



The Role of Package Color in Consumer Purchase Consideration and Choice

Lawrence L. Garber, Jr.

Raymond R. Burke

J. Morgan Jones

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To gain notice and consideration at the point of purchase, brands must break through the clutter of competitive products and messages. Package color is a critical, but often overlooked, tool to gain such notice.

Using a computerized grocery store simulation, this study investigates how the color of a product's packaging affects consumer choice. The authors predict that the shopper's likelihood of picking up and purchasing a product depends, in part, on his or her ability to identify the brand, the meaning communicated by the package, and the package's novelty and contrast—all of which are affected by package color.

Their results suggest that for shoppers who are not loyal to a particular brand, a change in package color can enhance brand consideration. Further, in relatively small and stable categories like raisins, flour, and spaghetti, the revised package was more likely to be picked up and purchased when the meaning it conveyed was consistent with the brand's original positioning. In highly competitive categories like cereal (where it is more difficult to attract shoppers' attention), having a strikingly different package was more important than consistency of meaning for attracting customers' interest.

On the other hand, the results suggest that if the brand has a large base of loyal customers, it may be better to retain the original package or a minor variation, as large changes may reduce brand identification and confuse existing customers.

The research also revealed that a change in package color can increase the total amount of search in the category.

Lawrence L. Garber, Jr., is Assistant Professor of Marketing at the John A. Walker College of Business, Appalachian State University. Raymond R. Burke is the E.W. Kelley Professor of Business Administration at Indiana University's Kelley School of Business. J. Morgan Jones is Associate Professor of Operations Management/Quantitative Methods at the Kenan-Flagler Business School, the University of North Carolina.

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Introduction

With the ongoing fragmentation of mass media, point-of-purchase promotion plays an increasingly important role in the promotional mix. Managers know that to successfully compete in the store, they must find ways to break through the bewildering clutter of products and messages stridently offered by competitors. In a world becoming not only more cluttered, but also more graphic in nature, a brand's package is an often-overlooked but critical tool to gain notice and consideration. But what is an effective package? How can a package be designed or modified to ignite the interest of new customers while continuing to leverage the brand's existing equity?

Consider the case a few years ago when a spate of "clear" products were introduced; from household cleaners to personal care items such as deodorants, to beverages such as beers and colas. There was even a clear car degreaser! The fad was started when Procter & Gamble changed Ivory Dishwashing Liquid's characteristic translucent white container and milky white fluid to a clear liquid in a clear bottle, with good results. This prompted several other manufacturers to launch clear products in order to capitalize on this new look: success was seemingly assured by Ivory's pioneering example. Yet many of these products did not succeed; Miller Clear Beer and Crystal Pepsi (a clear cola) were both withdrawn from the market, while Windex clear window cleaner returned to its original blue color.

What went wrong? Managers overlooked the fact that the sales impact of a new package depends not only on the novelty of its appearance, but also on how that appearance interacts with the established equity of the brand, its product category, and consumers' expectations of the category.

In this paper, we introduce a new approach for addressing the package design issue. Specifically, we: (1) present a theoretical framework which identifies the main factors that determine consumer response to a package change, (2) provide a methodology that allows the researcher to decompose and estimate the effects of each of these factors, and (3) provide an empirical test of the framework's predictions.

While the framework is applicable to all aspects of a package's appearance, we chose to focus on package color for several reasons. First, color is a major element of a product's package; one that is particularly salient because it is vivid, affect-loaded, and memorable (cf. Cheskin 1957, p. 80). Second, a package's color can have a substantial effect on consumers' ability to recognize the brand, the meaning conveyed by the package, and its novelty and contrast relative to other brands and consumers' expectations. Furthermore, package color can be altered without changing the cost, handling characteristics, and functionality of the product (unlike other package attributes, such as size and shape).

Finally, there has been very little research on the effects of package color on consumer choice. Most of the marketing research on color has focused on store atmosphere and print advertising. With respect to store design, Bellizzi, Crowley,

and Hasty (1983) and Bellizzi and Hite (1992) test consumers' color preferences for retail store designs and find that blue is soothing and preferred while red is arousing and less well liked. Several studies have compared the effectiveness of color versus black-and-white print media. Sparkman and Austin (1980) find that color ads sell more than black-and-white ads. Click and Stempel (1976) report that newspaper readers prefer the front pages of newspapers with color. Meyers-Levy and Peracchio (1995) demonstrate that black-and-white print ads have greater impact than color ads when consumers have limited cognitive resources. Schindler (1986) points out that the use of color in an ad can sacrifice contrast, reducing legibility and readability. Gorn et al. (1997) analyze the effects of color in print ads on consumer arousal, affect, and recall by breaking color into its constituent elements: hue, chroma, and value. They extend the notion that red is exciting by noting that any highly saturated color can be arousing.

Background

Packaging and Brand Performance

Roughly two-thirds of American shoppers make their brand selections at the point of purchase (POPAI 1978). Within this context, product packaging can have a substantial impact on consumer decision making (Raphael 1969). The package can attract the consumer's attention, communicate a brand's name and image, differentiate the brand from competitors, and enhance the product's functionality, thus contributing to the brand's overall sales and profitability (cf. Prone 1993).

In recent years, packaging has played an expanded role in brand marketing. With the growth of self-service retail outlets, including mass merchandise stores, discount stores, warehouse clubs, supermarkets, and supercenters, merchants have come to depend on product packaging to sell their goods. Hine (1996, p. 2) notes, "Historically, packages are what made self-service retailing possible, and in turn such stores increased the number and variety of items people buy." He suggests that, today, the package has largely replaced the salesperson as the primary means of communicating with customers at the point of purchase. Packaging is especially important when shoppers have little or no prior knowledge of a category or brand, a common occurrence given the high frequency of new brand introductions, extensions, repositionings, product changes, and improvements (16,000 a year, according to Kotler and Armstrong [1991]). For new or infrequently purchased products, the package may be the only source of information about the brands under consideration.

Consumers also appreciate the aesthetic value of a package as an inherently enjoyable part of the shopping experience (Hirschman and Holbrook 1982). Such feelings can translate into brand preference and choice. Moreover, these and other forms of commercial images have become a significant part of our visual environment and culture. On the basis of these images, brands are seen and valued as an expression of people's lives and times (Belk 1988).

Manufacturers have recognized the strategic importance of packaging. In mature product categories, the number of brands is increasing while actual brand performance is approaching parity, with most brands being perceived as generally satisfactory (BBDO 1987). Thus, marketers must increasingly rely on the augmented product (including a product's package) to differentiate their brands (Neal 1993). The package design, as an integrated element of the promotional mix, is also an important carrier of brand equity into the store (Aaker and Biel 1993). For example, the curved shape of the Coca-Cola bottle has been made famous through years of advertising and promotion. It communicates the Coke equity at the point of purchase and at the time of consumption. When Coke employed the contour shape in its 20-ounce plastic bottle, it experienced sales volume increases approaching 45 percent in the United States (Jabbonsky 1995). Coca-Cola has recently added a picture of its green contour bottle to its cans, again attempting to leverage the equity communicated by the original packaging.

Creating a New Package

Given the potentially powerful influence of packaging on consumer behavior, managers are now looking beyond the traditional communication tools of advertising and promotion and focusing on packaging as a way to keep their brands fresh, contemporary, and popular. But how should a company change the look of its brands in order to increase their on-shelf impact and appeal? Three factors must be considered: (1) brand identification, (2) package comprehension, and (3) package novelty and contrast.

Brand identification refers to the consumer's ability to recognize and uniquely identify a package as belonging to a particular brand. Certain characteristics of the package, such as the brand name, its logo, color, package shape, typestyle, and graphics, may be used for identification. For example, the curved shape of a Coke bottle and the pink color of Corning fiberglass are each unique and familiar brand cues for most consumers.

When changing a product's package, a brand should retain those elements that are used by its current customers for brand identification.¹ If these elements are modified, then customers will have difficulty locating the brand, reducing the probability of purchase. For example, a major shampoo manufacturer changed the distinctive curved shape of its brand's bottle to a rounded rectangle in order to improve shipping, handling, and stocking efficiencies. As a consequence, sales dropped. The company confused its existing customers, turning a routine purchase into an extensive search process that increased the level of brand switching. Another manufacturer observed the same, disappointing result when it changed its familiar red soup can to green. One way to avoid this problem is to change the package gradually so that customers have an opportunity to learn the new package elements. The appropriate rate of change will depend on the product's repurchase cycle.

If a brand is new and unfamiliar to consumers, or it has a very small share, then the manufacturer is not constrained by the previous look of the package. Yet brand identification is still an issue. One approach is to select a unique and memorable brand name and package that will serve as the foundation for building a distinctive brand image through advertising and promotion. An alternative strategy is to copy the salient elements of the leading brand's packaging. While this is a powerful method for gaining notice and consideration (and is frequently used by private label products), it may also lead to brand confusion and litigation.

Package comprehension refers to the meaning that a product's package conveys to the customer. A package communicates through explicit claims and illustrations that describe a product's attributes, benefits, ingredients, and promotional offers. It also communicates implicitly by triggering associations in consumer memory. Visual, verbal, and tactile elements of the package (such as the brand name and logo, package size, shape, color, texture, and graphics²) can bring to mind images of product quality, performance characteristics, usage situations, and past consumption experiences. Consumers' mental associations are the result of idiosyncratic personal experiences, as well as the past marketing activities (including advertising and promotion) of the product's manufacturer and its competitors. Over the

years, category-specific packaging norms develop. For example, in bar soap, the color pink has come to mean that a product has cosmetic and conditioning benefits while green suggests deodorizing qualities; in liquid soap, an orange-pink color communicates antibacterial properties; in dishwashing liquid, yellow suggests a lemon scent, green means gentleness, and blue conveys grease-cutting benefits.

When designing a new package, a manufacturer can borrow on the visual conventions established by existing brands in the category. For example, a new dishwashing liquid may use a green package similar to Palmolive to communicate gentleness. This approach has the virtue of reassuring the shopper by fulfilling expectations of what a brand in the category should look like; thus providing a measure of legitimacy and credibility (Dichter 1975). Consistent with this, Loken and Ward (1990) report that consumers prefer products which tend to match their expectations. Another approach is to bring new concepts and imagery into the category. The use of a well-chosen visual metaphor can capture, through association, desirable values associated with a brand (King 1989). For example, Gateway was the first company to use the black-and-white cow pattern on its packaging in order to communicate its South Dakota heritage and spur the interest of family buyers. The strength and concreteness of positive associations increase the likelihood that the brand will be considered for purchase.

Both brand identification and package comprehension have been discussed as elements of brand equity (Biel 1993). Brand equity has generally been defined as the added value endowed by the brand to the product (Farquhar 1989), and consists of the brand's recognition and familiarity to the consumer, as well as the image associated with the brand (Agarwal and Rao 1996; Keller 1993; Park and Srinivasan 1994). Packaging can either enhance or diminish this equity by facilitating or inhibiting brand identification and the retrieval of positive brand associations.

Package novelty and contrast refer to the package's ability to stand out visually from its surroundings, to draw attention to itself through its novel appearance. Novelty and contrast are defined in relative rather than absolute terms. They are a function of both a package's distinctiveness relative to the other brands on the store shelf (Veryzer and Hutchinson 1998), and its departure from consumer expectations based on past shopping and consumption experiences. Take, for example, the bright red package of Lifebuoy soap. We cannot say that the package is vivid and attention-getting simply because of its color. The red package may not attract attention because it has been seen hundreds of times before or because it is viewed in the context of other red packages. If the Lifebuoy product were placed on a shelf next to Lava soap in its red package, this would diminish the contrast between Lifebuoy and its surroundings. In this particular instance, Lifebuoy would be more noticeable if it was green (red's complement), both because it is a change from the original color and because it is different from the adjacent competitive products (even though the color red may, in absolute terms, be more visible to the human eye).

A fourth factor, *package function*, also affects how customers respond to a product. A package provides several practical benefits. As Hine (1996, p. 6) notes, "It

protects its contents from contamination and spoilage. It makes it easier to transport and store goods. It provides uniform measuring of contents." In many instances, manufacturers have been able to improve the performance of their brands by developing packaging innovations. These include lightweight plastic bottles, shelf-stable aseptic packaging, individual serving sizes, childproof caps, and no-drip spouts. Packaging can also be designed to reduce cost or waste. Because the focus of this paper is on package appearance rather than function, an attempt is made to hold the utility of product packaging constant throughout the experimental research.

The three goals of brand identification, package comprehension, and novelty/contrast can be conflicting. For example, let's assume that a manager selects a new package for an existing brand that is very similar to the original. Because the old and new packages match on key visual attributes, the loyal user can easily locate and identify the brand. Continuity of comprehension and purchase are maintained, as the consumer is able to generalize all the brand meaning associated with the former package to the new package. However, in selecting such a visually conventional repackaging strategy, the manager loses the opportunity to present an altogether new and exciting look that will attract the attention of new customers. On the other hand, if the package is very dissimilar to what came before, the brand risks confusing its existing customers and conveying an image that conflicts with its established equity.

In the next section, we will present a theoretical framework that suggests how these two respective strategies may affect the consumer's choice process. We will then describe a method of identifying which of several visual types a given package candidate belongs to, and an approach for predicting its success.

Theoretical Development

Consideration and Choice

For both frequently purchased nondurable goods (like soft drinks and cereal) and infrequently purchased durable products (like computers, automobiles, and houses), shoppers are faced with a tremendous variety of options. To cope with this complexity, consumers often restrict their purchase decisions to a subset of the available alternatives and then select a preferred brand from this subset. This concept—the “evoked set”—was introduced by John Howard in 1963 and later incorporated into the Howard and Sheth (1969) model of consumer behavior. Subsequent authors have alternatively called this the “consideration set” and have offered several operational definitions. Roberts (1989) defined it as “the brands which a consumer would evaluate.” Roberts and Lattin (1991) described it as “the brands that a consumer would consider in the near future.” Shocker, Ben-Akiva, Boccara, and Nedungadi (1991) referred to the consideration set as “those goal-satisfying alternatives salient or accessible on a particular occasion.” And Nedungadi (1990, p. 264) defined it as “the set of brands brought to mind on a particular choice occasion.”

The evoked set was originally conceived to be a relatively static selection of acceptable brands which the consumer would consider buying on any given shopping occasion (Howard and Sheth 1969; Narayana and Markin 1975). Its size depended on generally stable factors, such as the cost of searching for product information (Shugan 1980; Stigler 1961) and the overall levels of advertising and promotional spending in the product category (Hauser and Wernerfelt 1990). More recent research has emphasized the dynamic and context-dependent aspects of consideration set formation, and has sought to identify the marketing factors that determine set membership.

The composition of the consideration set is a function of both personal and situational factors and the interaction between them. A consumer is more likely to consider a brand that he or she can readily recognize or recall as a result of a recent, favorable consumption experience (cf. Wright 1975) or direct or incidental exposure to advertising for that brand (Shapiro, MacInnis, and Heckler 1997) or another brand in the same subcategory (Nedungadi 1990). Consumers will give greater consideration to brands that they perceive to be personally relevant (Celsi and Olson 1988), and that offer satisfactory performance on key attributes (Lussier and Olshavsky 1979; Payne 1976). Once shoppers enter the store, they are more likely to consider brands that are highlighted by end-of-aisle displays, feature advertising (Allenby and Ginter 1995), promotions (Siddarth, Bucklin, and Morrison 1995), merchandising (Inman, McAlister, and Hoyer 1990), and favorable shelf position (Hoch, Dr  ze, and Purk 1994).

The factors that drive consideration may be different from those that determine brand evaluation (Nedungadi 1990; also see the discussion by Siddarth, Bucklin,

and Morrison 1995). A brand may offer desirable features, but, because of its recent entry to the market, small share, or lack of merchandising, may not be considered. On the other hand, a leading brand may have a high share because it is considered more often than competitors (perhaps because of early entry into the category), even though it is not strongly preferred.

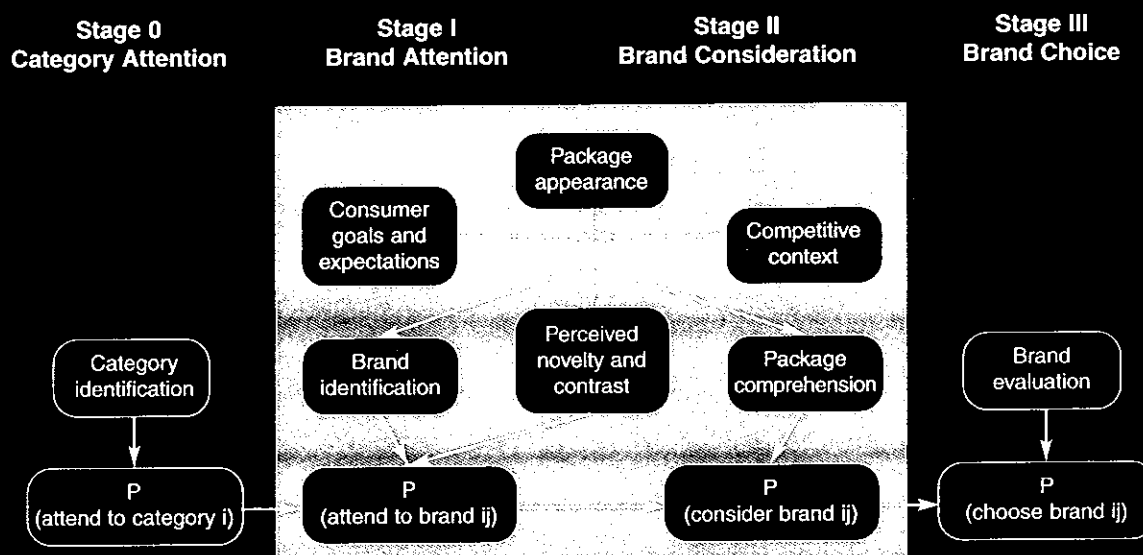
The Role of Package Color

Given the importance of visual search in cluttered and time-constrained environments, one would expect that package appearance would play an important role in the formation of brand consideration sets (cf. Pieters, Warlop, and Hartog 1997). Unfortunately, past research on product appearance and package design has frequently sidestepped the consideration issue by forcing customers to attend to and evaluate product packages (e.g., Durgee and O'Connor 1994; Schoormans and Robben 1996; Veryzer and Hutchinson 1998). While this may be realistic for some high involvement decisions where consumers carefully evaluate each available brand, it does not represent most retail shopping situations. As Alba, Hutchinson, and Lynch (1991, p. 3) note, "Motivation levels are usually too low and time too scarce for consumers to scan all brands displayed in a given product category."

Consider the shopping process in a typical supermarket. Consumers are faced with tens of thousands of different products and must make a large number of selections in a relatively short period of time. To cope with this task, consumers are selective in acquiring category and brand information. In a study by Marsh Supermarkets, category penetration ranged from a low of 5 to 25 percent for general merchandise, health and beauty care, and flowers, to a high of 60 percent for the meat department (Burke 1995). In a field study of consumer purchases of laundry detergent, Hoyer (1984) found that the median time per purchase decision was 8.5 seconds (including the time taken to walk down the grocery aisle). Few consumers examined more than one brand: only 28 percent of the sample looked at, and 17 percent picked up, two or more brands. Dickson and Sawyer (1990) found that, for coffee, toothpaste, margarine, and cold cereal, the mean category shopping time was less than 12 seconds, with 42 percent of shoppers spending 5 seconds or less. Shoppers examined an average of 1.2 brands. Burke (1995) reported that, during a typical stock-up shopping trip, customers purchased an average of 48 different items in just 39 minutes.

To encompass the several, diverse roles that package appearance in general and package color in particular can play in consideration and choice, we adopt and extend the theoretical framework developed by Roberts (1989). Roberts (1989, p. 749) casts choice as a phased process consisting of three, sequential stages: "The probability of brand choice (given category purchase) can be thought to have three elements: the probability of being aware of brand j ; the probability of considering brand j , given awareness of it; and the probability of choosing brand j , given awareness and consideration." This framework forms the backbone of the extended model shown in Figure 1.³

Figure 1. A Model of Packaging's Effect on Brand Attention and Package Consideration



As illustrated in Figure 1, consumers proceed through a series of stages when identifying and evaluating brands for purchase. Package color can have an impact at several stages in this process (Garber, Hyatt, and Starr 2000). In most retail stores, similar products (i.e., items sharing the same physical characteristics and/or satisfying the same consumer need) are grouped together in product categories. At the first stage (Stage 0), consumers enter the store with a set of goals⁴ and attempt to identify product categories that satisfy their requirements. As the consumer walks through the store, one or more product categories come into view. From this vantage point, the shopper can resolve only the largest physical and graphical features of the products. However, the information is sufficient to allow the individual to identify relevant and desired product categories and to set a course down the aisle.

When the consumer has located and entered a relevant category, he or she attends to one or more brands on the shelf (Stage I). The consumer's likelihood of attending to a brand is a joint function of his or her ability to identify the brand as a familiar and desirable product, and the perceived novelty and contrast of the package. Consumers are most likely to attend to those brands which they can readily identify as a result of prior advertising exposure, purchase and/or consumption, and those brands which stand out from the competitive clutter because of their new and different appearance.

Once the consumer attends to a selection of products on the shelf, he or she considers a subset of these brands for purchase (Stage II). At this point, the shopper may pick up one or more brands to acquire detailed information from the package. Information acquisition occurs in gradations or stages, with earlier processing limited to the coarser visual features such as size, shape, and color, and later stages focusing on detailed brand information. The number of brands the shopper considers depends on his or her motivation and ability to process product information

and the amount of time available. More brands will be considered if the shopper is new to the category, seeks variety, notices something new or different on the shelf, and/or has a liberal time budget.

In the final decision step (Stage III), the consumer selects one or more brands from the consideration set for purchase. This choice process has been discussed in detail in prior research (e.g., Bettman, Johnson, and Payne 1991; Meyer and Kahn 1991) and will not be reviewed again here. However, we should note that package factors that increase consumer attention to and consideration of brands are also likely to increase the probability of choice, everything else being equal. Brand attention and consideration are necessary but not sufficient conditions for choice.

In the following discussion, we examine how the appearance of a brand's package affects the consumer's likelihood of attending to, considering, and purchasing a brand (stages I, II, and III).⁵ We focus on the direct effects of a package color change on brand identification, perceived novelty and contrast, and package comprehension, as well as the interactions with consumer's goals and expectations and the competitive environment.

Brand Identification. The grocery shopping task may be framed as a process whereby the consumer searches through a visual field comprised of an array of competitor products (distractors) in order to find some preferred brand or brands (target) matching his or her goals and expectations. This is analogous to the speeded identification task that is often used in studies of attention, visual perception, and object identification (see Yantis and Hillstrom 1994). A subject is asked to locate some target object, usually a number or letter, which is "embedded" in a field of characters.

Most current models of visual search are based on Feature Integration Theory (Treisman 1991; Treisman and Gelade 1980), which portrays the identification process as consisting of two stages. In the first stage, individual features of the objects, including their size, shape, and color, are seen spontaneously across the entire visual field. In a subsequent step, these features are integrated into overall representations of the objects, a process requiring focused visual attention.

Early psychophysical experiments indicated that when the target is defined by a single feature or a disjunctive set of features, the visual display can be searched in parallel and at a high rate of speed (Treisman and Gelade 1980). That is, when a target has one or more unique features, it can be correctly identified in approximately the same amount of time regardless of the number of distractors. When the target consists of a conjunctive feature set (i.e., the specific combination of features is unique to the target, but the individual features are not), then the visual field is searched using a slower, serial process. Therefore, one would predict that consumers would be fastest at identifying packages that are uniquely identified by a single feature (such as a distinctive color or shape) rather than a conjunction of features.

More recent research suggests that people can search in parallel for patterns defined by conjunctive feature sets when they have certain "emergent properties." In some cases, these properties seem to be programmed into the human perceptual system,

such as shape from shading or shadows (Aks and Enns 1992; Kleffner and Ramachandran 1992) or perceptual groupings (Bravo and Blake 1990; Duncan and Humphreys 1989). In other cases, they are learned through frequent and/or recent exposure to the target stimulus. Lindsay and Lindsay (1966) and Hayes-Roth (1977) contend that frequently occurring patterns eventually form unitary cognitions that are recognized as a whole, without being analyzed at the individual feature level. Research indicates that people can identify these well-learned feature sets quickly and effortlessly (Chase and Simon 1973; Schneider and Shiffrin 1977). Concept priming studies reveal that propositions are verified faster when they are immediately preceded (i.e., "primed") by verification of other propositions involving some of the same information (e.g., Collins and Quillian 1970; Hayes-Roth and Hayes-Roth 1975).

This research suggests that when a manufacturer revises a product's package, it will be most readily perceived and identified by shoppers when (a) it shares many features (e.g., color, shape, typestyle, illustration) with the original packaging, (b) the features of the original package were well learned,⁶ (c) the features are primed by consumers' goals and expectations, and (d) the features are distinctive relative to competitors' packages.⁷

A package that is easily identified may also be perceived as more familiar and typical of the category, which can increase purchase consideration (Johnson and Lehmann 1997) and preference (Loken and Ward 1990). From a behavioral learning theory perspective, brand-identifying package elements are seen to act as discriminative stimuli for repeat buying (Foxall 1990, pp.73, 88). The degree to which consumers generalize their response from the original package to a new package depends on the similarity of the two packages (cf. Spence 1936). The closer the two packages are to each other in a multidimensional similarity space, the higher the level of generalization (Shepard 1987).

We therefore hypothesize:

- H₁: A new package whose color is very similar to a brand's original packaging is more easily identified and familiar, and is therefore more likely to be considered for purchase than a package whose color is moderately dissimilar.

Package Novelty and Contrast. During the visual search process, consumers may encounter packages that are strikingly different from their expectations and from the packages of competitors. The novelty of a package relative to consumers' expectations and its contrast relative to the competitive context will increase the likelihood that the package will evoke an involuntary attentional response (Kahneman 1973). In his adaptation-level theory, Helson (1964) suggested that people learn to associate a stimulus set with a reference point or adaptation level, defined in terms of contextual stimuli (background) and residual stimuli (past experience). Attention is created when an object differs markedly from that level. Pribram and McGuinness (1975) find physiological evidence that, when there is a mismatch between the stimulus input and an expected pattern, there is an attentional response.

There is support in the empirical aesthetics literature (Berlyne 1960, 1974), the attention literature (Kahneman 1973), and the psychology of visual perception literature (Bruce and Green 1992) for a positive relationship between novelty and preference. Schema theory suggests that consumers prefer moderate levels of incongruity (Meyers-Levy and Tybout 1989; Mandler 1982), which can be created by new or different packaging. Similarly, Dichter (1975) argues that marketers can play on consumers' affinity for surprise by presenting packages that are visually dissimilar, unfamiliar, and unexpected.

This leads us to hypothesize:

- H₂: A new package whose color is very dissimilar to a brand's original package color will attract the customer's attention and is therefore more likely to be considered for purchase than a package whose color is moderately dissimilar.

The relative importance of brand identification and package novelty and contrast depend on the extent to which consumers are open to acquiring new information at the point of purchase. If a high percentage of shoppers enter the store planning to purchase a specific familiar brand, then a novel package may interfere with brand identification, as predicted by H₁. However, if customers have broadly-defined goals and are searching for variety, then brand identification will be less important, and novelty and contrast will have a positive effect, consistent with H₂.

Package Comprehension. Once the consumer's attention is drawn to a select group of packages, he or she actively and sequentially considers a subset of these brands for purchase (Stage II). Whether the individual considers a specific brand depends, in part, on the meaning communicated by the package. This meaning is largely a function of the package's appearance, including both textual and visual information. However, it is also affected by consumers' goals and expectations and the competitive context. As Bransford, Nitsch, and Franks (1977, p. 46) note, "'meanings' cannot simply be construed as 'things' that are stored as particular entities. Instead meaning appears to be better conceptualized as a momentary place or pattern in a changing relation, structure or framework."

Customers will recognize some brands as being on their current shopping lists or as items they routinely purchase, and will include these in their consideration sets. This step often translates directly into choice, as hurried shoppers attempt to minimize the amount of time they spend in the store.

If customers are motivated to consider other brands, they will screen through the (noticed) alternatives based on the perceived match between the products' characteristics and their salient goals and expectations. If they encounter a familiar brand with a new and different package, they must ask themselves whether this is the same product that they have seen advertised, purchased, and/or consumed in the past. Is their knowledge of the product still relevant? If the image communicated by the new package is consistent with the brand's original positioning, then the equity associated with the brand will transfer to the new package, enhancing the likelihood of brand consideration and choice. If the new package conflicts with shoppers' expectations, then they are likely to reject the new package.

This parallels the situation where consumers encounter a well-known brand name that has been extended into a new product category. The success of the brand extension depends on the degree of “brand congruity” (Keller 1993), “perceptual fit” (Tauber 1988) or “relatedness” (Dacin and Smith 1994) between the parent brand’s positioning and the new extension. Consumers are more likely to purchase a brand extension if it is consistent with, and leverages, the existing brand’s equity.

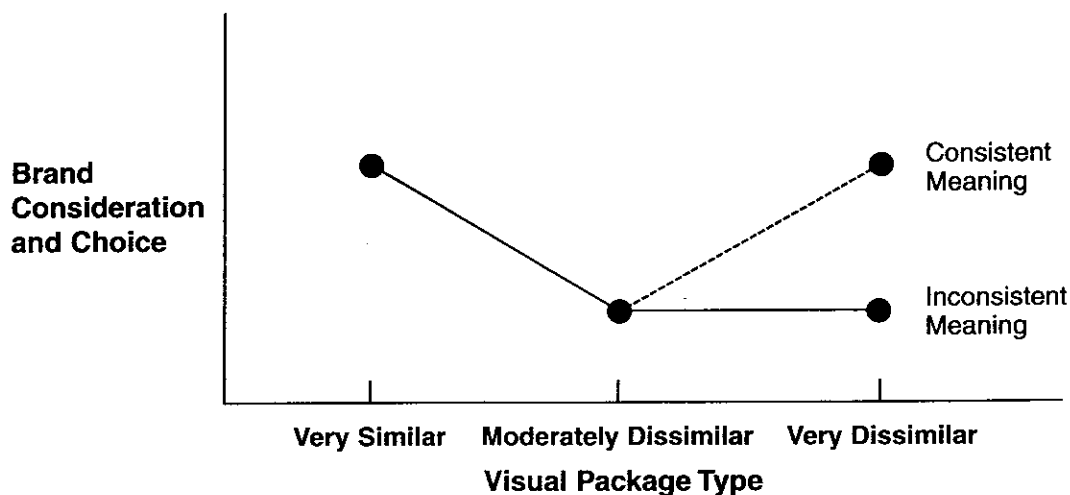
The importance of consistency of meaning is illustrated by reference to the clear product example cited in the introduction. As noted previously, some of the new clear products succeeded while others did not. Informal consumer research revealed that Ivory Liquid’s clear package (a success) reinforced the brand’s traditional positioning on the attributes of mildness and purity, while the clear Windex package (a failure) connoted that the product was watery and weak, which conflicted with the brand’s equity.

We therefore predict:

- H₃: When comparing two new packages, both of which are very dissimilar in color to a brand’s original packaging, the package that conveys meaning which is consistent with the brand’s original positioning is more likely to be considered for purchase than the package that conveys meaning which is inconsistent.

In summary, we expect that when the color of an existing brand’s package is changed, consumers will be most likely to consider the brand if the package is very similar to the original package (because it is familiar and easy to identify) or strikingly different (due to its novelty). In the latter case, consumers will be most likely to consider the brand if the novel package communicates an image that is consistent with the brand’s original positioning.⁸ The first three hypotheses are presented graphically in Figure 2.

Figure 2. The Hypothesized Effect of Visual Package Type on Brand Purchase Consideration and Choice



Additional Effects of a Package Change. When a manufacturer makes a major change to a product's package, it can disrupt routine processing in the product category, increasing consumers' attention to both the changed package and competitors' products. Consistent with this point, Bettman (1979, pp. 86-7) argues, "Disagreement between what was perceived and what was expected seems to be a particularly important cause of interrupts. . . . One important type of goal change in reaction to a conflict interrupt event may be to set up a goal for information search." More recently, Nedungadi (1990, p. 264) notes that a brand's marketing activities can stimulate the consideration of competitive products. As an example, he states, "Advertising cues that help the consumer retrieve and consider a target brand could simultaneously increase the likelihood of considering other competitors. If the consumer prefers any of these competing brands, the target brand may not be chosen."

We expect that a package change will increase the total amount of information processing in the product category, causing shoppers to spend more time in the category and pick up more packages.

- H₄: A new package that is very dissimilar in color to a brand's original packaging will disrupt routine processing in the category and increase the total amount of time spent in the category and the number of packages picked up, irrespective of the meaning displayed by the new package.

While a change in a product's package can have a positive impact on consumer attention, we would expect this effect to be short-lived as consumers habituate to the novel stimulus. Hilgard and Bower (1975, p. 82) note, "Habituation is one of the most primitive forms of stimulus learning or pattern perception; in habituating to a recurrent stimulus, the organism is in effect saying, 'I know that stimulus, and it bores me.'" Similarly, Bettman (1979, p. 95) states, "Over time, even if conflict is not handled, a conflicting stimulus will habituate from sheer repetition, and cease to evoke an [orientation reaction]." We therefore hypothesize:

- H₅: The positive effects of a change in package color on consumer brand consideration and choice will diminish with repeated exposure.

Of course, to the extent that a package change affects not only consumer attention, but also consumer learning and experience, then the effects would be more enduring.

Empirical Method

Studying the effects of a package change on consumer consideration and choice presented several major challenges (cf. Roberts and Lattin 1997). On the one hand, survey-based methods for assessing choice sets (e.g., Silk and Urban 1978) depend on unreliable recollections of past cognitive states and are poorly suited for measuring the dynamic impact of in-store factors on purchase consideration. Laboratory research methods, on the other hand, present customers with a limited selection of products in an unrealistic and highly involving context, effectively eliminating the role of consideration in choice. As Alba, Hutchinson, and Lynch (1991, p. 3) note, the selective attention paid by consumers to the brands in a given product category "cannot be easily captured in laboratory studies of stimulus-based choice."

To address these issues, we employed a virtual shopping simulation developed by Burke (1996; Burke, Harlam, Kahn, and Lodish 1992). The simulation used 3D computer graphics to recreate the appearance of a grocery shelf on a 20-inch touch-screen monitor. Shoppers could pan down the aisles of the store using a 3D trackball, "pick up" products by touching their images on the screen, and rotate packages and magnify labels for closer inspection. To purchase a product, the consumer touched an image of a shopping cart and the package would fly into the basket.

The simulation offered several advantages over existing methodologies. It provided the realism and visual clutter of an in-store experiment while delivering the control and process tracing measures of laboratory research. The computer unobtrusively recorded the amount of time consumers spent shopping in each category, the items they picked up, the amount of time taken to examine individual packages and labels, as well as the quantity of items purchased. Consumer behavior in the virtual shopping simulation has been found to closely mirror behavior in the physical store (see Burke 1996; Burke et al. 1992).

The Selection of Product Categories

The four product categories used in this study—flour, raisins, spaghetti, and cereal—were selected according to several criteria. First, they were each high penetration categories, purchased by most U.S. households. Shoppers had well-formed perceptions of the leading brands in each category (e.g., Kellogg's Cornflakes, Gold Medal Flour, Sun-Maid Raisins, Mueller's Spaghetti). Issues of brand identification, package novelty and contrast, and consistency of meaning are likely to play a greater role in these categories than in unfamiliar product categories.

Three of the four categories—flour, raisins, and spaghetti—met several additional criteria. Each was a mature, stable product category with relatively low levels of marketing activity such as product or package innovations, new product introductions, advertising, special store displays, or price promotions. In such categories, consumer behavior is likely to be routine, as shoppers select their favorite brands from the usual set of options. When the base level of brand consideration is low, a

packaging manipulation has a greater chance of increasing consideration and choice. Also note that the products in these categories were relatively undifferentiated according to their core performance attributes. If an effect of a package change is observed, it is unlikely that this is due to the interaction between the manipulation and the characteristics of a specific brand. Instead, the effect is likely to generalize to the other brands in the category.

Finally, each of the three categories had a well-established set of visual conventions, such as size, shape or color, which identified the category to consumers. In the flour category, for example, each existing brand was packaged in a white paper bag. If the package color were changed to something other than white, it would increase the package's novelty relative to the original, as well as increasing its contrast relative to competitive brands. In the raisin category, all but one brand had a primarily red box. In spaghetti, most packages featured red, white, and blue color schemes. Such conventions provide experienced shoppers with the same visual points of reference, increasing the likelihood that they will evaluate package manipulations on the same basis.

The fourth category, cereal, was added to the design to serve as a point of contrast. Unlike the categories of flour, raisins, and spaghetti, the cereal category is a hotbed of new product activity. Hundreds of brands compete for shelf space with innovative products and variegated package graphics. In this category, it is more difficult to classify a new package as being typical or novel, because there are no category conventions. Each consumer has a different reference point. We therefore defined the novelty of a package in terms of its dissimilarity to the original package's color.

To create a more realistic level of visual clutter, the test categories were displayed in aisles with other, related product categories. Brands of flour were shown next to cracker meal, cake, and muffin mixes; raisins were displayed with packaged puddings and gelatin products; and spaghetti products were merchandised alongside noodle and rice dishes. Because of the large number of brands in the cereal category, no additional products were included in this aisle.

Creating and Classifying the Package Manipulations

The next step in the research process was to select one target brand in each of the four categories and create new test packages representing the various conditions in the experimental design. We selected Gold Medal Flour, Sun-Maid Raisins, Mueller's Spaghetti, and Kellogg's Cornflakes as the target brands. These were the leading-share brands in their respective categories and had high levels of consumer familiarity and purchase incidence.

To create the various levels of package similarity and consistency for the experiment, we manipulated the color of the target brand's packaging. Color was chosen because it is a dominant visual feature that is often used by manufacturers to attract attention and convey a favorable brand image. Unlike package shape, a change in color does not affect the package's function. Color can have a significant impact on how consumers respond to marketing stimuli, as shown in advertising studies by Gorn, Chattopadhyay, Yi, and Dahl (1997) and Meyers-Levy and Peracchio (1995).

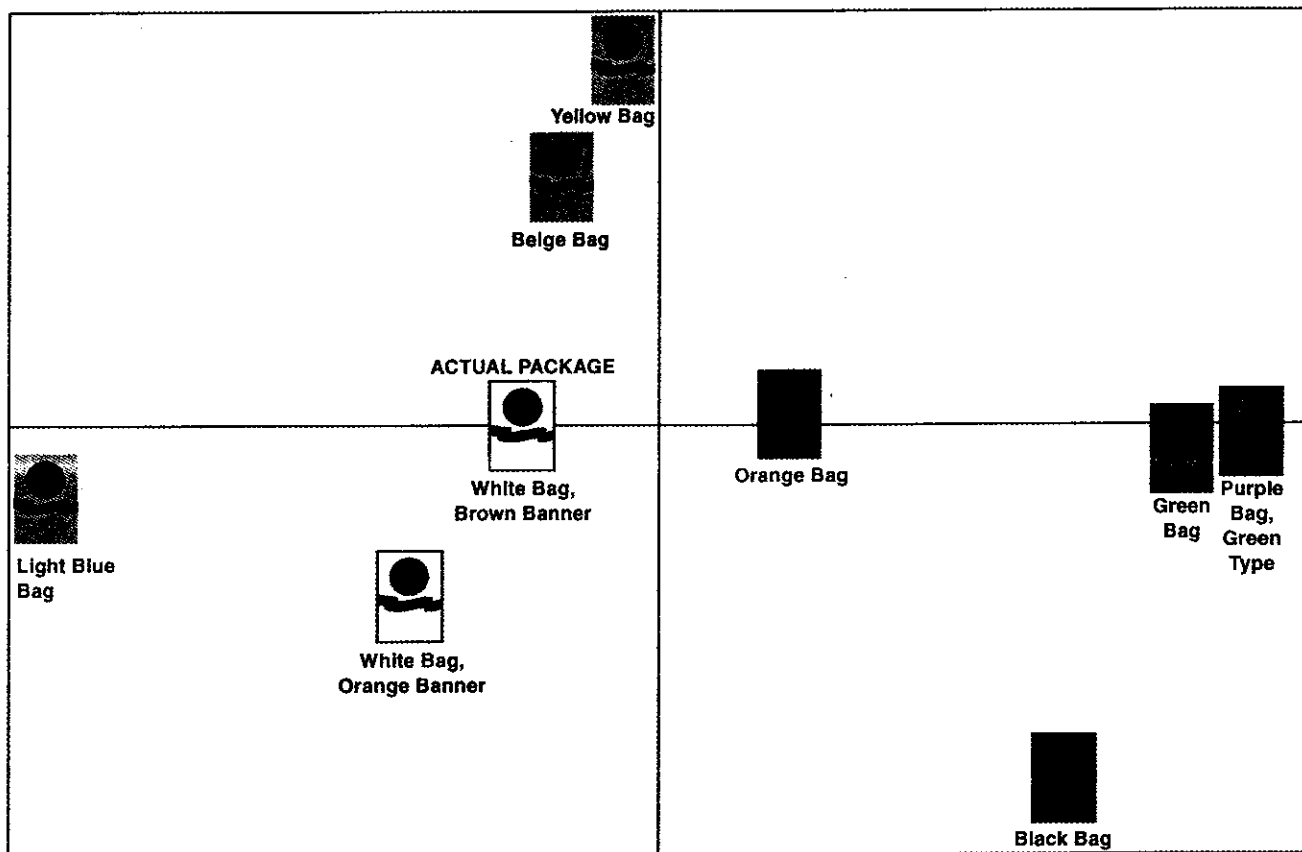
The packages of each of the target brands were scanned into the computer and the colors of selected package elements were systematically altered to create several new looks. Packages were edited to remove any extraneous promotions or offers, but most other visual features (including lines, borders, logos, characters, and other graphic elements) were retained in order to preserve brand identification. A total of 25 new packages were created for Gold Medal Flour, 18 for Sun-Maid Raisins, 26 for Mueller's Spaghetti, and 16 for Kellogg's Cornflakes.

Three judges evaluated these candidate packages: an industrial designer and two graphic designers. The judges were asked to select a subset of the candidates in each of the four categories based on the design's credibility as a professionally executed, commercial package, and the degree to which it could be easily recognized and identified as representing the target brand. The judges selected 9 packages in the flour category, 10 in raisins, 12 in spaghetti, and 9 in cereal.

The last steps in pretesting were to calibrate the new packages on the dimensions of perceived dissimilarity, consistency of meaning, and preference, and to select packages representing each of the experimental conditions (see Garber 1995). Gold Medal Flour is used as an example to illustrate this process.

Eighty respondents (20 in each product category) first rated the perceived dissimilarity of each pairwise combination of packages. These data were analyzed using the KYST multidimensional scaling algorithm (Kruskal, Young, and Seery 1973) as implemented in PC-MDS 5.1, from which we generated one- and two-dimensional perceptual maps (see, for example, Figure 3).⁹ The maps represent package alternatives as points in a common, perceptual space, where the Euclidean distance from the original ("actual") package to each of the color-altered packages indicates the dissimilarity or novelty of the new package. New designs that were perceived to be most similar to the original package (white bag with brown banner) in both the two- and three-dimensional scaling solutions were classified as "very similar" (e.g., white bag with orange banner, beige bag, orange bag). Candidates that were the farthest away were classified as "very dissimilar" (e.g., the black and purple bags). Packages that fell between these two extremes were categorized as "somewhat dissimilar."

Figure 3. Perceived Similarity of Alternative Gold Medal Flour Packages



Second, respondents were asked to indicate which product attributes (9 in flour, 11 in raisins, 8 in spaghetti, and 9 in cereal) characterized each of the packages.¹⁰ They were told to base their evaluations solely on package appearance. The frequencies with which packages were associated with attributes were mapped onto a common, multidimensional space using the SIMCA correspondence analysis package (Greenacre 1993). As shown in Figure 4, the original Gold Medal package was seen as being “fresh quality,” “good value,” “naturally pure,” and “good tasting.” New packages with similar benefit profiles (like the beige bag) were classified as having “consistent meaning.” New designs with very different benefit profiles (such as the black bag, which was seen as being “inexpensive”) were coded as having “inconsistent meaning.” By combining the results from the similarity and attribute scaling procedures, we were able to assign each package alternative to one of the four visual categories. Examples of the various package alternatives created for Gold Medal Flour are shown in Figure 5.

Finally, pretest respondents were asked to rate the degree to which they liked or disliked each of the test packages. Packages with low evaluations were eliminated from the set.

Figure 4. Attribute Associations for Alternative Gold Medal Flour Packages

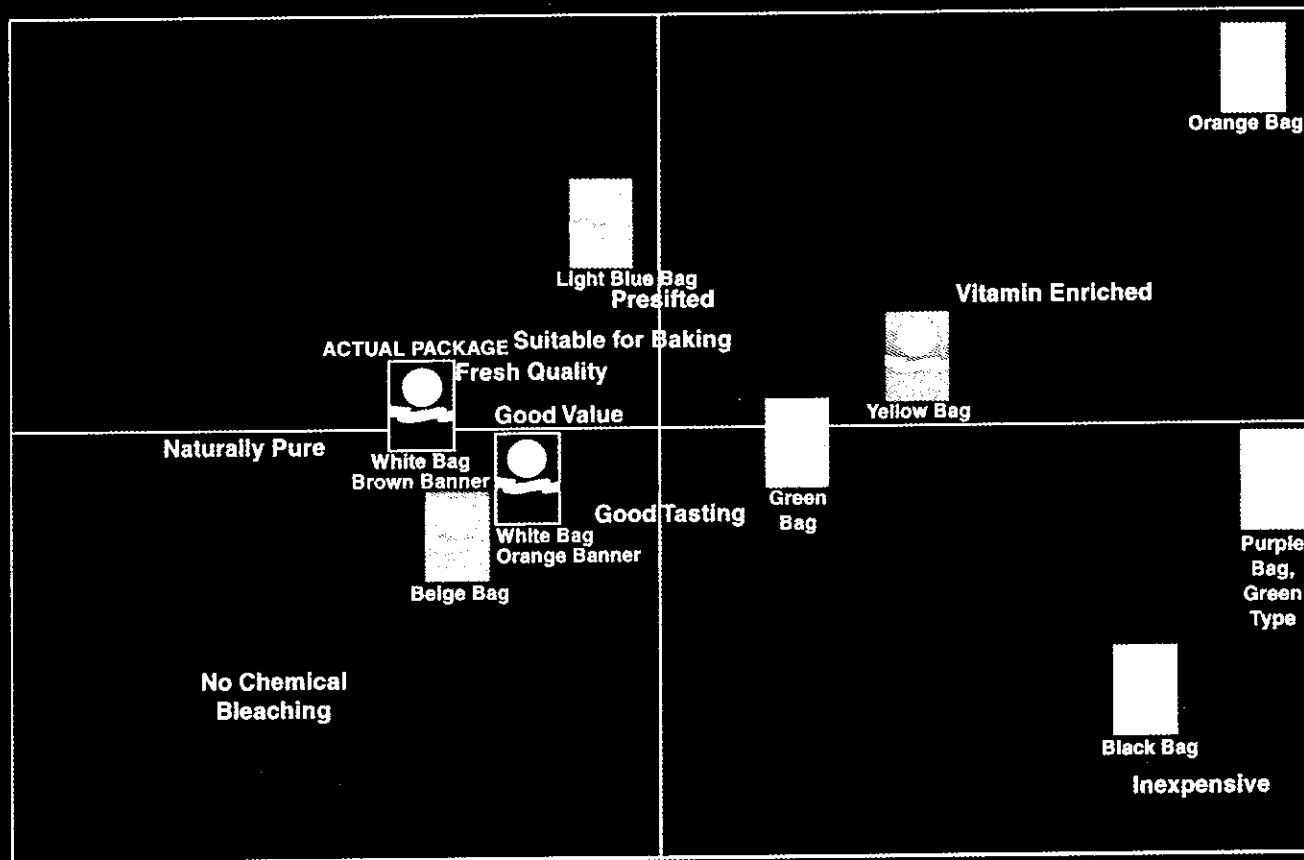
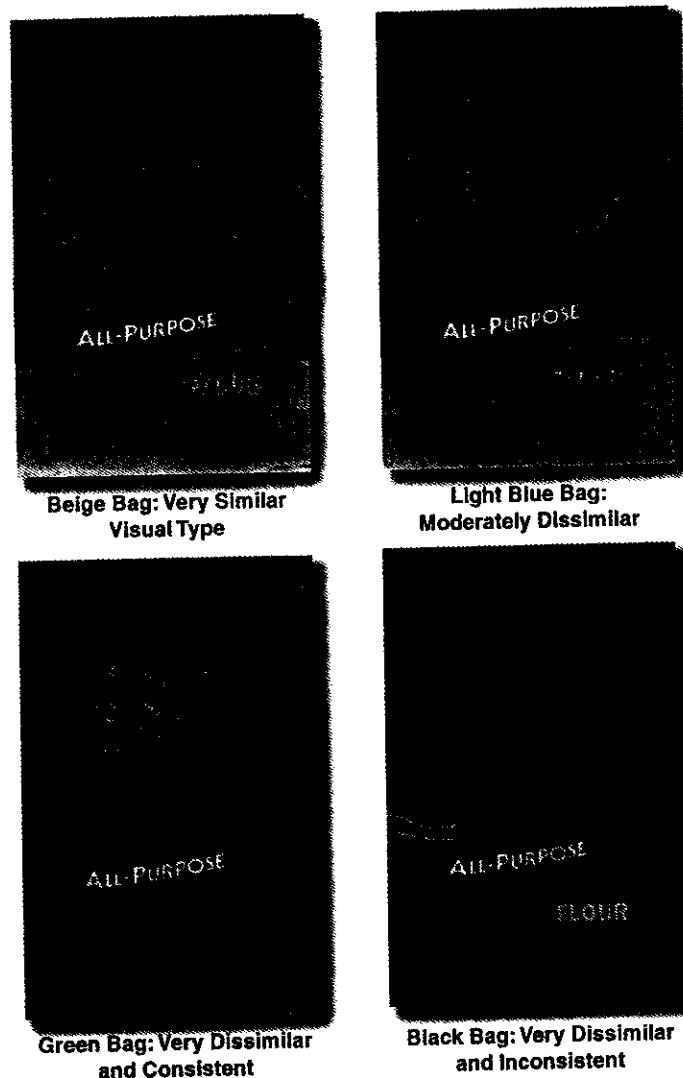


Figure 5. Selected Gold Medal Package Variations for the Flour Category



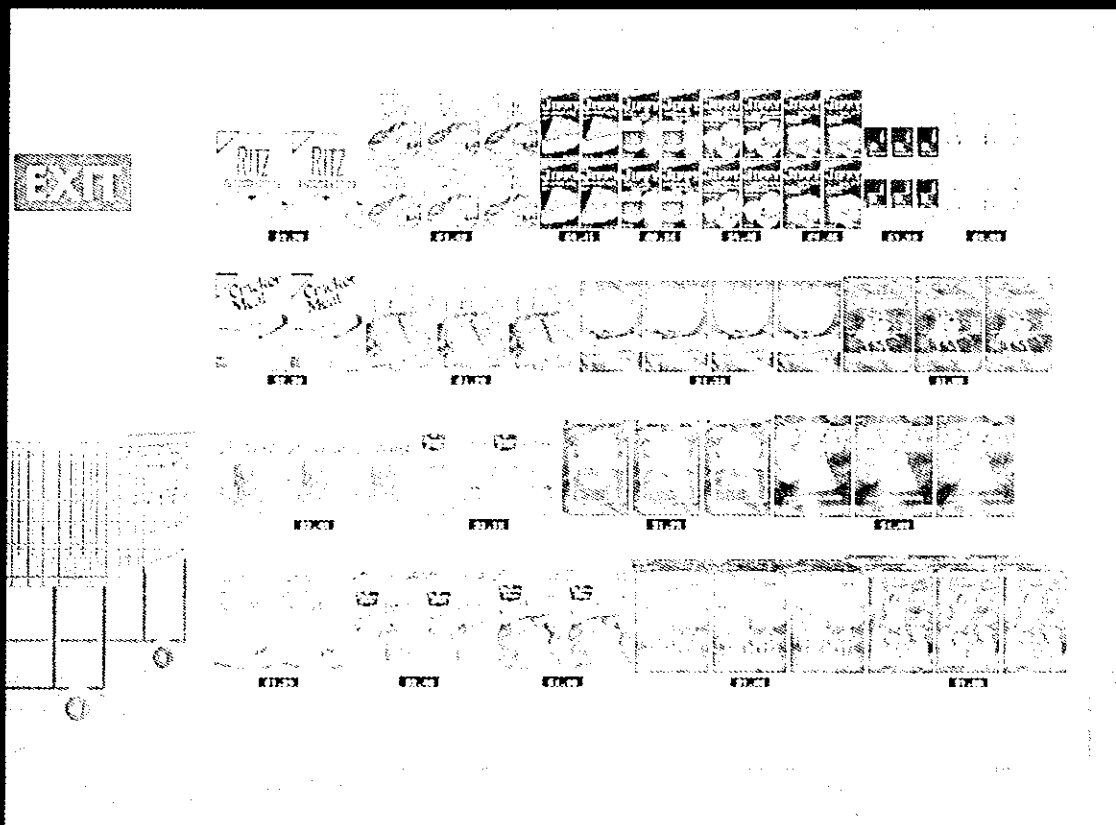
Experimental Design and Procedure

One hundred twenty-eight adults, age 18 to 65, participated in the study. Consumers were recruited through advertisements placed in local newspapers. They were asked to participate in a test of a new home shopping system and were paid \$20 for one hour of their time. No computer experience was required. All respondents were screened to be the primary grocery shoppers in their households.

Participants first completed a short questionnaire that gathered information on their shopping habits, computer experience, and product category and brand usage. Each person was then asked to take a series of five shopping trips through an electronic grocery store. On each trip, the individual would make selections from four product categories. (The shelf display for the flour category is shown in Figure 6.) Participants were asked to purchase at least one item in each category and to assume that they would pay the price shown on the shelf tag. The available

selection of products and associated prices closely matched local market conditions. For the first shopping trip and product category, the interviewer demonstrated how to “walk” down the grocery aisle by turning the trackball, zoom in on the shelf by rotating a trackwheel, pick up products by touching their images on the display screen, and purchase items by touching the on-screen shopping cart. Respondents were then asked to complete the remaining shopping trips on their own, behaving as they normally would in a conventional store. On the first three shopping trips, a few (non-target) items were placed “on sale” to create a realistic level of category activity, but none of the packages were altered. All package manipulations occurred on the fourth and fifth shopping trips.

Figure 6. Computer Simulated Shelf Display for the Flour Category



Sixteen respondents were randomly assigned to each of the eight treatment conditions in the 4 x 4 x 2 confounded block, mixed-factorial design (Kirk 1968, pp. 327-39; Winer 1971, pp. 639-50). The first factor in the design was a within-subject manipulation of the color similarity of the target brand's revised package to its original packaging. Color similarity varied across four levels: same package (i.e., no color change), very similar package, moderately dissimilar package, and very dissimilar package. On the fourth shopping trip, the package colors of three of the four target brands were changed, with the fourth category serving as a no-change control condition. (These changes also carried over into the fifth and final shop-

ping trip.) Each participant saw only one experimental condition in each product category, but the group as a whole saw all possible combinations of conditions and categories. The second factor in the study was a within-subject manipulation of the product category. As noted earlier, four product categories were used in this research: flour, raisins, spaghetti, and cereal. The presentation order of product categories was counterbalanced across conditions.

The third factor of the design was a two-level, between-group manipulation of the consistency of the target brand's new package with the meaning conveyed by its original packaging. This factor was only manipulated for the very dissimilar packaging (because when package color similarity was high, the consistency of meaning was also necessarily high). Half of the respondents saw a very color-dissimilar, consistent package in one of the four categories on the fourth and fifth shopping trips, while the other half saw a very color-dissimilar, inconsistent package.

The computer unobtrusively recorded which packages shoppers picked up and examined, and this served as a measure of brand consideration. While package examination and brand consideration are both necessary but not sufficient conditions for choice, the two constructs are not identical. Brands that are picked up are, by definition, considered for purchase. However, customers may consider buying a product but then reject it without ever picking it up. Therefore, this measure may underestimate the absolute levels of consideration. This was not a serious problem since we were primarily interested in the relative levels of consideration across experimental conditions.

Results and Discussion

Table 1 summarizes the main findings of the research with respect to the five hypotheses tested. The detailed results of the study are discussed in the following sections.

Table 1. Summary Results with Respect to Hypotheses Tested*

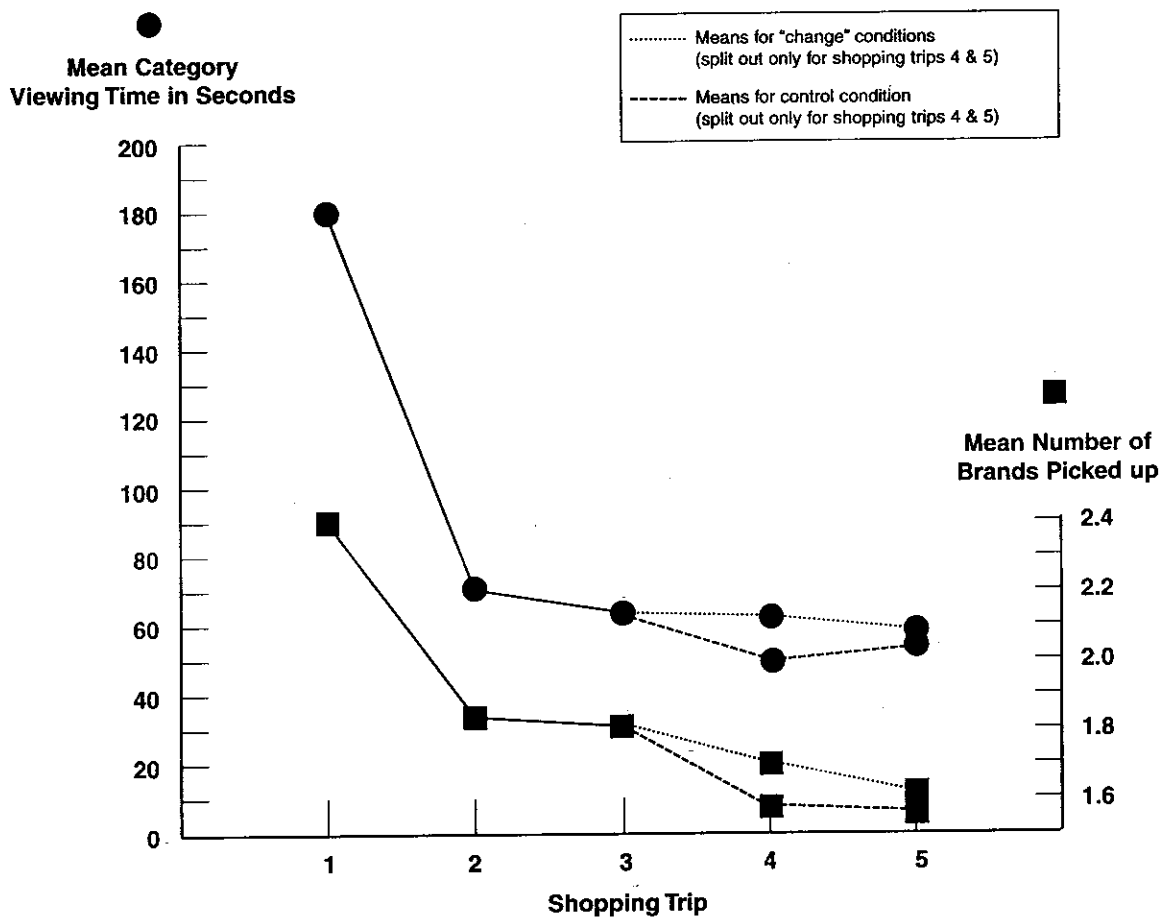
H ₁	A new package whose color is very similar to a brand's original packaging is more easily identified and familiar, and is therefore more likely to be considered for purchase than a package whose color is moderately dissimilar.	Partially Supported
H ₂	A new package whose color is very dissimilar to a brand's original package color will attract the customer's attention and is therefore more likely to be considered for purchase than a package whose color is moderately dissimilar.	Supported
H ₃	When comparing two new packages, both of which are very dissimilar in color to a brand's original packaging, the package that conveys meaning which is consistent with the brand's original positioning is more likely to be considered for purchase than the package that conveys meaning which is inconsistent.	Partially Supported
H ₄	A new package that is very dissimilar in color to a brand's original packaging will disrupt routine processing in the category and increase the total amount of time spent in the category and the number of packages picked up, irrespective of the meaning displayed by the new package.	Supported
H ₅	The positive effects of a change in package color on consumer brand consideration and choice will diminish with repeated exposure.	Supported

* The results supported these hypotheses conditional on the characteristics of the product category and the loyalty of consumers to the target brand. Across all conditions, the package manipulations generally had a greater effect on brand consideration than on choice.

Preliminary Analyses

Across all shopping trips, respondents took an average of 82 seconds to make their product selections in a given category. The average time per shopping trip declined monotonically across trips, from 178 seconds for the first trip to 71, 61, 54, and 47 seconds for trips 2 through 5, respectively (see Figure 7). People were able to shop more quickly as they became familiar with the computer procedure and the layout of the shelf displays. While each successive trip took significantly less time than the previous shopping trip ($p < .05$), purchase decision times were relatively stable by the fourth shopping trip when package manipulations were introduced.

Figure 7. Mean Category Viewing Time and Number of Brands Picked up by Shopping Trip and Condition



Breaking apart the average purchase decision times for the control and package-change conditions (collapsed across levels of similarity and consistency), we found that the mean category viewing times were greater in the change conditions than in the control condition for both the fourth and fifth shopping trips (Figure 7), supporting H₄. The mean difference was significant for trip four ($t = 2.478$, $p < .01$, $df = 122$, one-tailed test), but not significant for the fifth trip. This attenuation indicates that consumers quickly adapted to the new package, in support of H₅.

Figure 7 also shows the average number of brands picked up per shopping trip, which fell from 2.3 packages on the first trip to 1.6 packages by the fifth trip. We found that more packages were picked up in the package-change conditions than in the control condition, as predicted by H₄. The mean difference approached significance for trip four ($t = 1.269$, $p < .12$, $df = 193$), but was not significant for the fifth trip, again consistent with the attenuation effect suggested by H₅.

Packaging, Brand Consideration, and Purchase

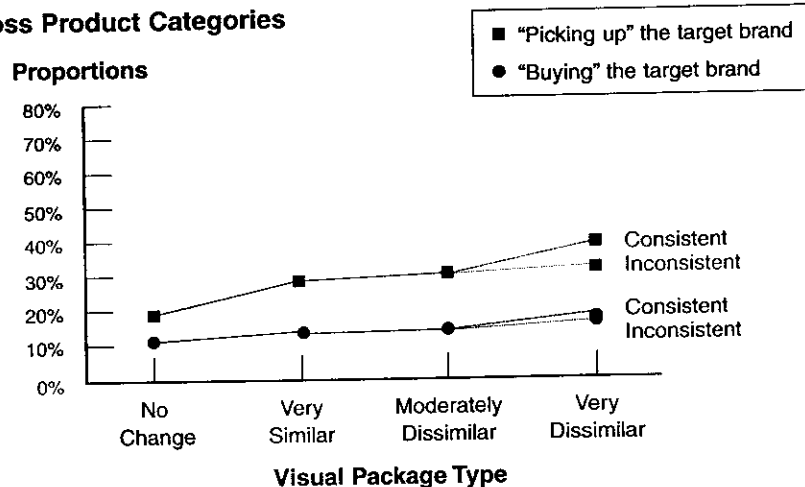
Of the 128 people who participated in the study, 5 individuals reported being colorblind, so their results were excluded from the analyses. We expected that consumers who regularly purchased the target brand would react differently to changes in its packaging than individuals who did not routinely purchase the brand. Therefore, respondents who bought the target brand on the third shopping trip (prior to the package color manipulations) were classified as "target-brand users," and their data were analyzed separately from the data of "other-brand users."¹¹

To test the effects of package similarity and consistency-of-meaning manipulations on consumer behavior towards the target brand, we calculated the proportions of shoppers picking up and purchasing the target brand in each condition and product category for the fourth and fifth shopping trips. A series of generalized logit models were fit to these data using the SAS CATMOD procedure (SAS Institute 1989). We tested the significance of differences between individual cells in the design using Kanji's "Z-test for the equality between two proportions (binomial distribution)" (Kanji 1993, p. 25).

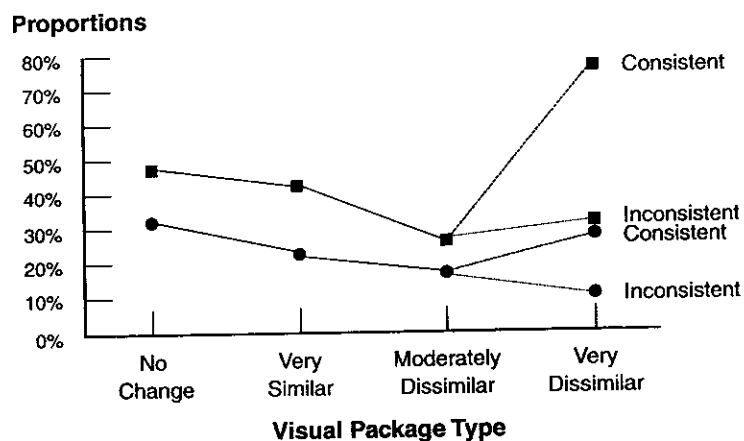
Other-brand Users. Among consumers who did not routinely purchase the target brand, the manipulation of package color had a significant main effect on shoppers' likelihood of picking up the target brand on the fourth or fifth shopping trips ($\chi^2 = 9.16$, $p < .03$, $df = 3$). As the color of the revised package became increasingly dissimilar from the original package, the proportion of people picking up the brand increased from 18 percent ("no change") to 27 percent ("very similar"; $p < .07$), and from 28 percent ("moderately dissimilar") to 42 percent ("very dissimilar/consistent;" $p < .05$; see Figure 8a). This suggests that, for shoppers who are not loyal to a particular brand, a change in package color can enhance brand consideration, as predicted by H_2 , without the negative effects on brand identification anticipated by H_1 .

Figure 8. Proportion of Shopping Trips Where the Target Brand Was Picked up and Purchased as a Function of Visual Package Type

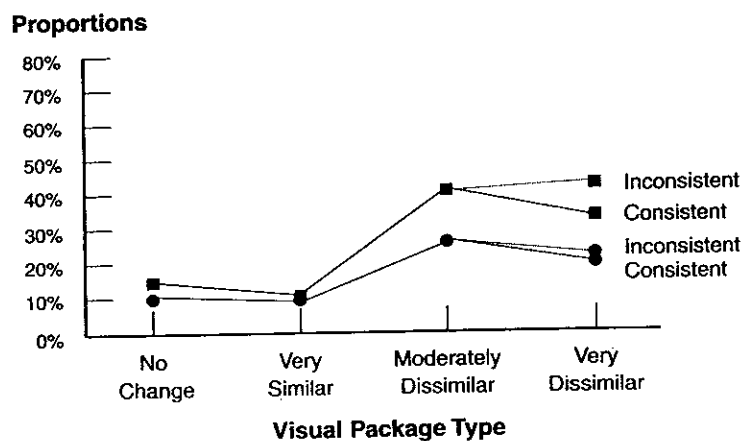
A. Aggregating Across Product Categories



B. The Raisin Category (Sun-Maid)



C. The Cereal Category (Kellogg's Corn Flakes)



Within the "very dissimilar" level of the package manipulation, consumers were somewhat more likely to pick up a package whose color conveyed a meaning that was consistent rather than inconsistent with the original packaging, as predicted by H₃. This overall effect across categories was not significant ($\chi^2 = .35$, $p > .20$, $df = 1$), though, as one might expect, it was stronger for some categories than others.

The aggregate analysis of the effects of package similarity and consistency reported above masked important differences between product categories. At one end of the spectrum, the raisin category (the smallest of the four categories with only six brands) showed results that were entirely consistent with the first three hypotheses. As the color of the target brand's package changed from "very similar" to "moderately dissimilar," the proportion of shoppers who picked up the package dropped from 43 percent to 24 percent ($p < .09$). This suggests that customers were less likely to automatically notice and pick up the revised package, as predicted by H₁. However, as the dissimilarity increased to the "very dissimilar/consistent" level, package examination shot up to 76 percent from 24 percent ($p < .001$). This was significantly higher than the 36 percent of people who examined the package in the "very dissimilar/inconsistent" condition ($p < .04$; see Figure 8b).

The effects of package similarity and consistency in the flour and spaghetti categories were directionally similar to the raisin category, but not as pronounced. In all three cases, consumers were more likely to purchase the brand when its package color was "very dissimilar" rather than "moderately dissimilar" to the original package ($p < .03$), in support of H₂, but only when the conveyed meaning was consistent with the original packaging ($p < .10$), as predicted by H₃.

At the other end of the spectrum, the cereal category showed strong positive effects for package novelty, but not for brand identification or consistency of meaning. As the appearance of the cereal package was changed from "very similar" to "moderately dissimilar," the proportion of shoppers who picked up the package jumped from about 8 percent to 38 percent ($p < .01$). It stayed at this high level for the "very dissimilar/inconsistent" package, but was only 29 percent for the "very dissimilar/consistent" package. The difference between consistent and inconsistent packages was not significant ($p > .20$, see Figure 8c).

As noted earlier, the cereal category was quite different from the other three categories (flour, raisins, and spaghetti) because of the large number of brands (38 in this study), the heterogeneity of package designs, the high level of promotional activity, and the relatively small (4 percent) share of the target brand. It appears that in this highly competitive category, having a novel package is critical to gaining the customer's attention, even if the image communicated by the package is inconsistent with the brand's original positioning. On the other hand, in smaller categories like raisins, spaghetti, and flour, a novel package needs to be consistent with the brand's equity in order to enhance brand consideration.

It is not surprising that brand identification and consistency of meaning had the greatest impact on customer behavior in the raisin category. The target brand, Sun-Maid, has commanded as much as a 50 percent share of the retail raisin category (Cuneo 1988). It has achieved high levels of consumer awareness through extensive

distribution and heavy advertising and promotion. The Sun-Maid name and logo have been extended to many categories through co-branding, including raisin bread, bagels, English muffins, ice cream, candy, and cereal. Unlike the three other target brands, the Sun-Maid trademark features a person, which has been shown to enhance logo recognition (Gillespie 1993). We found that the target brand for raisins, Sun-Maid, was the most popular of the target brands tested in this study ($\chi^2 = 9.90$, $p < .02$, $df = 3$).

In general, the results for consumer choice paralleled those for brand consideration reported above, but the effects of the manipulations were not as strong (see Figure 8). Across all four categories, there was a non-significant increase in the proportion of consumers purchasing the target brand as the package was changed from its original form (13 percent) to "very dissimilar" (17 percent). In the raisin category, an increase in the dissimilarity of the target brand's package caused a gradual (but insignificant) decline in the proportion of people who purchased the brand, from 33 percent ("no change") to 22 percent ("very similar") to 16 percent ("moderately dissimilar"). For the "very dissimilar" package, shoppers were more likely to purchase the brand when the package meaning was consistent (33 percent) rather than inconsistent (9 percent) with the brand's original positioning, $p < .09$.

On the other hand, in the cereal category, consumers were significantly more likely to purchase the "moderately dissimilar" and "very dissimilar" packages than they were to buy the "very similar" or the unchanged packages ($p < .05$). They were slightly more likely to choose the inconsistent (23 percent) than consistent (21 percent) package, although this effect was not significant. Once again, it appears that, in the highly cluttered cereal category, package novelty was more important than consistency of meaning for attracting customers' attention and interest.

Target-brand Users. As one might expect, regular users of the target brand were very likely to pick up and purchase that brand on the fourth and fifth shopping trips. On the fourth trip, 78 percent of "target brand users" picked up the brand and 95 percent of examiners followed through and purchased the product. Among these shoppers, the manipulation of package similarity had a marginally significant main effect on their likelihood of selecting the target brand ($\chi^2 = 7.76$, $p < .06$, $df = 3$). The proportion of people picking up the brand was approximately the same for the "no change" (79 percent), "very similar" (80 percent), and "moderately dissimilar" (82 percent) package conditions, but then dropped off to 77 percent for the "very dissimilar/consistent" condition and to 71 percent for the "very dissimilar/inconsistent" condition. The difference between the "moderately dissimilar" condition and the "very dissimilar/inconsistent" condition was marginally significant ($p < .07$). One can assume that this segment of shoppers already included the target brand in their consideration sets. When a highly novel package was introduced onto the shelf, some consumers may have been confused by the change and had difficulty finding their preferred brand.

Package similarity also had a significant main effect on target users' likelihood of purchasing the brand ($\chi^2 = 8.61$, $p < .04$, $df = 3$). The proportion of shoppers buying the brand was approximately 76 percent in the "no change," "very similar," and "very dissimilar/consistent" conditions, falling off to 73 percent in the "moderately

dissimilar" condition and 71 percent in the "very dissimilar/inconsistent" condition. Although directionally consistent with H_3 , the main effects of consistency of meaning on the likelihood of target brand examination and purchase were not significant ($\chi^2 = 0.98$, $p > .20$, $df = 1$; and $\chi^2 = 1.41$, $p > .20$, $df = 1$, respectively). Based on these results, it appears that, for loyal brand users, a package change generally has a negative (if any) effect on brand consideration and choice.

Packaging and Category Search

In addition to the direct effects of a package change on target-brand consideration, we expected that new packaging would increase the total amount of information search in the product category (H_4). To test this hypothesis, we looked at the effects of package similarity on the amount of time that other-brand users spent shopping in the category and the number of brands they picked up. We excluded data for the target brand because we were only interested in the effects of the manipulations on the remaining brands in the category. Effects were tested using analysis of variance and pairwise t-tests.

When the color of the target brand's package was altered, the total amount of time spent in the product category increased from 47 seconds to 51, 51, 58, and 60 seconds for the "very similar," "moderately dissimilar," "very dissimilar/consistent," and "very dissimilar/inconsistent" conditions, respectively. Consumers spent significantly longer shopping in the product category in the two "very dissimilar" conditions than in the no-change, "control" condition ($p < .02$), as predicted by H_4 .

The package change manipulation also affected the average number of brands picked up by consumers (excluding the target brand). The number of brands examined changed from 1.6 packages in the control condition to 1.6, 1.5, 1.7, and 1.8 for the "very similar," "moderately dissimilar," "very dissimilar/consistent," and "very dissimilar/inconsistent" conditions, respectively. The contrast between the "moderately dissimilar" and "very dissimilar/inconsistent" conditions was significant ($p < .05$).

The evidence in support of H_4 is somewhat surprising. For most marketing variables, a change that helps the target brand (e.g., a price cut or promotion) would tend to hurt consideration of the other brands. Here we see that a package change for the target brand can increase its consideration *and* consideration of other brands.

We also evaluated the effects of package manipulations on the amount of time customers spent examining the target brand's package. In those cases when the package was picked up, the average amount of time spent by other-brand users examining the target brand increased from 6.8 seconds in the control condition to 12.3, 14.9, 19.9, and 21.1 seconds for the "very similar," "moderately dissimilar," "very dissimilar/consistent," and "very dissimilar/inconsistent" conditions, respectively. The pattern was similar for the target-brand users, increasing from 6.9 seconds in the control condition to 13.8, 11.6, 16.2, and 12.3 seconds in the remaining conditions. Viewing times for all of the package change conditions were significantly higher than for the control condition ($p < .03$ or greater). It would appear

that a package change can increase brand evaluation (Stage III in Figure 1) as well as attention and consideration (Stages I and II).

Limitations

This research was necessarily limited in terms of the range of marketing stimuli and responses investigated. We manipulated only one dimension of a package's appearance—its color—while holding constant other elements of the marketing mix. A package's color is a dominant visual attribute that can be seen by shoppers at a considerable distance from the shelf. It is likely to have a greater effect on brand attention and consideration than visual elements requiring closer inspection, such as the brand's logo, typestyle, and package graphics.¹²

We looked at the effects of revising a package while holding constant other aspects of the marketing mix. However, packaging may interact with other marketing variables. For example, a revised package may attract more attention when it is used to introduce a new and improved product, or when accompanied by a free-standing display or promotion.

A third issue is whether the results can be extended to other purchase contexts. In this study, individuals could take as much time as they wanted to shop in each category. However, in the physical store, people often face significant time constraints. Pieters, Warlop, and Hartog (1997) report that, under high time pressure conditions, consumers are more likely to look at package illustrations but less likely to examine ingredient information and even entire brands. This suggests that time-pressed shoppers may use superficial package cues in order to reduce the size of their consideration sets, magnifying the effects reported here.

The present study focused on the packaging of grocery products. The results are most relevant to other retail environments where products are shown in the context of many competitors (e.g., mass merchandise outlets, drug stores, hardware stores, etc.). Yet the basic notions of brand identification, novelty/contrast, and appropriateness may apply to a broader range of products, markets, and marketing stimuli. Take print advertising, for example. A consumer's likelihood of attending to and considering a new product (e.g., Cadillac Catera) advertised in a specialty magazine filled with competitors' products is likely to be affected by the individual's ability to identify the brand (Cadillac), the novelty and contrast of the ad (duck driving a car), and the appropriateness of the conveyed meaning (Why is a duck driving a Cadillac?). The framework shown in Figure 1 could also be used to predict how customers will respond to a product's physical appearance (industrial design), the look of retail spaces (e.g., show rooms, trade show booths, professional offices), and the appearance of service people (dress, demeanor).

Future Directions

As illustrated in Figure 1, the competitive context can have a significant impact on how customers respond to a brand's packaging. It affects the ease with which shoppers can identify the brand, the perceived novelty and contrast of the packaging, and the comprehension of the package's meaning. In the present study, we held constant the appearance of competitive products and focused on the effects of changing a tar-

get brand's package color. However, the virtual shopping simulation has the flexibility to manipulate the appearance of all of the displayed brands. This allows one to test how a new package would perform under alternative competitive scenarios.

One promising avenue for future research would be to study the direct effects of competitive activity (including package changes) on brand consideration. On the one hand, a consumer may be more likely to consider a target brand because he or she considers another, similar competitive brand. Lattin and Roberts (1992) and Lehmann and Pan (1994) find that similar products tend to appear together in consideration sets. Nedungadi (1990) discovered that advertising for a competitive brand can stimulate consideration of a related target brand, increasing its likelihood of purchase. On the other hand, competitors' actions can distract consumers' attention away from the target brand. Burke reported that consumers were less likely to notice a new grocery product when competing brands were on sale (see Andrews 1995). Additional merchandising and promotional support for the target brand were required to counter these negative effects.

Another direction for future research is to isolate the components of perceptual similarity. In this study, similarity was treated as a single, continuous dimension. A new package could either be very similar to the original, in which case it would be easily identified but unexciting; or it could be very dissimilar to the original, making it more novel and attention getting, but harder to identify. To the extent that consumers use a subset of package attributes for brand identification, it would be possible to create a single package that is both easily identified as well as novel and attention getting. Models of stimulus generalization based on stimulus sampling theory (e.g., Atkinson and Estes 1963; Bush and Mosteller 1951) suggest that a stimulus should be treated as a collection of elements that may individually enter into associations when learning takes place. Through research, we can isolate which specific elements are critical to generalization.

One way to isolate these brand-identifying characteristics would be to conduct a speeded brand recognition test. Consumers would be asked to locate the target brand as quickly as possible from a competitive display. Across trials, package elements of the target brand would be manipulated according to an experimental design. Those elements having the greatest impact on the speed of brand recognition are the ones being used for identification.¹³

Conclusion

In 1928, Franken and Larabee noted, "The display container is as much a salesman as any flesh-and-blood clerk, and often more, for it works night and day for one product and emphasizes only those sales arguments which the manufacturer knows are best." Their point is still true today, as manufacturers and retailers continue to rely on packaging to sell their products in self-service shopping environments. New packaging technologies allow marketers to create an almost unlimited range of alternatives. An article in *Marketing News* (October 11, 1985) suggested that Coca-Cola tried over 150 package designs for Diet Coke. Unfortunately, there has not been a corresponding increase in the sophistication of packaging theory and research to help guide managers in the selection of a successful package.

In this paper, we identified the four main factors that managers should consider when designing or revising a product's package: brand identification, package novelty and contrast, package comprehension, and package function. We focused on the first three factors and described a methodology that can be used to isolate their independent effects on consumer consideration and choice. We presented an example application in the grocery context and reported the effects of various package changes on purchase consideration and choice.

As noted earlier, consumer shopping is both goal-directed and opportunistic, and packaging can influence both aspects of information search. While brand identification is largely guided by consumer goals (what Kahneman [1973] refers to as "voluntary attention"), package novelty and contrast stimulate exploration ("involuntary attention"). The extent to which one would emphasize brand identification or novelty when revising a package depends on the percentage of shoppers who are loyal to the brand (planning their purchases before entering the store) versus brand switchers or variety seekers (who make their decisions at the point of purchase).

The results of the research indicated that a manufacturer can encourage shoppers who are not currently loyal to its brand to consider purchasing the product by using a highly novel package. In relatively small and stable categories like raisins, flour, and spaghetti, we found that the revised package was more likely to be picked up and purchased when the meaning it conveyed was consistent with the brand's original positioning. In highly competitive categories like cereal (where it is more difficult to attract shoppers' attention), having a strikingly different package was more important to the success of the brand than maintaining a consistent image.

On the other hand, if the brand has a large base of loyal customers, the results suggest that it may be better to retain the original package or a minor variation, as large changes may reduce brand identification and confuse existing customers.

Notes

1. Of course, if the original brand was disliked, the manufacturer may intentionally design the new package to look different in order to minimize associations with the old product.
2. These may be the same or different from the elements that are used for brand identification.
3. There are two notable differences between Roberts' model and the one presented in Figure 1. First, we include an initial Stage 0 of category attention. Category attention is a necessary but not sufficient condition for brand-level information processing. Second, we focus on brand attention rather than brand awareness at Stage I. Whereas brand awareness is typically defined as the consumer's ability to recognize or recall the brand name when prompted (see, e.g., Lavidge and Steiner's 1961 "Hierarchy of Effects" model), we define attention as being when the consumer actually recognizes, recalls, or notices a brand at the point of purchase (e.g., Strong's 1925 "AIDA" model). Attention differs from consideration (Stage II) in that consideration requires more active processing of brand information. While Stages I and II are conceptually distinct, we do not attempt to discriminate between them in the empirical research.
4. In some cases, these goals are recorded on a shopping list. In others, they are stored in consumer memory. Goals can identify general needs (e.g., bath supplies), product categories (soap), brands (Dove), or individual shop-keeping units (Dove bar soap, white, three-pack). When goals are narrowly specified (either in memory or on a shopping list), the consumer is said to have "planned" the purchase.
5. In the laboratory study to be described, we have no way of empirically discriminating between stages I and II, so they are collapsed into a single stage called "Consideration Set Formation."
6. In further support of this point, Spence and Engel (1970) reported that perceptual thresholds were lower for preferred brands.
7. Research by Duncan and Humphreys (1989) suggests that a shopper's ability to identify a target brand's package will increase as it becomes more distinctive from competitors' packages and as competitors' packages become more similar to each other.
8. When a revised package is very similar to the original design, we assume that it communicates an image that is consistent with the brand's positioning.
9. Maps with higher dimensionality did not explain substantially more variance.

10. These attributes were identified by two judges with brand management experience in the consumer packaged goods industry as being the key performance dimensions in the four test categories.
11. Because an individual may use a target brand in one category but not in another, the classification of "target-brand user" was done at the product category level. There were a total of 102 subject/category observations for "target-brand users" and 390 observations for "other-brand users" (excluding the 20 observations for the five colorblind respondents).
12. Package size and shape are also visually dominant attributes, and are likely to be used for product screening.
13. Similar techniques have been used to test the visibility of billboard ads and yellow-page directory listings.

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MARKETING SCIENCE INSTITUTE

1000 Massachusetts Avenue
Cambridge, MA 02138
Phone: (617) 491-2060
Web: www.msi.org