The Effects of Product Display Organization on Consumers' Visual Attention to Attributes

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Abstract

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This thesis examines the effects of product display organization on consumers' visual attention to attributes underlying display organization. Although research has demonstrated that the features consumers base their decisions on are affected by product display organization, the mechanism by which consumers' choices are affected remained unknown. This thesis addresses this limitation by using eye-tracking methodology to measure consumers' visual attention to and processing of specific features at the point of purchase, and posited that this attention, in turn, affects consumer choice.

The findings represent an important contribution to the literature by examining how consumers' decisions are affected by display organization while making decisions at the point of purchase. This study was the first to uncover that significant visual attention is paid to product characteristic information and that this information is examined more often and for longer than brand or price information. Consistent with past research, this study supports the relationship between increased visual attention and purchase likelihoods. The results lend support to the idea that after examining display organization, consumers use other available information to make their purchase decisions. Although the relationship between display organization and visual attention was not found to be significant, there is some evidence that this link warrants further investigation.

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Chapter 1: Introduction and Literature Review

1.1 Introduction

Many of the environmental stimuli consumers encounter everyday impact their decisions and behaviors (Turley and Milliman, 2000). Turley and Milliman (2000) review research conducted on how the environment affects consumer responses, including atmospherics and shelf space studies. The authors note that although a number of studies have examined shelf space decisions and their effects on consumers, there are still many interesting research opportunities.

This thesis addresses one of these opportunities by examining the effects of product display organization on consumers' visual attention to attributes underlying display organization. Although research demonstrates that the features consumers base their evaluations and choices on are affected by product display organization, the mechanism by which consumers' evaluations and choices are affected remain unknown. This thesis thus focuses on the impact of display organization on consumers' visual attention and information processing, and posits that these in turn affect consumer choice.

This thesis extends the literature on product display effects. For example, Bawa, Landerwehr, and Krishna (1989) found that different marketing environments (the arrangements of price, product, and promotion) create unique frames of reference for

consumers, in which their attention is drawn to specific features, influencing their purchase behaviors. Other research shows that point of purchase displays, which essentially reorganize products within a store, draw consumers' attention to specific attributes (Areni, Duhan, and Kicker, 1999). This increased attribute salience influences what consumers base their purchase decisions on. Point of purchase displays are product displays that are often located in high traffic areas (i.e., near the cash register or at the end of aisles) that take the form of advertising signs, sometimes actually holding or displaying the product, which seek to increase consumers attention to the product (Kerin et al., 2005). "It is estimated that 73 percent of purchase decisions are made at the point of sale" (Rettie and Brewer, 2000). Because of this, large portions of marketing budgets are now allocated towards point-of-purchase marketing. Chandon et al. (2001) explain that the objective of these marketing efforts is to increase purchase consideration for a product, as a result of its visual salience at the point-of-purchase. The results of these studies illustrate the importance of understanding and examining display organization.

One area that has not been directly examined, however, is the impact of display organization on consumers' attention and information processing. Understanding what specific features of a product (e.g., brand, price, product benefits) consumers use to make their decisions at the point of purchase is important for both marketers and retailers who wish to create more effective product displays. It is impossible for marketers to understand how display organization affects consumers' information search and decision making without knowing the features that are attracting consumer attention.

The purpose of this study is to address this limitation by using eye tracking methodology, which allows researchers to measure consumers' attention to and

processing of specific features at the point of purchase, depending on product display organization. This research builds on previous eye tracking studies that found that increased visual attention to a product corresponds with increased likelihood of product choice (Chandon et al., 2001, Lohse, 1997):

> "On average, manufactures invest half of a brand's promotional dollars in trade promotions to secure appropriate levels of in-store marketing effort (Dreze, Hoch, and Purk 1994). Empirical studies justify these practices by showing that consumer in-store behavior is influenced by point of purchase marketing. However, there are no studies that evaluate the validity of commercial eye-tracking data, the most promising method for measuring the return on these investments." (Chandon et al. 2001, p. 2)

By using eye tracking, this study seeks to establish how display organization affects consumer's attention to, and use of these attributes. This study also aims to determine whether consumers' attention to and processing of these features relate to product choice.

1.2 Literature Review

Much of the literature on display organization focuses on sales data, or self-reported survey responses and purchase intentions. This section draws upon this research, as well as eye tracking research to develop some hypotheses about how display organization influences consumers' attention to and use of attributes in making their purchase decisions.

Display Organization

Display organization can be defined as the "classification system by which a product category is literally displayed in the store" (Morales, Kahn, McAlister, and Broniarczyk, 2005, p. 160). For example, toothpastes can be arranged by brand (with all Crest toothpastes together and all Colgate toothpastes together), by product benefit (with all whitening toothpastes arranged together, all toothpastes for sensitive teeth arranged together, etc.), or by price (with more expensive toothpastes arranged together and less expensive toothpastes arranged together). As discussed in the research below, product display organization has been found to affect the features consumers examine at the point of purchase, which in turn has been found to affect consumers' evaluations and purchase decisions.

Bawa et al. (1989), for example, examined the relationship between different marketing environments (the arrangement of price, products, and promotion that consumers encounter in store) and consumer purchase behaviors. They proposed that these different environments affect consumers' frame of reference, which in turn affect their purchase behaviors. For example, they proposed that in environments with increased display and feature activity (the frequency of promotional displays) consumers would have increased promotional sensitivity, leading to decreased brand loyalty. The authors' predictions were tested using scanner panel data from multiple stores with unique marketing environments. The authors found that assortment size, display and feature activity, new product introductions, and price variability had significant effects on consumer purchase behaviors, including brand loyalty, promotional sensitivity, price importance, and the rate of new product trial. For example, in certain instances the

organization of the store led to brand switching, hurting the sales of the dominant brand. This supported the notion that store environments create different frames of reference for consumers, influencing their purchase behaviors.

Similarly, Kahn and Wansink (2004) examined how assortment structure, the way in which products are organized and presented, influences consumer consumption. Increasing attribute salience makes it more likely that consumers will base their evaluations and purchase decisions on that specific attribute. Therefore, the authors proposed that the attributes consumers used to make their decisions would affect their consumption quantities. They examined how altering perceived variety, rather than actual variety, affected the amount customers consumed. Assortment structure was manipulated by presenting different organizations (organized vs. disorganized) and symmetries (equal vs. unequal frequency of items in an assortment), which influenced perceived variety, while holding actual variety constant. The salience of assortment size was manipulated by asking consumers to estimate the total number in the assortment. Consumption quantity was the actual number of items the participant took. The results support the hypothesis that assortment organization moderates the relationship of variety on consumption quantity, by influencing perceived variety. The authors also found that when size was made salient, it became the dominant attribute consumers used to determine consumption quantity; otherwise the assortment organization cues were used. Overall, this study indicates that both organization, and attribute salience are important in affecting consumers purchase decisions. One limitation of this study is that only products varying on a single attribute were used. Future research needs examine how more

complex decisions, choosing products varying on multiple attributes, can affect purchase decisions.

Areni et al. (1999) examined the relationship between display organization and attention to specific attributes. As opposed to the traditional view that point of purchase displays increase sales of the featured brand, the authors propose that these displays reorganize products within the store, and this reorganization changes the salience of the attributes consumers use to make purchase decisions. The authors suggest that this occurs primarily for brands that have a strong association with a specific attribute. Therefore, if a brand with a strong attribute association is displayed, its attribute becomes important in the decision process. This theory was examined in a test market study and a laboratory study involving different wine displays. Contrary to the traditional view that point of purchase displays increase sales of the featured brand, when the wines were displayed by region, this encouraged consumers to use region as a basis to compare the wines. This actually decreased the sales of the displayed wines (Texas) and increased the sales of the preferred region's wine (California). The results supported the authors' conception that point of purchase displays, which reorganize products within a store, draw consumers' attention to specific attributes, and change the attributes consumers use when making purchase decisions.

Research has demonstrated that the way products are organized affects not only consumers' purchase behaviors but also affects consumers' evaluations. Buchannan, Simmons, and Bickart (1999) examined how display and brand context affect brand equity. More specifically they investigated how inconsistencies in brand communication, where the brand is encountered, affect brand evaluations. It was suggested that

consumers have pre-existing expectations about retail display conditions, and if these expectations are not met, they cause consumers to alter their evaluations. The authors altered the display structure (the way in which the brands were displayed), the precedence of the brands, as well as the perceived similarity of the brands. After exposing participants to a catalog with different ads for a high equity brand and a fictitious brand, the perceived quality, value and fair price of the high-equity brand were measured. The results indicated that the display context had strong effects on consumer evaluations, and in certain circumstances even negated the equity of the brand. There were situations in which the context cued consumers to have negative thoughts about the high equity brand. Consumers also relied very heavily on these external cues, and used them more than their previously formed brand attitudes.

Morales et al. (2005) examined how assortment organization affects evaluations. The authors examined how the congruency between consumers' internal cognitive structure and an online store's external structure (i.e., the way the store's assortment was organized), affect consumers' perceptions of the assortment, satisfaction with the assortment, purchase decisions, as well as satisfaction with these decisions. Three experiments examined congruency effects on evaluations and perceptions in consumers with varied product familiarity (familiar vs. unfamiliar) and goal orientation (with goals or without goals). The authors also examined the effects of filtering, in which management limits a product offering. The authors found that for familiar product categories, congruent displays increased perceived variety as well as satisfaction, whereas for unfamiliar product categories, congruency increased satisfaction but not variety. Filtering, even if consistent with the goals of consumers, decreased consumer

satisfaction. These results illustrate how assortment organization affects consumers' evaluations and satisfaction.

Taken together these studies illustrate that the information consumers use and the decisions consumers make are affected by product display organization. However, one major limitation of these studies is that they fail to examine which features, specifically, consumers examine when making their purchase decisions. It is impossible for marketers to understand how display organization affects consumers' evaluations and decisions without knowing which specific features are attracting consumer attention, and in what order and for how long consumers are examining these features. The results of previous studies used subjective measures of attitudes or attention that required introspection on the part of the participant. The features consumers used were inferred from change in sales, purchase intentions, and questionnaire responses. Consumers' knowledge and recall of the attributes they examine may not be reliable, however, as attribute salience is generally low. Consumer self-reports are perhaps not the most accurate way to understand consumers' information processing, as Pelz, Canosa and Babcock (2000, p. 37) point out:

> "Because so much of what we accomplish in everyday tasks is performed without conscious intervention, it is very difficult to describe via introspective report. This is especially true for over-learned tasks. If the method of conscious report is excluded because of its inability to capture important elements of these tasks, we are forced to search for another tool."

There has been some research suggesting eye tracking could more effectively answer questions that relate to consumer attention and information processing.

Eye Tracking

Eye tracking is a term used to refer to research that examines where one is looking, or the motion of the eye relative to the head ("Eye Tracking," 2007). It is a technology that has, more recently, made its way into marketing research as well as into the commercial sector because of its many possible applications for marketing researchers and practitioners alike. Eye tracking has been used in consumer research to improve internet usability (McCarthy, Sasse and Riegelsberger, 2003; Russell, 2005) as well as to examine how consumers look at online advertisements (Day, Shyi and Wang, 2006), yellow pages (Lohse, 1997), print advertisements (Pieters, Rosbergen and Wedel, 1999; Pieters and Wedel 2004), health warnings (Krugman et al., 1994), and point of purchase marketing (Chandon, Hutchinson, and Young, 2001).

Research in marketing considers what features attract attention, how certain stimuli are perceived, and how attention affects recall, attitudes and behavior. Eye tracking research is primarily centered on analyzing eye movements. Fixations, saccades and smooth pursuits are the eye movements that provide evidence of voluntary, overt visual attention (Duchowski, 2003). Fixations are stable eye movements, during which the eye remains relatively still, while saccades are the rapid eye movements (Rayner, 1998). These eye movements illustrate one's desire to maintain their gaze on an interesting object (either stationary or moving objects respectively), while saccades illustrate the desire to voluntarily change one's focus of attention (Duchowski, 2003).

Eye tracking research provides a way to examine these topics using objective quantifiable results ("Eye Tracking," 2007). As Duchowski argues (2003, p. 194), if one wants to better understand how people function then "...a model of consumers' internal processes could aide in the direction of marketing actions." Duchowski (2003) goes on to argue that if we can understand these perceptual processes while the consumer is acquiring the information, information can be presented as directly and efficiently as possible. Research in scene perception supports the use of eye-tracking to measure visual attention (Rayner, 1998). Janiszewski (1998) also illustrated the validity of using eye tracking data to examine visual attention and predict brand choice in a display context. He found that layout affected attention, memory, and sales of products.

Dreze and Hussherr (2003) used eye tracking to study the perception of online advertisements, in particular flash banners, and to examine the efficiency of the typical "success" measurements of these advertisements. They describe that "click-through" rates, the number of times a banner ad is actually clicked on, are the standard measure of an online advertisement's effectiveness. To advertise online, many companies will not simply pay for the number of exposures, but will "pay-per-click." Using eye tracking research combined with more traditional survey research, the authors instructed participants to do a number of searching tasks online. Although Internet surfers avoided looking at banner ads, the effect of the online ads on unaided brand awareness was 4.5 times larger than the standard measure of click-through rates, and 19 times larger than the average click-through rates. These results suggest that although surfers avoid looking at banner ads, incidental ad exposure affected brand and ad recognition and recall. These

results also illustrate the strength in this methodologies ability to capture unconscious processes.

The following studies show how eye tracking measures, such as fixation and saccades, are useful for studying consumer attention and choice: Pieters and Wedel (2004) examined how the different elements of an ad (brand, pictorial, and text) affected how the advertisement captures attention. Consumers were instructed to page through several magazines displayed on a monitor while eye-tracking data were recorded. Analyses, to determine the unique effect the different elements of an ad had on consumers' attention to the advertisements, indicated that the pictorial elements in the ad were the most attention grabbing, regardless of their size. The text elements, on the other hand, captured attention in direct proportion to their size. When consumers examine the brand in an advertisement, this causes them to then examine other elements of the advertisement. Similarly, in the context of Yellow Pages, Lohse (1997) used eye tracking to examine visual attention: which advertisement features cause people to notice an ad, if there is any particular order to the ads which people view, and how viewing time towards different ads varies in relation to the presence of certain features. The author found that colorful ads were scanned more quickly, more often, and longer than black and white ads, and were noticed earlier. Ads that had graphics were scanned more often than those without. Larger ads were more likely to be noticed than smaller ads. Ads placed earlier on a page were more likely to be noticed. In addition, increased attention correlated with consumers' choice: Participants spent 54% more time viewing ads of businesses they chose, compared to other ads. Thus, organization of an advertisement affects consumers'

information search patterns. Overall, these results illustrate the importance of visual attention and processing on subsequent choice behavior.

In a simulated retail context, Chandon et al. (2001) examined how point of purchase marketing affects consumer attention and purchase intentions, as well as its impact on "visual equity" (i.e., an increase in consideration due to the visual salience of the product at the point-of-purchase). One major advantage to this research is that it used eye tracking as opposed to the subjective measures used in other studies. Eye tracking was done while consumers examined pictures of either a typical supermarket shelf layout for fruit juices or detergents. The results suggested that participants attended to more products and prices than had been found in other in-store observation studies, given the same amount of time. Participants looked at an average of 7.1 products and 2.1 prices in 19 seconds. It is clear from these results that participants spend much longer examining brands than they do examining prices. Results also indicated that prices are only examined after brands. Attention to a brand greatly increased the probability that it was considered (from 30% to 120%). Visual equity increased only for brands with low brand equity, meaning that point-of-purchase advertising was most effective at increasing purchase intention for those brands that the consumer was less familiar with. This research highlights the flaws of attempting similar research using in store observation, and the erroneous conclusions that would be drawn from these methods; namely that very few brands are examined, although in reality 7.1 brands are examined on average. The researchers failed to take into account, however, that the way in which products are organized can affect both the attributes consumers examine as well as purchase behaviors. As discussed previously, display organization has a significant effect on

consumers' information search (e.g., Areni et al., 1999; Bawa et al., 1989; Kahn and Wansink, 2004). If the products in this study were organized so as to increase brand salience, this may account for why a large number of brands were examined, and why price was only examined secondarily. The authors did not consider the diverse features the brands differed on. For example, juices of different flavors with different options (pulp vs. no pulp) were offered. Perhaps consumers did not only examine the brand, but also product attributes, which could account for the longer time it took to examine a product. To understand the attributes consumers attend to and use to make purchase decisions, it is therefore critical to understand how display organization affects consumer information search and usage.

The advantage of eye tracking methodology over traditional approaches to measuring visual attention and information processing is its ability to extract information that would otherwise be extremely difficult to obtain. It allows researchers to collect and process data that cannot be reliably obtained by asking participants to list all the ads or products they looked at, or by asking them to use introspection to describe what specifically drew their attention to the ad or product they chose.

> "Even if consumers have memorized the organization of a supermarket display, visual factors such as the contrast and luminance of specific stimuli in parafoveal vision usually dominate eye control. As a result, it is likely that even an expert consumer searching for her preferred brand in a familiar setting will be attracted to some products that are simply too visually salient to ignore." (Chandon, Hutchinson, and Young, 2001, p. 5)

Eye tracking thus holds a lot of promise for the development of displays that capture consumers' attention, and facilitate information acquisition, information processing, and consumer choice. In fact, eye tracking research suggests that visual attention is a relevant measure of point of purchase marketing effects:

> "The standard procedure in the eye-tracking industry is to ask adult shoppers to look at projected photographs of supermarket shelves or print ads "as they would normally do" while their eyes are being tracked. Respondents are not instructed to evaluate the items they are looking at or to make a choice. The performance of point of purchase marketing is therefore assessed in terms of visual attention only."
>
> (Chandon, Hutchinson and Young, 2001, p.6)

Eye tracking research has shown that certain features of an advertisement attract consumer's visual attention (Lohse, 1997; Pieters and Wedel, 2004). Measuring visual attention was described in terms of: which features cause people to notice an ad, the order in which the ads were viewed, and how viewing time for different ads varies in relation to the presence of certain features. Although previous research examined attention to advertisements, how product display organization affects the specific features consumers attend to at the point of purchase has not been examined. It is critical for marketers to understand how display organization affects consumers' attention, information search, information usage, and choice, such that more effective product displays can be designed. The purpose of this research is to investigate the visual search patterns of consumers presented with different displays, in which products are organized by either price, brand or by product characteristics. This will identify the features consumers attend to, search

for, and use to make purchase decisions, and clarify how display organization affects consumer information search and usage. This research also contributes to our understanding of how consumer information search and usage affects product choice.

1.3 Hypotheses

Previous marketing research examining product displays has suggested that organization can alter the salience of attributes for consumers, affecting which attributes consumers use when making their decisions. As was previously mentioned, Bawa et al. (1989) found that POP displays draw attention to specific product attributes. Areni et al. (1999) found that POP displays (e.g., displaying wine by region) increase the salience of a given attribute (region), encouraging consumers to use this as a basis to compare the wines. Kahn and Wansink (2004) also found that making an attribute more salient increased the likelihood that consumers will base their evaluations and purchase decisions on this attribute. However, all of these studies failed to examine to what extent consumers' attention and information processing is in fact affected by increased attribute salience; the effects of display organization on consumers visual attention has yet to be measured.

Based on this research demonstrating that product organization increases attribute salience for consumers (Bawa et al., 1989; Areni et al., 1999; Kahn and Wansink, 2004), it is expected that display organization increases the likelihood that consumers will use these attributes when examining the products. Therefore, organization should affect consumers' visual attention to those attributes.

Hypothesis 1: Consumers will attend to the primary attribute display that organization is based on (i.e., brand when display is organized by brand, product benefit when it is organized by product characteristics, or price when it is organized by price)

(a) for longer than the other attributes when examining the product offering

(b) more often than the other attributes when examining the product offering

(c) earlier when examining the product offering

than when products are organized in another manner

Researchers have also found that increased visual attention is related to an increase in purchase intentions. Chandon et al. (2001) used eye tracking to examine how point of purchase marketing affects "visual equity", and found that visually examining a brand greatly increased the probability that it would be considered for purchase. Lohse (1997) found that increased attention correlated with consumers' choice: Participants spent 54% more time viewing ads of businesses they chose compared to other ads. Therefore increased visual attention is expected be related with consumers' purchase decisions, where the product chosen is expected to be viewed longer, more often, and earlier on as compared to other products.

Hypothesis 2: The product receiving increased visual attention, i.e.,

(a) the product viewed longer than other products

(b) the product viewed more often that other products

(c) the product viewed earlier than other products

(d) the product viewed most recently prior to decision

will be more likely to be chosen than other products.

Based on the study's hypotheses, Figure 1.1 depicts the proposed relationships between product display organization and consumers visual attention to attributes, as well as purchase intentions.

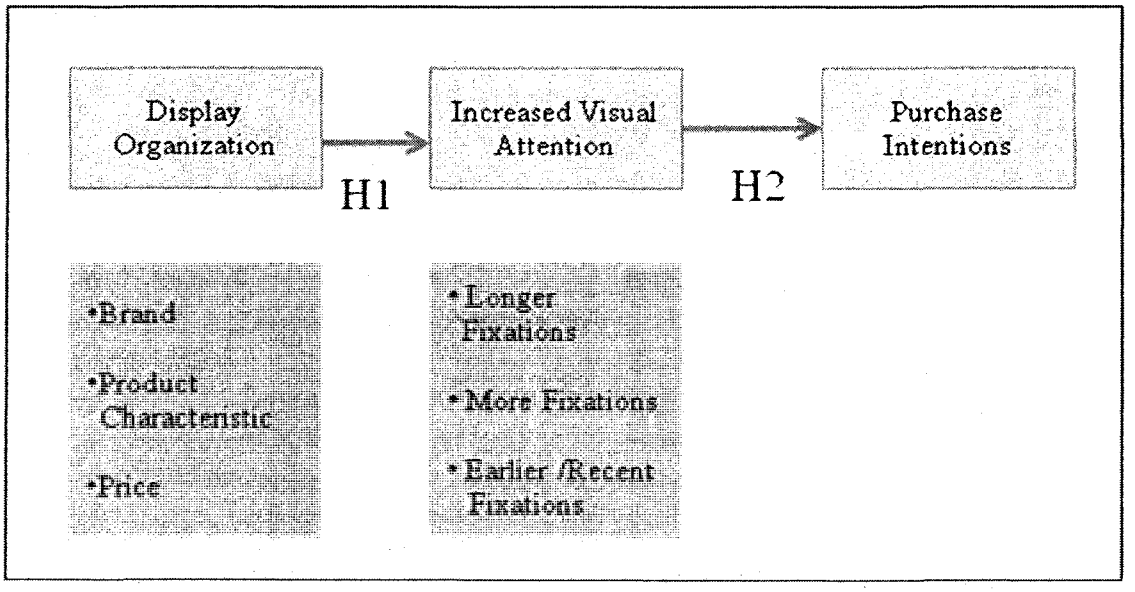

Figure 1.1 Model of the Effects of Product Display Organization on Consumers Visual Attention to Attributes and Purchase Intentions

Chapter 2: Pretest and Research Methods

2.1 Pretest Methods

Participants

A total of 50 university students (23 males and 27 females) between the ages of 18 and 45 (M = 24.49, SD = 5.01) were recruited from Concordia University. Participants were recruited on a voluntary basis, and they received 5$ for their participation. Informed consent was obtained from all participants (Appendix 1).

Pretest Stimuli

Photographs were developed in order to examine the effects of display organization on consumer choice. The photographs illustrated a simulated store shelf, where both products and prices were displayed. For a number of reasons, toothpaste was used as the focal product: Since the organization of both brand and product features was manipulated, the chosen product had to be available in different brands, each with the many product features available. To reduce the effects of risk avoidance behavior, it was also important to choose a product, brands and product features consumers are familiar with.

The brands used as pretest stimuli were Arm & Hammer, Crest, Colgate, and Aquafresh. Each brand was presented in four varieties: teeth whitening, fresh breath, toothpaste for sensitive teeth, and toothpaste for overall oral health. As toothpaste is an inexpensive routinely purchased product, risk avoidance by participants was reduced. The prices associated with the toothpastes were four prices currently used at the local pharmacy: $1.99, $2.49, $2.79, and $2.99. Toothpaste also lends itself to minimization

of choice behavior associated with brand loyalty or product feature loyalty; it is a product in which households routinely try different brands as well as varieties.

To better disguise the focal product category, stimuli were also created for two other product categories (laundry detergent and fruit juices). Stimuli were created using Microsoft Paint, where photographs of toothpastes (as well as detergents and juices) were arranged to create the simulated shelving display. To see an example of each photograph refer to Appendix 2. Each pretest photograph shown to participants depicted the four brands of toothpastes, four types of each brand, and four prices, organized by brand, by product feature, or by price, on two shelving units with four shelves each. The products were organized in four quadrants: the top left two shelves, top right two shelves, bottom left two shelves, bottom right two shelves. To increase the realism of the photographs, three of the same toothpaste were stacked on top of one another, as is commonly done in stores. To create a realistic product offering, the two shelves in each quadrant featured the same toothpastes, as is commonly done in stores. In the brand organization photograph, each quadrant housed one of the four brands. The varieties of each brand were arranged in counterbalanced order. The prices were also counterbalanced so that for each brand, every variety had a different price. Therefore, each brand covered all price points, and each product feature covered all price points. The prices assigned to each product were held constant for the different organizations. In the price organization photograph each quadrant housed one of four prices and in the characteristic organization each quadrant housed one of the four varieties, with the other attributes randomized.

Questionnaire

The pretest consisted of questionnaires completed by each participant (Appendix 3). The order of product category and experimental stimuli presentation was randomized for each participant. In the first section, participants considered a few product categories, and answered questions about these product categories. In an open-ended fashion, participants were first asked to list all brands that came to mind for each product category (toothpaste, laundry detergent, and fruit juice), as well as list the factors that came to mind when considering purchasing a product in that given category. This was asked to determine if the most familiar brands and attributes were used in the stimuli. Product category familiarity was also recorded on a 7-point scale ranging from 1 (not at all familiar) to 7 (very familiar). Next, participants were asked in an open-ended fashion how often they purchase an item from the given product category. Following this, participants' brand familiarity, brand attitudes, attribute importance, and brand purchase frequency were recorded for the brands and attributes used in the experimental stimuli for all three product categories (toothpaste, laundry detergent, and fruit juice). This was done to see if there were any differences in brand familiarity, brand attitudes, attribute importance, and brand purchase frequency. As significant differences were found, these measures were included in the experimental questionnaire to be used as covariates. A few additional brands and attributes were included as distracter variables. Refer to (Appendix 3) to see the brands and attributes used in each product category. Brand familiarity for the given brands was measured on a 7-point scale ranging from 1 (not at all familiar) to 7 (very familiar). Brand attitudes, for the given brands, were measured by averaging the responses on three 7-point scales ranging from 1 (negative, unfavorable,

dislike) to 7 (positive, favorable, like). Cronbach's alpha reliability coefficient for brand attitudes during both the pretest and main experiment ranged from .924 to .983. Attribute importance for the given brands was measured on a 7-point scale ranging from 1 (not at all important) to 7 (very important). Brand purchase frequency for the given brands was measured on a 7-point scale ranging from 1 (never buy) to 7 (always buy).

In the second section of the pretest, participants looked at photographs of the product displays, and answered a series of questions regarding these displays. First, the participants were asked to select the product of their choice, as if they were in the market for this product. Participants were shown all nine pictures of the different product categories and different organizations in counterbalanced order. Choice difficulty was also measured on a 7-point scale ranging from 1 (very easy) to 7 (very difficult). To verify the organizational manipulation, the nine photographs were presented again and participants were asked to identify how the products were organized in the display in an open-ended fashion. It was also important to verify that the prices chosen were thought to be realistic, and relatively inexpensive. While looking at the nine pictures and indicating display organization, participants rated how expensive the prices for the products were in the display on a 7-point scale, ranging from 1 (inexpensive) to 7 (expensive). They were also asked to indicate how realistic the prices were for the products included in the display on a 7-point scale, ranging from 1 (unrealistic) to 7 (realistic). The photographs were shown once more, to confirm the organizational manipulation. Participants were asked to indicate how the products were organized, but this time by forced choice: by price, by brand, and by product characteristic. Participants

were also given the opportunity to make any comments about the products or the displays.

In the third portion of the questionnaire, demographic information was recorded. Participants were asked to indicate their age, gender, program of study and year of study. To examine any income effects, both employment status as well as household's total income, were recorded. To ensure an adequate understanding of English, years in Canada, native language, most spoken language, and English language knowledge were recorded. English language knowledge was measured on a 7-point scale from 1 (poor) to 7 (excellent). Finally, hypothesis guessing was examined. Participants were asked to describe in their own words what they thought the study was about.

2.2 Pretest Analysis and Results

After entering and coding the data into Microsoft Excel, the data were analyzed using SPSS software. To examine product category familiarity, the mean values were examined. Toothpaste (M = 4.52, SD = 1.845) on average is something our sample was familiar with. To examine whether the most familiar brands were used as stimuli, a simple frequency analysis was done for the open-ended lists of toothpaste brands: Colgate, Crest, and Aquafresh were the three brands mentioned most (86%, 82%, and 38% respectively). Sensodyne (30%), however, was mentioned more often than Arm & Hammer (18%).

To examine if there were any differences in brand familiarity and brand attitudes a repeated measures analysis of variance was conducted. Significant differences were found for both brand familiarity ($F(3,147) = 32.363$, $p < .001$) and brand attitudes (F

(3,144) = 15.165, $p < .001$). Similarly, to examine whether the most familiar attributes were used in the stimuli, a simple frequency analysis was done for the open-ended lists of toothpaste attributes. It was found that the attributes chosen for the stimuli were those mentioned most often (Price: 50%, Freshness: 40%, Whitening: 36%, Overall Health: 26%, Brand: 10%, and Sensitive: 2%), aside from Flavor: 8%. To examine if there were any differences in attribute importance a repeated measures analysis of variance was conducted. Significant differences were found for attribute importance (F (6,294) = 12.214, $p < .001$). To determine if consumers were loyal to only one brand type or one attribute type, a simple frequency analysis was done on brand purchase frequency and attribute importance. Scores greater than or equal to four (indicating a regular level of purchasing and finding moderately important) were counted. 80% of participants buy more than one of the proposed brands and 100% of participants find more than one attribute important to them.

To examine whether relevant brands and attributes were used in the photographs presented in part two, choice frequencies were examined. All brands and all attributes were chosen. To examine the organizational manipulation, participants were asked to identify how the products were organized in the display in an open-ended fashion, as well as by forced choice. Correct organization identification was attained for the price organization (81.6% free response, 91.1% forced choice), the brand organization (97.2% free response, 97.7% forced choice), and for the characteristic organization (81.6% free response, and 88.4% forced choice). Participants also commented on the displays and products. Thirty-seven comments were made over the three pictures, and all related to personal preference on organization. No comments were made regarding brands or

attributes. To examine if choice difficulty was affecting any results, a repeated measures analysis of variance was conducted. When comparing price organization (M = 2.44, SD = 1.50), brand organization (M = 2.71, SD = 1.58) and characteristic organization (M = 2.75, 1.61), there were no significant differences in choice difficulty (F (2, 94) = 1.45, n.s.).

To ensure the prices were not expensive and were realistic, repeated measures analysis of variance were run for all the organizations. The mean values for expensive prices were below the midpoint and for realistic prices were above the midpoint. No significant differences were found for expensiveness (F (2, 92) = 1.08, n.s.) nor realism (F (2, 92) = 1.62, n.s.).

2.3 Pretest Discussion

The pretest results were used to develop the experimental stimuli for the eye tracking experiment and were also used to develop the questionnaire that accompanied the experiment. The results of the pretest are discussed in the experimental stimuli and questionnaire sections of research methods.

2.4 Research Methods

Participants

A total of 30 university students (12 males and 18 females) between the ages of 18 and 45 (M = 23.87, SD = 4.82) were recruited from Concordia University. Only participants with normal vision or corrected to normal vision (i.e., with contact lenses) were eligible for this study. All participants were instructed to wear no eyeliner or

mascara, as it interferes with the eye tracker. Participants were recruited on a voluntary basis, and received 5$ for their participation. Informed consent was obtained from all participants (Appendix 4).

Experimental Stimuli

The stimuli used in the eye tracking experiment were adapted from the pretest stimuli (Appendix 2). While running a pilot experiment with the pretest stimuli, it became clear that the images were too long. In order to project these images clearly, it became necessary to reduce the size of the images. The pretest stimuli were developed following a specific organization (Appendix 5). New organizations for the experimental stimuli, using similar rules were developed (Appendix 6). Toothpaste was kept as the focal product. Pretest results suggest that participants are familiar with toothpaste, toothpaste brands, and product benefits. The majority of participants also routinely purchase more than one brand of toothpaste, and all participants reported many of the features as highly important to them. The experimental brands used were Arm & Hammer, Crest, Colgate, and Aquafresh. Although the pretest results indicated that Sensodyne had higher brand recognition, it is a specialized product for tooth sensitivity. One of the features of toothpaste used was sensitivity, and it was therefore decided to not add this specialized product to the offering. Each brand was still presented in the four varieties, as these were the most familiar. The features presented included: teeth whitening, fresh breath, toothpaste for sensitive teeth, and toothpaste for overall oral health. As the prices were found to be realistic and non-expensive, the original prices associated with the toothpastes were kept: $1.99, $2.49, $2.79, and $2.99. Experimental

stimuli were also created for the two other product categories: laundry detergent and fruit juice.

Again, each photograph depicted the four brands of toothpastes, four types of each brand, and four prices organized by brand, by product feature, or by price. To counterbalance the position of the brands and varieties, four variations of each photograph were created, 12 in total. In the original photographs, created for the pretest, there were two shelving units, each with four shelves. In the main experiment, to reduce the size of the photographs, one shelving unit was used, with four shelves. The products were organized in rows, rather than in quadrants, and rather than two shelves of the same toothpastes being presented, there was just one presentation of each shelf, still with three identical toothpaste boxes stacked on top of one another. In the brand organization photograph, each shelf housed one of the four brands. The varieties of each brand were arranged in counterbalanced order. The prices were also counterbalanced, so that for each brand every variety had a different price. Therefore, each brand covered all prices points, and each product feature covered all price points. For one set of photographs the prices for each product stayed constant. However, for the different sets, each product received a different price. For an example of each type of the testing stimuli please refer to Appendix 7.

Apparatus and Eye Tracking

The apparatus used for the experiment was the Eye Link II system (SR Research Ltd., Ottawa, Canada), a head mounted eye-tracking device with an attached scene camera (Appendix 8). Eye movements were recorded using pupil and corneal reflection at a sampling rate of 250 Hz.

> "[Pupil Center/Corneal Reflection monitoring] devices illuminate a subject's eyes with a near-infrared LED while a video camera collects images of the eyes. From these images, a computer calculates the position of the center of the pupil and the specular highlight of the LED (corneal reflection). From the relative position of the pupil and the reflection, the computer can recover the location of subjects' fixation within 1.5 degrees" (Dreze & Hussherr, 2005, p. 14).

If any head movements were made, these were observed in the video recording of the scene camera, which had a sampling rate of 30 frames per second.

For calibration, the chin rest was placed at a distance of 70cm from the computer screen, centered at eye level. The screen display was set at 1024 x 768 pixels. Calibration and validation of the eye-tracker and camera were done through the Eye Link II calibration software. For the experiment, the stimuli were displayed on a large white projection screen, adjacent to the calibration computer, using a Proxima Desktop 6800 projector. The projected stimuli measured 76cm x 118.5cm. The bottom of the projection was at a height of 64cm off the floor, and 34cm from the edge of the screen. These measurements were constant for all participants. The chinrest was centered on the projected stimuli, and was placed at a distance of 157cm from the screen.

Procedures

After obtaining informed consent, the eye tracker (Eye Link II) was placed on the participant's head, was adjusted and calibrated. Participants sat on an office chair with adjustable height so that they could comfortably reach the chin rest. They also wore a band around their waists, over the cords of the eye tracker. This was to ensure comfort,

as well as to keep the eye-tracking device stable when they moved from one chin rest to the next. Once calibrated, participants moved to the adjacent chin rest, facing the projection screen, and participants were shown a second picture for calibration and drift correction (Appendix 9). This was done to ensure that the eye-tracker was accurately identifying the positions of the participants' fixations. Participants were then shown one photograph of each product category, all organized by the same attribute. Eye-tracking recordings took place during the choice process. Participants were instructed to select one product of their choice, as if they were purchasing this product for themselves. Participants were given as much time as they needed to make their choice. Eye tracking was stopped once a choice was made, and the choice was recorded by the experimenter. After the first three products were chosen, the drift correction procedure was repeated. Then participants were shown three more photographs, the same three products organized by a different attribute (prices held constant for each product). This procedure was repeated for the third display organization. Therefore, participants made purchase decisions for each product category and for each display organization. For the order of photograph presentation please refer to Appendix 10. Once all of the photographs were presented, the eye-tracking portion of the experiment ended. Following the eye tracking experiment, participants filled out a short questionnaire.

Questionnaire

The questionnaire was adapted from the pretest questionnaire (Appendix 3). A number of the scales from the pretest were used in this questionnaire because significant differences were found on these measures in the pretest. Therefore, it was necessary to measure these covariates for each individual. In the first section, participants considered

a few product categories, and answered questions about these product categories. The order of product category presentation was identical to the order of presentation of their experimental stimuli (i.e., randomized for participants). Participants' brand familiarity, brand attitudes, attribute importance, and brand purchase frequency were recorded using the pretest scales for the brands and product features used in the experiment. Participants indicated how expensive the prices for the products were in the displays on a 7-point scale, ranging from 1 (inexpensive) to 7 (expensive). They also indicated how realistic the prices were (on a 7-point scale, ranging from 1 (unrealistic) to 7 (realistic)). This was done to ensure that the prices were found to be relatively inexpensive and realistic. Participants could also make comments about the products or the display.

In the second portion of the questionnaire, demographic information was recorded (age, gender, program of study and year of study). To examine any income effects, both employment status as well as household's total income, were recorded. To ensure an adequate understanding of English, years in Canada, native language, most spoken language, and English language knowledge were recorded. English language knowledge was measured on a 7-point scale from 1 (poor) to 7 (excellent). Finally, hypothesis guessing was examined. Participants were asked to describe in their own words what they thought the study was about.

Coding Procedure

The eye-tracking experiment created SCENECAM data. A video playback from the scene camera with the eye positions overlaid for each participant was created using the Eye Link Playback Viewer software. Also, the x-coordinates and y-coordinates of each fixation ($\geq$ 30ms of stationary eye position) along with fixation duration for each

fixation were recorded. The Eye Link Data Viewer software allows one to view a 2-dimensional map of all of the fixation points (larger diameter of each fixation point indicates longer duration of fixation). The software is interactive, so one can follow the order, location, and duration of each fixation. For a sample screenshot of one of the participants fixation map please refer to Appendix 11.

One experimenter coded the outputs fixation-by-fixation. The points on the Eye Link Data Viewer software were compared with the video of the eye positions from the Eye Link Playback Viewer. From these outputs, along with the photographs of the stimuli used, it was possible to determine each product that the participant was fixating on, and more specifically whether they were fixating on the brand name, the product feature, or the price of that product. It was not possible to use x- and y- coordinate analysis to determine these fixations because, although efforts were made to keep the head position constant for each participant, some head movements occurred during the recordings. Also, due to each person's unique height, the position of the scene camera to the screen was different for every individual. Therefore, fixation-by-fixation data coding was required, producing an ordered list of every fixation, as well as the fixation durations. A sample of the coded data for one participant is available in Appendix 12.

Chapter 3: Analyses and Results

One subject was removed from all analyses because they were shown the wrong stimulus. Table 3.1 depicts the range and average number of products examined, the range and average total number of fixations, and the range and total duration of the fixations.

Table 3.1 Descriptive Statistics for Number of Products Examined, Number of Fixations, and Fixation Durations

	N	Minimum	Maximum	Mean	St Dev
Number of Products Examined	29	11	16	14.31	1.69
Total Number of Fixations	29	19	168	62.66	36.4
Total Fixation Duration (seconds)	29	4.42	37.01	14.84	8.73

Hypothesis 1: Display Organization and Increased Visual Attention to Primary Attribute

To examine the hypotheses that participants increase visual attention to the primary organizational attribute, a series of repeated measures analyses of variance (ANOVA) were run.

To examine if organization affected whether consumers spent more total time on the primary attribute, a repeated measures ANOVA was run. Organization was the between-subjects factor (brand organization, characteristic organization, and price organization). The total fixation duration on the attributes was the within-subjects factor (total fixation durations on brand, total fixation durations on characteristic, and total fixation duration on price). Total durations were obtained by averaging all fixation durations participants made on the given attributes. Significant differences were found

between the total fixation durations on the different attributes ($F(2, 25) = 36.176$, $p < .000$), where the majority of time was spent examining product characteristics (M = 7.5 seconds, SD = 4.0), less time was spent on brand information (M = 5.0 seconds, SD = 3.1), and the least amount of time was spent on price information (M = 2.3 seconds, SD = 2.6). However, the main effect of organization and the interaction effect of product display organization on the fixation duration of the different attributes were insignificant ($F(2,26) = .454$, n.s.; $F(4, 52) = .538$, n.s.), indicating no effect of display organization on the amount of time the attributes were examined. This is illustrated in Figure 3.1. To view the mean table and ANOVA tables please refer to Appendix 13.

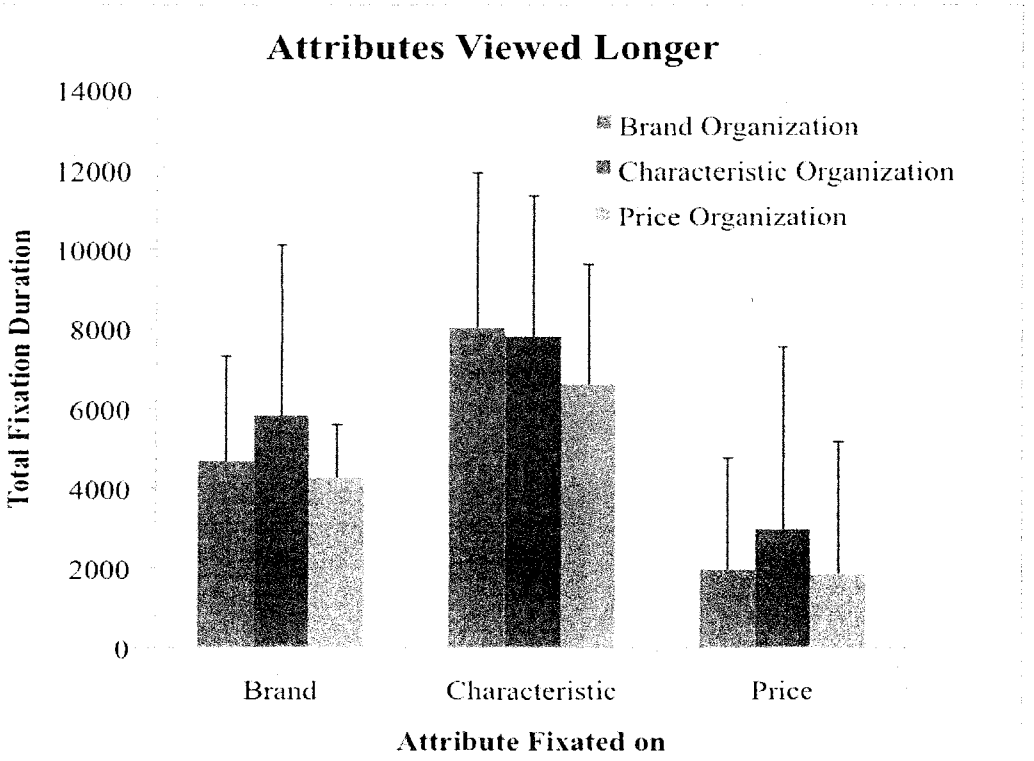

Figure 3.1 Total Fixation Durations Spent Examining the Attributes

Participants were not given time limits when making their purchase decisions. Therefore the variance in the fixation durations between subjects was quite large. The analyses were also run by calculating the proportion of time each participant spent fixating on the given attributes. Significant differences were found between the proportion of fixation durations on the different attributes ($F(2, 25) = 67.155$, $p < .000$), such that the majority of time was spent examining product characteristics (M = 51.8%, SD = 9.0), less time was spent on brand information (M = 33.5%, SD = 11.2), and the least amount of time was spent on price information (M = 14.0%, SD = 10.6). However, the main effect of organization and interaction effect of product display organization on the fixation duration of the different attributes were insignificant ($F(2,26) = 1.168$, n.s.; $F(4, 52) = .585$, n.s.), indicating no effect of display organization on the proportion of time the attributes were examined. This is illustrated in Figure 3.2. To view the mean table and ANOVA tables please refer to Appendix 13.

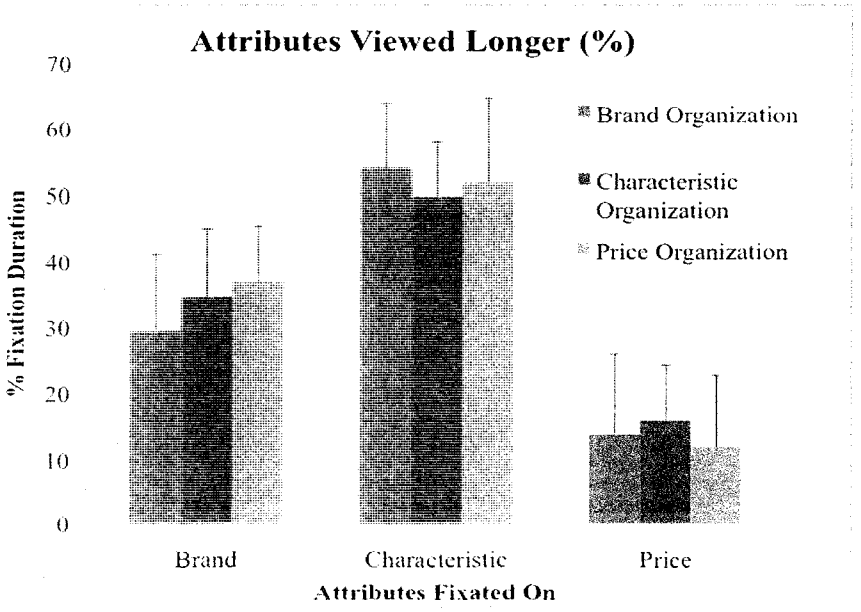

Figure 3.2 Proportion of Fixation Duration Spend Examining the Different Attributes

To examine if organization affected whether consumers look at the primary attribute more often, a repeated measures ANOVA was run. Organization was the between-subjects factor (brand organization, characteristic organization, and price organization). The total number of fixations on the attributes was the within-subjects factor (total number of fixations on brand, total number of fixations on characteristic, and total number of fixations on price). Total number of fixations was obtained by counting the number of fixations participants made on the given attributes. Significant differences were found between the total number of fixations on the different attributes ($F(2, 25) = 45.091$, $p < .000$), where the majority of fixations were examining product characteristics ($M = 30.6$, $SD = 15.6$), fewer fixations were made on brand information ($M = 21.4$, $SD = 12.4$), and the least number of fixations were made on price information ($M = 10.7$, $SD = 12.4$). However, the main effect of organization and interaction effect of product display organization and the number of fixations made on the different attributes were insignificant ($F(2,26) = .236$, n.s.; $F(4, 52) = .335$, n.s.), indicating no effect of display organization on how often the attributes were examined. This is illustrated in Figure 3.3. To view the mean table and ANOVA tables please refer to Appendix 13.

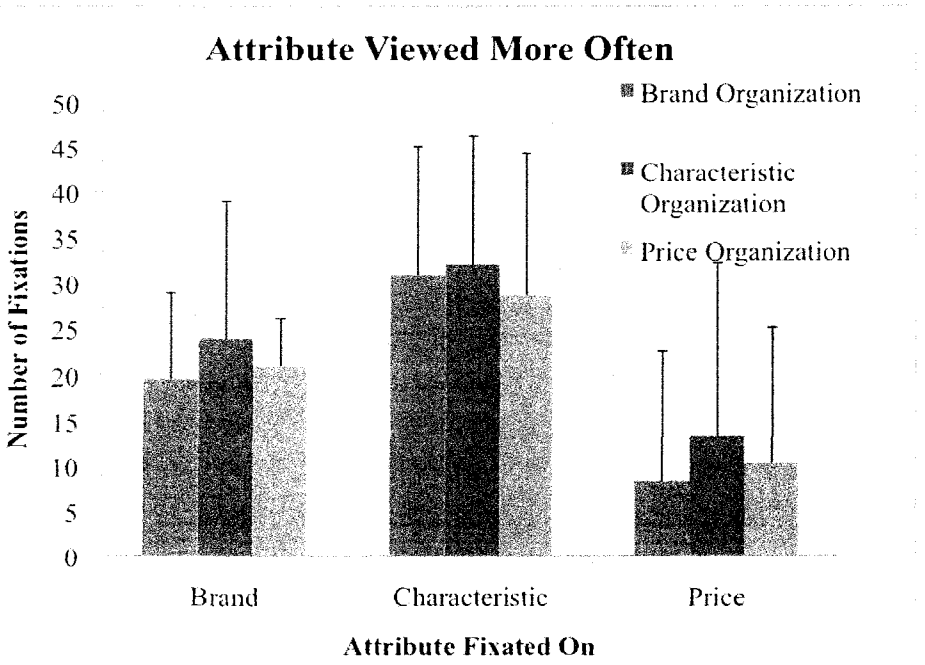

Figure 3.3 Total Number of Fixations made on each Attribute

Participants were not given time limits when making their purchase decisions. Therefore the variance in the number of fixations between subjects was quite large. The analyses were also run by calculating the proportion of fixations each participant made on the given attributes. Significant differences were found between the proportion of fixations on the different attributes ($F(2, 25) = 66.216$, $p < .000$), where the majority of fixations were made on product characteristics ($M = 50.3\%$, $SD = 8.2$), fewer fixations were made on brand information ($M = 35.0\%$, $SD = 9.4$), and the least number of fixations were made on price information ($M = 14.7\%$, $SD = 10.4$). However, the main effect or organization and interaction effect of product display organization on the proportion of fixations on the different attributes were insignificant ($F(2,26) = 1.26$, n.s.; $F(4, 52) = .852$, n.s.), indicating no effect of display organization on the proportion of fixations the

attributes were examined. This is illustrated in Figure 3.4. To view the mean table and ANOVA tables please refer to Appendix 13.

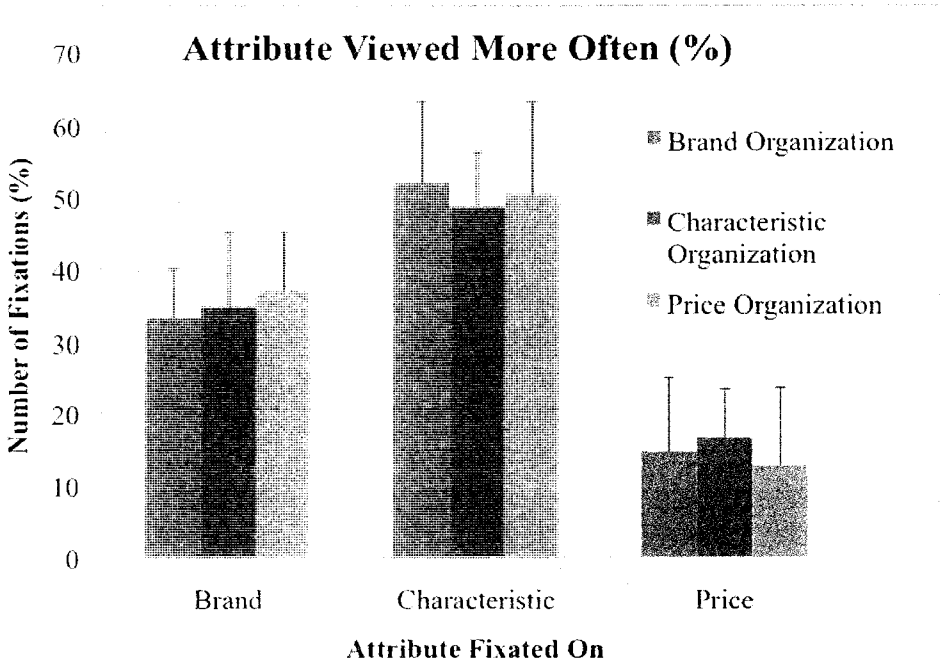

Figure 3.4 Proportion of Fixations made on Attributes

To examine if organization affected whether consumers look at the primary attribute earlier, a repeated measures ANOVA was run. Organization was the between-subjects factor (brand organization, characteristic organization, and price organization). The ordered number in which the primary attribute was attended to was the within-subjects factor (1st fixation on brand, 1st fixation on characteristic, and 1st fixation on price). The first fixation was obtained by counting the number of fixations until the participants made a fixation on the given attributes. Significant differences were found between the first fixation on the different attributes ($F(2, 23) = 13.357, p < .000$), where characteristic was viewed earliest ($M = 2.07$, $SD = 1.62$), brands were viewed almost

equally as early (M = 2.59, SD = 3.65), and price was viewed much later (M = 17.96, SD = 16.51). However, the main effect of organization and interaction effect of product display organization on how early the different attributes were attended to were insignificant (F (2,24) = 3.081, n.s.; F (4, 48) = 1.94, n.s.), indicating no effect of display organization on how early the attributes were examined. This is illustrated in Figure 3.5. To view the mean table and ANOVA tables please refer to Appendix 13.

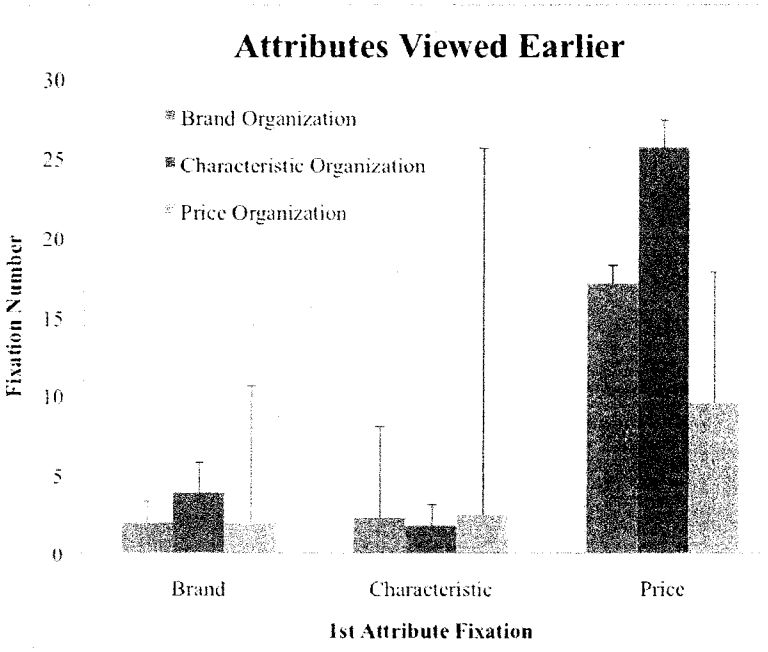

Figure 3.5 The Ordered First Fixation on Each Attribute

Hypothesis 2: Increased Visual Attention and Product Choice

To examine whether increased visual attention and organization are related to consumers' product choice, where the product chosen is expected to be viewed longer, more often, and earlier on as compared to other products, a series of analyses were run. Table 3.2 depicts the proportion of participants that chose the products that received the most visual attention (irrespective of organization).

Table 3.2 Proportion of Participants Choices Linked with Visual Attention

Choice Attention Percentages	
Chose Most Looked At	79.30%
Chose Longest Looked At	79.30%
Chose Either Most or Longest Looked At	86.20%
Chose Earliest Looked At	3.40%
Chose Most Recently Looked At	58.60%

Table 3.3 depicts the proportion of participants that chose the products that ranked highest in terms of individual preferences.

Table 3.3 Proportion of Participants Choices Linked with Preferences

Choice Preference Percentages	
Chose Preferred Brand	82.80%
Chose Preferred Characteristic	64.30%
Chose Either Preferred Brand or Characteristic	89.70%
Chose Both Preferred Brand and Characteristic	55.20%
Chose Lowest Price	27.60%

A series of logistic regressions was run to examine the effect of organization and visual attention on product choice. The predicted values were: did the participant choose the brand they examined longest, most often, earliest on, most recently. Included as covariates were: organization by brand (Y/N), organization by characteristic (Y/N), and organization by price (Y/N). The results of these regressions were insignificant (p's for

all regression coefficients > .05), indicating increased visual attention and organization are not related to consumer's purchase decisions. To view details of the logistic regression tests please refer to Appendix 14.

Other Analyses

Organization, in this study, was manipulated by changing the product ordering on specific shelves. When organizing by brand each shelf housed one brand, when organizing by product characteristic each shelf housed one characteristic, and when organizing by price each shelf housed one price point. Another way to capture if organization was having any effects on consumers' visual search patterns is to examine if consumers spent more time, and made more fixations on the shelf where they made their decision as compared to the other shelves. Table 3.5 depicts the proportion of participants who fixated longer on the shelf where they made their purchase decision.

Table 3.4 Proportion of Participants Choices Linked with Shelf Attention

Shelf Attention Percentages	
Examined Shelf With Choice Product Longest	58.60%
Examined Shelf With Choice Product Most	62.10%
Brand Organization	
Examined Shelf With Choice Product Longest	80.00%
Examined Shelf With Choice Product Most	80.00%
Characteristic Organization	
Examined Shelf With Choice Product Longest	50.00%
Examined Shelf With Choice Product Most	50.00%
Price Organization	
Examined Shelf With Choice Product Longest	44.40%
Examined Shelf With Choice Product Most	55.60%

Chi-Square analyses were run to determine whether organization affected the proportion of participants who spent largest amount of visual attention (duration and number of fixations) on the shelf where choices were made. The results of these analyses were insignificant (all p's > .22), meaning organization did not significantly affect if visual attention was spent on the "choice shelf".

Chapter 4: Discussion and Conclusions

4.1 Discussion

Understanding which features of a product consumers use to make their decisions at the point of purchase is important for both marketers and retailers who wish to create more effective product displays. The present study contributes to the literature on display organization and purchase decisions by measuring consumers' visual attention during this decision making process. The results provide insight into what information consumers use when making these decisions under different product display organizations, and how this visual attention is linked with purchase decisions.

Previous eye tracking research has found that consumers examine a variety of products in a very short period of time (Rettie and Brewer, 2000). The findings of this study are comparable: consumers on average examined 14.8 of the possible 16 products over a 14 second period. Consistent with other research, our findings show that brand information was viewed earlier, more often, and for longer than price, which was examined later on, less often, and for less time than either brand or characteristic information. However, unlike previous studies which examine the proportion of time spent fixating on brand or on price (Chandon, Hutchinson and Young, 2001; Hoyer, 1984; Leong, 1993), this study separated the time spent viewing product features from the time spent extracting brand information or price information. The results show that there were significant differences in the amount of time spent on the three different sources of product information, and that characteristic information was actually viewed longer and more often than brand or price information. Chandon, Hutchinson and Young (2001) concluded their research by stressing the importance of brand information and its

effect on consumers' consideration sets. The authors did not take into account the diverse features brands differed on. For example, juices of different flavors with different options (pulp vs. no pulp) were offered. The results found in this study (Fig 3.1 – Fig 3.5) suggest product characteristic information is not only looked at as early as brand information, but it is looked at for longer, and more often than brand information, perhaps guiding choice consideration even more than brand information.

Contrary to Hypothesis 1, no significant differences were found in the relationship between product display organization and the amounts of time consumers spent viewing the different sources of product information. On average, consumers examined the different sources of information in the same way regardless of product organization (by brand, product characteristic, or price). Although not significant, an interesting pattern emerged in the data on organization and visual attention (Figure 3.1 – 3.5): For each product display organization, participants attend to the primary attribute earlier on compared to the other organizations. However, they appear to then attend to this attribute less often and for less long. For example, characteristic is viewed earliest when the display is organized by product characteristic, but is viewed less often and for less long than when organized by brand or by price. Perhaps consumers focus on product organization early on and grasp it quickly. Once the organization is understood, consumers seem to go on to process other information to make their purchase decisions. Some support for this proposition is found when examining Hypothesis 2 and in the additional analyses; it is important to note, however, that these differences were not significant. Some possible explanations for the lack of significant results are discussed in the *limitations and future research* section.

Hypothesis 2 examined whether increased visual attention is associated with consumers' purchase decisions. The product chosen was expected to be fixated on for longer, more often, earlier on and more recently compared to other products. Results from Table 3.2 support a portion of this hypothesis. When visual attention measures alone are related to choice behaviors, the results show that the majority of participants (86.2%) chose the product they examined longest or most often. The majority of participants also made their last fixation on their choice product (58.6%). Participants did not make their first fixation on their choice product, however (3.4%). As organization was manipulated in this experiment, it would be surprising to find that consumers would be able to fixate on their choice product first. Overall, the results of these analyses supported the hypothesis that increased visual attention was linked to choice behavior, consistent with previous eye tracking literature (Chandon et al., 2001; Janiszewski, 1998; Leong, 1993; Lohse, 1997). Visual attention was also hypothesized to mediate the relationships between product display organization and purchase intentions. As there was no support for the link between display organization and increased visual attention, there is no support for mediation. Similarly, the logistic regression analyses that examined the effect of organization and visual attention on product choice were found to be insignificant.

Despite the lack of significant effects, some of the results are indicative of an effect of organization on visual attention and choice. Organization, in this study, was manipulated by changing the product ordering on specific shelves: When organized by brand, each shelf housed one brand; when organized by product characteristic, each shelf housed one characteristics; when organized by price, each shelf housed one price point.

Because there were four shelves presented in the photographs, if participants were spending an equal amount of time on each shelf, the expected percentage of time spent on any shelf would be roughly 25%. However, the majority of participants spent most time on the shelf where their choice product was located (58.6%; see Table 3.4) and looked most often at the shelf where their choice product was located (62.1%; see Table 3.4). Only the organizational variable was held constant, all other variables were randomized on each shelf. These results indicate that consumers' choices were, at least to some degree, affected by display organization. Chi-square analyses were subsequently run to determine whether organization affected the proportion of participants who spent largest amount of visual attention (duration and number of fixations) on the shelf where choices were made. The results of these analyses were insignificant: organization was not associated with the extent of visual attention paid to the "choice shelf." Nevertheless, more visual attention was spent on the shelf where choice decisions were made. In fact, the insignificant chi-square results reinforce the idea that it was not only a brand or characteristic preference that maintained visual attention on a given shelf, because these results were statistically equivalent for all organizations.

When considering the effect of shelf display organization on product choice in the context of existing brands, the role of consumer preferences also needs to be considered. As illustrated in Table 3.3, 89.7% of consumers chose either their preferred brand or characteristic, and 55.2% of participants chose both their preferred brand and preferred characteristic. Brand and feature preferences, therefore, had an influence on consumers purchase decisions. Price, on the other hand, was not a significant factor in determining product choice, as only 27.6% of participants chose one of the lowest priced options, a

value roughly at chance (25%). It is plausible that in this study, consumer preferences were stronger factors in determining product choice than display organization.

4.2 Limitations and Future Research

There are a number of reasons that explain the lack of significant effects on display organization on visual attention. First, a sample size of ten participants per condition is quite small and resulted in a lack of statistical power. A larger sample size may have yielded significant results. Another concern is the limited effect of price information on product choice. Participants paid little attention to price (Fig 3.1 – 3.5), and price information was not significantly used as a basis for product choice (26.7% of participants chose the least expensive product, see Table 3.3). Therefore, participants' visual attention was mainly spent on the two other sources of product information. Although the finding that consumers spend less time fixating on price is consistent with previous findings (Chandon et al. 2001; Hoyer 1984; Leong, 1993), it reduces the chances of a significant effect of product organization on visual attention to attributes, due to the decreased relevance of price information. Future research should probably employ more expensive products or a larger price range.

Another limitation revolves around the use of only one product category, consisting of a low involvement product. Hoyer (1984) found that for low involvement purchases, the risk involved in making these decisions is too low to warrant decision making efforts; these decisions have been made numerous times and therefore effort is not required; and as multiple decisions are made on any given shopping trip, consumers reduce effort spent on choosing certain products. Therefore, participants in this study

may not have expended much attention to the product in this research, and instead relied on personal preferences. Leong (1993) replicated Hoyer's findings (1984) and concluded that for low involvement purchases, many subjects reported relying on awareness to make their purchase decisions. In this study, only products and varieties associated with high consumer awareness were used, so consumers may have based decisions on familiarity and preference. The results support this possibility, in that regardless of price almost 90% of consumers chose either their preferred brand or variety (see Table 3.3). The fact that consumers did not feel the necessity to compare and choose products carefully (i.e., a low-risk decision context) may have predisposed consumers to make decisions based on experience, rather than expending cognitive effort. Future research using multiple product categories, with both high and low involvement products, should thus be conducted. Similarly, future research should also have a condition with only low familiarity products, as they might influence the amount and type of information consumers use to make their purchase decisions.

Chandon et al. (2001) suggest that even if consumers know what they want, the most experienced shoppers' attention will be diverted by other factors: "the decision about where to look is in a large part triggered by exogenous and reflexive factors requiring little or no central processing" (p. 5). Therefore, even if consumers are primarily interested in examining brand information, when the products were organized by brand, other available information may be examined for reflexive reasons, yet not be used for decision-making. In line with this reasoning, it is possible that the highly involving nature of this laboratory study could have caused participants to examine more information and make more fixations than required to make their decisions. Social

desirability may also have come into play, such that participants may have felt the need to look at more information, and try to examine the visual stimuli carefully because they knew their eye movements were being recorded. Although the number of products examined and the time it took to make a purchase decision were similar to results of previous studies (Chandon et al., 2001; Hoyer, 1984; Leong, 1993) a social desirability bias cannot be ruled out. A social desirability scale should therefore be included in any future questionnaires.

There are also methodological limitations to this study. First, the use of a sample of university students may limit the study's generalizability. Similarly, the artificiality encountered when running a laboratory experiment reduces the external validity of the findings. The setup requiring participant to make choices based on inspection of a large projection screen, while wearing an eye tracking head set and resting their chin on a chin rest limit external validity. The advantages and unique information obtained from using eye-tracking data, however, seem to justify its use.

One other limitation involved data collection: The x-y coordinates could not be used to determine fixation location, and therefore fixation-by-fixation coding had to be manually determined. This increases the error involved in determining the exact location of fixations. In addition, the use of only one coder to extract this fixation information may have affected the reliability of the fixation locations used in analyses. Future studies should be designed in a way so that x-y coordinates can easily determine fixation location.

4.3 Conclusions

The present study's findings represent an important contribution to the literature with respect to examining the mechanism by which consumers' evaluations and choices are affected by display organization while making decisions at the point of purchase. This study was the first to uncover that significant visual attention is paid to product characteristic information and that this information is examined more often and for longer than brand or price information. Consistent with past research, this study also supports the relationship between increased visual attention and purchase likelihoods. The results lend support to the idea that after examining display organization, consumers use the other available information to make their purchase decisions. Although the relationship between display organization and visual attention was not significant, there is some evidence that this link warrants further investigation with larger samples. It is important to further continue research to better understand how organization affects consumers attention, information processing, and decision making. It is possible that visual attention is mediating this relationship, but more conclusive findings need to be obtained.

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Appendices

Appendix 1: Pretest Informed Consent Form

This is to state that I agree to participate in a pretest to the program of research being conducted on consumer choice, titled CONSUMER'S VISUAL SEARCH PATTERNS DURING PRODUCT CHOICE. This project is supervised by Dr. Bianca Grohmann, Department of Marketing at the John Molson School of Business, Concordia University. This study will be used towards the completion of Nicole Robitaille's Masters' Thesis. If you have any questions or comments regarding the study, please contact Dr. Grohmann at (514) 848-2424 ext 4845, or bgrohmann@jmsb.concordia.ca.

A. PURPOSE

I have been informed that the research is solely academic and that its purpose is to investigate consumers' search when making purchase decisions.

B. PROCEDURES

You will be presented with photographs of store environments, and asked to answer a series of questions regarding these environments. There are no right or wrong answers. It is important that you answer **ALL** the questions. If at any point in time you do not know the exact answer, please provide the estimate that best suits your situation. Responses provided will be anonymous. Note that you may discontinue participation at any time. The entire experiment should not take longer than 30 minutes. As a token of your participation, you will receive $5.

C. RISKS

There are no risks involved in completing this study.

D. CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my consent and discontinue my participation at anytime without negative consequences.
- I understand that my participation in this study is CONFIDENTIAL (i.e., the researcher will know, but not disclose my identity)
- I understand the data from this study may be published.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

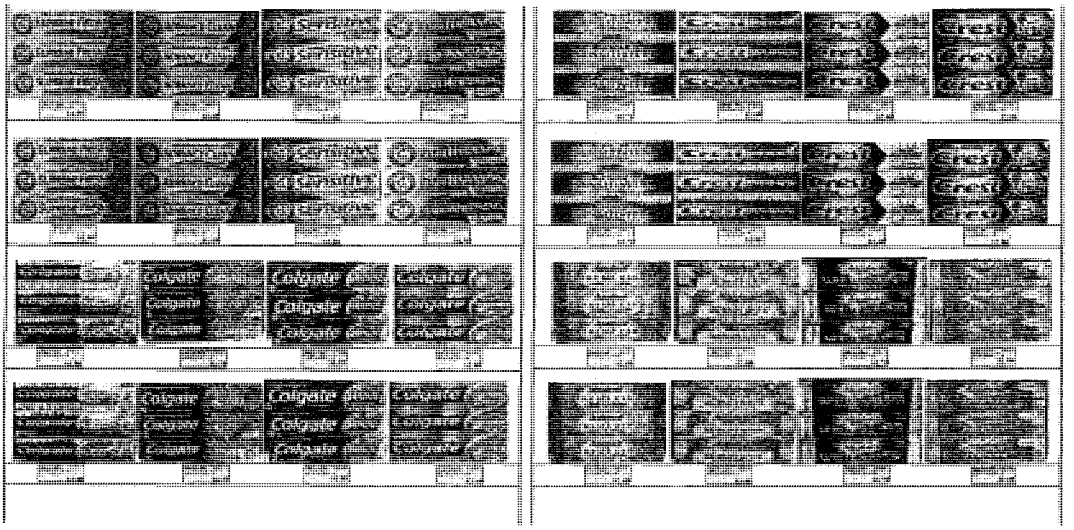
NAME (please print) _____

SIGNATURE _____

DATE _____

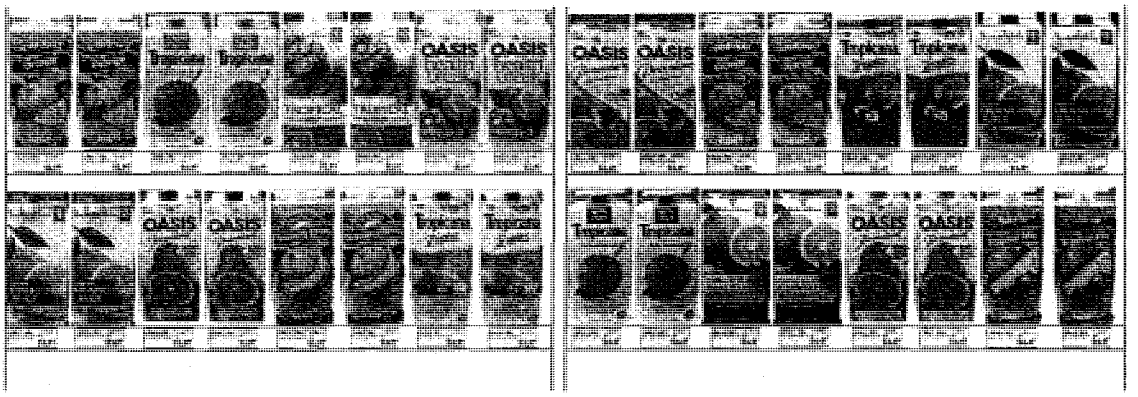
If at any time you have questions about your rights as a research participant, please contact Adela Reid, Research Ethics and Compliance Officer, Concordia University, at (514) 848-2424 x7481 or by email at areid@alcor.concordia.ca.

Appendix 2: Examples of Pretest Stimuli (Each photograph was printed lengthwise on a full page)



Stimuli 1: Toothpaste Brand Organization

Stimuli 2: Detergent Characteristic Organization



Stimuli 3: Juice Price Organization

Appendix 3: Pretest Questionnaire
(Pretest stimuli are not repeated in Appendix, but were present in pretest).

Section 1: Instructions

First, we will ask you to consider a few product categories, and to answer questions about these product categories. Please fill in the blanks, and circle the appropriate numbers where applicable.

Please consider the following product category and answer the questions below. Please fill in the blanks, and circle the appropriate numbers where applicable.

Toothpaste

When you think of toothpaste, what brands come to mind? List as many as you can.

When you buy toothpaste, what factors do you consider when making your purchase decision?

How familiar are you with this product category?

Not at all familiar						Very familiar
1	2	3	4	5	6	7

How often do you buy toothpaste?

Please consider the following product category and answer the questions below. Please fill in the blanks, and circle the appropriate numbers where applicable.

Laundry Detergent

When you think of laundry detergent, what brands come to mind? List as many as you can.

When you buy laundry detergent, what factors do you consider when making your purchase decision?

How familiar are you with this product category?

Not at all familiar						Very familiar
1	2	3	4	5	6	7

How often do you buy laundry detergent?

Please consider the following product category and answer the questions below. Please fill in the blanks, and circle the appropriate numbers where applicable.

Fruit Juice

When you think of fruit juice, what brands come to mind? List as many as you can.

When you buy fruit juice, what factors do you consider when making your purchase decision?

How familiar are you with this product category?

Not at all familiar						Very familiar
1	2	3	4	5	6	7

How often do you buy fruit juice?

Please consider the following product category and answer the questions below. Please circle the appropriate number.

Toothpaste

How familiar are you with the following brands?

Arm & Hammer

Not at all familiar						Very familiar
1	2	3	4	5	6	7

Crest

Not at all familiar						Very familiar
1	2	3	4	5	6	7

Colgate

Not at all familiar						Very familiar
1	2	3	4	5	6	7

Aquafresh

Not at all familiar						Very familiar
1	2	3	4	5	6	7

Please consider the following product category and answer the questions below. Please circle the appropriate number.

Toothpaste

How do you feel about these brands?

Arm & Hammer

Negative						Positive
1	2	3	4	5	6	7
Unfavourable						Favourable
1	2	3	4	5	6	7
Dislike						Like
1	2	3	4	5	6	7

Crest

Negative						Positive
1	2	3	4	5	6	7
Unfavourable						Favourable
1	2	3	4	5	6	7
Dislike						Like
1	2	3	4	5	6	7

Colgate

Negative						Positive
1	2	3	4	5	6	7
Unfavourable						Favourable
1	2	3	4	5	6	7
Dislike						Like
1	2	3	4	5	6	7

Aquafresh

Negative						Positive
1	2	3	4	5	6	7
Unfavourable						Favourable
1	2	3	4	5	6	7
Dislike						Like
1	2	3	4	5	6	7

Please consider the following product category and answer the questions below. Please circle the appropriate number.

Toothpaste

How important are the following attributes to you when you choose toothpaste?

Price

Not at all important						Very important
1	2	3	4	5	6	7

Brand

Not at all important						Very important
1	2	3	4	5	6	7

Fresh Breath

Not at all important						Very important
1	2	3	4	5	6	7

Whitening option

Not at all important						Very important
1	2	3	4	5	6	7

Option for sensitive teeth

Not at all important						Very important
1	2	3	4	5	6	7

Cavity protection

Not at all important						Very important
1	2	3	4	5	6	7

Option for overall tooth health

Not at all important						Very important
1	2	3	4	5	6	7

What other attributes are important to you in choosing toothpaste? Please list all that come to mind.

Please consider the following product category and answer the questions below.

Toothpaste

How often do you buy the following brands?

Arm & Hammer

Never						Always
1	2	3	4	5	6	7

Crest

Never						Always
1	2	3	4	5	6	7

Colgate

Never						Always
1	2	3	4	5	6	7

Aquafresh

Never						Always
1	2	3	4	5	6	7

Please consider the following product category and answer the questions below. Please circle the appropriate number.

Laundry Detergent

How familiar are you with the following brands?

Tide

Not at all familiar						Very familiar
1	2	3	4	5	6	7

Sunlight

Not at all familiar						Very familiar
1	2	3	4	5	6	7

Cheer

Not at all familiar						Very familiar
1	2	3	4	5	6	7

Please consider the following product category and answer the questions below. Please circle the appropriate number.

Laundry Detergent

How do you feel about these brands?

Tide

Negative						Positive
1	2	3	4	5	6	7
Unfavourable						Favourable
1	2	3	4	5	6	7
Dislike						Like
1	2	3	4	5	6	7

Sunlight

Negative						Positive
1	2	3	4	5	6	7
Unfavourable						Favourable
1	2	3	4	5	6	7
Dislike						Like
1	2	3	4	5	6	7

Cheer

Negative						Positive
1	2	3	4	5	6	7
Unfavourable						Favourable
1	2	3	4	5	6	7
Dislike						Like
1	2	3	4	5	6	7

Please consider the following product category and answer the questions below. Please circle the appropriate number.

Laundry Detergent

How important are the following attributes to you when you choose laundry detergent?

Price

Not at all important						Very important
1	2	3	4	5	6	7

Brand

Not at all important						Very important
1	2	3	4	5	6	7

Scent

Not at all important						Very important
1	2	3	4	5	6	7

Liquid laundry detergent

Not at all important						Very important
1	2	3	4	5	6	7

Powder laundry detergent

Not at all important						Very important
1	2	3	4	5	6	7

Ultra/High Efficiency detergent

Not at all important						Very important
1	2	3	4	5	6	7

Option for dark colors

Not at all important						Very important
1	2	3	4	5	6	7

Cold water detergent

Not at all important						Very important
1	2	3	4	5	6	7

What other attributes are important to you in choosing laundry detergent? Please list all that come to mind.

Please consider the following product category and answer the questions below. Please circle the appropriate number.

Laundry Detergent

How often do you buy the following brands?

Tide

Never						Always
1	2	3	4	5	6	7

Cheer

Never						Always
1	2	3	4	5	6	7

Sunlight

Never						Always
1	2	3	4	5	6	7

Please consider the following product category and answer the questions below. Please circle the appropriate number.

Fruit Juice

How familiar are you with the following brands?

Tropicana

Not at all familiar						Very familiar
1	2	3	4	5	6	7

Oasis

Not at all familiar						Very familiar
1	2	3	4	5	6	7

President's Choice

Not at all familiar						Very familiar
1	2	3	4	5	6	7

Great Value

Not at all familiar						Very familiar
1	2	3	4	5	6	7

Please consider the following product category and answer the questions below. Please circle the appropriate number.

Fruit Juice

How do you feel about these brands?

Tropicana

Negative						Positive
1	2	3	4	5	6	7

Unfavourable						Favourable
1	2	3	4	5	6	7

Dislike						Like
1	2	3	4	5	6	7

Oasis

Negative						Positive
1	2	3	4	5	6	7

Unfavourable						Favourable
1	2	3	4	5	6	7

Dislike						Like
1	2	3	4	5	6	7

President's Choice

Negative						Positive
1	2	3	4	5	6	7

Unfavourable						Favourable
1	2	3	4	5	6	7

Dislike						Like
1	2	3	4	5	6	7

Great Value

Negative						Positive
1	2	3	4	5	6	7

Unfavourable						Favourable
1	2	3	4	5	6	7

Dislike						Like
1	2	3	4	5	6	7

Please consider the following product category and answer the questions below. Please circle the appropriate number.

Fruit Juice

How important are the following attributes to you when you choose fruit juice?

Price

Not at all important						Very important
1	2	3	4	5	6	7

Brand

Not at all important						Very important
1	2	3	4	5	6	7

Flavour

Not at all important						Very important
1	2	3	4	5	6	7

Option with pulp

Not at all important						Very important
1	2	3	4	5	6	7

Option without pulp

Not at all important						Very important
1	2	3	4	5	6	7

Option not made from concentrate

Not at all important						Very important
1	2	3	4	5	6	7

What other attributes are important to you in choosing fruit juice? Please list all that come to mind.

Please consider the following product category and answer the questions below. Please circle the appropriate number.

Fruit Juice

How often do you buy the following brands?

Tropicana

Never						Always
1	2	3	4	5	6	7

Oasis

Never						Always
1	2	3	4	5	6	7

President's Choice

Never						Always
1	2	3	4	5	6	7

Great Value

Never						Always
1	2	3	4	5	6	7

Section 2: Instructions

You will now look at photographs of product displays, and answer a series of questions regarding these displays. There are no right or wrong answers to these questions, but it is important that you answer **ALL** the questions. If at any point in time you do not know the exact answer, please provide the best estimate. Please look at the following image and answer the questions that follow.

(For each page of section 2, one of the pretest stimuli photographs was paired with each set of questions, they were removed from the appendix)

If you were in the market to buy one of these products, which would you choose? Please circle the appropriate choice.

Arm & Hammer Supreme Fresh $1.99

Crest Pro Health $1.99

Aquafresh Sensitive $1.99

Colgate Sparkling White $1.99

Aquafresh White and Shine $2.79

Colgate Max Fresh $2.79

Arm & Hammer Extra Whitening $2.79

Crest Sensitivity $2.79

Colgate Sensitive $2.49

Arm & Hammer Advance Clean $2.49

Crest Extra Whitening $2.49

Aquafresh Extreme Clean $2.49

Crest Scope Extreme $2.99

Aquafresh Ultimate White $2.99

Colgate Total $2.99

Arm & Hammer Sensitive $2.99

How difficult was it for you to identify the product you would purchase? Please circle the appropriate number.

Very easy						Very difficult
1	2	3	4	5	6	7

If you were in the market to buy one of these products, which would you choose? Please circle the appropriate choice.

Arm & Hammer Supreme Fresh $1.99

Arm & Hammer Advance Clean $2.49

Arm & Hammer Sensitive $2.99

Arm & Hammer Extra Whitening $2.79

Colgate Total $2.99

Colgate Max Fresh $2.79

Colgate Sparkling White $1.99

Colgate Sensitive $2.49

Crest Sensitivity $2.79

Crest Pro Health $1.99

Crest Extra Whitening $2.49

Crest Scope Extreme $2.99

Aquafresh Extreme Clean $2.49

Aquafresh Ultimate White $2.99

Aquafresh White and Shine $2.79

Aquafresh Sensitive $1.99

How difficult was it for you to identify the product you would purchase? Please circle the appropriate number.

Very easy						Very difficult
1	2	3	4	5	6	7

If you were in the market to buy one of these products, which would you choose? Please circle the appropriate choice.

Arm & Hammer Advance Clean $2.49

Crest Pro Health $1.99

Aquafresh White and Shine $2.79

Colgate Total $2.99

Aquafresh Ultimate White $2.99

Colgate Sparkling White $1.99

Arm & Hammer Extra Whitening $2.79

Crest Extra Whitening $2.49

Colgate Sensitive $2.49

Arm & Hammer Sensitive $2.99

Crest Sensitivity $2.79

Aquafresh Sensitive $1.99

Crest Scope Extreme $2.99

Aquafresh Extreme Clean $2.49

Colgate Max Fresh $2.79

Arm & Hammer Supreme Fresh $1.99

How difficult was it for you to identify the product you would purchase? Please circle the appropriate number.

Very easy						Very difficult
1	2	3	4	5	6	7

If you were in the market to buy one of these products, which would you choose? Please circle the appropriate choice.

Liquid Ultra Sunlight HE $5.77

Liquid Cheer $5.77

Powder Tide $5.77

Liquid Tide $8.77

Liquid Ultra Cheer HE $8.77

Powder Sunlight $8.77

Powder Cheer $11.77

Liquid Sunlight $11.77

Liquid Ultra Tide HE $11.77

How difficult was it for you to identify the product you would purchase? Please circle the appropriate number.

Very easy						Very difficult
1	2	3	4	5	6	7

If you were in the market to buy one of these products, which would you choose? Please circle the appropriate choice.

Liquid Cheer $5.77

Liquid Ultra Cheer HE $8.77

Powder Cheer $11.77

Liquid Tide $8.77

Powder Tide $5.77

Liquid Ultra Tide HE $11.77

Liquid Ultra Sunlight HE $5.77

Liquid Sunlight $11.77

Powder Sunlight $8.77

How difficult was it for you to identify the product you would purchase? Please circle the appropriate number.

Very easy						Very difficult
1	2	3	4	5	6	7

If you were in the market to buy one of these products, which would you choose? Please circle the appropriate choice.

Liquid Cheer $5.77

Liquid Tide $8.77

Liquid Sunlight $11.77

Powder Tide $5.77

Powder Sunlight $8.77

Powder Cheer $11.77

Liquid Ultra Sunlight HE $5.77

Liquid Ultra Cheer HE $8.77

Liquid Ultra Tide HE $11.77

How difficult was it for you to identify the product you would purchase? Please circle the appropriate number.

Very easy						Very difficult
1	2	3	4	5	6	7

If you were in the market to buy one of these products, which would you choose? Please circle the appropriate choice.

Great Value Orange Juice With Pulp $2.97

Tropicana Orange Juice No Pulp $2.97

President's Choice Tropical Juice $2.97
Banana Juice

Oasis Strawberry Kiwi Juice $2.97

President's Choice Orange Juice No Pulp $3.97

Oasis Orange Juice With Pulp $3.97

Great Value Orange Strawberry Banana Juice $4.47

Tropicana Paradise Blend Juice $3.97

Oasis Orange Mango Juice $3.47

Great Value Orange Juice No Pulp $3.47

Tropicana Orange Strawberry

$3.47

President's Choice Orange Juice With Pulp $3.47

Tropicana Orange Juice With Pulp $4.47

President's Choice Orange Cranberry Raspberry $4.47

Oasis Orange Juice Without Pulp $3.97

Great Value Tropical Mix Juice $4.47

How difficult was it for you to identify the product you would purchase? Please circle the appropriate number.

Very easy						Very difficult
1	2	3	4	5	6	7

If you were in the market to buy one of these products, which would you choose? Please circle the appropriate choice.

Great Value Orange Juice With Pulp $2.97

Great Value Orange Juice No Pulp $3.47

Great Value Tropical Mix Juice $4.47

Great Value Orange Strawberry Banana Juice $4.47

Oasis Orange Juice Without Pulp $4.47

Oasis Orange Juice With Pulp $3.97

Oasis Strawberry Kiwi Juice $2.97

Oasis Orange Mango Juice $3.47

Tropicana Paradise Blend Juice $3.97

Tropicana Orange Juice No Pulp $2.97

Tropicana Orange Strawberry Banana Juice $3.47

Tropicana Orange Juice With Pulp $3.97

President's Choice Orange Juice With Pulp $3.47

President's Choice Orange Cranberry Raspberry $4.47

President's Choice Orange Juice No Pulp $3.97

President's Choice Tropical Juice $2.97

How difficult was it for you to identify the product you would purchase? Please circle the appropriate number.

Very easy						Very difficult
1	2	3	4	5	6	7

If you were in the market to buy one of these products, which would you choose? Please circle the appropriate choice.

Great Value Orange Juice No Pulp $3.47

Tropicana Orange Juice No Pulp $2.97

President's Choice Orange Juice No Pulp $3.97

Oasis Orange Juice Without Pulp $4.47

President's Choice Orange Cranberry Raspberry $4.47

Oasis Strawberry Kiwi Juice $2.97

Great Value Orange Strawberry Banana Juice $3.97

Tropicana Orange Strawberry Banana Juice $2.97

Oasis Orange Mango Juice $3.47

Great Value Tropical Mix Juice $4.47

Tropicana Paradise Blend Juice $3.97

President's Choice Tropical Juice $2.97

Tropicana Orange Juice With Pulp $4.47

President's Choice Orange Juice With Pulp $3.47

Oasis Orange Juice With Pulp $3.97

Great Value Orange Juice With Pulp $3.47

How difficult was it for you to identify the product you would purchase? Please circle the appropriate number.

Very easy						Very difficult
1	2	3	4	5	6	7

How are the products organized in this display? Describe.

Evaluate the prices for the products included in the display. Please circle the appropriate number.

Inexpensive						Expensive
1	2	3	4	5	6	7

Unrealistic						Realistic
1	2	3	4	5	6	7

(This page was paired with all 9 photographs, but was not repeated in this Appendix)

How are products organized in this display? Please circle the appropriate choice.

By price

By brand

By product characteristic

Do you have any comments about the products or the display? If so please describe.

(This page was paired with all 9 photographs, but was not repeated in this Appendix)

Section 3
Please answer the following questions about yourself.

Student # _____

How old are you? _____ years

What is your gender? Please circle the appropriate choice.

Male

Female

What program are you studying in?

What year of study are you in?

What is your current employment status? Please circle the appropriate choice.

Student

Working part time

Working full time

What is your household's total income? Please circle the appropriate choice. (OPTIONAL QUESTION)

Less than $25,000	$75,000 - $99,999
$25,000 - $49,000	$100,00 - $149,999
$50,000 - $74,999	$150,000 and more

How long have you been living in Canada? _____ years

What is your native language?

What language do you speak most often?

How would you evaluate your level of English language knowledge?

Poor						Excellent
1	2	3	4	5	6	7

In your words, what was this study about?

Appendix 4: Informed Consent Form

This is to state that I agree to participate in a program of research being conducted on consumer choice, titled CONSUMER'S VISUAL SEARCH PATTERNS DURING PRODUCT CHOICE. This project is supervised by Dr. Bianca Grohmann, Department of Marketing at the John Molson School of Business, Concordia University. This study will be used towards the completion of Nicole Robitaille's Masters Thesis. If you have any questions or comments regarding the study, please contact Dr. Grohmann at (514) 848-2424 ext 4845, or bgrohmann@jmsb.concordia.ca. If you have any questions about the eye tracking method used in this study or its effects, please contact Dr. von Grünau at (514) 848-2424 ext 2190.

E. PURPOSE

I have been informed that the research is solely academic and that its purpose is to investigate consumers' visual search patterns when making purchase decisions.

F. PROCEDURES

In order to examine the visual search patterns of consumers, the eye tracker (Eye Link II) will first be placed on your head, and will then be adjusted and calibrated. They eye tracker is a helmet like device that videotapes the stimuli one examines as well as records where one looks and ones eye movements. Once calibrated you will view different projected photographs of a store environment. You will be instructed to select the product of your choice, as if you were wishing to purchase this product for yourself. There are no right or wrong answers to any of your choices. All we ask for is your honest opinion. Eye tracking data will be recorded while you make your decision. Once you have been presented with photographs of each product category, the eye tracking portion of the experiment will end, and you will be asked to fill in a simple pencil and paper questionnaire. Both eye tracking data and responses provided will be anonymous. If at any point you feel uncomfortable let us know, and note that you may discontinue participation at any time. The entire experiment should not take longer than 30 minutes. You will be provided with $5 for your participation.

G. RISKS

There are no risks involved in completing this study. Eye tracking has been used in marketing as well as psychology studies and is not associated with any risks other than the slight possibility of potential discomfort felt by participants. Participants are supervised while they are participating in this study and the eye tracker will be removed immediately if they indicate that they feel uncomfortable.

H. CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my consent and discontinue my participation at anytime without negative consequences.
- I understand that my participation in this study is CONFIDENTIAL (i.e., the researcher will know, but not disclose my identity)
- I understand the data from this study may be published.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

NAME (please print) _____

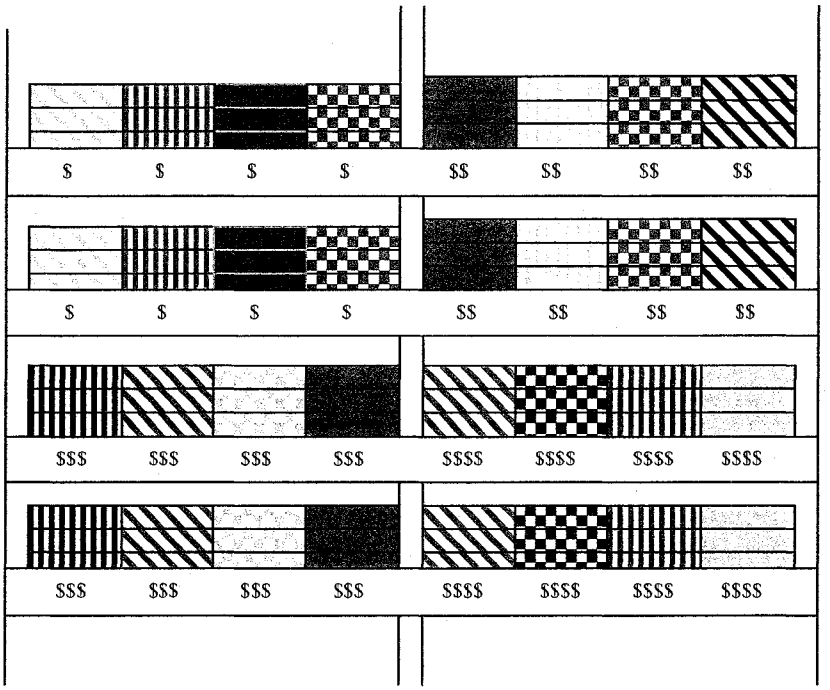
SIGNATURE _____

DATE _____

If at any time you have questions about your rights as a research participant, please contact Adela Reid, Research Ethics and Compliance Officer, Concordia University, at (514) 848-2424 x7481 or by email at areid@alcor.concordia.ca.ca

Appendix 5: Pretest Organization

Toothpaste Organization by Price



Brand A

Brand B

Brand C

Characteristic A

Characteristic B

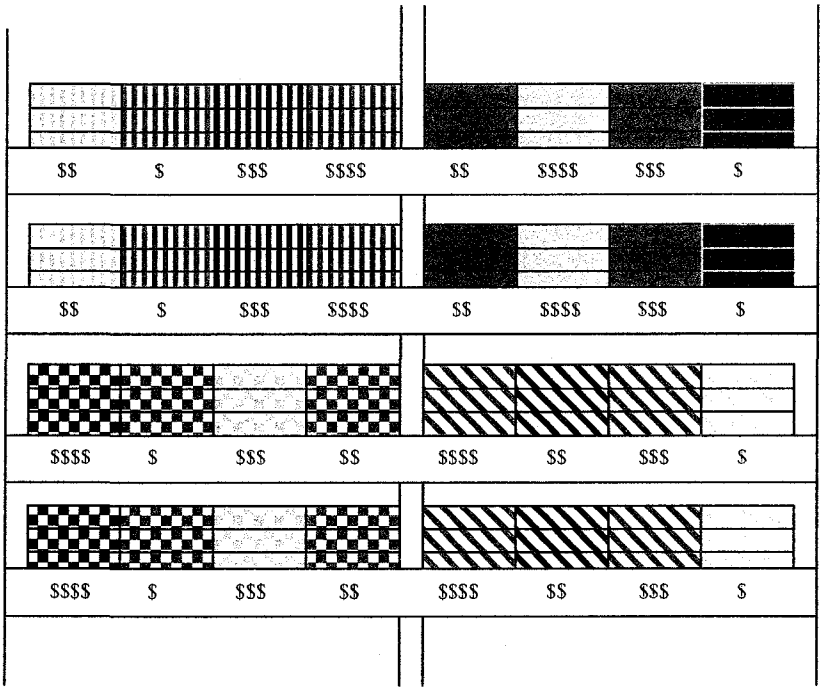
Characteristic C

$ Price 1

$$ Price 2

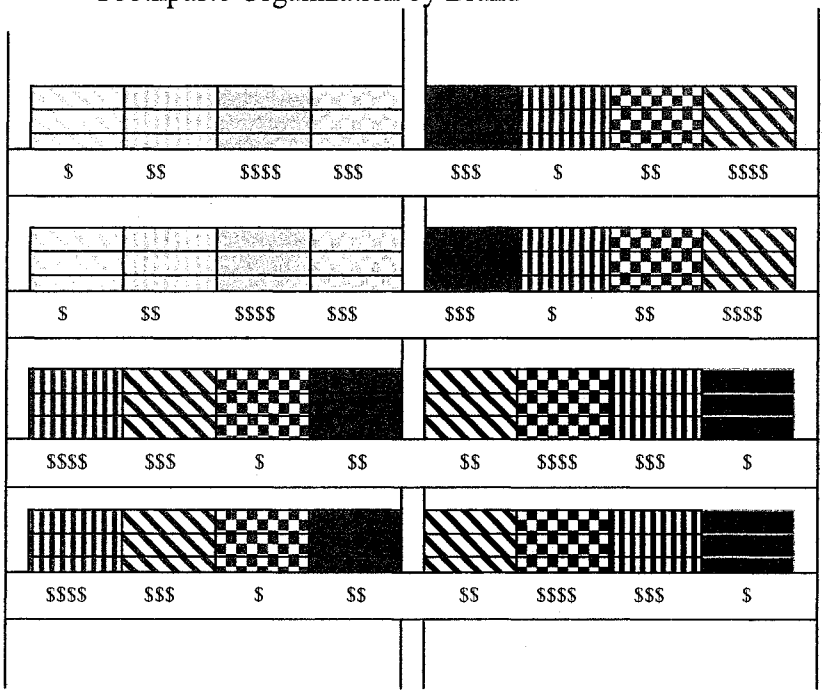
$$$ Price 3

Toothpaste Organization by Product Characteristic



	Brand A		Characteristic A	$	Price 1
	Brand B		Characteristic B	$$	Price 2
	Brand C		Characteristic C	$$$	Price 3

Toothpaste Organization by Brand

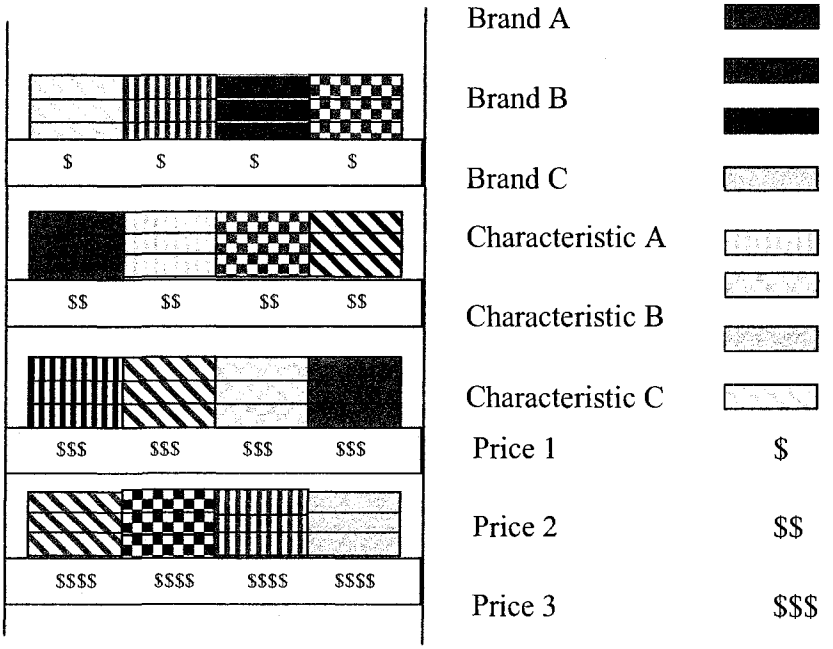


	Brand A		Characteristic A	$	Price 1
	Brand B		Characteristic B	$$	Price 2
	Brand C		Characteristic C	$$$	Price 3

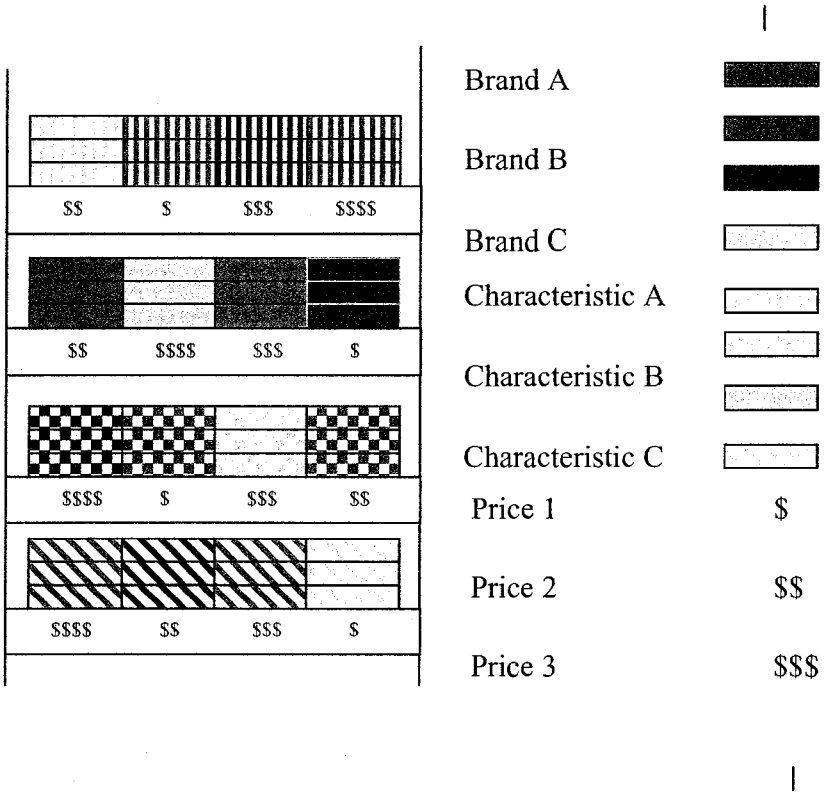
Toothpaste	
Brands	
A. Crest	
B. Colgate	
C. Aquafresh	
D. Arm & Hammer	
Characteristics	
A. Health	
B. Whitening	
C. Sensitive	
D. Freshness	
Prices	
$	$1.99
$$	$2.49
$$$	$2.79
$$$$	$2.99

Appendix 6: Testing Organization

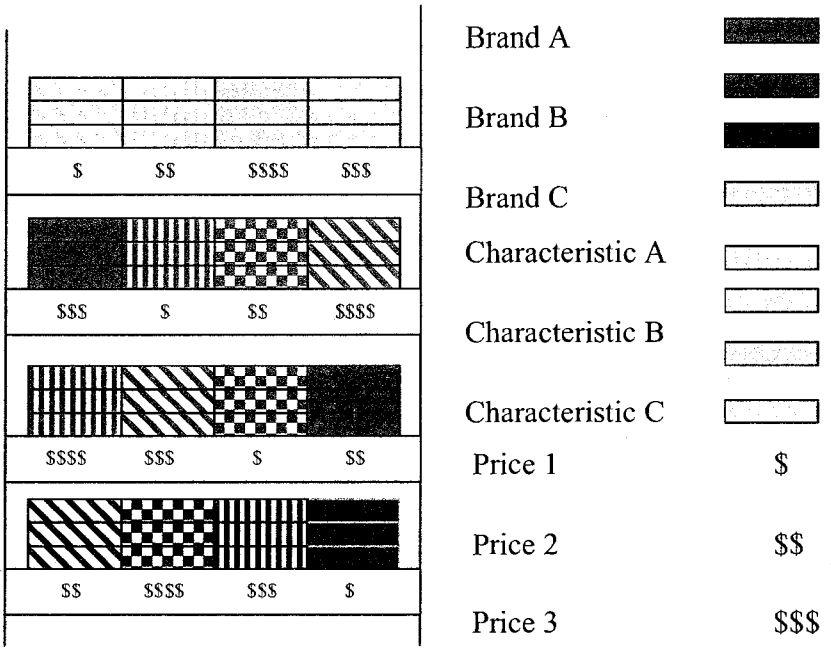
Toothpaste Organization by Price



Toothpaste Organization by Product Characteristic

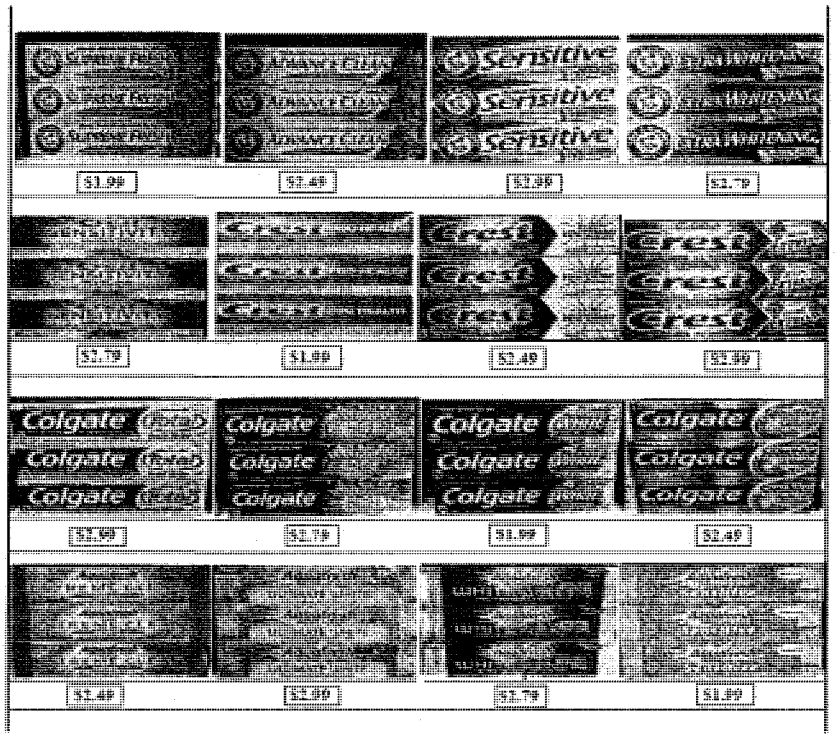


Toothpaste Organization by Brand

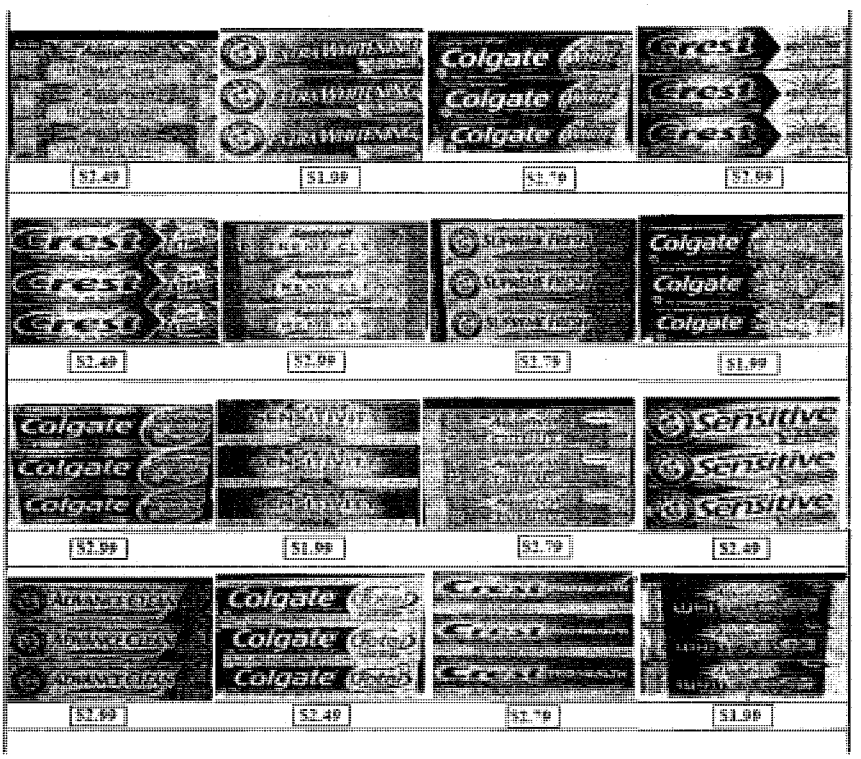


Toothpaste 1	Toothpaste 2	Toothpaste 3	Toothpaste 4
	Brands		
E. Crest	**A.** Arm & Hammer	**A.** Aquafresh	**A.** Colgate
F. Colgate	**B.** Crest	**B.** Arm & Hammer	**B.** Aquafresh
G. Aquafresh	**C.** Colgate	**C.** Crest	**C.** Arm & Hammer
H. Arm & Hammer	**D.** Aquafresh	**D.** Colgate	**D.** Crest
	Characteristics		
D. Health	**A.** Whitening	**A.** Sensitive	**A.** Freshness
E. Whitening	**B.** Sensitive	**B.** Freshness	**B.** Health
F. Sensitive	**C.** Freshness	**C.** Health	**C.** Whitening
D. Freshness	**D.** Health	**D.** Whitening	**D.** Sensitive
	Prices		
$ $1.99	**$** $1.99	**$** $1.99	**$** $1.99
$$ $2.49	**$$** $2.49	**$$** $2.49	**$$** $2.49
$$$ $2.79	**$$$** $2.79	**$$$** $2.79	**$$$** $2.79
$$$$ $2.99	**$$$$** $2.99	**$$$$** $2.99	**$$$$** $2.99

Appendix 7: Examples of Testing Stimuli



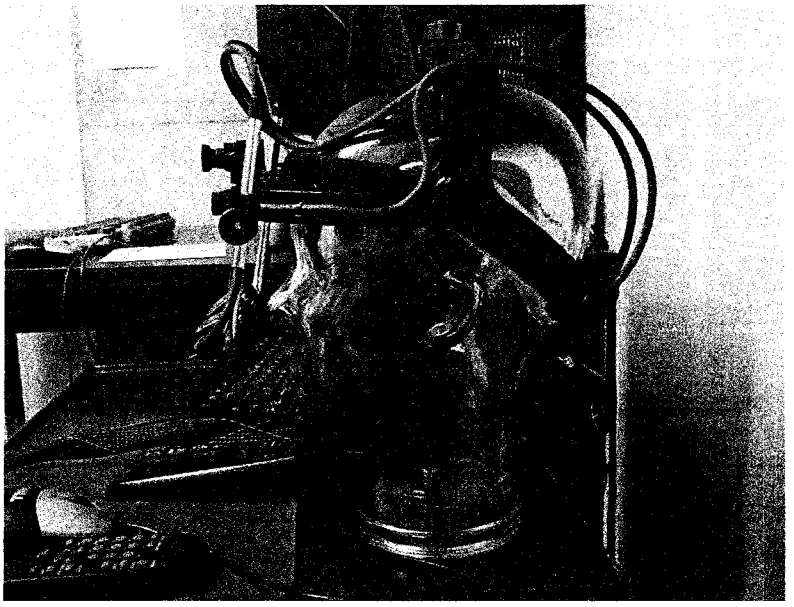
Stimuli 1: Toothpaste Brand Organization 1

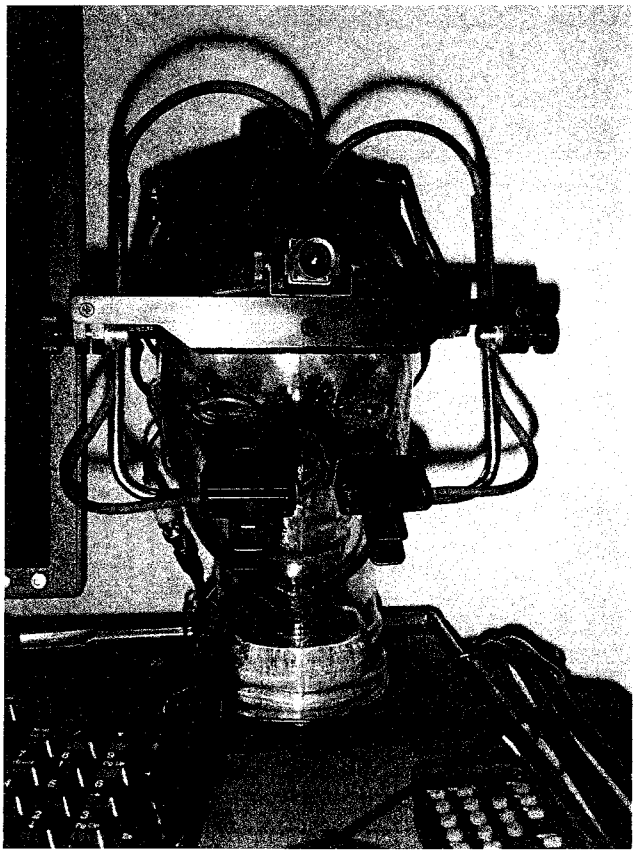


Stimuli 2: Toothpaste Characteristic Organization 2

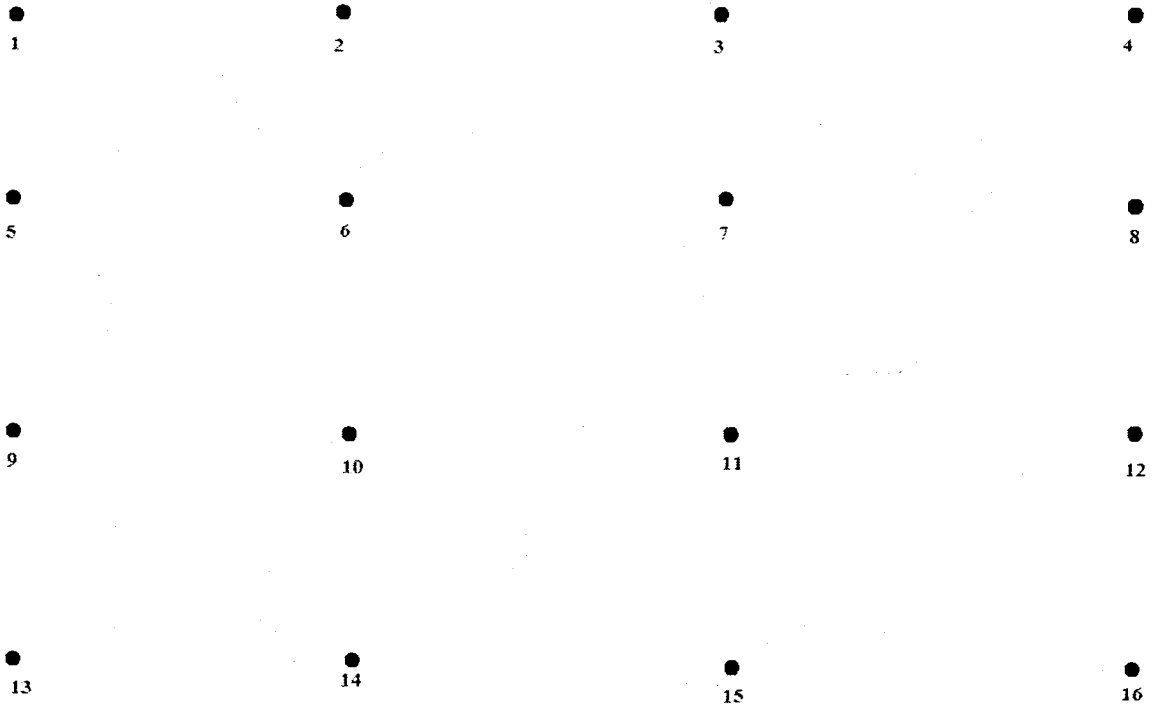
Stimuli 3: Toothpaste Price Organization 3

Appendix 8: Eye Link II system





Appendix 9: Eye Tracking Calibration and Drift Correction Stimuli

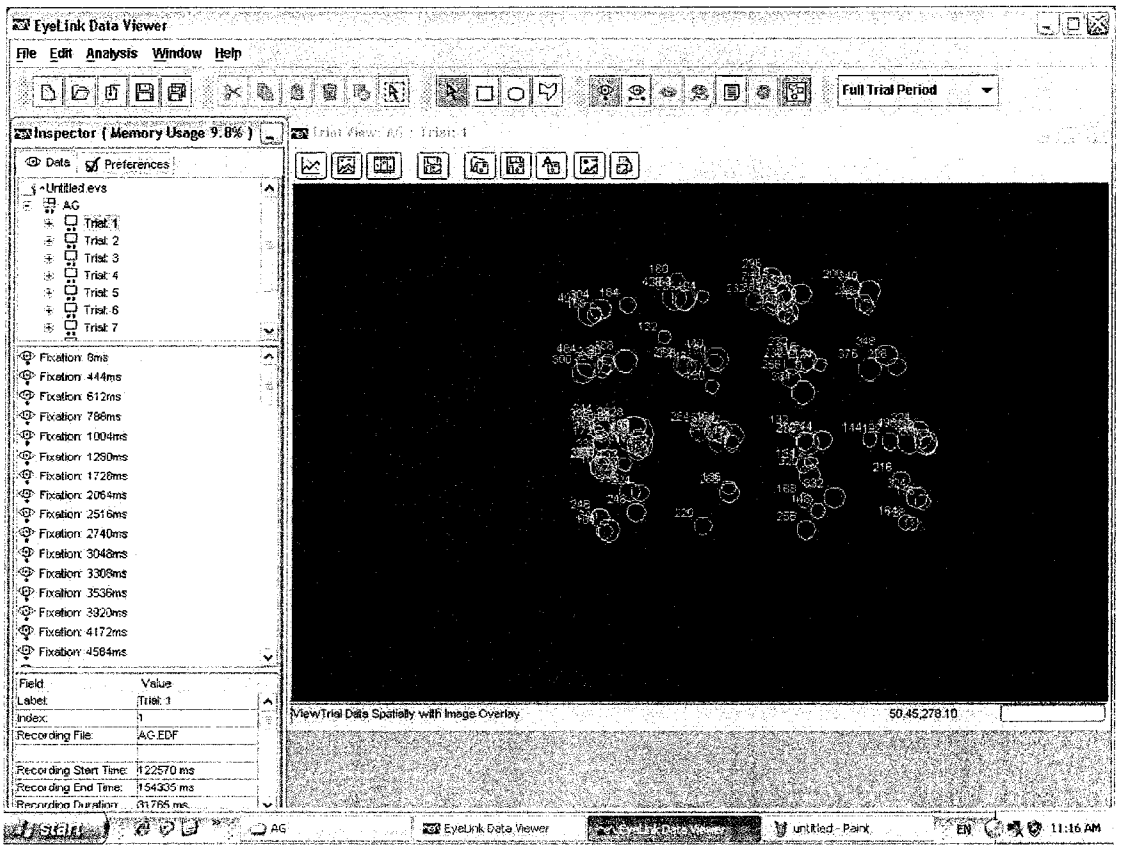


Appendix 10: Stimuli Presentation Order

Number	Product	Organization
1	Toothpaste	Brand
2	Toothpaste	Characteristic
3	Toothpaste	Price
4	Fruit Juice	Brand
5	Fruit Juice	Characteristic
6	Fruit Juice	Price
7	Laundry Detergent	Brand
8	Laundry Detergent	Characteristic
9	Laundry Detergent	Price

Subject	1st Presentation			2nd Presentation			3rd Presentation		
1	1.1	4.1	7.1	5.1	8.1	2.1	9.1	3.1	6.1
2	5.1	8.1	2.1	9.1	3.1	6.1	1.1	4.1	7.1
3	9.1	3.1	6.1	1.1	4.1	7.1	5.1	8.1	2.1
4	4.2	7.2	1.2	8.2	2.2	5.2	3.2	6.2	9.2
5	8.2	2.2	5.2	3.2	6.2	9.2	4.2	7.2	1.2
6	3.2	6.2	9.2	4.2	7.2	1.2	8.2	2.2	5.2
7	7.3	1.3	4.3	2.3	5.3	8.3	6.3	9.3	3.3
8	2.3	5.3	8.3	6.3	9.3	3.3	7.3	1.3	4.3
9	6.3	9.3	3.3	7.3	1.3	4.3	2.3	5.3	8.3
10	1.4	7.1	4.4	9.1	6.4	3.4	5.4	2.4	8.1
11	5.4	2.4	8.1	1.4	7.1	4.4	9.1	6.4	3.4
12	9.1	6.4	3.4	5.4	2.4	8.1	1.4	7.1	4.4
13	4.1	1.1	7.2	3.1	9.2	6.1	8.2	5.1	2.1
14	8.2	5.1	2.1	4.1	1.1	7.2	3.1	9.2	6.1
15	3.1	9.2	6.1	8.2	5.1	2.1	4.1	1.1	7.2
16	7.3	4.2	1.2	6.2	3.2	9.3	2.2	8.3	5.2
17	2.2	8.3	5.2	7.3	4.2	1.2	6.2	3.2	9.3
18	6.2	3.2	9.3	2.2	8.3	5.2	7.3	4.2	1.2
19	1.3	4.3	7.1	5.3	8.1	2.3	9.1	3.3	6.3
20	5.3	8.1	2.3	9.1	3.3	6.3	1.3	4.3	7.1
21	9.1	3.3	6.3	1.3	4.3	7.1	5.3	8.1	2.3
22	4.4	7.2	1.4	8.2	2.4	5.4	3.4	6.4	9.2
23	8.2	2.4	5.4	3.4	6.4	9.2	4.4	7.2	1.4
24	3.4	6.4	9.2	4.4	7.2	1.4	8.2	2.4	5.4
25	7.3	1.1	4.1	2.1	5.1	8.3	6.1	9.3	3.1
26	2.1	5.1	8.3	6.1	9.3	3.1	7.3	1.1	4.1
27	6.1	9.3	3.1	7.3	1.1	4.1	2.1	5.1	8.3
28	1.2	7.1	4.2	9.1	6.2	3.2	5.2	2.2	8.1
29	5.2	2.2	8.1	1.2	7.1	4.2	9.1	6.2	3.2
30	9.1	6.2	3.2	5.2	2.2	8.1	1.2	7.1	4.2

Appendix 11: Sample screenshot of Eye Link Data Viewer fixation map



Appendix 12: Coded Data For Participant

Subject	Fixation Duration	Fixation Location (1=Brand, 2=Characteristic, 3=Price)	Product: Brand	Product: Characteristic	Product: Price
AG	120	2	Arm & Hammer	Whitening	$1.99
AG	132	1	Arm & Hammer	Whitening	$1.99
AG	184	2	Aquafresh	Whitening	$2.49
AG	168	1	Aquafresh	Health	$1.99
AG	404	2	Aquafresh	Health	$1.99
AG	320	2	Aquafresh	Whitening	$2.49
AG	428	2	Aquafresh	Whitening	$2.49
AG	180	1	Aquafresh	Whitening	$2.49
AG	296	1	Aquafresh	Fresh	$2.99
AG	216	2	Aquafresh	Fresh	$2.99
AG	208	1	Aquafresh	Sensitive	$2.79
AG	340	2	Aquafresh	Sensitive	$2.79
AG	228	2	Arm & Hammer	Health	$2.99
AG	376	1	Arm & Hammer	Health	$2.99
AG	316	2	Arm & Hammer	Sensitive	$2.49
AG	232	1	Arm & Hammer	Sensitive	$2.49
AG	180	2	Arm & Hammer	Whitening	$1.99
AG	288	1	Arm & Hammer	Whitening	$1.99
AG	148	1	Arm & Hammer	Whitening	$1.99
AG	224	2	Arm & Hammer	Fresh	$2.79
AG	300	1	Arm & Hammer	Fresh	$2.79
AG	336	1	Crest	Whitening	$2.99
AG	172	1	Crest	Whitening	$2.99
AG	200	2	Crest	Whitening	$2.99
AG	992	2	Crest	Whitening	$2.99
AG	180	2	Crest	Whitening	$2.99
AG	112	2	Crest	Whitening	$2.99
AG	208	2	Crest	Health	$2.79
AG	164	2	Crest	Health	$2.79
AG	252	1	Crest	Health	$2.79
AG	156	2	Crest	Health	$2.79
AG	392	2	Crest	Health	$2.79
AG	212	1	Crest	Sensitive	$1.99
AG	244	1	Crest	Sensitive	$1.99
AG	184	2	Crest	Sensitive	$1.99
AG	320	3	Crest	Sensitive	$1.99
AG	112	2	Crest	Sensitive	$1.99

AG	216	3	Crest	Fresh	$2.49
AG	496	1	Crest	Fresh	$2.49
AG	360	2	Crest	Fresh	$2.49
AG	224	2	Crest	Fresh	$2.49
AG	324	2	Colgate	Fresh	$1.99
AG	156	2	Colgate	Fresh	$1.99
AG	128	3	Colgate	Fresh	$1.99
AG	164	3	Colgate	Fresh	$1.99
AG	148	2	Colgate	Whitening	$2.79
AG	256	3	Colgate	Whitening	$2.79
AG	168	1	Colgate	Whitening	$2.79
AG	332	2	Colgate	Whitening	$2.79
AG	268	2	Colgate	Sensitive	$2.99
AG	136	2	Colgate	Sensitive	$2.99
AG	224	2	Colgate	Health	$2.49
AG	296	2	Colgate	Health	$2.49
AG	248	1	Colgate	Health	$2.49
AG	248	2	Colgate	Health	$2.49
AG	184	3	Colgate	Health	$2.49
AG	340	3	Colgate	Health	$2.49
AG	220	3	Colgate	Sensitive	$2.99
AG	132	3	Crest	Whitening	$2.99
AG	224	3	Crest	Whitening	$2.99
AG	128	1	Crest	Whitening	$2.99
AG	328	2	Crest	Whitening	$2.99
AG	236	2	Arm & Hammer	Fresh	$2.79
AG	388	2	Arm & Hammer	Fresh	$2.79
AG	484	1	Arm & Hammer	Fresh	$2.79
AG	96	2	Arm & Hammer	Fresh	$2.79
AG	468	2	Aquafresh	Whitening	$2.49
AG	104	2	Aquafresh	Whitening	$2.49
AG	304	1	Aquafresh	Health	$1.99
AG	288	1	Aquafresh	Fresh	$2.99
AG	280	2	Aquafresh	Fresh	$2.99
AG	364	2	Aquafresh	Fresh	$2.99
AG	232	1	Aquafresh	Fresh	$2.99
AG	268	2	Aquafresh	Fresh	$2.99
AG	204	2	Aquafresh	Fresh	$2.99
AG	180	2	Aquafresh	Sensitive	$2.79
AG	228	1	Aquafresh	Sensitive	$2.79
AG	348	2	Arm & Hammer	Health	$2.99
AG	232	2	Arm & Hammer	Sensitive	$2.49
AG	32	3	Aquafresh	Fresh	$2.99

AG	700	3	Aquafresh	Fresh	$2.99
AG	140	1	Aquafresh	Fresh	$2.99
AG	76	3	Aquafresh	Fresh	$2.99
AG	324	3	Aquafresh	Fresh	$2.99
AG	256	2	Arm & Hammer	Sensitive	$2.49
AG	236	2	Arm & Hammer	Sensitive	$2.49
AG	124	1	Arm & Hammer	Health	$2.99
AG	272	1	Arm & Hammer	Whitening	$1.99
AG	440	2	Arm & Hammer	Whitening	$1.99
AG	284	1	Crest	Health	$2.79
AG	244	2	Crest	Health	$2.79
AG	148	2	Crest	Health	$2.79
AG	336	2	Crest	Sensitive	$1.99
AG	144	1	Crest	Fresh	$2.49
AG	132	2	Crest	Sensitive	$1.99
AG	192	1	Crest	Fresh	$2.49
AG	204	2	Crest	Fresh	$2.49
AG	228	2	Crest	Fresh	$2.49
AG	184	2	Crest	Whitening	$2.99
AG	112	1	Crest	Whitening	$2.99
AG	208	2	Crest	Whitening	$2.99
AG	324	2	Crest	Whitening	$2.99
AG	336	3	Crest	Whitening	$2.99
AG	228	1	Crest	Whitening	$2.99
AG	384	3	Crest	Whitening	$2.99
AG	160	3	Crest	Whitening	$2.99
AG	344	1	Crest	Whitening	$2.99
AG	108	3	Crest	Whitening	$2.99
AG	336	1	Crest	Whitening	$2.99
AG	276	2	Crest	Whitening	$2.99

	Brand	Characteristic	Price	Total
Fixation Duration	8296	15088	4304	27688
% Fixation Duration	29.96	54.49	15.54	
Number of Fixations	34	58	18	110
% Number of Fixations	30.91	52.73	16.36	

	Fixation Duration	% Fixation Duration	Number Fixations	% Number of Fixations
Aquafresh Fresh	3420	12.35	13	11.82
Aquafresh Health	876	3.16	3	2.73
Aquafresh Sensitive	956	3.45	4	3.64
Aquafresh Whitening	1684	6.08	6	5.45
Arm & Hammer Fresh	1728	6.24	6	5.45
Arm & Hammer Health	1076	3.89	4	3.64
Arm & Hammer Sensitive	1272	4.59	5	4.55
Arm & Hammer Whitening	1580	5.71	7	6.36
Colgate Fresh	772	2.79	4	3.64
Colgate Health	1540	5.56	6	5.45
Colgate Sensitive	624	2.25	3	2.73
Colgate Whitening	904	3.26	4	3.64
Crest Fresh	2064	7.45	8	7.27
Crest Health	1848	6.67	8	7.27
Crest Sensitive	1540	5.56	7	6.36
Crest Whitening	5804	20.96	22	20.00
Total	27688		110	

	Fixation Duration	% Fixation Duration	Number Fixations	% Number of Fixations
Product Choice Shelf	11256	40.65	45	40.91
Other Shelf 1	6936	25.05	26	23.64
Other Shelf 2	5656	20.43	22	20.00
Other Shelf 3	3840	13.87	17	15.45
Total	27688		110	

Appendix 13: Hypothesis 1 Mean Tables and ANOVA Tables

Amount of Time Fixated On

Total Fixation Durations on	Organization	Mean	St. Dev	N
Brand	Brand	4.678	2.627	10
	Characteristic	5.829	3.9	10
	Price	4.263	2.801	9
	Total	4.946	3.131	29
Characteristic	Brand	8.027	4.288	10
	Characteristic	7.8	3.56	10
	Price	6.614	4.563	9
	Total	7.51	4.039	29
Price	Brand	1.96	1.342	10
	Characteristic	2.967	3.011	10
	Price	1.849	3.327	9
	Total	2.273	2.631	29

Tests of Within-Subjects Effects

Source	SS	df	MS	F	Sig.
TotalTime	394434915.1	2	197217457.6	47.42	0.00
TotalTime * Organization	7199401.3	4	1799850.316	0.433	0.78
Error	216258002.2	52	4158807.734		

Tests of Between-Subjects Effects

Source	SS	df	MS	F	Sig.
Intercept	2072994620	1	2072994620	79.5	0.00
Organization	23668890.37	2	118344445.2	0.454	0.64
Error	677992267.7	26	26076625.68		

Proportion of Time Fixated On

Proportion of Fixation Durations on	Organization	Mean	St. Dev	N
Brand	Brand	29.43	11.64	10
	Characteristic	34.54	9.77	10
	Price	36.89	12.05	9
	Total	33.51	11.21	29
Characteristic	Brand	54.05	10.37	10
	Characteristic	49.6	8.47	10
	Price	51.79	8.36	9
	Total	51.82	9.01	29
Price	Brand	13.82	8.48	10
	Characteristic	15.86	12.91	10
	Price	11.98	10.62	9
	Total	13.95	10.56	29

Tests of Within-Subjects Effects

Source	SS	df	MS	F	Sig.
%TotalTime	20816.14	2	10408.07	65.71	0.00
%TotalTime * Organization	429.82	4	107.46	0.678	0.61
Error	8236.18	52	158.39		

Tests of Between-Subjects Effects

Source	SS	df	MS	F	Sig.
Intercept	95127.99	1	95127.99	1077.14	0.00
Organization	20.628	2	10.31	1.168	0.327
Error	229.5	26	8.83		

Amount Fixated On

Number of Fixations on	Organization	Mean	St. Dev	N
Brand	Brand	19.5	9.42	10
	Characteristic	23.9	14.15	10
	Price	20.89	14.24	9
	Total	21.44	12.43	29
Characteristic	Brand	30.9	15.07	10
	Characteristic	32.1	14.13	10
	Price	28.67	19	9
	Total	30.62	15.57	29
Price	Brand	8.3	5.19	10
	Characteristic	13.3	15.61	10
	Price	10.3	14.79	9
	Total	10.66	12.41	29

Tests of Within-Subjects Effects

Source	SS	df	MS	F	Sig.
TotalFix	5747.67	2	2873.84	51.343	0.00
TotalFix* Organization	62.03	4	15.51	0.277	0.892
Error	2910.59	52	55.97		

Tests of Between-Subjects Effects

Source	SS	df	MS	F	Sig.
Intercept	37823.82	1	37823.823	80.426	0.00
Organization	222.24	2	111.117	0.236	0.791
Error	12227.7	26	470.3		

Proportion of Fixations On

Proportion of Fixations on	Organization	Mean	St. Dev	N
Brand	Brand	33.43	6.63	10
	Characteristic	34.78	11.34	10
	Price	37.03	10.36	9
	Total	35.01	9.4	29
Characteristic	Brand	51.86	10.16	10
	Characteristic	48.65	7.64	10
	Price	50.44	6.83	9
	Total	50.31	8.2	29
Price	Brand	14.71	8	10
	Characteristic	16.55	12.74	10
	Price	12.76	10.78	9
	Total	14.74	10.41	29

Tests of Within-Subjects Effects

Source	SS	df	MS	F	Sig.
%TotalFix	18501.3	2	9250.65	66.77	0.00
%TotalFix* Organization	181.77	4	45.44	0.328	0.858
Error	7204.8	52	138.55		

Tests of Between-Subjects Effects

Source	SS	df	MS	F	Sig.
Intercept	96558.12	1	96558.12	2102328.4	0.00
Organization	0.116	2	0.058	1.262	0.3
Error	1.194	26	0.046		

Earlier Fixation On

First Fixation on	Organization	Mean	St. Dev	N
Brand	Brand	1.89	1.36	10
	Characteristic	3.8	5.77	10
	Price	1.88	1.13	9
	Total	2.59	3.65	29
Characteristic	Brand	2.22	1.92	10
	Characteristic	1.7	1.34	10
	Price	2.38	1.69	9
	Total	2.07	1.62	29
Price	Brand	17	8.75	10
	Characteristic	25.6	23.18	10
	Price	9.5	8.26	9
	Total	17.96	16.51	29

Tests of Within-Subjects Effects

Source	SS	df	MS	F	Sig.
1stFix	4049.22	2	2024.61	21.42	0.00
1stFix* Organization	733.7	4	183.43	1.94	0.119
Error	4536.2	48	94.5		

Tests of Between-Subjects Effects

Source	SS	df	MS	F	Sig.
Intercept	4314.91	1	4314.91	58.27	0.00
Organization	456.34	2	228.17	3.08	0.064
Error	1777.1	24	74.05		

Appendix 14: Hypothesis 2 Analyses (Organization + Visual Attention)

Chose Most Looked At

Classification Table: Chose Most Looked At

Observed		Predicted: Chose Most Looked At — No	Predicted: Chose Most Looked At — Yes	% Correct
Chose Most Looked At	No	0	6	0
	Yes	0	23	100
Overall %				79.3

Variables in the Equation: Chose Longest Most At

Organization	B	S.E.	Wald	df	Sig.	Exp (B)
Brand	1.97	1.25	2.5	1	0.11	7.2
Characteristic	1.97	1.25	2.5	1	0.11	7.2
Constant	0.223	0.671	0.11	1	0.74	1.25

Chose Longest Looked At

Classification Table: Chose Longest Looked At

Observed		Predicted: Chose Longest Looked At: No	Predicted: Chose Longest Looked At: Yes	% Correct
Chose Longest Looked At	No	5	1	83.3
	Yes	4	19	82.6
Overall %				82.8

Variables in the Equation: Chose Longest Looked At

Organization	B	S.E.	Wald	df	Sig.	Exp (B)
Brand	21.43	12710.13	0	1	0.99	2.00E+09
Characteristic	2.42	1.25	3.75	1	0.05	11.25
Constant	-0.22	0.67	0.11	1	0.74	0.8

Chose Earliest Looked At

Classification Table: Chose Earliest Looked At

Observed		Predicted		
		Chose Earliest Looked At		
		No	Yes	% Correct
Chose Earliest Looked At	No	28	0	100
	Yes	1	0	0
Overall %				96.6

Variables in the Equation: Chose Earliest Looked At

Organization	B	S.E.	Wald	df	Sig.	Exp (B)
Brand	19.01	13397.66	0	1	0.99	1.80E+08
Characteristic	0	18467.4	0	1	0.99	1
Constant	-21.2	13397.66	0	1	0.99	0

Chose Recently Looked At

Classification Table: Chose Recently Looked At

Observed		Predicted		
		Chose Recently Looked At		
		No	Yes	% Correct
Chose Recently Looked At	No	0	12	0
	Yes	0	17	100
Overall %				58.6

Variables in the Equation: Chose Recently Looked At

Organization	B	S.E.	Wald	df	Sig.	Exp (B)
Brand	-0.22	0.92	0.06	1	0.81	0.8
Characteristic	0.62	0.96	0.42	1	0.52	1.87
Constant	0.22	0.67	0.11	1	0.74	1.25