8
Purple	20	10	9

However, participants perceived the orange and green packaging to have little difference between good and moderate shelf visibility. When asked which shaving powder they would like to receive a free six-month supply participants selected orange most, and orange and green the least (Table 13).

Table 13. Spray-on pantyhose Packaging Purchase Intent

Red	Yellow	Blue	Orange	Green	Purple
9	2	8	11	1	6

Red Packaging Color Results. Participants perceived the red potato rings packaging to have the best quality (Table 14). The red toothpowder packaging was perceived to have the second best quality. Although participants made good and poor quality judgments, the shaving powder, bacon-flavored potato rings, toothpowder, and spray-on pantyhose packaging were perceived to have satisfactory quality.

Table 14. Red Packaging Expected Quality

Product	Good Quality	Satisfactory Quality	Poor Quality	Can't Determine
Shaving Powder	10	17	10	2
Potato Rings	19	11	6	3
Toothpowder	13	12	10	4
Spray-On Pantyhose	11	11	10	7
Total	**53**	**51**	**36**	**16**

The red bacon-flavored potato rings packaging was perceived to have the best shelf impact. The spray-on pantyhose packaging was perceived by participants as having the second best shelf impact (Table 15). Although participants made specific judgments regarding shelf visibility, there was little difference between moderate and good shelf visibility for the toothpowder and spray-on pantyhose packaging.

Table 15. Red Packaging Shelf Impact

Product	Good	Moderate	Poor
Shaving Powder	11	16	12
Potato Rings	29	7	3
Toothpowder	18	17	4
Spray-On Pantyhose	19	17	3
Total	**77**	**57**	**22**

Participants selected the bacon-flavored potato rings packaging most for their free six-month supply (Table 16).

Table 16. Red Packaging Purchase Intent

Shaving Powder	Potato Rings	Toothpowder	Spray-On Pantyhose
4	17	1	9

Yellow Packaging Color Results. Participants did not perceive any yellow packaging to have good quality. The yellow shaving powder packaging was perceived to have satisfactory quality (Table 17). The toothpowder packaging was perceived to have poor quality.

Table 17. Yellow Packaging Expected Quality

Product	Good Quality	Satisfactory Quality	Poor Quality	Can't Determine
Shaving Powder	5	17	14	3
Potato Rings	8	13	15	3
Toothpowder	8	5	22	4
Spray-On Pantyhose	7	8	17	7
Total	**28**	**43**	**68**	**17**

Participants did not perceive any yellow packaging to have good shelf impact. However, a few participants perceived the yellow bacon-flavored potato rings packaging had moderate shelf impact (Table 18).

Table 18. Yellow Packaging Shelf Impact

Product	Good	Moderate	Poor
Shaving Powder	9	4	26
Potato Rings	7	11	21
Toothpowder	6	6	27
Spray-On Pantyhose	3	7	29
Total	**25**	**28**	**103**

Participants selected the bacon-flavored potato rings packaging and the shaving powder packaging most for their free six-month supply (Table 19). Of the participants who selected to receive yellow packaging some stated, "it's really

bright and when you think of your teeth you want them to be bright and white as well" and "yellow reminds me of the golden crispness of potatoes."

Table 19. Yellow Packaging Purchase Intent

Shaving Powder	Potato Rings	Toothpowder	Spray-On Pantyhose
5	5	3	2

Blue Packaging Color Results. Participants perceived the toothpowder packaging had the best quality and the shaving powder packaging had the second best perceived quality. The spray-on pantyhose packaging shared a perception of good, satisfactory, and poor quality equally. The bacon-flavored potato rings packaging was perceived to have the poorest quality (Table 20).

Table 20. Blue Packaging Expected Quality

Product	Good Quality	Satisfactory Quality	Poor Quality	Can't Determine
Shaving Powder	16	14	7	2
Potato Rings	8	13	15	3
Toothpowder	18	10	7	4
Spray-On Pantyhose	11	10	11	7
Total	**53**	**47**	**40**	**16**

Participants perceived the toothpowder packaging to have the best shelf impact. However, the shaving powder packaging, spray-on pantyhose packaging, and

bacon-flavored potato rings packaging were also perceived to have good shelf impact (Table 21). Participants selected the toothpowder packaging and the shaving powder packaging most for their free six-month supply (Table 22).

Table 21. Blue Packaging Shelf Impact

Product	Good	Moderate	Poor
Shaving Powder	26	9	4
Potato Rings	21	13	5
Toothpowder	32	5	2
Spray-On Pantyhose	24	12	3
Total	**103**	**39**	**14**

Table 22. Blue Packaging Purchase Intent

Shaving Powder	Potato Rings	Toothpowder	Spray-On Pantyhose
17	7	19	8

Orange Packaging Color Results. Some participants perceived the bacon-flavored potato rings packaging had the best quality and the spray-on pantyhose packaging had the second best quality. However, participants in general perceived the shaving powder packaging had satisfactory quality. Although participants perceived the bacon-flavored potato rings packaging had good quality, there was little contrast between good and satisfactory quality perception. The toothpowder packaging was perceived to have the poorest quality (Table

23). Participants perceived both the bacon-flavored potato rings packaging and the spray-on pantyhose packaging had the best shelf impact. However, the toothpowder packaging was perceived to have moderate shelf impact. Participants perceived no contrast between good and moderate for the bacon-flavored potato rings packaging shelf impact (Table 24). Participants selected the spray-on pantyhose packaging most for their free six-month supply (Table 25).

Table 23. Orange Packaging Expected Quality

Product	Good Quality	Satisfactory Quality	Poor Quality	Can't Determine
Shaving Powder	6	22	8	3
Potato Rings	15	14	7	3
Toothpowder	7	10	18	4
Spray-On Pantyhose	12	9	12	6
Total	**40**	**55**	**45**	**16**

Table 24. Orange Packaging Shelf Impact

Product	Good	Moderate	Poor
Shaving Powder	13	16	10
Potato Rings	18	19	2
Toothpowder	10	25	4
Spray-On Pantyhose	18	14	7
Total	**59**	**74**	**23**

Table 25. Orange Packaging Purchase Intent

Shaving Powder	Potato Rings	Toothpowder	Spray-On Pantyhose
3	7	2	11

Green Packaging Color Results. Participants perceived the toothpowder packaging had the best quality. The shaving powder packaging was perceived to have satisfactory quality. The participants perceived no contrast between satisfactory and low quality for the bacon-flavored potato rings packaging. The spray-on pantyhose packaging was perceived to have the poorest quality (Table 26).

Table 26. Green Packaging Expected Quality

Product	Good Quality	Satisfactory Quality	Poor Quality	Can't Determine
Shaving Powder	10	16	10	3
Potato Rings	9	13	13	4
Toothpowder	15	11	8	5
Spray-On Pantyhose	9	7	16	7
Total	**43**	**47**	**47**	**19**

Participants perceived the toothpowder packaging had the best shelf impact. However, the shaving powder packaging and the bacon-flavored potato rings packaging was perceived to have minimum contrast between good and moderate shelf impact (Table 27). Participants selected the toothpowder packaging most for their free six-month supply (Table 28).

Table 27. Green Packaging Shelf Impact

Product	Good	Moderate	Poor
Shaving Powder	15	16	8
Potato Rings	17	18	4
Toothpowder	28	8	3
Spray-On Pantyhose	12	19	8
Total	**72**	**61**	**23**

Table 28. Green Packaging Purchase Intent

Shaving Powder	Potato Rings	Toothpowder	Spray-On Pantyhose
3	2	13	1

Purple Packaging Color Results. Participants overall did not perceive purple packaging had good quality. Some participants perceived the spray-on pantyhose packaging had good quality although an equal number of participants perceived the same packaging had poor quality. However, participants perceived all packaging had satisfactory quality. The shaving powder packaging was perceived to have the poorest quality (Table 29). Participants perceived the spray-on pantyhose packaging had the best shelf impact. The shaving powder packaging and the bacon-flavored potato rings packaging was perceived second and third for good shelf impact. However, the toothpowder packaging was perceived to have no contrast between good and moderate shelf impact (Table

30). Participants selected the shaving powder packaging most for their free six-month supply and the spray-on pantyhose packaging second (Table 31).

Table 29. Purple Packaging Expected Quality

Product	Good Quality	Satisfactory Quality	Poor Quality	Can't Determine
Shaving Powder	6	12	18	3
Potato Rings	5	13	17	4
Toothpowder	9	10	14	6
Spray-On Pantyhose	10	13	10	6
Total	**30**	**48**	**59**	**19**

Table 30. Purple Packaging Shelf Impact

Product	Good	Moderate	Poor
Shaving Powder	18	13	8
Potato Rings	17	13	9
Toothpowder	15	15	9
Spray-On Pantyhose	20	10	9
Total	**70**	**51**	**35**

Table 31. Purple Packaging Purchase Intent

Shaving Powder	Potato Rings	Toothpowder	Spray-On Pantyhose
7	1	1	6

Discussion of Data

The results of this exploratory study addressed the central research question (Do packaging colors influence consumer decision-making and the intent to purchase?) and showed that consumers do in fact utilize packaging color to make purchase decisions. Without prior knowledge of the products used in the study, participants formed perceptions regarding expected quality and ease of use for each product category (shaving powder, bacon-flavored potato rings, tooth powder, spray-on pantyhose) when "can't be determined" was a response option on the questionnaire.

More specifically, the study results addressed **RQ1: Does the color of surface graphics on packaging increase shelf impact?** Data indicated there was a difference in shelf visibility when surface graphics color on packaging varied. Of all the packaging colors, participants perceived blue had the best shelf impact and yellow had the poorest shelf impact. The data indicated a color change within the same product category had an effect on shelf visibility. Within the product category of shaving powder participants determined the blue packaging was significantly more visible from the shelf than the purple, green, orange, and red packaging (Table 32). The shaving powder packaging graphics were identical with the exception of color (see Appendix D, Figure 9). Within the product category of bacon-flavored potato rings participants determined the blue packaging was significantly more visible from the shelf than the red, yellow, purple, green, and orange packaging (Table 6). The bacon-flavored potato rings packaging graphics were identical with the exception of color (see Appendix

Figure 10). Within the product category of toothpowder participants determined the blue and green packaging were most visible from the shelf than the red, purple, orange, and yellow packaging.

Table 32. Shelf Impact by Color

Color	Good Shelf Impact	Moderate Shelf Impact	Poor Shelf Impact
Red	77	57	22
Yellow	25	28	103
Blue	103	39	14
Orange	59	74	23
Green	72	61	23
Purple	70	51	35

The toothpowder packaging graphics were identical with the exception of color (see Appendix D, Figure 11). Within the product category of spray-on pantyhose participants determined the blue packaging was significantly more visible than the purple, red, orange, green, and yellow packaging (Table 12). The spray-on pantyhose packaging graphics were identical with the exception of color (see Appendix D, Figure 12).

Of the six packaging colors (red, yellow, blue, orange, green, and purple), participants determined blue packaging had the best shelf impact and yellow packaging had the poorest shelf impact. Data indicated that the product makes a difference in color preference. Red and blue were selected most often for good shelf impact, good quality, and intent to purchase. However, when red was applied to toothpowder the intent to purchase was minimal (Table 33).

Table 33. Intent to Purchase by Color

Product	Red Purchase Intent	Yellow Purchase Intent	Blue Purchase Intent	Orange Purchase Intent	Green Purchase Intent	Purple Purchase Intent
Shaving Powder	4	5	17	3	3	7
Potato Rings	17	5	7	7	2	1
Toothpowder	1	3	19	2	13	1
Spray-On Pantyhose	9	2	8	11	1	6
Total	**31**	**15**	**51**	**23**	**19**	**15**

The results of this exploratory study also indicated that capturing the attention of the consumer does not mean the consumer intends to purchase the product that grabbed their attention. One participant responded that the green spray-on pantyhose packaging grabbed their attention because "I thought how odd to have a green package. The colors on the boxes should reflect the color that would spray on your legs." The color may have grabbed the attention of the participant for some other reason (color does not match the product) not associated with purchase intent. Participants selected the blue spray-on pantyhose packaging as the color packaging that grabbed their attention most (Table 12) but opted to receive the orange spray-on pantyhose packaging for the free six-month supply (Table 13). Asking participants which product they would prefer to receive a free six-month supply of is a stronger indicator of purchase intent than simply asking participants which product would you buy. In other words, if a product is noticed from a shelf, this noticeability is not a reliable indicator of purchase intent. Participants also indicated that product association

influenced the shelf impact of packaging color. For example, a participant stated the red bacon-flavored potato rings packaging grabbed their attention because "red and potato seemed like a natural fit." Another participant responded to the shelf impact of the yellow toothpowder packaging with "it's really bright and when you think of your teeth you want them to be bright and white as well." The packaging color may garner attention from the consumer however, if the packaging color does not fit the preconceived product association or product benefit then the packaging color is not an influence on consumer purchase intent.

The results of this study also addressed **RQ2: Does the color of surface graphics on packaging influence perceived product quality?** Data indicated surface graphic colors did influence the consumer's perception of product quality. Of all the packaging colors, participants perceived blue and red to reflect the best product quality and yellow to reflect the poorest product quality. Within the product category of shaving powder participants perceived the blue packaging reflected the highest quality above the red, green, orange, purple, and yellow packaging (Table 34).

Table 34. Perceived Product Quality By Color

Color	Good Quality	Satisfactory Quality	Low Quality	Can't Determine
Red	53	51	36	16
Yellow	28	43	68	17
Blue	53	47	40	16
Orange	40	55	45	16
Green	43	47	47	19
Purple	30	48	59	19

Within the product category of bacon-flavored potato rings participants perceived the red packaging reflected the best quality above the orange, green, yellow, blue, and purple packaging (Table 5). Within the product category of toothpowder participants perceived the blue packaging displayed the best quality above the green, red, purple, yellow, and orange packaging (Table 8). Within the product category of spray-on pantyhose participants perceived the orange packaging to exhibit the best quality above the blue, red, purple, green, and yellow packaging (Table 11). The results indicated participants made quality judgments regarding each packaging color within each product category when "can't determine" was a response option on the questionnaire.

The data also indicated participants used packaging color to obtain information about the expected performance or benefit of the product. Some participants made responses that indicated quality judgments (when asked why they would prefer to receive a free six-month supply) regarding the red bacon-flavored potato rings packaging with "seems like a trustworthy product," "they (Bacon-flavored Potato Rings) just seem like they would taste better." Some participants indicated good quality judgments regarding the blue toothpowder packaging with "looks expensive" and "would get my teeth clean" when asked why they preferred to receive a free six-month supply of the blue toothpowder packaging. Another participant explained their six-month free supply preference by stating "I want the blue one because I predict that just as it stands out from the others on the shelf in looks, it will do the same in performance."

Data indicated the inference of product quality made by participants was based on packaging color. The packaging used in this study did not contain any visual or textual information that would indicate quality (see Appendix D, figures 9 through 12). The textural information on the packaging was: product name, content weight, ingredients, nutrition information if applicable, and instructions for use. The textural information included on the packaging was specific to each product category and the information on the packaging was identical within each product category. Thus rendering the packaging within each product category identical except for color. The results of this exploratory study indicated participants formed quality judgments about each product that lead to product performance expectations based on the packaging color.

This study addressed **RQ3: Does the color of surface graphics on packaging serve as a cue for product information that influences purchase intent?** The data indicated that surface graphics color (extrinsic cues) provided product information that influenced consumer purchase intent. Participants were forced to rely on the surface graphics color of each unfamiliar product category to gather information (perceived ease of use of a product, perceived product quality) that might influence purchase intent. Although not asked on the questionnaire, some participants formed expectations regarding shaving powder and spray-on pantyhose performance solely based on packaging color. In reaction to the red shaving powder packaging a participant responded: "red, I think it's going to burn." When asked why a particular color packaging was selected for a free six-month supply a participant responded with "the bright color

of the yellow packaging, I predict will correspond to the golden crispness of the bacon flavored potato snacks." Additional product judgments formed by participants based on surface graphics color as a cue for product information included "the color (blue) seems to fit the product better so it seems like it would work better," "product is fresh," "product is worth trying due to packaging," "probably has a nice scent," and "packaging means mint flavor." The intrinsic cues (ingredients, net weight, nutrition information) remained constant, forcing the participants to rely on packaging color. Results indicated packaging color influenced participants by assisting with the formulation of judgments regarding product quality, product performance, and intent to purchase.

Overall, the hygiene products (shaving powder and toothpowder) in blue packaging were perceived as having the better quality, highest shelf visibility, and the highest intent to purchase. The visibility for blue pantyhose packaging was the highest but the intent to purchase was highest for orange spray-on pantyhose packaging. The visibility for the purple spray-on pantyhose packaging was slightly lower than the visibility for the blue spray-on pantyhose packaging. However, the purple spray-on pantyhose packaging had the lowest intent to purchase. The red bacon-flavored potato rings packaging was perceived to have the highest quality and highest intent to purchase. The red bacon-flavored potato rings packaging also was perceived to have the highest shelf visibility the blue bacon-flavored potato rings packaging ranked a close second for having high shelf visibility. In other words, high shelf impact (visibility) does not guarantee consumer intent to purchase.

When the data was collapsed to reflect each packaging color of all products, intent to purchase was most associated with blue, then red packaging and was least associated with yellow packaging (Table 33). The overwhelming intent to purchase blue packaging was potentially influenced by the two personal hygiene product categories (shaving powder and toothpowder). Research has shown blue is associated with cool, water, and cleanliness (Russell 1990) and as a result a well known laundry detergent once employed the phrase "with added bluing for extra whiteness" in their marketing & advertising. Since traditional color associations have encouraged the use of certain colors as well as discouraged the use of others especially in the market place yellow traditionally associated with cowardliness may have influenced participants' intent to purchase products in yellow packaging. Participants may have formed the assumption that the yellow packaging products were inferior, weak in performance and expected quality.

Participants determined the blue packaging had the best shelf impact (Table 21), green packaging received notable responses (Table 27), and yellow was perceived to have the poorest shelf impact (Table 18). The color blue's ability to be highly visible against a white background allowed the blue packaging to be more noticeable from the shelf. The color green also contrasted well against a white background. Yellow does not contrast well against a white background. In fact, when yellow lettering appears on a white background the lettering disappears when viewed from a distance.

Red and blue packaging garnered the highest perceived quality (Table 14 and Table 20). Yellow packaging was perceived to have the poorest expected quality (Table 17). As stated earlier, the color blue was positively associated with hygiene products and the color blue contrasted well with the white background that rendered blue packaging high shelf impact. Hence the positive color association and high shelf impact may have influenced the participants' perception of quality of blue packaging. The color red is traditionally associated with excitement, heat, anger, powerful, happiness (Schaie and Heiss 1964). However color is also associated with products in the marketplace. The color red is best associated with the product category of bacon-flavored potato rings. Common color associations often function as logic in the marketplace. Some participants responded with "red is the color that is closet to the color of bacon" and another participant stated "I like it when the package approximates the contents. I don't want purple bacon. The red is natural." This product association of red with bacon suggested the other colors of bacon-flavored potato rings packaging would taste less like bacon. The color association with yellow (weak, inferior) and the poor shelf impact may have influenced the participants' perception of quality of yellow packaging with the assumption that products in yellow packaging perform poorly or exhibit little benefit of product use.

Attitudes Toward Packaging Color and Intent to Purchase

To further examine the data as part of this exploratory study, the data collected was collapsed to reflect attitudes participants formed regarding packaging color since consumers purchase products to improve mood and

attitude (Pare 2001; Prior 2003). The questionnaire (Appendix C) responses of "excellent quality" and "good quality," "very good shelf visibility " and "good shelf visibility," "highly likely to purchase" and "likely to purchase," were collapsed to reflect a positive attitude toward product quality, shelf visibility and likelihood of purchase. The questionnaire responses of "satisfactory quality," "moderate visibility," "maybe purchase," were collapsed to reflect a neutral attitude towards product quality, shelf visibility, and likelihood of purchase. The questionnaire responses of "low quality" and "poor quality," "poor shelf visibility" and "very poor shelf visibility," and "may be not purchase" and "not likely to purchase" were collapsed to reflect a negative attitude towards product quality, shelf visibility, and likelihood of purchase. The questionnaire response of "can't be determined" was collapsed to reflect participants had no attitude towards product quality and product ease of use. Research has shown that a consumer's attitude toward a product or an advertisement has the potential to influence purchase decisions (Granger and Billson 1972; Peter and Olson 1999).

Shaving Powder. Data in tables 2 through 4 were collapsed to conclude the participants reflected a positive attitude toward the blue shaving powder packaging when forming perceptions regarding quality, likelihood of purchase, and shelf visibility. The collapsed data showed the participants reflected a neutral attitude towards the red, yellow, orange, and green shaving powder packaging in all three areas of product quality, likelihood of purchase, and shelf impact. The collapsed data reflected a negative attitude formed by participants towards the likelihood of purchase and shelf impact of the purple shaving powder packaging.

For some product categories (neutraceuticals[36], cosmetics, perfume, personal hygiene) the consumer is purchasing an image not just the product (Hilton 2005). When considering packaging design consideration must be given to the color blue as a dominant color for hygiene products because the color blue was associated with being clean which may be an expectation of the consumer. This association may suggest well groomed.

Bacon-Flavored Potato Rings. The collapsed data from tables 5 through 7 indicated participants reflected a positive attitude toward the quality, likelihood of purchase, and the shelf visibility of red bacon-flavored potato rings packaging. The participants indicated a negative attitude toward the blue bacon-flavored potato rings packaging regarding the likelihood of purchase despite the indication of a positive attitude toward the blue bacon-flavored potato rings packaging regarding shelf visibility. The yellow bacon-flavored potato rings packaging garnered a negative attitude from participants when forming perceptions regarding product quality, likelihood of purchase, and shelf visibility. Data indicated that the blue packaging shelf impact was received with a positive attitude. However, highly visible packaging did not guarantee consumers would purchase the product. Product associations should be considered when designing packaging. Although different colors are entertained in an attempt to "break through the clutter" with packaging design consumers used the packaging to help with decision-making and desired to see packaging resemble the product or the benefits of using the product.

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[36] refers to nutrition products such as vitamins, weight loss aids, energy supplements and herbal health remedies that are not regulated by the USFDA

Toothpowder. The collapsed data from tables 8 through 10 indicated participants reflected a positive attitude toward the blue toothpowder packaging when forming perceptions of product quality, likelihood of purchase, and shelf visibility. The green toothpowder packaging garnered enough response to reflect a positive attitude toward shelf visibility. The yellow toothpowder packaging garnered a negative attitude from participants when forming perceptions regarding product quality, likelihood of purchase, and shelf visibility. Like shaving powder, toothpowder fell under the category of a neutraceutical and the consumer is purchasing an image in addition to the product. Blue packaging was viewed positively because the color blue associates the product or benefit of using the product as clean, well groomed. For toothpowder the color green was also received positively due to the association of the color green and mint. Mint has become a standard association for fresh breath. When designing packaging consider the color blue or green for the dominant color. Other colors (red, yellow, orange) may be used to emphasize a certain feature or attribute. During a recent survey of dental care products one well known brand used blue as the dominant color on the packaging but used red to reflect cinnamon flavor and orange to reflect a citrus flavor.

Spray-on Pantyhose. The orange spray-on pantyhose packaging indicated the participants formed positive attitudes toward likelihood of purchase and perceived quality. The blue and purple spray-on pantyhose packaging reflected a positive attitude by participants respectively regarding shelf visibility. The yellow spray-on pantyhose packaging reflected an extremely negative attitude in

regards to product quality, likelihood of purchase, and shelf visibility. As indicated earlier highly visible packaging does not guarantee consumers will purchase the product. Product associations should be considered when designing packaging especially cosmetics. It was apparent that consumers viewed spray-on pantyhose as a product to improve image. Especially with image improving products the dominant color used on packaging design should reflect the product performance, the image, or the benefits of using the product.

CHAPTER NINE

CONCLUSIONS

The purpose of this chapter is to provide a summary of an investigation of packaging design color and its influence on consumer intent to purchase as well as present ideas for future research regarding packaging color, packaging design and the influence on consumer intent to purchase.

The objective of this research was to create a benchmark study exploratory in nature that synthesized color, packaging design[37], and advertising as an influence on consumer decision-making as an introductory mean of investigating packaging design as the new advertising. The purpose of this objective was to investigate the influence of packaging design color on consumer purchase intent. This study focused on packaging design from a communication aspect not an engineering aspect. More specifically this research investigated the use of packaging color as a cue.

This study was driven by the general research question: Do packaging colors (extrinsic cues) influence consumer decision-making and the intent to purchase? This experimental study was created to explore the following research questions to address the general research question: **RQ1:** Does the color of surface graphics on packaging significantly increase shelf impact (visibility)? **RQ2:** Does the color of surface graphics on packaging significantly influence perceived

[37] "The combination of materials, structure, typography, imagery, color and other visual design components for the purposes of communicating the marketing objectives and strategies of a particular brand or product" (Klimchuk 2004).

product quality? **RQ3:** Does the color of surface graphics on packaging serve as a cue for product information that influences purchase intent?

Red packaging was indicated to reflect a positive attitude on perceived product quality, shelf visibility, and ease of use despite an indication of a negative attitude toward the likelihood of purchase. Yellow packaging was indicated to reflect a negative attitude toward perceived quality, likelihood of purchase, shelf visibility, and product ease of use. Blue packaging was indicated to reflect an extremely positive attitude toward shelf visibility despite an indication of a negative attitude toward the likelihood of purchase. The blue packaging also was indicated to reflect a positive attitude toward perceived product quality and product ease of use. Orange packaging was indicated to reflect a positive attitude toward shelf visibility in despite of the indication of a negative attitude towards perceived product quality, likelihood of purchase, and product ease of use. Green packaging was indicated to reflect a positive attitude toward shelf visibility, and product ease of use, despite an indication of a negative attitude toward the likelihood of purchase. Green packaging also equally indicated a reflection of a positive and negative attitude toward product perceived quality. Purple packaging was indicated to reflect a positive attitude toward shelf visibility despite an indication of a negative attitude toward product perceived quality, likelihood of purchase, and product ease of use.

Participants expressed in an open-ended question why one color of packaging caught their attention most as well as why one particular color of packaging was selected to receive a free six-month supply. Participants

responded most often with "color stands out" regarding why the color packaging that caught their attention. When asked why a particular color packaging was selected for a free six-month supply (an indication of purchase intent) participants responded most often with "I like that color" and "it's my favorite color." Research indicates that a preferred color is not a reflection that an individual would prefer his or her entire environment to be saturated with this preferred color but that preferred color has a special meaning to the individual in comparison with other colors (Sharpe 1974). It is plausible that a "favorite color" preference may not be associated with a product but something more personal and all together unrelated.

In summary, the results indicated blue and red packaging were most likely to be purchased than yellow, orange, green, and purple packaging. Yellow packaging was the least likely to be purchased. Furthermore, yellow packaging was perceived to have the poorest quality, the poorest shelf visibility, and its contents were perceived difficult to use. The results of this study also indicated that product associations had an influence on the intent to purchase. Various types of products are often associated with certain colors. For example, red is associated with meat products (bacon, beef) and blue is often associated with hygiene and cleaning products. Product associations are developed through repetitious relationships with products and the colors that best represent them. For example, one participant responded to the red bacon-flavored potato rings packaging with "red is the color that is closet to the color of bacon" and another participant stated "I like it when the package approximates the contents. I don't

want purple bacon. The red is natural." Although red was indicated overall as a packaging color most likely to be purchased, it was the color packaging least likely to be purchased for toothpowder. It can be assumed that product association influenced the intent to purchase because red is not a color normally associated with clean and teeth. Perhaps color association and product association influenced the intent to purchase due to the nature of one color appearing on the packaging. With a single color dominating the packaging participants were likely influenced by "it is my favorite color" or "it is the color of bacon." In the marketplace it is a common practice to use more than one color on packaging therefore minimizing the dominance of one color on the packaging. During a recent informal survey of supermarket shelves, more specifically dental hygiene products showed orange, yellow, purple, green, red, and blue on the packaging. The colors red and blue appeared most often and were most prominent on the packaging and the colors orange, yellow, purple, and green were used in a secondary or descriptive nature (such as green to suggest mint). The red was depicting the color of the cinnamon-flavored toothpaste therefore it was not the only color appearing on the toothpaste packaging. This study also indicated that product associations have an influence on the intent to purchase. Although red was indicated overall as a packaging color most likely to be purchased, in the case of the toothpowder red was the color packaging least likely to be purchased. It can be concluded that red is not a color normally associated with clean and teeth by consumers.

Another factor that may have influenced the intent to purchase is culture. The intent to purchase the green bacon-flavored potato rings packaging was low however, a participant from Asia responded with an intent to purchase the green bacon-flavored potato rings packaging because "it looked like a more healthy product." Another participant from Asia preferred to receive a free six-month supply of the yellow shaving powder because "shaving powder is something for cleanness and yellow color gives me the idea of cleanness so I have more expectation and interest in yellow packaging."

The results of this exploratory study indicated packaging colors do influence consumer decision-making and consumer purchase intent. The results showed consumers receive information regarding a product from the packaging that assists with the decision-making process. When consumers are faced with a multitude of product choices, especially in an unfamiliar product category, the packaging is a source of information. Color provides information to the consumer that assists with individual inference of quality and product performance, therefore influencing consumer purchase intent. Overall, packaging color did influence the intent to purchase. However, other influences such as product association and culture also must be considered as an influence on the intent to purchase. A participant preferred the yellow bacon-flavored packaging because "the yellow coloring reminds me of snack type foods like potato chips." One participant's prior experience with a product and its color association may have influenced her intent to purchase. When asked why a particular color packaging was selected for a free six-month supply the participant replied, "blue is a

soothing color... I've had bad experiences with Nair® and it was in a hyper-pink bottle." A few participants indicated that purple is gender specific in the case of the spray-on pantyhose with the responses "it is girly for a girl's product" and "it's (purple) a more feminine color." Traditional color associations have long indicated that pink is the color for girls and blue is the color for boys. Perhaps with the broadening of gender roles in American society comes the broadening of color associations. It can be concluded that the results of this exploratory research indicated a need for further research investigating the influence of packaging color on consumer purchase intent.

It can be concluded that best perceived product quality, best shelf impact, and the highest purchase intent marketers and manufacturers should consider packaging with blue or red dominant color. The dominant color should also associate with the product. For another conclusion the color yellow should be discouraged as a dominant packaging color. The results indicated yellow had the poorest perceived product quality, the poorest shelf impact, and the lowest purchase intent.

Marketers more often link color associations to the product and not psychological associations (Tom, Barnett, Lew, and Selmants 1987). Yet, in academia, the practice of using traditional psychological color associations in academic research is continued. The results of this research should serve as an indicator for change. It would benefit the marketplace if consumer behavior academic research would investigate and evaluate the shopping behavior using current marketing tactics that would allow marketers to employ their academic

findings. The marketplace would also benefit from academic research using product associations because this inclusion could be incorporated into textbooks and articles (a result of academic research) that often appear on course syllabi in institutions of higher learning. The preparedness of the next generation workforce is a direct reflection of the numerous academic studies conducted and a direct reflection of the success of the United Sates and global economy.

This study stands to add to the limited body of knowledge regarding packaging color influence on consumer decision-making and the intent to purchase. This exploratory study brings a unique perspective because of the three-dimensional stimuli used to collect data. Previous studies investigating packaging design and its influence on consumer purchase intent used stimulus books and a virtual shopping computer program. Although this is a benchmark study, and additional research in packaging color and consumer intent to purchase needs to be conducted, this study lends support to the notion that consumers are more influenced by color and product association than traditional psychological color associations.

This exploratory study as well as future studies indicated a major benefit for marketing, packaging design, graphic design, and advertising professional to loosen their strongholds on traditional psychological color associations. Specific color and product associations have the potential to increase brand loyalty with the consumer as well as further personalize the branding experience. The popular belief that market share is the core of branding strategies is shifting to "mind and emotions share" (Gobé 2001). Gobé defines emotional branding as

providing the means to connecting with the consumer in an emotionally profound manner in addition to focusing on the human characteristic of transcending material satisfaction and experience emotional fulfillment (Gobé 2001). Studies have indicated that consumers maintain an emotional attachment to packaging (Gobé 2001). As a result of improved printing technologies, packaging has reached a new level of design expression and continues to support the new role of packaging as the "new advertising".

Educators, of marketing, packaging design, graphic design, and advertising can also benefit from the results of this study by loosening their strongholds on traditional psychological color associations in their curriculum and encouraging the use of product and color associations.

This study indicated as well as supported the burgeoning notion that color associations in marketing are more closely associated with the product and color associations need to be developed specifically for marketing purposes. Creating relationships between color and products resulting in color associations specifically for marketing should be the emphasis of future color association and purchase behavior studies. Future research regarding color associations should examine culture and racial identity to discover similarities and differences. Another population segment of study should be age. Previous studies have indicated that children, teens, and adults have different color associations. Therefore, future studies should concentrate on developing color and product associations that specifically address each age group.

As the popularity of "packaging as the new advertising" develops, it behooves the academic researchers and the professional marketing industry to continue to investigate the influence of packaging design on consumer decision-making and ultimately, the consumer intent to purchase.

Future Research

This exploratory study has inspired additional research in the area of packaging color as an influence on purchase intent. Future research will include a qualitative research method regarding the influence of packaging design color on the intent to purchase. Future research will include the investigation of the influence of packaging design color using color combinations of two or more colors on the packaging to investigate the influence of color combinations on the intent to purchase. Additional research will be conducted to begin to develop color associations used specifically for marketing thus reducing the reliance upon traditional color associations. This study has also indicated a need to investigate the color associations with objects and how those associations influence consumer purchase intent. Overall, this exploratory research has indicated a need for future research that investigates the influence packaging design shape, color, and texture has on the consumer intent to purchase and the effect it has on product sales, market share, and profits.

Limitations of the Study

With this study being unique to its counterparts and solely exploratory in nature there were elements of this study that could be modified for future

research. The remainder of the chapter is devoted to elements of the study if changed, would have created different outcomes of the study.

Participants. The reliance upon university students created a majority of participants between the ages of 17 and 22 although a viable target for studying shopping behavior, this limited the overall ability to generalize the findings to a population of consumers. The time of year had an impact on data collection. Data was collected during the second half of the summer semester when the number of students attending class were at its lowest. It was also believed that the time of year was influential in the lack of commitment to participate in the study. It is believed with a more diverse age range the overall ability to generalize to a population of consumers would have a great impact on the importance of research of packaging design as the "new advertising." Recruiting off campus is a consideration in addition to finding another location that better reflects a supermarket for future research.

Stimulus. Creating surface graphics and assembling packaging manually absorbed a considerable amount of time. Thus the notion of creating a mock supermarket shelf was unrealistic for this particular study. The chosen location's shelf system did not allow for multiple packages of the bacon-flavored potato rings due to the packaging size and therefore would create an asymmetrical product shelf. It is believed that an asymmetrical shelf balance would bias product perceptions. The manual production of the surface graphics also presented challenges with color matching. Relying on the color accuracy of an inkjet printer did not provide accurate color representation. Some PMS colors

selected on screen printed poorly. Problematic PMS colors were abandoned and colors were selected based on the printed inkjet color and the match to the perceived primary and secondary colors. Using a professional printing press with direct printing on the packaging is the ideal production method for creating the stimulus for this study.

As a result of these limitations, it is believed that finding a lab setting that is permanently configured to mimic a supermarket shopping experience to conduct this study would provide strong support for packaging as the "new advertising" and add to the growing notion that packaging design has more influence on consumer purchase intent than advertising.

Questionnaire and Data. With this study being exploratory in nature, a qualitative method may have provided richer data. Although there were open-ended questions on the survey, the data presented and discussed was descriptively statistical. Since it has been indicated that in marketing, color associations are more commonly linked to the product, not psychological associations (Tom, Barnett, Lew, and Selmants 1987) delving into product associations and the emotional connection between the product and the consumer with interviews and ethnographies coupled with a questionnaire would provide more in depth information regarding the influence packaging color has the consumer intent to purchase.

Since the data was collapsed to reflect attitudes toward packaging color and expected product quality, product shelf impact, and product intent to

purchase perhaps an investigation of attitudes toward the packaging and the products should have been conducted prior to the 72 -item questionnaire.

Research Reflection

In summary, it is believed that this study adds to the limited academic research that investigates the influence that product aesthetics have on consumer purchase intent. Although future research is necessary, this study also supports the current marketing notion that packaging sells products hence becoming the "new advertising." This research supports previous marketing oriented research that state color preferences are difficult to assess apart from objects as well as serving as additional support for the need of separate color associations for marketing consumer-packaged goods. This exploratory research serves as an indicator to academic researchers that consumer influence has migrated beyond attitude and recall to include the supermarket shelf as a viable research area. This study also supports the notion that academic researchers consider testing color associations that are not traditionally based but market based to better measure the influence of color in the marketing sector. This study has the potential to effect educators and the information disseminated to students regarding color associations as it relates to marketing. With continued research in the area of color associations an alternative to traditional color associations can be developed and integrated into marketing curriculums. This study also identified consumers have an emotional connection with their purchases positioning this research as an addition to the burgeoning body of

research that advocates using emotion as a means to understand consumer shopping behavior as well as a method to influence consumer purchase intent. This study is believed to be positioned with the new research areas of emotional branding and NeuroDesign®[38] that embrace the practice of influencing consumers by creating an emotional connection to brands and products through design.

[38] A proprietary design research and management instrument that combines neuroscience, psychology, and iconology to align consumer desire and design to create real results

APPENDICES

APPENDIX A

TERMS

TERMS

Packaging design: is distinct from the terms "packaging" and "package" despite being related and often used interchangeably. The covering and wrapping of an item are referred to as "packaging." Packaging design is "the combination of materials, structure, typography, imagery, color and other visual design components for the purposes of communicating the marketing objectives and strategies of a particular brand or product" (Klimchuk 2004).

Package: a vague reference to a container, carton or bundle and does not suggest a relationship with the marketing component of packaging (Klimchuk 2004).

National brand: refers to products that are produced by one manufacturer and distributed nation wide.

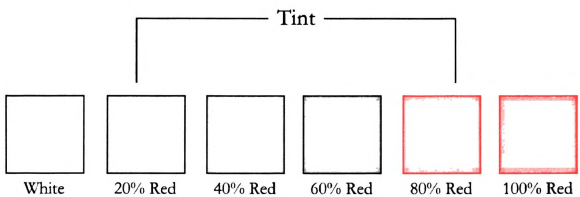
Store brand: refers to all merchandise sold under a retail store's private label (Private Label Manufacturers Association 2005).

Principle display panel (PDP): refers to the front or main side of the packaging that is visible to the consumer from the store shelf.

Surface graphics: refers to the photographs, illustrations, and typography that appear on the surface of the packaging. Surface graphics is exclusionary of the color, shape and size of the product.

Tint: is white added to a color. A tint is often expressed as a percentage of a specific color. For example, 20% red would appear to the viewer as a pale pink and red is100%.

Color Tint Chart



One color: identifies a monochromatic color palette used to create the surface graphics.

Pantone Matching System (PMS): the comprehensive reference for selecting, specifying, matching, and controlling ink colors (Pantone 2005). The PMS method of color selecting has been in existence for over 40 years and is used internationally.

Flexography: the printing method most commonly used when printing food packaging, medical packaging, corrugated containers, and plastic bags.

APPENDIX B

ARTIST'S COLOR WHEEL

Artist's Color Wheel

APPENDIX C

QUESTIONNAIRE

Packaging Design and Purchase Decision-Making

You are being asked to complete a questionnaire entitled "Packaging Design and Purchase Decision-Making." The questionnaire should take about 30 minutes to complete. This questionnaire is intended to help better understand the relationship between packaging design and consumer purchase intentions.

This is a voluntary questionnaire; you may choose not to participate or discontinue your participation at any time. You may also choose not to respond to specific questions.

Each participant will be entered in a drawing for $100 worth of prizes. Each participant will be entered in the drawing even those participants who choose not to complete the questionnaire.

Data that are collected from you will be held in the strictest confidence. No personally identifiable information will be used to link back to you, or shared with a third party. Only researchers involved in this study will have access to these questionnaires. All results of this study will be reported in the aggregate. Your privacy will be protected to the maximum extent allowable by law.

If you have questions or comments regarding this study, please contact Vickie VanHurley, Doctoral Candidate in Mass Media at Michigan State University at 517-353-5465 or vanhurl1@msu.edu, or Dr. Lucinda Davenport, Acting Dean for Graduate Education and Research at Michigan State University at 517- 355-6574 or ludavenp@msu.edu.

If you have any questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspects of this study, you may contact anonymously, if you wish- contact Peter Vasilenko, Ph.D., Chair of the University Committee on Research Involving Human Subjects (UCRIHS) by phone at 517-355-2180, fax at 432-4503, email at ucrihs@msu.edu or regular mail at 202 Olds Hall, East Lansing, MI 48824.

You indicate your voluntary agreement to participate by completing and returning this questionnaire.

Thank you for your participation.

Instructions

Questionnaire. Once you enter the room you will be directed to a shelf containing several products. Once in front of the shelf you will be asked to view each product packaging. You are encouraged to select each product from the shelf and examine it further. After selecting each product packaging please return it to the shelf in the same spot it was removed. You will be allowed to spend approximately ten minutes viewing the product packaging.

After you have finished viewing the product packaging you will be given a questionnaire. You will be asked to sit at a table and complete the questionnaire. While completing the questionnaire you will be allowed to look at the shelf from your seat but you will not be allowed to revisit to the shelf area. While completing the questionnaire you are asked to refrain from talking. If you have any questions while completing the questionnaire feel free to ask the survey proctor for assistance.

The completion of the questionnaire is an individual effort. Once you have completed the questionnaire give it to the survey proctor. If at any time you decide to discontinue with the completion of the questionnaire give the questionnaire to the survey proctor. Once you give the questionnaire (complete or incomplete) to the survey proctor you will be given a raffle ticket to enter the prize drawing.

Raffle Drawing. The prize drawing will be held after all participants have completed the questionnaire. Do not loose or throw away your raffle ticket. You will need your raffle ticket to redeem your prize. Raffle winners will be notified by the email addressed listed on the back of the raffle ticket. Raffle winners will be notified when prizes will be available for pick up in COM 331.

Packaging Design and Purchase Intentions Questionnaire
The brand name has been removed from the packaging to eliminate branding bias. The purpose of this survey is to test consumer reaction to the packaging.

After viewing the packaging shelf, please read each question carefully and follow the directions of each question closely. Please place a check (✓) in the box to select your answer. Please feel free to revisit the packaging to assist you with responding to the questionnaire. Choose the **one** best answer.

1. Are you the primary grocery shopper for your household?

   ❑ Yes ❑ No

   If you answered yes, skip to question #3.

2. Do you ever request specific items be purchased for you?

   ❑ Yes ❑ No

3. Where do you shop for groceries? Check (✓) all that apply.

   ❑ Grocery Store Chain
   ❑ Neighborhood Grocery Store
   ❑ Warehouse Club
   ❑ Discount Super Store
   ❑ Discount Retailer
   ❑ Convenience Store
   ❑ Other. Please Specify (please print):

   _____

Shaving Powder Packaging

The following questions refer to the shaving powder category. Please reference the shelf area that contains the shaving powder packages while responding to this section of questions.

4. Please rate the expected overall quality (effectiveness) of each shaving powder. Please circle the number under the response that indicates the shaving powder's expected quality.

	Excellent Quality	Good Quality	Satisfactory Quality	Low Quality	Poor Quality	Can't Be Determined
Shaving Powder Packaging 1 (red)	1	2	3	4	5	6
Shaving Powder Packaging 2 (yellow)	1	2	3	4	5	6
Shaving Powder Packaging 3 (blue)	1	2	3	4	5	6
Shaving Powder Packaging 4 (orange)	1	2	3	4	5	6

	Excellent Quality	Good Quality	Satisfactory Quality	Low Quality	Poor Quality	Can't Be Determined
Shaving Powder Packaging 5 (green)	1	2	3	4	5	6
Shaving Powder Packaging 6 (purple)	1	2	3	4	5	6

5. Please rate the overall ease of use of each shaving powder. Ease of use means how easy you expect it will be to measure, mix, and apply the shaving powder. Please circle the number under the response that indicates the shaving powder's expected ease of use.

	Excellent	Good	Satisfactory	Low	Poor	Can't Be Determined
Shaving Powder Packaging 1 (red)	1	2	3	4	5	6
Shaving Powder Packaging 2 (yellow)	1	2	3	4	5	6
Shaving Powder Packaging 3 (blue)	1	2	3	4	5	6
Shaving Powder Packaging 4 (orange)	1	2	3	4	5	6
Shaving Powder Packaging 5 (green)	1	2	3	4	5	6
Shaving Powder Packaging 6 (purple)	1	2	3	4	5	6

6. If you were going to purchase shaving powder for yourself or someone else how likely would you be to buy each shaving powder. Please circle the number under the response that indicates the likelihood of you buying each shaving powder.

	Highly Likely	Likely	Maybe	Maybe Not	Not Likely
Shaving Powder Packaging 1 (red)	1	2	3	4	5
Shaving Powder Packaging 2 (yellow)	1	2	3	4	5
Shaving Powder Packaging 3 (blue)	1	2	3	4	5
Shaving Powder Packaging 4 (orange)	1	2	3	4	5
Shaving Powder Packaging 5 (green)	1	2	3	4	5
Shaving Powder Packaging 6 (purple)	1	2	3	4	5

7. Have you ever tried shaving powder?

❑ Yes ❑ No ❑ Not Applicable

If yes, was it a positive experience?

❑ Yes ❑ No

8. Do you currently use shaving powder?

❑ Yes ❑ No ❑ Not Applicable

9. Do you know someone who uses shaving powder?

❑ Yes ❑ No

If yes, was it a positive experience?

❑ Yes ❑ No

10. Please select the shaving powder packaging that first grabbed your attention. Check (✓) one.

❑ Shaving Powder Packaging 1 (red) ❑ Shaving Powder Packaging 2 (yellow)

❑ Shaving Powder Packaging 3 (blue) ❑ Shaving Powder Packaging 4 (orange)

❑ Shaving Powder Packaging 5 (green) ❑ Shaving Powder Packaging 6 (purple)

Please state why the packaging grabbed your attention:_____

_____

11. Which shaving powder would you prefer to receive a free six-month supply? Check (✓) one.

❑ Shaving Powder Packaging 1 (red) ❑ Shaving Powder Packaging 2 (yellow)

❑ Shaving Powder Packaging 3 (blue) ❑ Shaving Powder Packaging 4 (orange)

❑ Shaving Powder Packaging 5 (green) ❑ Shaving Powder Packaging 6 (purple)

Please state why you prefer to receive the selected packaging: _____

_____

The following questions ask you to rate the shelf visibility of each shaving powder package. Shelf visibility means how well each shaving powder package can be seen among the other packages from the shelf. Please circle the number under your response.

12. Compared to the other packages on the shelf, Shaving Powder Packaging 1 (red) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

13. Compared to the other packages on the shelf, Shaving Powder Packaging 2 (yellow) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

14. Compared to the other packages on the shelf, Shaving Powder Packaging 3 (blue) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

15. Compared to the other packages on the shelf, Shaving Powder Packaging 4 (orange) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

16. Compared to the other packages on the shelf, Shaving Powder Packaging 5 (green) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

17. Compared to the other packages on the shelf, Shaving Powder Packaging 6 (purple) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

Bacon-flavored Potato Rings Packaging

The following questions refer to the bacon-flavored potato rings packaging. Please reference the shelf area that contains the bacon-flavored potato rings while responding to this section of questions.

18. Please rate the expected overall quality (flavor, crunch) of each package of bacon-flavored potato rings. Please circle the number under the response that indicates the bacon-flavored potato ring's expected quality.

	Excellent Quality	Good Quality	Satisfactory Quality	Low Quality	Poor Quality	Can't Be Determined
Potato Rings Packaging 1 (red)	1	2	3	4	5	6
Potato Rings Packaging 2 (yellow)	1	2	3	4	5	6
Potato Rings Packaging 3 (blue)	1	2	3	4	5	6
Potato Rings Packaging 4 (orange)	1	2	3	4	5	6
Potato Rings Packaging 5 (green)	1	2	3	4	5	6
Potato Rings Packaging 6 (purple)	1	2	3	4	5	6

19. If you were going to purchase a snack for yourself or someone else how likely would you be to buy each package of bacon-flavored potato rings? Please circle the number under the response that indicates the likelihood of you buying each bacon-flavored potato rings snack.

	Highly Likely	Likely	Maybe	Maybe Not	Not Likely
Potato Rings Packaging 1 (red)	1	2	3	4	5
Potato Rings Packaging 2 (yellow)	1	2	3	4	5
Potato Rings Packaging 3 (blue)	1	2	3	4	5
Potato Rings Packaging 4 (orange)	1	2	3	4	5
Potato Rings Packaging 5 (green)	1	2	3	4	5
Potato Rings Packaging 6 (purple)	1	2	3	4	5

20. Have you tried bacon-flavored snacks before?

❑ Yes ❑ No

If yes, was it a positive experience?

❑ Yes ❑ No

21. Do you currently eat bacon-flavored snacks?

❑ Yes ❑ No

22. Do you know someone who eats bacon-flavored snacks?

❑ Yes ❑ No

If yes, was it a positive experience?

❑ Yes ❑ No

23. Please select the bacon-flavored potato rings packaging that first grabbed your attention. Check (✓) one.

❑ Bacon-flavored Potato Rings Packaging 1 (red)

❑ Bacon-flavored Potato rings Packaging 2 (yellow)

❑ Bacon-flavored Potato Rings Packaging 3 (blue)

❑ Bacon-flavored Potato Rings 4 (orange)

❑ Bacon-flavored Potato Rings 5 (green)

❑ Bacon-flavored Potato Rings Packaging 6 (purple)

Please state why the packaging grabbed your attention: _____

_____

24. Which bacon-flavored potato rings snack would you prefer to receive a free six-month supply? Check (✓) one.

- ❑ Bacon-flavored Potato Rings Packaging 1 (red)
- ❑ Bacon-flavored Potato rings Packaging 2 (yellow)
- ❑ Bacon-flavored Potato Rings Packaging 3 (blue)
- ❑ Bacon-flavored Potato Rings 4 (orange)
- ❑ Bacon-flavored Potato Rings 5 (green)
- ❑ Bacon-flavored Potato Rings Packaging 6 (purple)

Please state why you prefer to receive the selected packaging: _____

The following questions ask you to rate the shelf visibility of each bacon-flavored potato rings package. Shelf visibility means how well each bacon-flavored potato rings package can be seen among the other packages from the shelf. Please circle the number under your response.

25. Compared to the other packages on the shelf, Bacon-flavored Potato Rings Packaging 1 (red) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

26. Compared to the other packages on the shelf, Bacon-flavored Potato Rings Packaging 2 (yellow) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

27. Compared to the other packages on the shelf, Bacon-flavored Potato Rings Packaging 3 (blue) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

28. Compared to the other packages on the shelf, Bacon-flavored Potato Rings Packaging 4 (orange) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

29. Compared to the other packages on the shelf, Bacon-flavored Potato Rings Packaging 5 (green) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

30. Compared to the other packages on the shelf, Bacon-flavored Potato Rings Packaging 6 (purple) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	**2**	**3**	**4**	**5**

Tooth Powder Packaging

The following questions refer to the tooth powder products. Please reference the shelf area that contains the tooth powder packages while responding to this section of questions.

31. Please rate the expected overall quality (fresh breath, cleansing, taste) of each tooth powder. Please circle the number under the response that indicates the tooth powder's expected quality.

	Excellent Quality	Good Quality	Satisfactory Quality	Low Quality	Poor Quality	Can't Be Determined
Tooth Powder Packaging 1 (red)	1	2	3	4	5	6
Tooth Powder Packaging 2 (yellow)	1	2	3	4	5	6
Tooth Powder Packaging 3 (blue)	1	2	3	4	5	6
Tooth Powder Packaging 4 (orange)	1	2	3	4	5	6
Tooth Powder Packaging 5 (green)	1	2	3	4	5	6
Tooth Powder Packaging 6 (purple)	1	2	3	4	5	6

32. Please rate the overall ease of use of each tooth powder. Ease of use means how easy you expect it will be to measure, mix, and apply the tooth powder. Please circle the number under the response that indicates the tooth powder's expected ease of use.

	Excellent	Good	Satisfactory	Low	Poor	Can't Be Determined
Tooth Powder Packaging 1 (red)	1	2	3	4	5	6
Tooth Powder Packaging 2 (yellow)	1	2	3	4	5	6
Tooth Powder Packaging 3 (blue)	1	2	3	4	5	6
Tooth Powder Packaging 4 (orange)	1	2	3	4	5	6
Tooth Powder Packaging 5 (green)	1	2	3	4	5	6
Tooth Powder Packaging 6 (purple)	1	2	3	4	5	6

33. If you were going to purchase tooth powder for yourself or someone else how likely would you be to buy each tooth powder. Please circle the number under the response that indicates the likelihood of you buying each tooth powder.

	Highly Likely	Likely	Maybe	Maybe Not	Not Likely
Tooth Powder Packaging 1 (red)	1	2	3	4	5
Tooth Powder Packaging 2 (yellow)	1	2	3	4	5
Tooth Powder Packaging 3 (blue)	1	2	3	4	5
Tooth Powder Packaging 4 (orange)	1	2	3	4	5
Tooth Powder Packaging 5 (green)	1	2	3	4	5
Tooth Powder Packaging 6 (purple)	1	2	3	4	5

34. Have you ever tried tooth powder?

❑ Yes ❑ No

If yes, was it a positive experience?

❑ Yes ❑ No

35. Do you currently use tooth powder?

❑ Yes ❑ No

36. Do you know someone who uses tooth powder?

❑ Yes ❑ No

If yes, was it a positive experience?

❑ Yes ❑ No

37. Please select the tooth powder packaging that first grabbed your attention. Check (✓) one.

❑ Tooth Powder Packaging 1 (red)

❑ Tooth Powder Packaging 2 (yellow)

❑ Tooth Powder Packaging 3 (blue)

❑ Tooth Powder Packaging 4 (orange)

❑ Tooth Powder Packaging 5 (green)

❑ Tooth Powder Packaging 6 (purple)

Please state why the packaging grabbed your attention: _____

_____

38. Which tooth powder would you prefer to receive a free six-month supply? Check (✓) one.

❑ Tooth Powder Packaging 1 (red)

❑ Tooth Powder Packaging 2 (yellow)

❑ Tooth Powder Packaging 3 (blue)

❑ Tooth Powder Packaging 4 (orange)

❑ Tooth Powder Packaging 5 (green)

❑ Tooth Powder Packaging 6 (purple)

Please state why you prefer to receive the selected packaging: _____

_____

The following questions ask you to rate the shelf visibility of each tooth powder package. Shelf visibility means how well each tooth powder package can be seen among the other packages from the shelf. Please circle the number under your response.

39. Compared to the other packages on the shelf, Tooth Powder Packaging 1 (red) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

40. Compared to the other packages on the shelf, Tooth Powder Packaging 2 (yellow) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

41. Compared to the other packages on the shelf, Tooth Powder Packaging 3 (blue) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

42. Compared to the other packages on the shelf, Tooth Powder Packaging 4 (orange) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

43. Compared to the other packages on the shelf, Tooth Powder Packaging 5 (green) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

44. Compared to the other packages on the shelf, Tooth Powder Packaging 6 (purple) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

Spray-On Pantyhose Packaging

The following questions refer to the spray-on pantyhose packaging. Please reference the shelf area that contains the spray-on pantyhose packages while responding to this section of questions.

45. Please rate the expected overall quality (effectiveness) of each spray-on pantyhose product. Please circle the number under the response that indicates the spray-on pantyhose's expected quality.

	Excellent Quality	Good Quality	Satisfactory Quality	Low Quality	Poor Quality	Can't Be Determined
Spray-On Pantyhose Packaging 1 (red)	1	2	3	4	5	6
Spray-On Pantyhose Packaging 2 (yellow)	1	2	3	4	5	6
Spray-On Pantyhose Packaging 3 (blue)	1	2	3	4	5	6
Spray-On Pantyhose Packaging 4 (orange)	1	2	3	4	5	6
Spray-On Pantyhose Packaging 5 (green)	1	2	3	4	5	6
Spray-On Pantyhose Packaging 6 (purple)	1	2	3	4	5	6

46. Please rate the overall ease of use of each spray-on pantyhose. Ease of use means how easy you expect it will be to apply the spray-on pantyhose evenly. Please circle the number under the response that indicates the spray-on pantyhose's expected ease of use.

	Excellent	Good	Satisfactory	Low	Poor	Can't Be Determined
Spray-On Pantyhose Packaging 1 (red)	1	2	3	4	5	6
Spray-On Pantyhose Packaging 2 (yellow)	1	2	3	4	5	6
Spray-On Pantyhose Packaging 3 (blue)	1	2	3	4	5	6
Spray-On Pantyhose Packaging 4 (orange)	1	2	3	4	5	6
Spray-On Pantyhose Packaging 5 (green)	1	2	3	4	5	6
Spray-On Pantyhose Packaging 6 (purple)	1	2	3	4	5	6

47. If you were going to purchase spray-on pantyhose for yourself or someone else how likely would you be to buy each spray-on pantyhose product. Please circle the number under the response that indicates the likelihood of you buying each spray-on pantyhose product.

	Highly Likely	Likely	Maybe	Maybe Not	Not Likely
Spray-On Pantyhose Packaging 1 (red)	1	2	3	4	5
Spray-On Pantyhose Packaging 2 (yellow)	1	2	3	4	5
Spray-On Pantyhose Packaging 3 (blue)	1	2	3	4	5
Spray-On Pantyhose Packaging 4 (orange)	1	2	3	4	5
Spray-On Pantyhose Packaging 5 (green)	1	2	3	4	5
Spray-On Pantyhose Packaging 6 (purple)	1	2	3	4	5

48. Have you ever tried spray-on pantyhose?

❑ Yes ❑ No ❑ Not Applicable

If yes, was it a positive experience?

❑ Yes ❑ No

49. Do you currently use spray-on pantyhose?

❑ Yes ❑ No ❑ Not Applicable

50. Do you know someone who uses spray-on pantyhose?

❑ Yes ❑ No

If yes, was it a positive experience?

❑ Yes ❑ No

51. Please select the spray-on Pantyhose packaging that first grabbed your attention. Check (✓) one.

- ❑ Spray-On Pantyhose Packaging 1 (red)
- ❑ Spray-On Pantyhose Packaging 2 (yellow)
- ❑ Spray-On Pantyhose Packaging 3 (blue)
- ❑ Spray-On Pantyhose Packaging 4 (orange)
- ❑ Spray-On Pantyhose Packaging 5 (green)
- ❑ Spray-On Pantyhose Packaging 6 (purple)

Please state why the packaging grabbed your attention: _____

_____

52. Which spray-on Pantyhose would you prefer to receive a free six-month supply? Check (✓) one.

- ❑ Spray-On Pantyhose Packaging 1 (red)
- ❑ Spray-On Pantyhose Packaging 2 (yellow)
- ❑ Spray-On Pantyhose Packaging 3 (blue)
- ❑ Spray-On Pantyhose Packaging 4 (orange)
- ❑ Spray-On Pantyhose Packaging 5 (green)
- ❑ Spray-On Pantyhose Packaging 6 (purple)

Please state why you prefer to receive the selected packaging: _____

_____

The following questions ask you to rate the shelf visibility of each spray-on pantyhose package. Shelf visibility means how well each spray-on pantyhose package can be seen among the other packages from the shelf. Please circle the number under your response.

53. Compared to the other packages on the shelf, Spray-On Pantyhose Packaging 1 (red) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

54. Compared to the other packages on the shelf, Spray-On Pantyhose Packaging 2 (yellow) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

55. Compared to the other packages on the shelf, Spray-On Pantyhose Packaging 3 (blue) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

56. Compared to the other packages on the shelf, Spray-On Pantyhose Packaging 4 (orange) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

57. Compared to the other packages on the shelf, Spray-On Pantyhose Packaging 5 (green) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

58. Compared to the other packages on the shelf, Spray-On Pantyhose Packaging 6 (purple) appears to have:

Very Good Shelf Visibility	Good Shelf Visibility	Moderate Shelf Visibility	Poor Shelf Visibility	Very Poor Shelf Visibility
1	2	3	4	5

General Packaging and Shopping Questions

Please rate how much you agree with each following statement. Please circle the number under the response that best indicates your level of agreement.

	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree
59. Packaging increases the price of the product.	1	2	3	4	5
60. There is too much wasted packaging with the products that I purchase.	1	2	3	4	5
61. I have retained a package after all the contents have been used.	1	2	3	4	5
62. I have purchased products because of the look of the packaging.	1	2	3	4	5
63. I don't care about packaging. I just throw it in the trash after I've used or removed the contents.	1	2	3	4	5
64. I prefer not to go shopping. It takes too long to get my purchases and takes too much time out of my day.	1	2	3	4	5
65. I love to go shopping. I can always find time in my day to go shopping.	1	2	3	4	5
66. When I shop, I browse and search for my purchases.	1	2	3	4	5
67. When I shop, I take the hurried hit-and-run approach (I hurry to the specific product area, make a selection and head straight to the check out).	1	2	3	4	5

For tabulation purposes only, please tell us:

68. What is your age?

❑ 17-22 ❑ 23-28 ❑ 29-34 ❑ 35-40 ❑ 41-46

❑ 47-52 ❑ 53 and over

69. What is your gender?

❑ Male ❑ Female

70. What is your highest completed degree?

❑ High School ❑ Bachelor ❑ Master's ❑ Doctorate.

71. If you are currently enrolled in college please select your status. Check (✓) one

❑ Freshman ❑ Sophomore ❑ Junior ❑ Senior

❑ Master's Graduate Student ❑ Ph.D. Graduate Student

❑ Post Graduate

72. Which racial group do you identify with? Check (✓) one.

❑ Caucasian ❑ African-American

❑ Hispanic ❑ Asian-American

❑ Native American ❑ Other _____

APPENDIX D

STIMULUS PACKAGING

Figure 8. Stimuli

Figure 9. Shaving Powder Packaging

Figure 10. Bacon-flavored Potato Rings Packaging

Figure 11. Tooth Powder Packaging

Figure 12. Spray-on Pantyhose Packaging

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