Design for aging eyes: an in-depth look at fast-food outdoor menu displays

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Design for aging eyes:
An in-depth look at fast-food outdoor menu displays

by

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I dedicate this thesis to the strongest woman I know—my grandma. And to my family, who supports and encourages me in everything I do. I also dedicate it to my best friend, Noah, and thank him for his unwavering confidence in me. And, of course Riley and Piccolo, who because of this research, have become neglected. I promise that someday I will make it up to each and everyone of you.
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ABSTRACT

The aging population, one of the fastest growing age groups in the United States, is an audience that graphic designers and visual communicators often fail to address. Fast-food menu displays are just one example of a design that may not meet the needs of a senior clientele. This study consolidates and summarizes a variety of literature relevant to the design needs of an aging population.

This study then poses four research questions:

1. How can we design a fast-food menu for the aging eye?

2. How can a designer understand the functional problems associated with the visual and motor deficits of the older population?

3. What colors do elderly have difficulty seeing? What typeface is easiest to see at a distance?

4. What size does that typeface have to be in order for it to be read without any difficulty?

By considering the changes that occur as the eye ages, the fast-food industry could take a giant step forward. Two basic conditions must be met in order to make fast-food menu displays more legible and effective. The first condition is that the material (text & photographs) on the menu should be both visible and legible. The second condition is that the items on the menu must be easily understood. To test the current fast-food menu displays, 90 individuals responded to a questionnaire. The questionnaire provided data that begins to reveal how people order food from the menus at fast-food restaurants. The same questionnaire also collected some qualitative data regarding individuals’ overall impressions of fast-food menu design. The outdoor menu displays of
four drive-thru fast-food restaurants were also evaluated and analyzed based on criteria established by the literature review.

Results from the study provided some answers about what individuals like and want in the designs of fast-food menus. Speed and consistency were two suggestions that were reported by multiple respondents on the surveys. Also, there seemed to be a strong preference for pictures. The findings from the menu analysis show that there is not a universal standard in terms of outdoor fast-food menu display design.

The purpose of this line of research is to produce some preliminary guidelines for the structure, organization, and design layout of outdoor drive-thru fast-food menu displays. The study establishes critical legibility factors related to aging vision and analyzes the displays of four fast-food restaurants.
CHAPTER 1: CONSIDERING THE AGING AUDIENCE

Introduction

If the least conservative estimates are used, by the year 2040 the average life expectancy of older people could increase by 20 years. Some projections are that by the middle of the 21st century, there will be 16 million Americans over 85 years of age. The sensory, cognitive and motor abilities decline as we age. With a rapidly aging population, design for the elderly is going to have to be given greater consideration than it has in the past. When looking at many designed interfaces today it does not seem that the needs of the aging population are even being considered.

Statement of Problem

Almost everyone experiences age-related vision changes beginning around 40 years of age. Changes in vision are related to the growth of the lens, yellowing of the lens, changing ability to adjust to dark and light, and a decreasing visual field. As a result, the aging population may expect decreased visual accuracy, spatial perception and discrimination, difficulty in color discrimination, and altered accommodation to light and dark.

The menus in many fast-food restaurants, such as McDonalds, Culvers, Wendy’s, and Steak n’ Shake, have not taken the aging eye into consideration. Inside these restaurants, the menu is up high and usually quite far from the customer. The outdoor drive-thru menu displays are all usually set back at a great distance from the customer. Some restaurants make an attempt to show the food in picture form, but many times it is
hard to see what is on the sandwich; and even then, there are only a select few items from the menu actually presented in photographic form. The backlit lighting varies between restaurants, as do the typefaces that list the menu selections.

Our physical environment is organized in a system of cues that allow us to respond appropriately to different situations. However, “the environment communicates meaningfully only to the degree to which the cues sent out by the environment can be perceived correctly by the individual,” (Hershberger, et al., 1977, pp. 33-36). If sensory modalities such as hearing or vision have deteriorated, the intended message may not get through. This is often the case with the elderly. Because of this deterioration, they may not respond appropriately to the situation they encounter, or at least not in the way the designer intended (Hershberger, et al., 1977). A vast amount of the information we receive about the world passes through our eyes, which is why it is important that we learn to produce designs that are compatible with compensating for the visual deficits of the aging population.

In his book, *Design for Everyday Things*, psychologist and engineer Donald Norman argues that often times humans feel they are to blame for not understanding something. He explains that it’s all too often the simple things of everyday life, such as opening a door, using a light switch, or turning on a water faucet, that are the most difficult. Norman states that, “while we all blame ourselves, the real culprit, faulty design, goes undetected. And millions of people feel themselves to be mechanically inept. It is time for a change,” (Norman, 1988, p. viii). Research reveals that fast-food menu displays have little to no real guidelines in terms of design. In fact, many menu displays are perfect examples of information overload. This overload can create a very
stressful situation for someone going through a line at a fast-food restaurant where things are meant to be processed quickly. If the “visual information is overcrowded by stimuli, presented at low contrast, in small print, or at the wrong viewing distance, older adults will have more difficulty perceiving the information,” (Scialfa, 2004, pp. 19-20).

As designers, it is important to understand the functional issues related to vision reduction and loss. Considering how vision reduction changes the ability to read print, see colors and communicate with others is something designers need to keep in mind. It is the designer’s duty to look at the psychological and functional aspects of vision loss—we have the power to help make simple tasks, such as reading and comprehension, easier.

The Purpose

The purpose of this research is to produce some preliminary guidelines for the structure, organization, and design layout of outdoor drive-thru fast-food menu displays. The study will establish critical legibility factors related to aging vision and analyze the displays of four fast-food restaurant’s drive-thru menus in terms of these critical factors.

The Research Questions

How can we design a fast-food menu for the aging eye? How can a designer understand the functional problems associated with the visual and motor deficits of the older population? What colors do elderly have difficulty seeing? What typeface is easiest to see at a distance, and what size does that typeface have to be in order for it to be read without
any difficulty? These are just a few of the problems designers should consider when designing for the older population.

**Significance**

In the competitive fast-food industry, restaurants have to operate efficiently and maintain the quality of their products and services. By considering the changes that occur as the eye ages, the fast-food industry could make a giant step forward. Two basic conditions must be met in order to make fast-food menu displays more legible and effective. The first condition is that the information (text & photographs) on the menu should be both visible and legible. The second condition is that the items on the menu must be easily understood.

**Definitions of Terms**

Physical age is the “chronological time something has existed or the number of elapsed standard time units between birth and a date of observation,” (Spirduso, et. al., 2005, p. 4). In this study, the term aging refers to “a process or group of processes occurring in living organisms that with the passage of time lead to a loss of adaptability, functional impairment, and eventually death,” (Spirduso, et. al., 2005, p. 4).

**Organization of this Study**

The remainder of the thesis is organized as follows: A review of current research and existing studies for the aging eye and vision changes, typography and color considerations for effective information design, design principles, illustrations and
photographs as visual cues, glare and illumination considerations, and typographic recommendations from the Americans with Disabilities Act, are given in chapter two. In chapter three, four current drive-thru fast-food menu display designs are observed and the design and distribution of a questionnaire dealing with how individuals order food from a fast-food menu is discussed. In chapter four, the results from the questionnaire are analyzed and discussed and an evaluation matrix is constructed. The conclusion and recommendations for future research are discussed in chapter 5.
CHAPTER 2: LITERATURE REVIEW

Why is it important to consider the needs of the elderly? As mentioned previously, seniors are one of the fastest growing demographics. Today, one out of every ten people in the world is 60 years and older; by 2050, it will be one in five, and by 2150, it will be one in three (Coyne & Nielsen, 2002). With age comes vision loss and reduced visual acuity. The rapidly aging population, makes it is essential that designers understand and address the needs of this growing population. Fast-food menu displays are one example of a design that may not meet the needs of a senior clientele. Some basic understanding of legibility as it relates to information design and older populations would be helpful in developing senior-friendly graphics.

Americans with Disabilities Act

In 1990, Congress passed a civil rights law protecting people against discrimination on the basis of both physical and mental disabilities. This law is called the Americans with Disabilities Act (ADA). The ADA is important because approximately 20% of all American’s, or about 55 million people, have some type of disability that affects daily life (U.S. Census Bureau, 2000).

In 1991, the Department of Justice and the Architectural and Transportation Barriers Compliance Board published the Americans with Disabilities Act Accessibility Guidelines (ADAAG), which “provides the minimum requirements for standards of accessibility,” (Osterberg & Kain, 2005, p. 4). This comprehensive set of standards was developed to make buildings and various other sites more accessible for people with
disabilities. ADAAG’s main focus is on “buildings and sites in the United States that are used by the general public (customers, visitors, patients, etc), including medical facilities, restaurants, hotels and other public places,” (Osterberg & Kain, 2005, p. 4).

The ADA is important because it “mandates the policies, procedures and practices that provide equitable access for all people to jobs, buildings services, transportation and many other aspects of daily life,” (Osterberg & Kain, 2005, p. 5). The ADA believes in the term universal design, meaning that, “the design should work well for all people, regardless of the variations in ability,” (Osterberg & Kain, 2005, p. 5). The main purpose for the ADAAG is to make places more accessible to everyone.

**Aging and Vision Changes**

**Demographics of Aging and Vision Loss**

According to Alberta L. Orr’s article, *Assistive Technologies for Older Persons Who are Visually Impaired*, as the aging population increases, we should expect to see significantly higher amounts of age-related vision loss. Some of the data that Orr lists are:

“In 2005, there were 32.8 million people over the age 65 in the United States, making up 12.7% of the population.

Vision loss is among the most frequently reported disabilities affecting the elderly.

An estimated 4.1 million Americans age 55 and over are blind or severely visually impaired and have a vision loss severe enough to interfere with their ability to carry out routine daily tasks independently (Nelson & Dimitrova, 1993).

One in eight people age 55 and over is severely visually impaired.

One in four people age 85 and over—the fastest growing age group—is severely visually impaired.
Sixty-six percent of visually impaired people live in their own home.

There will be 70.2 million Americans over the age of 65 by the year 2030, over 20% of the population.

The current older visually impaired population will double by 2030 when the last cohort of the baby boomer generation reaches its senior year.

Even sooner—by the year 2010—there will be 1.6 million severely visually impaired people age 85 and older,” (Orr, 1997, pp. 72-73).

**Aging Vision Changes**

Research by Frank Schieber (2003) shows “our ability to cope effectively with the environment begins with our capacity to process sensory information,” (129). Unfortunately, “advancing adult aging brings with it some systematic reductions in the efficiency of our sensory systems,” (Schieber, 2003, p. 129). There are many different optical changes one experiences as he or she ages. According to Schieber, “light first enters the eye through the cornea (see Figure 1).” He explains that, “small changes in the curvature of the cornea result in remarkable changes in the quality of the retinal image,” (Schieber, 2003, p. 130). Research shows that these changes in the curvature of the cornea “increase after age 50,” (Schieber, 2003, p. 129). Also, “changes in the cornea result in age-related increases in the intraocular scattering of light in persons over 60 years of age,” (Schieber, 2005, p. 129).

1) The term **visual impairment** is defined as a “decreased visual ability that impacts on daily activities,” (Orr, 1997, p. 74).
2) **Legal blindness** is defined as “a visual acuity of 20/200 or a visual field of no greater than 20 degrees in the better eye with the best possible correction,” (Orr, 1997, p. 74).

3) **Severe visual impairment** is defined as “having difficulty reading newspaper print,” (Orr, 1997, p. 75).

4) **Low vision** means that the person is not totally blind. This means “the person has a lower degree of functional vision, or a visual acuity of 20/70 or less in the better eye with the best possible correction,” (Orr, 1997, p. 75).

![The Human Eye](Figure_1.jpg)

**Figure 1.** The Human Eye. Source: Webvision

**Changes in Light**

The iris regulates the amount of light that enters the eye. According to Schieber, “through dilation and constriction the pupil of the typical young adult is capable of regulating retinal illumination over a 16:1 ratio range,” (130). However, he explains that “as one grows older, the average diameter of the pupil for a given value of illumination tends to become smaller – a condition referred to as *papillary miosis*,” (Schieber, 2003, p. 130). This age difference in pupil diameter “are greatest under low-illumination conditions (Winn et al., 1994). Designer Paul Nini devised a series of images that show how much
“the aging eye changes the relative transmission of light through the optic media for viewers ages, 20, 60, and 75,” (Nini, 2006). The images in Figure 2 show that it is obvious how much darker the photograph is at age 75 when compared to age 20. The contrast of the colors is very, very little. In fact, there is even a large difference of contrast from age 20 to age 60. The contrast of color sensitivity is clearly shown with these three examples.

![Image of Age-related Vision Change with Contrast Sensitivity](source aiga.org)

The images in Figures 2 portray how much the aging eye changes the relative transmission of light for viewers ages 20, 60 and 75 (Nini, 2006). Here is it obvious how much darker the images appear when seen through eyes that are 75 years old when compared to 20 year old eyes. The contrast in colors declines progressively as we age. There is even a large difference in color contrast perception that occurs between ages 20 and 60. The reduction in color sensitivity is clearly demonstrated by these examples.

**Loss of Focus**

The light that passes through the pupil next encounters the lens (Schieber, 2003). According to Schieber, “in young children, the maximum amplitude of accommodation
enables the lens to add approximately 20 diopters of focusing power to the eye, thus enabling them to focus upon objects as close as 5 cm away,” (Schieber, 2003, p. 131). Like other parts of the eye, this maximum amplitude changes as we age. “The maximum amplitude of accommodation decreases in a linear fashion from childhood onward. By the mid-forties, the average person has lost so much accommodative power that they can no longer adequately focus upon objects within arm’s length,” (Hofstetter, 1965, p. 3-8). This is a normal age-related condition called *presbyopia* (Shieber, 2003).

![Normal vs. Blurred Vision](source:aiga.org)

*Nini also devised visual representations of how different types of age-related vision changes could look. Figure 3 shows the difference between what a person with presbyopia, or loss of focus sees compared to a person with normal vision. The onset of this common age-related vision change occurs can begin between the ages of 40 and 50 years of age. Because the lens loses elasticity as we age, we develop a decreased ability to focus, especially during reading.*
**Visual Acuity**

According to Nini, *visual acuity* is the most common age-related vision change, and it happens to almost everyone, beginning between the ages of 40 and 50 (Echt, 2002, Haegerstrom-Portnoy, et al., 1999, Nini, 2006). The ability to focus and resolve fine spatial detail becomes especially difficult as the lens starts to lose elasticity. The loss of visual acuity can “result in blurred vision, which may worsen with age, as the eye weakens,” (Nini, 2006). The picture in Figure 3 shows the difference between “normal focus and blurred vision,” (Nini, 2006). It’s important to note that the loss of focus can differ from person to person. Studies have shown that age-related differences in visual acuity are “exacerbated under challenging viewing conditions such as low stimulus contrast and/or low luminance,” (Richards, 1977; Stuff, et al., 1990).

**Contrast Sensitivity**

Our “ability to detect and recognize objects in our environment varies considerable as a function of target size, contrast and spatial orientation,” (Olzak & Thomas, 1985, p. 1-56). Often referred to as function vision, contrast sensitivity really means how well we can see details in high contrast and also in very low contrast environments. Numerous studies reveal that there is a “consistent pattern of age-related change in contrast sensitivity,” (Schieber, 2006, p. 141).

**Color Vision**

According to Schieber (2006), there is a linear increase in the number of color discrimination errors between 30 and 80 years old. The data suggests that much of the
“age-related change appears to be due to the weakness in blue-yellow color mechanisms,” (Schieber, 2006, p. 141). This means that the individual will have a difficult time differentiating between colored surfaces that only slightly differ from small trace amounts blue or yellow pigmentation. “Colors at the red-yellow end of the spectrum should predominate where accents are required,” (Hershberger, et. al., 1977, p. 34).

**Compensation for the Visual Deficits**

As we already know, the world’s population is rapidly aging. Normal age-related declines in vision can “render visually conveyed information difficult to comprehend,” (Charness, 2001). A lot of the information we receive from the world is through our eyes. But as we know, aging is often accompanied by visual deficits. As designers, we need to be aware of these deficits and compensate for them. Some of the ways vision can change as we age includes:

1) “Loss of ability to discriminate among colors, especially at the blue-green end of the color spectrum due to the yellowing and opacity of the lens;

2) A pitting or crazing of the cornea, which accentuates glare from uncontrolled natural light or from unbalanced artificial light. At the same time, older people tend to require up to three times the amount of light to receive messages;

3) Loss of the ability to discriminate boundaries, edges, and distances which make it difficult to distinguish walls from floors;

4) Distorted depth perception which makes changes in elevation difficult to judge;

5) Slowed adaptation to light and dark which lowers tolerance for extreme contrasts in color and light; and

6) Lowered ability to read fine visual detail making reading a burden,” (Hershberger, et al.,1977).
Typography and the Aging Eye

Designers of fast-food menus should pay particular attention to the typeface choice, typeface color, and background color for the fast food menu design. Because the menu will be read from a distance, it is vital that the information is readable from that distance. If the visual information is overcrowded by stimuli, presented at low contrast, in small print, or at the wrong viewing distance, older adults will have more difficulty perceiving the information (Scialfa, Charles, 2004).

Typeface choice strongly “impacts whether or not a communication is read,” (Re & Watzman, 2008, p. 336). The selection of the typeface should be considered carefully. Distinct typefaces and typographic styles “create environments that influence a user’s perception of text,” (Re & Watzman, 2008, p. 336).

In his publication, The Visible Word (1969), author Herbert Spencer presented the fact that the eye uses visual information in the form of both outline word shapes and their internal patterns to move along a text line and steps and jumps as it groups text to form comprehensible phrases of information. When choosing a typeface, the designer must consider the typeface size, weight, style, individual letter spacing, word spacing, line spacing, and color (337).

Typeface Size and Style

Type size is given in points, a measuring system unique to typography. In digital typesetting systems, a point equals 1/72 of an inch. (Re & Watzman, 2008, p. 337). Generally speaking, the larger the type the easier it is to read. Proportions of the individual letterforms are “an important consideration in typography,” (Carter, Day &
Meggs, 2007). In the book *Typographic Design: Form and Communication* (2007), graphic designers, Rob Carter, Ben Day, and Philip Meggs suggest that:

“Four variables control letterform proportion and have considerable impact upon the visual appearance of a typeface: the ratio of the letterform height to stroke width; the variation between the thickest and thinnest strokes of the letterform; the width of the letters; and the relationship of the x-height to the height of capitals, ascenders, and descenders,” (Carter, Day & Meggs, 2007, p. 32).

There are two different categories of typefaces: serif and sans serif. Serif refers to a typeface with serifs, or “short strokes that project off the end of letter strokes,” (Re & Watzman, 2008, p. 339). A sans serif typeface does not have that projection off the letterform and instead has blunt ends. Sans serif typefaces are generally considered easier to read on screen (Re & Watzman, 2008). In fact, research shows that “text set with a sans serif typeface has been found to be more readable by older adults,” (Grabinger Osman-Jouchoux, 1996, pp. 181-212).

Research has found that bodies of text set entirely in capital letters can be very difficult to read (Hartley, 1994). Having small bits of information, such as headers of the different types of food choices (Drinks, Sides, Burgers, etc.) in all capital letters is fine, but it is advisable that the designer sets the rest of the information on the menu in either all lowercase letters or an uppercase letter for the first letter and lowercase for the rest of the word.
Contrast in Weight

Weight is the thickness or thinness of a letterform. “Combining two classic typefaces with a strong differential factor such as Helvetica Extra Bold with Times New Roman can add useful contrast,” (Re & Watzman, 2008, p. 339).

If the designer sets menu subheading selections such as: Appetizers, Value Meals, Desserts, Sides, etc. in bold and sets the rest of the text in a lighter weight, it would help give the menu a sense of hierarchy. The eye would then immediately be drawn to the different types of menu selections because the headings would seem more significant because they were in bold. Once the individual found the type of selection they want, they could go down the list and find the actual item they would like to order. Having a sense of direction and hierarchy would allow the customer to read menu to be read and understand the menu more easily.

Letter Spacing and Word Spacing

Letter spacing and word spacing are another important consideration in setting readable text. Condensed typefaces are when the letterforms have a compressed horizontal width (Carter, Day & Meggs, 2007). “When letter spacing is too tight, the letters are hard to distinguish from each other and legibility decreases,” (Re & Watzman, 2008, p. 340). Typefaces that have a lot of space between them are called expanded typefaces. When “letter spacing is too wide, letter groups are not easily recognizable,” (Re & Watzman, 2008, p. 340). The same goes for word spacing. When word spacing is too tight, identifying individual letters in the words becomes very difficult, and when word spacing is too wide, word groups fall apart (Re & Watzman, 2008, p. 340).
**Line Spacing / Leading**

Leading is the “distance measured in points between the baseline of one line of text and the baseline of the text line below or above it. If there is too much leading, a person may get lost and their eyes may jump around. However, if the leading is too tight, the individual may not be able to read the individual words in the sentence,” (Re & Watzman, 2008, p. 340). “There should be enough distance, or leading, between the lines that the words from each line are not on top of one another, but they should be close enough that the lines can be read as an actual unit,” (Re & Watzman, 2008, p. 340).

**Highlighting with Type**

Emphasis on specific content can be achieved by highlighting or modifying type weight, slope, or case. Weight can be shifted from Roman to bold or extra bold. Slope can be altered from Roman to Italic (Re & Watzman, 2008). Using italics for long sentences or words is not recommended because the italic appears lighter and smaller and can create complex forms making it difficult to read. Using all caps for extended text passages also impedes readability since word outlines are rectangular and harder for the eye to differentiate (Re & Watzman, 2008). Using only one highlighting technique will help differentiate between letters, words and sentences to create meaning.

**Positive and Negative Type**

White on black (or light on a dark background) is generally regarded as less legible and much more difficult to read over large areas. To the eye, white letters on a black background appear smaller than black letters on a white background. This is because the
counters (the negative space that is fully or partially enclosed by a letterform) gets filled in by the ink from the dark background. Also, colored type appears smaller to the human eye than the same type in black. The amount of contrast between the color of type and the background is an especially important factor for reading at a distance (Re & Watzman, 2008).

**Color Considerations**

Color can be a very powerful tool for designers. It can evoke emotion and serve as a reinforcing visual cue in informational design. “The appropriate use of color can make it easier for users to absorb large amounts of information and differentiate information types and hierarchies,” (Re & Watzman, 2008, p. 347). Color is often used to: “show qualitative differences, act as a guide through information, attract attention/highlight key data, indicate quantitative changes, and depict physical objects accurately,” (Re & Watzman, 2008, p. 347).

Color is critical to our sense of visual space. Differences in color across a scene facilitate the separation of figure and ground. “For both neural and optical reasons that are only partially understood, older adults have some reliable difficulties processing color information. Shorter wavelengths, corresponding to the blue range of the visible spectrum, are more difficult to discriminate, especially in poor illumination,” (Cooper, et. al., 1991, pp. 320-324), “If subtle color differences are used indiscriminately in technological applications, older adults will find them less accessible,” (Scialfa, et. al., 2004, p. 20).
Properties of Color

Because the “human eye can distinguish among light waves of different wavelengths, we see the world in color,” (Adams, et. al., 2006, p. 8). The sensation of color is a “result of our vision’s response to these different wavelengths,” (Adams, et. al., 2006, p. 8). The various rays our eyes can “distinguish are called the visible spectrum,” (Adams, et. al., 2006, p. 8). These colors include red, orange, yellow, green, blue, blue-violet (or indigo), and violet.

Each color must be described in terms of its physical properties (Adams, et. al., 2006, p. 12). Some of the important terms include:

1) **Hue** (Figure 4) is the “common name of a color that indicates its position in the visible spectrum or on the color wheel. It is determined by the specific wavelength of a color in a ray of light,” (Adams, et. al., 2006, p. 12).

![Color Wheel & Hue Illustrations](Adams, et. al., 2006, p. 12)
2) **Saturation** (Figure 5) is the “intensity, strength, purity, or chroma— the absence of black, white, or gray— in a color. Vivid color has high or full saturation, whereas a dull one is desaturated,” (Adams, et. al., 2006, p. 12). The image in Figure 5 illustrates the desaturated colors on the left side and the more saturated colors and vivid color on the right side.

![Figure 5. Saturation Illustration (Adams, et. al., 2006, p. 12)](image)

3) **Brightness**, or value, (Figure 6) is “the relative degree of lightness of a color, or its reflective quality or brilliance. A color can be more narrowly described as either light or dark,” (Adams, et. al., 2006, p. 12). Dark colors often have black added to them and the light colors frequently have white added to them.

![Figure 6. Brightness Illustration (Adams, et. al., 2006, p. 12)](image)
Less is More

Just as you can overload a page or a menu with too many typefaces and too much information, you can have too many colors. As a general rule, use no more than three colors for primary information (Re & Watzman, 2008, p. 347). Color is often used to highlight key information. Bars of color could be used to divide different sections on a menu, or the different menu selections (such as Sides, Drinks, Burgers, etc.) could each have a different color typeface to differentiate one type of selection from another.

Use Color Coding

Using a color scheme that reinforces the hierarchy of information is considered standard best practice among designers. Use the same color for the same elements of menu items (Re & Watzman, 2008, p. 347). Color schemes are “harmonious color combinations that use any two or more colors,” (Adams, et. al., 2006, p. 236). The six classic color schemes are:

1) **Monochromatic:** “color schemes made up of shades and tints of a single color,” (Adams, et. al., 2006, p. 21).

2) **Analogous:** “combinations of any three colors that are spaced evenly around the color wheel. These colors are easiest on the eye,” (Adams, et. al., 2006, p. 21).

3) **Complementary:** “color pairs that are directly opposite each other on the color wheel. These represent the most contrasting relationships by causing a visual vibration and excite the eye,” (Adams, et. al., 2006, p. 21).
4) **Split-Complementary**: “three-color schemes in which one color is accompanied by two others that are spaced equally from the first color’s compliment. The contrast is toned down somewhat,” (Adams, et. al., 2006, p. 21).

5) **Triadic**: “combinations of any three colors that are spaced evenly around the color wheel,” (Adams, et. al., 2006, p. 21).

6) **Double-Complementary or Teradic**: “combination of two pairs of complementary colors,” (Adams, et. al., 2006, p. 21).

_Symbolic Use of Color_

Research has suggested, “that the human eye and brain experience color physically, mentally and emotionally,” (Adams, et. al., 2006, p. 24). As a result, “colors themselves have meanings,” (Adams, et. al., 2006, p. 24). According to international designers Terry Sean Adams and Noreen Morioka, and graphic designer, Terry Lee Stone, there are several colors that increase appetite. Their research indicates that, red “stimulates heart rate, breathing and appetite,” (Adams, et. al., 2006, p. 27). Yellow “speeds the metabolism” (27). Green “aids digestion and reduces stomachaches” (29), and Orange is an “appetite stimulant” (29). Blue, on the other hand, “is unappetizing and suppresses hunger” (27). Color meanings should be considered when designing for a menu.

_Contrast is Critical_

Contrast is the “range of tones between the darkest and the lightest elements, whether one is considering black and white or color,” (Re & Watzman, 2008, p. 348). “The desired
contrast between what is being ‘read’ must be clearly and easily differentiated from the
background it is presented against. If there is not enough contrast, it will be nearly
impossible, if not completely impossible to read,” (Re & Watzman, 2008, p. 348).

The Americans with Disabilities Act Guidelines (ADAAG) recommends interior
signage improve building accessibility and safety for disabled persons and provide room
and facility information for persons with limited vision (Souter, 2008). In 1994, ADAAG
recommended a color contrast standard. According to the ADAAG, there is a 70%
contrast rule. It is important to note that this is only a recommendation, not a requirement.
The American National Standards Institute Committee (ANSI) and ADAAG enforce
regulations regarding the finish and contrast, however. According to the ADAAG and
ANSI, “characters should contrast with their background with either light characters on a
dark background or dark characters on a light background,” (Souter, 2008). Though these
recommendations and regulations are made for interior signage systems, the same could
and should be used for outdoor displays for fast-food menus.

Because some fast-food drive-thru menu displays are outdoor, there are many
things that affect the contrast perception for those with full and limited vision. The
contrast and legibility of the type may be affected by the changing levels of illumination
during different hours of the day, or background clutter, such as landscaping, blocking
the view and casting shadows.

Dr. Aries Arditi, a Senior Fellow in Vision Science at Lighthouse International,
created a series of, “models and guidelines for making effective color choices that work
for nearly everyone,” (Adams, et. al., 2006, p. 66). The image in Figure 7 shows an
“exaggerated lightness difference between the foreground and background colors of
similar lightness adjacent to one another, even when they differ in saturation or hue,” (Adams, et. al., 2006, p. 66):

First, Arditi suggests that the designers not, “assume that the lightness we perceive will be the same as the lightness perceived by people with color deficits,” (Adams, et. al., 2006, p. 66). He recommends that designers, “assume that those people will see less contrast between colors,” and should, “lighten,” the light colors and, “darken,” the dark colors to increase the “visual accessibility” of the design (Adams, et. al., 2006, p. 66).

Second, as shown in Figure 8, he recommends that the designer “choose dark colors with hues from the bottom half of the hue circle against light colors from the top half of the circle,” (Adams, et. al., 2006, p. 67). Arditi suggests the designer “avoid contrasting light colors from the bottom half against dark colors from the top half,” (Adams, et. al., 2006, p. 67). Figure 9 shows that for most people with “partial sight
and/or color deficiencies, the lightness values of the colors in the bottom half of the hue circle tend to be perceptively reduced,” (Adams, et. al., 2006, p. 67).

Figure 8. Hue Chart: Looking at Light Colors and Dark Colors (Adams, et. al., 2006, p. 67)

Figure 9. Lightness Value Comparison (Adams, et. al., 2006, p. 67)

Third, as shown in Figure 10, Arditi suggests that the designer “avoid contrasting hues from adjacent parts of the hue circle, especially if the colors do not contrast sharply in lightness,” (Adams, et. al., 2006, p. 67). Figure 11 illustrates how the “color
deficiencies associated with partial sight make it difficult to discriminate between colors of a similar hue,” (Adams, et., al., 2006, p. 67).

Figure 10. High Contrast versus Low Contrast Model (Adams, et. al., 2006, p. 67)

Figure 11. Color Discrimination Illustration (Adams, et. al., 2006, p.67)

**Use Color as a Cue**

At least 9% of the population, mostly male, is color-deficient to some degree, so it is generally not a good idea to differentiate menu elements based only on color. Using both
a different color and a different typeface or type style is recommended (Re & Watzman, 200, p. 348).

Color vision is a “result of the way our eyes and brains interpret the complexities of reflected light,” (Adams, et. al., 2006, p. 64). We see a result of “different wavelengths of light stimulating parts of the brain’s visual systems,” (Adams, et. al., 2006, p. 64).

There are several varieties of color blindness:

1) **Monochromatic color blindness** is when a person “lacks all cone receptors in their eyes and cannot see any color,” (Adams, et. al., 2006, p. 64).

2) **Dichromatic color blindness** is when a person “lacks either red-green or blue-yellow receptors and cannot see hues in these respective ranges,” (Adams, et. al., 2006, p. 64).

3) **Anomalous trichromatism** means a person “can perceive a color but need greater intensity of the associated wavelength in order to see it normally,” (Adams, et. al., 2006, p. 64)

Also, as research has shown, the “natural aging process in humans may also reduce the color vision and acuity,” (Adams, et. al., 2006, p. 64).

![Figure 12. Simulation of Color Blindness Test (Adams, et. al., 2006)](image)
Figure 12 shows the simulation of a color blindness test graphic that can be used to diagnose individuals for red-green difficulties, or dichromatic color blindness (Adams et. al., 2006). People with these types of “color vision deficiencies cannot see the eye shape within the pattern,” (Adams, et. al., 2006, p. 64). This is just one test used to determine if a person has this type of deficiency.

**Design Principles and Basic Layout**

Like page design, the information on a menu should be easy to read and comprehend. The customer must be able to find what they need on the menu. An effective menu design ensures that the viewer continues by increasing the ease of understanding and the accessibility of information. Motivation and accessibility are accomplished by providing the reader with ways to quickly understand the information hierarchy. A successful menu should have an underlying visual structure or organized grid. The information should be labeled and distinct. The menu items should have a clear structure. This kind of visual structuring helps the reader and provides an obvious path through the menu items, helping to reduce information overload (Re & Watzman, 2008).

**White Space**

Having some empty space (or white space) within the menu design will open up the menu—making it easier for the customer to focus. The empty space becomes a resting points for the reader’s eye which creates the perception of simplicity and ease of use (Re & Watzman 2008, p. 343).
Grid

The menu layout is probably one of the most important parts of the menu design.

“Having a grid will allow for a controlled system of organization that will provide distribution of visual elements in an intelligible order,” (Re & Watzman, 2008, p. 343). The grid will allow for an underlying structure which will determine the “horizontal placement of columns and the vertical placement of headlines, text, and graphics,” (Re & Watzman, 2008, p. 343). A grid is a “skeletal framework used by designers to organize information within a spatial field,” (Carter, Day, & Meggs, 2007, p. 91). It provides a “strategy for composing text and other visual information in two-and three-dimensional space,” (Carter, Day, & Meggs, 2007, p. 91). The grid system “aids the designer in making information clear and optimally accessible,” (Carter, Day, & Meggs, 2007, p. 91). A successful grid will make the layout of the menu design very easy to follow and comprehend.

Field of Vision

Field of vision “refers to what the user can see on the menu with little or no eye movement; it is the main area where the eye rests to view most of the menu. A good design places key elements in the primary field of vision reflecting and reinforcing the information hierarchy,” (Re & Watzman, 2008, p. 343). This is where things such as the different types of menu selections (Sides, Drinks, Burgers, etc.) would stand out and have more contrast than the actual items. The eye should first be directed towards the menu selections, and then once the viewer has found the type of menu selection he or she wants, his or her eye would be drawn down from the menu selection to choose a
particular food item. “Size, contrast, grouping, relationships and movement are tools that create and reinforce field of vision,” (Re & Watzman, 2008, p. 343).

**Proximity**

It is recommended that the placement of visual elements are physically close to one another so that they are understood as related items (Re & Watzman, 2008, p. 343). Color is “always seen in context,” (Adams, et. al., 2006, p. 52). Sometimes, that “context is proximity to another color, which alters its meaning or even the perception of the color itself,” (Adams, et. al., 2006, p. 52). Designers and researchers, Sean Adams, Noreen Morioka and Terry Lee Stone, explain that, “human perception mixes colors that are next to each other and forms a color impression based on the entire composition,” (52). What they mean is, “the viewer may perceive colors that are not actually present,” (Adams, et. al., 2006, p. 52). The hue’s position on the color wheel can “affect the perception of other hues. Hues that are next to each other have an easier relationship than those that are opposite each other,” (Adams, et. al., 2006, p. 53). “Warm colors always advance and seem nearer while cool ones recede and seem more distant,” (Adams, et. al., 2006, p. 53).

**Visual Cues: Illustrations and Photographs**

A major goal of fast-food menus is to provide the fastest, most efficient path to finding a menu selection. To do this, designers should make these ideas clear and compelling. “Useful, effective graphics act like visual shorthand, particularly important when the menu is limited” because of size,” (Re & Watzman, 2008, p. 345). A photograph can
easily represent an existing object, but “issues related to resolution and cross-media publishing can make it unintelligible. If a photograph can be reproduced with proper resolution, cropping and contrast, and emphasize a required detail, then photography is a good choice,” (Re & Watzman, 2008, p. 345). When a menu is outside for an extended time period, photographs can fade. This fading is something that should be considered, because once a photograph is faded, the contrast is greatly reduced—thus, making the information in the photograph hard to decipher and the food less appetizing (Re & Watzman 2008, p. 345). The “visual information, graphic or iconic, should be simple, large, glare free, bold and easily located,” (Hershberger, et. al., 1977, p. 34).

**Glare and Illumination Considerations**

“Different visual displays rely on different physical principles to generate an image: light can be emitted, transmitted, or reflected by the display,” (Schlick, et al., 2008, p. 202). Regardless of the choice of menu display used, designers need to consider the way the information is being projected (Schlick, et al., 2008). Brightness and contrast can and will vary from one type of light display to another.

Brightness is defined as the “perceived amount of light that comes from an object. It is a physiological interpretation of luminance, an important photometric quantity,” (Schlick, et al., 2008, p. 207). The brightness of a display “depends not only on the optical power generated, transmitted, or reflected by the display but also the response of the human eye at certain wavelengths,” (Schlick, et al., 2008, p. 207). Brightness also
“depends on the size of the surface spot, which the light is emanating from,” (Schlick, et al., 2008).

We know that “the human eye cannot collect all of the light that is radiated or reflected from the source,” (Schlick, et al., 2008, p. 207). Some displays, such as, “LCDs, appear dimmer from an oblique angle than from the normal viewing angle; whereas most emissive displays, such as CRTs, emit light in such a way that the angular luminous intensity approximately follows Lambert’s cosine law (Lamberian surface), resulting in approximately constant luminous across all viewing directions,” (Schlick, et al., 2008, p. 207).

High luminance levels can cause glare discomfort. Glare caused by “light sources in the field of view is called ‘direct glare,’” (Schlick, et al., 2008, p. 207). Glare caused by “light being reflected off a surface in the field of view is called ‘reflective glare,’” (Schlick, et al., 2008, 207). Reflected glare occurs from “specular (smooth, polished, or mirror-like) surfaces, spread (brushed, etched, or pebbled) surfaces, diffuse (flat of matt) surfaces or as a combination of the above three (compound),” (Schlick, et al., 2008, p. 207).

Outdoor menu displays are often times viewed in the sunlight, which can reduce legibility. “Because older adults take longer for light and dark adaptation, they are more susceptible to the effects of glare, and because their vision suffers more in low luminance conditions, steps to counter the effects of external light sources (and lake thereof) are important,” (Scialfa, Ho, & Laberge, 2004, p. 30).

In order to avoid glare indoors, the display can be protected with curtains, blinds or movable walls. Outdoor displays, such as menu displays, can be protected by a
building structure, moveable walls or surfaces, or landscaping (Schlick, et al., 2008, p. 207).

**Americans with Disabilities Act Typographic Recommendations**

According to Paul Nini, “the Americans with Disabilities Act (ADA) devised a body-width to height and stroke-width to height ratios for the use of appropriate typefaces in signage systems.” He explains that these standards are set to “ensure that more uniform typefaces are used, and that overly thick or thin stroke-widths, and overly condensed or expanded styles are not used,” (Nini, 2006). The image in Figure 7 is an illustration of the standards the ADA set:

![Figure 13. Body-Width to Height and Stroke-Width to Height Ratio Standard for ADA (source aiga.org)](image)

After extensive research, the ADA concluded that the above type style is the easiest to decipher with most types of vision impairments. The ten images (Figure 14–Figure 23) show typefaces that meet the ADA requirements for use in signage systems. Nini explains, “each is shown as it would be seen by a viewer with no vision problem
compared with an example of how it would be seen by a viewer experiencing a loss of light and focus.”

Figure 14. Bodoni Book

Figure 15. Times Roman

Figure 16. Garamond Semibold

Figure 17. Century Schoolbook

Figure 18. Futura Heavy

Figure 19. Frutiger Bold

Figure 20. Syntax Bold

Figure 21. Glypha Roman

Figure 22. Helvetica Bold

Figure 23. Univers 65

(source: aiga.org)
The images in Figures 14-23 make it quite obvious how much the appearance of type can look as one ages. These typefaces have all been approved by the ADA for signage design. It’s important to note how difficult it is to read the blurred version of these typefaces.

**Theoretical Framework**

An important data collection model for measuring experience by degrees is the Likert scale. A Likert scale item often appears on surveys or questionnaires and will ask the participant to rate a phenomenon on a numeric scale. The Likert scale is a question strategy developed by organizational psychologist Renis Likert who described it as: (a) “psychometric response scale often used in questionnaires, and is the most widely used scale in survey research,” (Likert, 1932). A Likert scale is a “scaling method where the results show how favorable each item is with the respect to the construct of interest,” (Trochim, 2006). The findings from the Likert scale can provide vital indication of current trends, or opinions; it quantifies experiential information.

Statistical treatments are research tools that can measure and evaluate data empirically. A treatment known as a t-test is the primary statistical instrument used for making comparisons. A t-test, “assesses whether the means of two groups are statistically different from each other,” (Trochim, 2006). The analysis is, “appropriate whenever you want to compare the means of two groups,” (Trochim, 2006).

Another statistical treatment, ANalysis Of VAriance (or ANOVA), “is a powerful and common statistical procedure in the social sciences,” (M. Plonsky, 2006). In statistics, ANOVA is a collection of “statistical models, and their associated procedures, in which the observed variance is partitioned into components due to different
explanatory variables,” (Ferguson, G., and Yoshio, T., 2005). The purpose of ANOVA is to “test for significant differences between means found in the t-tests (M. Plonsky, 2006).

Conclusions from the Literature

Design research has provided a strong informational base for successful design in terms of typographic considerations, color contrast recommendations, glare or illumination, and organizational strategies for the aging eye. However, research evaluating the design of current fast-food menu displays and the overall effectiveness as an information graphic has been lacking. While there is a strong informational base for design research, there is limited research on how individuals interact with fast-food menu display designs. Because of the limited research in this field, this thesis study will look at how people interact with fast-food menu displays, and in particular, how seniors interact with these displays. An important objective is to determine what difficulties seniors might have with fast-food menu displays and how seniors compare, or differ from the general population in this regard. This study will tell us something about how information can be effectively communicated to an aging population. The study will also examine patterns in the way people order food from a menu at a fast-food restaurant.
CHAPTER 3: MATERIALS AND METHODS

Methodology

In order to attain the goals of this study, two research methodologies were required. First, the outdoor drive-thru menu displays of four different fast-food restaurants were analyzed to determine if there were any guidelines in the overall layout, color-coding, ratio of type to image and typeface choices. This analysis produced a list of possibly problematic features. From the analysis, a series of questions were developed to determine if the problematic features found in the analysis were in fact problem areas the general public had also noticed. The second phase, or pilot study, consisted of a questionnaire about how people order food at the drive-thru windows of fast-food restaurants. This survey was administered to individuals 18 and over to gain a better understanding of how people interact with the relevant technologies.

Observation of Current Menu Displays

The four fast-food restaurants selected for this research project were Wendy’s, Steak n’ Shake, McDonalds and Culver’s. These are all popular fast-food restaurants that offer a wide array of food selections. The outdoor menu displays of all four fast-food restaurants were evaluated according to five critical factors:

1. Colors of the background
2. Typeface choice and color
3. Contrast between text color against the background
4. Proportion of the photographs to text areas
5. Overall hierarchy/organization
When examining these menus, it is important to note how the information is being presented. Where is the eye drawn? Are the prices obvious on the menu? What typeface is being used? How many typefaces are being used? What colors are used, and is there a color system? Is the menu easy to understand or is there information overload?

Each of the four-fast food menu displays have been illustrated and deconstructed in order to fully analyze the information and overall design layout of each menu. From the information collected from the menu analysis, a final evaluation matrix will be constructed where the five critical issues have been evaluated. The information collected from the matrixes will serve as a model for a final evaluation matrix where each of the four restaurants is rated on a scale of 1 (optimal design solution) to 5 (poorest design solution).

The purpose of the evaluation matrix process was to determine which combination provided the most effective solution with regard to each of the five critical factors. The end goal of the process was to produce optimal design recommendations for each of the four menus in terms of color usage (such as color contrast and color-coding), the type of text used, the contrast between the text and background, a good balance of type and image, with a more unified hierarchy of information.
Wendy’s Menu

Figure 24. Wendy’s Menu from Car View in Ames, Iowa (June 2007)

Figure 25. Wendy’s Menu from Car View in Galesburg, Illinois (November 2007)
The images in Figures 24 and 25 are both photographs of drive-thru menus from Wendy’s restaurants. The first image is taken from a restaurant in Ames, Iowa (June 2007) while the second is taken from Galesburg, Illinois (November 2007). It’s important to note that both of these menus display five separate distinct panels, but it is quite interesting to see that both menu displays differ sharply in terms of item placement on one panel to another. The menu display from Ames, Iowa has an intercom system on their center panel, while the menu from Galesburg, Illinois has photographs of the “Kids Meals” and lists of “Featured Products”, “Hot Stuffed Baked Potato”, and photographs of “Frosty,” choices; their intercom ordering system is a completely separate structure.

Another important consideration, when looking at the individual panels, is the order of the menu hierarchy. Though very subtle, the Ames, Iowa menu and the Galesburg, Illinois have different locations for their product placement on their menus. This can be quite confusing to someone from out of town.

![Figure 26. Detail view of Ames, Iowa Menu](image)
Ames, Iowa Menu (Figure 26):

- Panel One: Create a Combo + Choose Your Side
- Panel Two: Frescata Sandwiches + Salads + Sandwiches
- Panel Three: Ordering System
- Panel Four: Kids Meal Choices + Sides + Frosty
- Panel Five: Beverages + Super Value Menu

Galesburg, Illinois Menu (Figure 27):

- Panel One: Choose Your Side + Create a Combo
- Panel Two: Frescata Sandwiches + Salads + Sides
- Panel Three: Kids Meal + Featured Products + Potato + Frosty
- Panel Four: Beverages + Super Value Menu
- Panel Five: Photographs of Featured Products (intercom system in the way)
A third important consideration is the color choices and placement for the menu display. Both Ames and Galesburg menus use white type on a medium-dark brown background. Although both menus use the same green color on the subheadings dividing the different selections of food choices, they use the green in different ways. The menu in Ames, Iowa distinguishes the different subheadings with a green bar, while the menu in Galesburg, Illinois distinguishes the subheading choices with green type.

“Combo Meals” (Figure 28: 1) in both menus are shown in photographic form on the farthest left panel. The items are divided with brown grid-like horizontal and vertical lines. The “Frescata Sandwiches” and “Salads” are shown in photographic form one panel over. All the photographic boxes are crammed full of information: the name and number of the combo meal, two different price options, and of course, the photograph of the sandwich. The name and number of the combo meal in each combo box are white with a very thin dark stroke. The same combo box also contains two separate white and yellow rectangles listing the two different prices.
“Kid’s Meals” (Figure 28: 2) are also shown in photographic form—but, on the opposite side of the menu from the “Combo Meals”. The photographs are much smaller than the photographs used for the “Combo Meals” and do not have identifying names and numbers to go with the meals. The prices are a little easier to distinguish because there is only one price listed and not as much information forced into one tiny box.

The choices of “Sides” are located in two different places on the menu. One is right below the photographs of the combo meals on the farthest left panel (Figure 28: 3), and the other is beneath the “Kid’s Meals” in panel 4. The option for “Sides” (Figure 29) below the combo selections uses photographs and text to represent the item, while the one below the “Kid’s Meals” (Figure 30) uses only text. Also, the two choices for side options list different items. The photographs of the “Sides” are named under “Choose Your Side”, and shows photographs of a side salad, french fries, a baked potato, chili, and a yogurt cup. Meanwhile, the subheading for “Sides”, listed under the “Kid’s Meal” choices, lists only french fries and chili. In order to make the menu as clear as possible for consumers, careful consideration should be given to where information is listed.
Looking more closely at both menus, panels one and two contain mostly photographs. Individual combo selections are divided up into small squares, each of which has a green background behind the photographs. The price is shown in either a white or yellow background which does not provide much contrast when placed over the green and photographic backgrounds. This contrast issue makes it especially difficult to see the price of the combos from a distance.

Both the Ames Wendy’s menu and the Galesburg Wendy’s menu use a condensed sans-serif typeface, which can be quite difficult to read when layered on top of a photograph. A likely scenario is that Wendy’s menus use a condensed typeface because it allows designers to include as much information on the menu as possible. However, this makes it very difficult to distinguish individual letterforms, and therefore very difficult for the customer to read. The photographs seem quite washed out against a green background, and it is difficult to differentiate the photograph from the background with the low contrast color tones. As seen in Figure 31, the contrast of the green background against the yellow buns is not enough to define forms for most people.

Figure 31. Detail of Photographs and Text from Wendy’s Menu in Galesburg, Illinois
So far this analysis has looked at the Wendy’s menu in direct daylight. However, fast-food menus are viewed at many different times of the day, including night. Considering what the menu will look like during the different viewing times is essential when designing these displays. The images in Figures 32 and 33 show examples of how Wendy’s menu in Ames, Iowa, looks illuminated. These photographs, taken one year later than the daylight photographs seen in Figures 26 and 27, also reflect the constant changes in menu design at fast-food restaurants.

Figure 32. Night View of Ames, Iowa Menu (June 2008)

The illumination of the information on the menu at nighttime (Figures 32 and 33) is sufficient, however, the design of the menu has not improved much. Fast-food menus change at a rapid rate. Promotional items are constantly being added and removed. Keeping the menu design as consistent as possible to reduce confusion and making the
ordering process as easy as possible is important for what is supposed to be a “quick” process.

Wendy’s added larger photographs and divided the burger combo meals from the chicken combo meals. They also attempted color-coding the different value selections. At first glance this seems like a successful design. However, trying to distinguish one burger or chicken sandwich from another is not easy. The orange background behind the chicken sandwiches makes it more difficult to distinguish from the background than their previous 2007 menu. The same goes for the red background behind the photographs of the burgers. Also, issues with the condensed typeface still have not been solved.

Figure 34 a detailed view of what has been observed while critiquing Wendy’s 2007 menu in the daylight. There is a poor use of organization, the photographs are all low quality with very little contrast, the text is too narrow and condensed, and the leading is very tight.
The Yellow color used to showcase the new menu item does not have much contrast compared to the rest of the menu. It is not effective.

There is not much contrast for selection choices here.

These green bars are good emphasis for different menu selection choices.

The sides are placed on the menu in two different locations.

Figure 34. Wendy’s Final View
Steak n’ Shake Menu

Figures 35 and 36 show what Steak n’ Shake’s menu looks like from car view. Figure 35 is what the menu looks like while waiting in line and Figure 36 shows what the menu looks like when viewing it from the location where the customer places his or her order.

Figure 35. Steak n’ Shake Menu from Car View in Galesburg, Illinois (June 2008)

Figure 36. Steak n’ Shake Menu Detail from Car View in Galesburg, Illinois (June 2008)
The Steak n’ Shake menu (Figure 37) is divided up into 9 distinct panels. From left to right they are:

- Panel One: Takhomasak #1
- Panel Two: Takhomasak # 2
- Panel Three: Takhomasak #3
- Panel Four: Takhomasak #4
- Panel Five: Takhomasak #5
- Panel Six: Original Steakburger Sandwiches + Chicken ‘n Salads ‘n Chili
- Panel Seven: Side Orders
- Panel Eight: Kid’s Meals
- Panel Nine: Hand-Dipped Milk Shakes + Beverages + Breakfast Bagels
The placement of the Steak n’ Shake’s Value Menu items is unique when compared to other fast-food menu displays in that the combo, or “Takhomasak” selections are displayed at the top going across all five panels. Like a majority of fast-food restaurant menu designs, Steak n’ Shake has small photographs of the combo items. Surprisingly, the price of the combo, or “Takhomasak” selections, is actually the largest font on the menu. In fact, the price is far more distinct than even the name of the combo selection. The name of the actual menu item for the “Takhomasak” selections is actually very difficult to find. Because of the structure of the menu display board, a gray bar divides the descriptions and names of the “Takhomasak” meal from the actual photograph representing that menu item. Unlike the other restaurants observed during this study, Steak n’ Shake has a short sentence under the photograph explaining what comes with the combo meal. The designer did not emphasize the exact name of the “Takhomasak” meal, either, as it is the same typeface, type size, and color as the rest of the paragraph.

The Steak n’ Shake’s menu uses white text against a red background. Each selection choice, or subheading, is divided with black bars with white text inside each bar. Designers used a serif typeface for every item on Steak n’ Shake’s menu. They also used far more type than image. Unfortunately, it is very difficult to read white type on a red background. Though it is high contrast, the red and white compete too much causing strain on the eyes. A main factor of why the white type against the red background does not work is because the leading of the text (the space between the lines) is very tight, making it very difficult on the eyes to focus to read.
Designers did not use effective solutions to avoiding glare for the Steak n’ Shake menu. Figures 38 and 39 show subtle hints of glare on the menu. Though this may only be subtle, it may be enough that someone would not be able to read the items on the menu board.

Figure 38. Glare on Steak n’ Shake Menu

Figure 39. Another View of Glare on Steak n’ Shake Menu
Again, looking at the menu during the nighttime is very important. The presentation of the menu is especially vital to Steak n’ Shake because they are a fast-food restaurant known for being open 24-hours. At first, the menu illumination and contrast seem to be fine. However, it is when one begins to read the menu that the problems arise. Portions of the menu have been added in as new items are being offered. Neither designers’ nor Steak n’ Shake employees considered the illumination factor of the additional pasted on items. These items do not illuminate. In fact, they leave a blank black bar on the menu where they are pasted, as seen in Figures 40-44.

Figure 40. Night View of Steak n’ Shake Menu (June 2008)
Figure 41 shows where text was added before the menu item “Cottage Cheese”, however, this is one of the additions to the menu that does not illuminate. During night view, the addition before “Cottage Cheese” is completely blacked out.

Figure 42 is similar to the image in Figure 41. All of the additional text listed before or below the menu items has been blacked out with the illumination. The photographs of the different drink selections under the subheading, “Beverages”, are all very dull when illuminated. In fact, it is nearly impossible to differentiate one drink selection from another because the contrast of the images is so dark.
Figure 43 and 44 show other examples of another area that has been blacked out because of the illumination during nighttime view. An actual menu item in Figure 43 has been blacked out when the menu is illuminated. Credit card information (Figure 44) cannot be seen because it was added at a later time and does not illuminate with the rest of the menu.

Figure 45 is a detailed view of what has been observed while critiquing Steak n’ Shakes 2007 menu in the daylight. A structured grid throughout the menu has not been established, there is more text than photographs, and the leading is very tight.
Figure 45. Final Detail of Steak n’ Shake Menu
McDonald’s Menu

Figure 46. McDonald's Menu from Car View in Ames, Iowa (Note, the Galesburg, IL menu is the same)

Figure 47. Detail of McDonald's Menu
Both Ames, Iowa, and Galesburg, Illinois, McDonald's menus (November 2007) were the same in terms of placement of photographs and text (Figure 46). McDonald's menu is divided up into four distinct panels (Figure 47). These are:

- Panel One: Happy Meal + Mighty Kids Meal + Dollar Menu + Breakfast Dollar Menu + Desserts + Sides + Beverages
- Panel Two: Value Meals
- Panel Three: Salads + New Menu Items
- Panel Four: Breakfast Value Menu

McDonald’s menu uses far more photographs compared to the amount of text. Designers categorized the “Value Menu” and separated them into two groups: “Burgers” and “Chicken or Fish”. There seems to be an attempt of color-coding within this section of the menu, though once examining it, it is difficult to determine what each color means (Figure 48).

For instance, the heading, “Burgers” is labeled in a red box and is situated above the photographs on the left side of the “Value Menu”. The photographs under the “Burgers” heading are of different types of burger value meals. A yellow bar is situated on every picture separating one meal from another and showcasing the value meal number and name. However, the last photograph listed under the “Burgers” section is a “McChicken Sandwich”, which also has a yellow bar over the picture. This is inaccurate and inconsistent with their categorization schema.
Next to the red box with the heading, “Burgers” is a purple box with the heading, “Chicken or Fish”. Below this heading are the other six photographs of value meals. The top three choices are chicken sandwich meals. A purple bar is situated on top of these pictures, showcasing the value number and name, similarly to the yellow bars under the “Burgers” subhead. The next three menu items, “Chicken Selects”, “Chicken McNuggets”, and “Filet-o-Fish” have yellow bars, however. Any attempt at color-coding here has failed. This could have been a very effective use of color-coding had the designer also included the “McChicken” sandwich, listed under “Burgers” within a purple bar.

The McDonald’s Breakfast menu, also shown in photograph form, is on its very own panel on the far right side of the menu. The proportion of text and photographs is
effective, as it seems to be easier to look at a picture and say a number instead of reading the text on the menu. The images are all fairly high-contrast making them very easy to see.

McDonald’s uses a condensed sans serif typeface for their menu. They use a white condensed sans serif typeface against a black background. The sans serif typeface is presented in all uppercase. Our previous research has suggested that this is the most difficult type to read for older adults.

Though the overall organization of the menu is easier to understand when compared to the previous menus observed during this study, it still has information overload. Why are items on the menu when they are not offered? The breakfast menu, for example, is only available during certain hours of the day. The same goes for the items on the rest of the menu.

Again, looking at menus during different times of the day is vital in choosing an effective design solution. The image in Figure 49 was taken at 5 o’clock in the morning from the drive-thru at the McDonald’s in Galesburg, Illinois. The glare makes it impossible to read almost half of the entire menu. Using a glare-resistant glass or plastic could have helped. The design is extremely important, but the placement of the display is something that also needs to be taken in consideration.
Figure 50 shows a night view from the McDonald’s restaurant in Galesburg, Illinois. The contrast and illumination issues seem to be sufficient here. The photograph was taken in 2008, and is an updated version of the McDonald’s menu than was previously discussed. Designer’s removed the breakfast menu from the far right panel and replaced it with the only “Value Menu” being offered. This panel is removed and changed on a day-to-day basis depending on what is being offered. This is a very good change. Still, though, the text on the left panel is set in all uppercase and is still very condensed. Also, the addition of the photographs in panel 3 seems successful at first glance, but the text is very difficult to read. The text in the bright colored boxes for “Salads and Wraps” is set in white, is very condensed, and is in all uppercase making it nearly impossible to read.
Figure 51 shows a detailed view of the observations and discussions from the 2007 version of McDonald’s menu. As seen in Figure 51, the “Kid’s Menu” could be emphasized more so that children could get an opportunity to pick their own meals. The menu items could be shown in simplistic photographic form like that of the “Value Menu”. The text on panel one is set in a condensed all uppercase typeface making things very difficult to read, the photographs of the drinks seem to be forced in a very small space making them difficult to differentiate one from another, and there is not a successful attempt at color-coding the “Value Menu” selections on the menu.
There is an attempt at color coding, but it is not working. The items with arrows are all chicken selections, but only 3 of the chicken choices are marked with a purple box. This is very confusing.

There is a lot of emphasis on the breakfast menu and it is only offered during certain times of the day.

Kid's menu could be emphasized more so kids could get a chance to pick their selection.

Drink photos are difficult to see. Also, the type on this panel is very small. Having it in all uppercase makes things more difficult to read.
Culver’s Menu

Figure 52 is a photograph of the view of the Culver’s menu while waiting in line at the drive-thru. Trees and bushes destruct the view of the lower portion of the menu while at this location, making it difficult to read the entire menu while waiting in line.

![Culver’s Menu from Car View in Ames, Iowa (June 2007)](image)

Figure 52. Culver’s Menu from Car View in Ames, Iowa (June 2007)

Figure 53 is a view of the menu where the customer would place their order from their car. The menu view is not obstructed at this location, but the distance of the menu from the car is quite far.

![Another View from Car of Culver’s Menu from Car View in Ames, Iowa](image)

Figure 53. Another View from Car of Culver’s Menu from Car View in Ames, Iowa
Culver’s menu is divided into six actual panels (Figure 54). They are:

- Panel One: Photographs of 2 Value Menu items

- Panel Two: Photograph of a Snack Pak + Photograph of a Value Basket

- Panel Three: Two photographs of Desserts

- Panel Four: Specialty Sandwiches + Butterburger Classics + Side Choices + Drinks

- Panel Five: Culvers Favorites + Photographs of Desserts + Fresh Salads + Dinner Plates

- Panel Six: Frozen Custard + Build Your Own Treat + Culvers Kids Meal
Culver’s menu uses medium-blue text against a white background. The white background on the menu display seems to have aged a little and is not as bright or vibrant as it probably once was. The menu items on the Culver’s menu are set in a condensed sans serif typeface and the leading is very tight, making the information very difficult to read. Each subhead is distinguished by a colored bar. These bars all vary in color with no real sense of structure. The bar colors are light yellow, blue, and red. They are used as subheadings to distinguish the different types of selection choices. The text in six of the subheadings is a serif typeface (sometimes all uppercase and sometimes just the first letter is uppercase), two subheadings use a decorative typeface, and the text in one subheading (the Kid’s Meal choices) uses an uppercase condensed typeface similar to the typeface, Impact. Overall, Culver’s uses far more type than it does image.

Unlike McDonald’s, Steak n’ Shake, or Wendy’s, Culver’s does not have numbers associated with their combo meals or “Value Baskets”. In fact, only three of the “Value Baskets” selections are shown as photographs. Also, unlike the other fast-food menus analyzed, the “Value Baskets” are not even emphasized. They are under the section “Culver’s Favorites” with very small text “Value Baskets” nearby. It is possible that many people would not even see this because the text is so small.

Although there is an obvious attempt at color-coding the menu, it has failed. The designers used a light yellow bar to distinguish the subheading, “Specialty Sandwiches” from the other subheadings. They also used a red bar to distinguish the “Build Your Own Treat” and a multi-colored bar for the “Kid’s Menu”. However, the subheadings “Drinks”, “Sides”, “Dinner Plates”, “Fresh Salads”, “Favorites”, and “Burgers” are all contained within a blue bar. This is probably because the designers did not want to use
too many colors within the menu, but this may not be relevant since there is already a
break-down of the color-coding system.

![Image of Culver's Grid Breakdown](image)

**Figure 55. Culver’s Grid Breakdown**

There is no integrated sense of hierarchy in the grid structure of the Culver’s
menu (Figure 55). The eye is immediately drawn to the pictures at the top of the menu.
However, unlike other fast-food restaurant menus, where the grouped pictures are items
from a “Value Meal”, the pictures on Culver’s menu vary from “Value Baskets” to
“Snack-Paks” to “Build Your Own Treat”. The images do not correspond to numbers for
Combo meals like many other fast-food restaurant menu designs, and it is unclear if those
items are also listed below with the other menu items.

The remainder of the menu is extremely text-heavy. The leading between the
individual menu items is very tight, making it difficult to read and distinguish the
individual lines of text. The only sense of hierarchy of information within the entire menu
is on the last and final panel where there are desserts (Figure 56). That whole panel, with
the exception of the “Kid’s Menu”, is devoted to desserts. The rest of the menu is
extremely scattered and jumps from one item to a completely different item.
Though the “Build Your Own Treat” desserts section seems to have a sense of visual hierarchy, the way the information is organized does not reflect how a person might use the menu. The hierarchy of information presented under “Sundaes” and “Toppings & Mix-Ins” is successful, but there is absolutely no structure or grid. Some type is left-aligned while other type is centered. The choices for “Toppings & Mix-Ins” are too condensed. There are photographs of some of the choices but they all vary in shape, size and presentation. The contrast of these photographic clippings is poor. This combination of text and visual images is a great example of information overload.

The bar with the subheading “Culver’s Kids Meal” is multi-colored and also contains a pattern. Strangely, there is also text placed next to the subheading within the patterned bar. This is almost impossible to read, even for someone with perfect vision.
Again, looking at menus during different hours of the day is essential. The photograph in Figure 57 shows the most updated Culver’s menu in June 2008. Overall, the illumination seems to be sufficient for the color blocks, however, the photographs are a bit too dark. In comparison to the menu in 2007, this menu has a background that is brighter white than the previous menu. Also, the shape and color of the bars containing the subheadings are now more stylized. While the color of the bars still seems to have no effective use of color-coding, the leading between each menu item has improved significantly. The white type used for the subheadings is still a problem because it does
not provide effective use of color-contrast against the colored bars. In addition, the type for “Salads and Soups” and “Team Scoopie Meal” is especially low contrast when placed against the colored bars.

Figure 58 is a detailed view of what has been observed while critiquing Culver’s 2007 menu in the daylight. In Culver’s 2007 menu, the “Culver’s Kid’s Menu” is very difficult to find because of it's placement in the far lower right corner on the menu. Placed directly under “Build Your Own Treat”, the location seems as if it was an accident. The colored and patterned bar behind the text, “Culver’s Kid’s Menu”, makes it very difficult to read the type placed on top. As seen in Figure 58, the type and leading are very condensed all throughout the entire menu. In addition, the large number of different typefaces used throughout the menu can cause confusion because it clutters the overall layout. The photographs are all quite dull and could be brightened so that there is more contrast. The organization of the menu items is poor, there is far more text than photographs, and the leading is very tight.
Figure 58. Culver’s Final Detail

The type is really condensed and the leading is very tight making it difficult to read each menu item.

How many typefaces? There is no use of effective color coding.

What is the difference between favorites, specialty, burgers, and dinner plates?

Contrast could be bumped up in the photographs.

There is way too much going on here. There is no real grid system.

The Kid’s Menu is not easy to find and the type on the colored background is very difficult to read.
**Menu Matrix**

The menu designs from all four fast-food restaurants have been deconstructed down to its grid form to analyze the very base and structure of each menu. Then from the very basic grid structure, an illustration considering color placement, hierarchy, and contrast was created. By breaking the menu down to its core design structure, we are able to look at issues such as color-coding, color contrast, image use and placement, and overall basic design principles. We are also able to observe and critique how the five critical issues: (1) colors of the background, (2) typeface choice and color, (3) contrast between text color against the background, (4) proportion of the photographs to text areas, and (5) overall hierarchy/organization, are being used. The information collected from these deconstructed grids will serve as a model for a final evaluation matrix where each of the four restaurants is rated on a scale of 1 (optimal design solution) to 5 (poorest design solution). The results from this evaluation method will be discussed further in Chapter 4.

**Questionnaire**

A primary research goal in this study was to learn how people age 40 and older order items from an outdoor fast-food menu display. A significant aspect of the study, therefore, was to observe whether there were any notable differences between the way people 40 and older interact with outdoor fast-food menu displays, and the way people ages 18 to 39 interact with these displays. Because age-related changes to our vision begin around forty years of age, this seems to be an appropriate break down.

The study was conducted using a questionnaire (Appendix C) designed to evaluate individual satisfaction with their interactive experiences involving current fast-
food menu displays. The questionnaire solicited both quantitative and qualitative data; results were gathered in quantitative form. The survey was designed to provide information about peoples’ habits, opinions, and experiences regarding the current design of fast-food menus. An important objective of the study was to see if the individuals knew what they wanted before they went to the restaurant, or if they decided on a menu item after examining the menu. Another objective was to learn if pictures or text were more likely to influence the participants’ choices. Another factor of interest was the participants themselves, therefore some basic personal information was requested: age, gender, occupation and level of education. Other questionnaire items were designed to quantify habitual behaviors such as how often the individual visited a fast food restaurant, how often they ordered their own meal from a fast food restaurants as opposed to having someone else place their order, and what meals typically bring the respondents to a fast food restaurant (breakfast lunch, dinner, snacks). The quantitative portion of the questionnaire used a Likert scale of 1 to 5.

On the qualitative survey, the questionnaire solicited opinions about fast-food menu display designs. To gather this information, open-ended questions were used.

**Distribution**

The questionnaire and cover letter were sent out to three groups of respondents. The first sample were patients at a dentist’s office in Galesburg, Illinois. The patients were scheduled for appointments and while at check-in, were asked if they would be willing to participate in the study by filling out a questionnaire. The distribution and collection of
the surveys lasted the entire month of May. In total, there were 35 patients that participated. The second sample involved residents at Northcrest Retirement Community in Ames, Iowa. Flyers were distributed throughout the facility to solicit participation in the study. Interested individuals were asked to go to the front desk to pick up a copy of the survey. Unfortunately, the response rate was zero. Additional respondents in the third sample were solicited from my email contact list of friends and family. The recipients of the email were given a link to the Survey Monkey questionnaire (an online survey instrument) and asked to forward the questionnaire on to friends, family, colleagues, etc. The third sample was different from the previous group in that it was an online survey done through Survey Monkey. The cover letter and questionnaire presented through Survey Monkey were identical to the paper copies, only it was online.

**Survey Development and Design**

**The Survey Document**

The primary research instrument was the survey document. It began with some basic demographic questions about the individual’s age, gender, native language, level of education, current employment, and marital status. These demographic questions were important because it was relevant to know who was filling out the surveys, and because age comparison was part of the study. The second set of questions dealt with how that individual ordered food from a fast-food restaurant. These were multiple-choice questions where the participant checked one of four answers. One multiple-choice
question allowed for checking “all that apply.” The questionnaire was designed to elicit several specific types of information, including:

1) On average, how often the respondent eats meals from fast food restaurants.

2) How often that individual personally orders his or her meal from a fast food restaurant.

3) When the individual typically goes to a fast food restaurant.  
   i.e. breakfast, lunch, dinner, or snacks

4) Whether the individual goes to the fast food restaurant alone or with someone else.

The information solicited by item 1 and 2 above was very important because it revealed whether or not the person actually orders his or her own meal, or if they have someone else order for them. Item 4 provided information about which was more popular—breakfast, lunch, dinner or snacks.

The succeeding five questions used a Likert scale structure. The Likert scale section of the survey document asked the respondents to rate five questions on a scale from 1 – 5: 1 = Never, 2 = Almost Never, 3 = Sometimes, 4 = More than Likely, and 1 = Always. The questions were:

1) You know what you want before you go.
2) You order by reading the menu.
3) You order by looking at the pictures.
4) You order from suggestions from someone else.
5) You order what someone else is having.

And finally, the last two questions involved open-ended responses where the respondent’s were allowed to give opinions and offer suggestions to the overall design of the fast-food menu displays. The first question asked for the individual’s opinion on what
they “liked” about fast-food menu designs and the second question asked for the individual’s suggestions for improving the current menus. The responses to these questions were important because they gave a better understanding of people’s opinions about the current menu designs.

**Procedures**

The data received from the surveys was entered into a Microsoft Excel spreadsheet and divided into two groups in order to make a comparison between the way people 40 and older interact with outdoor fast-food menu displays, and the way people ages 18-39 interact with these displays. This treatment was applied to both the short answer questions and the Likert items. A T-test was used to test the significance of the comparison data.

On the open-ended questions, each answer was typed in a Microsoft Excel document and then tabulated to verify whether or not the response appeared more than once. The Appendix has a list of all of the exact written responses.

**Limitations**

Because of time and resources, there were several limitations in the study. The paper version of the questionnaire was handed out to individuals in two Midwest towns and, thus, the results from the paper questionnaires yielded results from a midwestern perspective. In the future, the paper questionnaire could be handed out all across the United States and eventually around the world. Another limitation in the study was the
number of participants that completed the questionnaire. Because acquiring the questionnaires at Northcrest Retirement Community proved to be very difficult, nobody from that facility participated in the study. In the future, it would be important to have more individuals participate in the study.
CHAPTER 4: RESULTS AND DISCUSSION

Population and Sample

The distribution at the dentist’s office returned 35 responses, and the email contact list distribution resulted in 55 responses, for a total of 90 responses to the questionnaire. No one returned the surveys from Northcrest Retirement Community. Because the size of the sample was relatively small, 90 respondents, the collected data must be regarded as interesting but preliminary. The results provided here should be regarded as a pilot study that merits additional research.

Age Distribution

Of the 90 respondents from the Survey Monkey and paper questionnaire, 32 were ages 18-29, 11 of the respondents were ages 30-39, 24 the respondents were ages 40-49, 12 of the respondents were ages 50-59, 5 individuals were ages 60-69, 5 respondents were between the ages of 70 and 79, and finally, 1 respondent was between the ages of 80-89 (Table 1).

Table 1. Entire Respondents Age Distribution (N = 90)

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 – 29</td>
<td>32</td>
<td>35.6</td>
</tr>
<tr>
<td>30 – 39</td>
<td>11</td>
<td>12.2</td>
</tr>
<tr>
<td>40 – 49</td>
<td>24</td>
<td>26.7</td>
</tr>
<tr>
<td>50 – 59</td>
<td>12</td>
<td>13.3</td>
</tr>
<tr>
<td>60 – 69</td>
<td>5</td>
<td>5.6</td>
</tr>
<tr>
<td>70 – 79</td>
<td>5</td>
<td>5.6</td>
</tr>
<tr>
<td>80 +</td>
<td>1</td>
<td>1.1</td>
</tr>
</tbody>
</table>
As mentioned previously, the 90 respondents were then divided into two groups to see if there were any notable differences between the way people 40 and older interact with outdoor fast-food menu displays, and the way people ages 18-39 interact with these displays (Table 2). This ended up being a pretty even distribution of individuals. Forty-three people were in the 18-39 age group and 47 people were in the 40 and over age group.

Table 2. Age Group Breakdown (N = 90)

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 - 39</td>
<td>43 individuals</td>
</tr>
<tr>
<td>40 +</td>
<td>47 individuals</td>
</tr>
</tbody>
</table>

**Gender Distribution**

Unlike the age distribution, there was a noteworthy difference in the gender that responded to the survey (Table 3). Of those who completed the questionnaire, 62% of the respondents were female and 38% of the respondents were male.

Table 3. Gender Distribution (N = 90)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>56</td>
<td>62.2</td>
</tr>
<tr>
<td>Male</td>
<td>34</td>
<td>37.8</td>
</tr>
</tbody>
</table>

**Language Distribution**

All but two of the questionnaire respondents gave English as their native language, accounting for 98% of the respondents (Table 4). One respondent gave Spanish as the
native language and the other respondent’s native language was Arabic. Because of these results, it cannot be determined if language was a factor in the responses. This means that language barriers are probably not part of any comprehension or legibility problems recorded in the study.

Table 4. Language Distribution (N = 90)

<table>
<thead>
<tr>
<th>Language</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>88</td>
<td>97.8</td>
</tr>
<tr>
<td>Spanish</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Arabic</td>
<td>1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

**Education Level Distribution**

The education levels varied from the respondents, but a majority of the respondents (87%) had some college or higher (Table 5). 12% of the respondents had some high school or were high school graduates. Only one respondent did not attend school past elementary school.

Table 5. Education Distribution (N = 90)

<table>
<thead>
<tr>
<th>Education</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some High School</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>High School Graduate</td>
<td>10</td>
<td>11.1</td>
</tr>
<tr>
<td>Some College</td>
<td>29</td>
<td>32.2</td>
</tr>
<tr>
<td>College Graduate</td>
<td>37</td>
<td>41.1</td>
</tr>
<tr>
<td>Masters or Above</td>
<td>12</td>
<td>13.3</td>
</tr>
<tr>
<td>Other (Elementary School)</td>
<td>1</td>
<td>1.1</td>
</tr>
</tbody>
</table>
**Employment Distribution**

The employment distribution also varied, though most respondents (80%) were employed than the remaining 20%, which were unemployed, retired or volunteers (Table 6).

Table 6. Employment Distribution (N = 90)

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>72</td>
<td>80</td>
</tr>
<tr>
<td>Volunteer</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>Unemployed/Retired</td>
<td>16</td>
<td>17.8</td>
</tr>
</tbody>
</table>

**Marital Status Distribution**

Data from the questionnaire shows that 31 of the respondents were single, 47 were married, 3 were widowed and 9 individuals were divorced (Table 7). Overall, the distribution of single, widowed and divorced people verses married people was relatively even.

Table 7. Marital Status Distribution (N = 90)

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>31</td>
<td>34.4</td>
</tr>
<tr>
<td>Married</td>
<td>47</td>
<td>52.2</td>
</tr>
<tr>
<td>Widowed</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>Divorced</td>
<td>9</td>
<td>10.0</td>
</tr>
</tbody>
</table>

**Quantitative Data**

The quantitative data were drawn from the individuals’ responses and reactions to questions regarding the following questions: how often they eat food from a fast food
restaurant and how often they personally order food from a fast-food restaurant. The data were also drawn from the five questions where the individuals were asked to rate on a scale of 1-5 their responses as to how they order food from the menu from a fast-food restaurant. The data in Tables 8-14, is based on the combined responses from all age groups.

How often do you eat a meal from a fast-food restaurant?

When asked, “How often do you eat food from a fast-food restaurant?,” 45 respondents, or 50% said they eat food from fast-food restaurants on a weekly basis.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than Monthly</td>
<td>16</td>
<td>17.8</td>
</tr>
<tr>
<td>Monthly</td>
<td>27</td>
<td>30</td>
</tr>
<tr>
<td>Weekly</td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td>Daily</td>
<td>2</td>
<td>2.2</td>
</tr>
</tbody>
</table>

How often do you personally order a meal from a fast-food restaurant?

When asked, “How often do you personally order food from a fast-food restaurant?”, 44 respondents (49%) said they order their own food on a weekly basis. The results shifted a little here which was an interesting finding. The results above say that 45 individuals eat a meal from a fast-food restaurant on a weekly basis. Recalling that 45 individuals visit fast-food restaurants weekly, the slight difference we see in the results of these first two questions is intriguing. The results also show that 27 individuals eat a meal from a fast-food restaurant on a monthly basis while only 23 personally order meals. The differences
we see between the number of visits to a fast-food restaurant and frequency of ordering one’s food could indicate that someone else is ordering for them. At this point we have no concrete information about why some people do not order their own food. Are they in the passenger seat at the drive-up window, are they guests so the food was ordered in advance, or are they in some way uncomfortable interacting with the menus? This is a topic that merits further research.

Table 9. How Often Individual Orders From a Fast-Food Restaurant Distribution (N = 90)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than Monthly</td>
<td>21</td>
<td>23.3</td>
</tr>
<tr>
<td>Monthly</td>
<td>23</td>
<td>25.6</td>
</tr>
<tr>
<td>Weekly</td>
<td>44</td>
<td>48.9</td>
</tr>
<tr>
<td>Daily</td>
<td>2</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Likert Scale Results

The following graphs show the individual response breakdown of the ratings on the Likert Scale of 1-5 (always, more than likely, sometimes, almost never, and never). These findings were important to see if there was an overall consensus of the way people ordered, regardless of age. Later, the data will be broken up further to see if there was any distribution with regard to age and the way people order.

Likert 1: “You Know What You Want Before You Go To A Fast-Food Restaurant”

The data from the pilot study suggests that 49% of the people indicated that they “Almost Never” know what they want to eat before they approach a menu at a fast-food restaurant
(Table 10). Only about 9% of the respondents answered that they “Always” knew or “More than Likely” knew what they wanted before approaching the fast-food menu to place an order. This is an important finding because it suggests that many people do actually look at the menu to find an item they want to order, therefore indicating that the design of the menu is very important in facilitating and expatiating the ordering process.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>More than Likely</td>
<td>6</td>
<td>6.7</td>
</tr>
<tr>
<td>Sometimes</td>
<td>35</td>
<td>38.9</td>
</tr>
<tr>
<td>Almost Never</td>
<td>44</td>
<td>48.9</td>
</tr>
<tr>
<td>Never</td>
<td>3</td>
<td>3.3</td>
</tr>
</tbody>
</table>

**Table 10. Likert 1: Know Before Go Distribution (N = 90)**

*Likert 2: “You Order By Reading The Menu”*

The findings reveal that 43% of the people indicated that they “Sometimes” read the text on the fast-food menu (Table 11). 36% of the people, the second highest rating, indicated that they “Almost Never” read the text on menu. Relatively few people read the text, “Always,” or, “More than Likely,” This is not surprising, as our findings indicate that text on the menus is often very difficult to read.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>10</td>
<td>11.1</td>
</tr>
<tr>
<td>More than Likely</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Sometimes</td>
<td>39</td>
<td>43.3</td>
</tr>
<tr>
<td>Almost Never</td>
<td>32</td>
<td>35.6</td>
</tr>
<tr>
<td>Never</td>
<td>8</td>
<td>8.9</td>
</tr>
</tbody>
</table>

**Table 11. Likert 2: Read the Text Distribution (N = 90)**
**Likert 3: “You Order By Looking At The Pictures”**

The question about looking at pictures resulted in a surprisingly even distribution of responses (Table 12). 39% of the respondents said that they “Sometimes” order by looking at the pictures. 21% of the respondents said that “More than Likely” they order by looking at the pictures, while 23% of the respondents said that they “Almost Never” order by looking at the pictures on fast-food restaurant’s menus.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>12</td>
<td>13.3</td>
</tr>
<tr>
<td>More than Likely</td>
<td>19</td>
<td>21.1</td>
</tr>
<tr>
<td>Sometimes</td>
<td>35</td>
<td>38.9</td>
</tr>
<tr>
<td>Almost Never</td>
<td>21</td>
<td>23.3</td>
</tr>
<tr>
<td>Never</td>
<td>3</td>
<td>3.3</td>
</tr>
</tbody>
</table>

**Table 12. Likert 3: Looking at Pictures Distribution (N = 90)**

**Likert 4: “You Order From Suggestions From Someone Else”**

The findings show that over half, or 48 individuals (53%) “Sometimes” order based on someone else’s suggestions (Table 13). The next highest response was 25 individuals, or 28% of the respondents who said that they “More than Likely” order based on a suggestion from someone else.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>11</td>
<td>12.2</td>
</tr>
<tr>
<td>More than Likely</td>
<td>25</td>
<td>27.8</td>
</tr>
<tr>
<td>Sometimes</td>
<td>48</td>
<td>53.3</td>
</tr>
<tr>
<td>Almost Never</td>
<td>5</td>
<td>5.6</td>
</tr>
<tr>
<td>Never</td>
<td>1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

**Table 13. Likert 4: Suggestions From Someone Distribution (N = 90)**
Likert 5: “You Order From What Someone Else Is Having”

The findings show 36 individuals, or 40% of the respondents “Sometimes” order what someone else is having (Table 14). The distribution of answers for this question seems to lean more towards “More than Likely” and “Always” compared to “Almost Never” and “Never”. In fact, only 1% of the respondents, or 1 individual, responded that they “Almost Never” order what someone else is having. Nobody responded to “Never” ordering what someone else is having.

Table 14. Likert 5: Someone Else is Having Distribution (N = 90)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>More than Likely</td>
<td>35</td>
<td>38.9</td>
</tr>
<tr>
<td>Sometimes</td>
<td>36</td>
<td>40</td>
</tr>
<tr>
<td>Almost Never</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Data Collection and Analysis

A one-way analysis of variances (ANOVA) using SPSS, or Statistical Package for Social Sciences, of the information was used to determine if the individuals’, age, gender, language, education, employment, or marital status showed any significant changes with the way he or she ordered food from a menu at a fast-food restaurant.

A T-test was used to compare the mean values between the two age group breakdowns (18-39 and 40 +) on the five Likert scale questions as well as the questions asking if they went to a fast-food menu for breakfast, lunch, dinner, and/or snacks. A significant (2-tailed) level of less than .05 shows a significant difference in the mean
value, meaning that there was a noteworthy statistical difference between the answers from two age groups.

**Significant Differences Regarding Age Distribution**

The following data was collected and analyzed using Levene’s Test for equality of variances and also a T-Test for equality of measures. The data analyzed in this next section examines the data to determine if there was any significant difference in the results from the two age groups (18-39 and 40+) responded to the 5 Likert-Scale items.

The findings from this pilot study indicate that there was a significant difference between the responses of the two age categories, over 40 and under 40 with regard to the method of ordering. This significant difference was derived from the age-based comparison of responses of individuals who ordered from always reading a menu, individuals who always ordered by looking at pictures, and individuals who always ordered from suggestions from someone else. No significant difference was found in the over and under 40, age-based, comparison of responses to the questions about whether the respondents, “always knew what they wanted before they went to a fast-food restaurant,” or whether, “they always ordered what someone else was having.”

The T-Test was also used to see if there was any significant difference in the two age-groups with regard to when they frequented the fast-food restaurants: breakfast, lunch, dinner or snacks.
Individuals That Always Know What They Want

Age apparently did not play a role in the results regarding the Likert scale question, “You know what you want before you go to a fast-food restaurant”. The T-test results from the pilot study did not show a significant difference in the number of responses from one age category compared to the other.

Individuals That Always Order From Reading the Menu

The T-test results from the pilot study reveal that individuals in the 18-39 age group (mean score: 3.6512) tended to order from reading a menu significantly more often than those in the 40+ age group (mean score: 2.9787).

Individuals That Always Order From Looking at Pictures

The results from the pilot study showed that individuals in the 18-39 age group (mean score: 3.1395) also tended to order by looking at the pictures on a menu significantly more often than those in the 40+ age group (mean score: 2.5319).

Individuals That Always Order From Suggestions From Someone Else

The data from the T-test suggests that individuals in the 18-39 age group (mean score 2.8140) tended to order based on the suggestion from someone else more often than those in the 40+ age group (mean score: 2.3191).
**Individuals That Always Order What Someone Else is Having**

Based on the data, age did not play a role in the response to the question, “You order what someone else is having”. The T-test results from the questionnaire did not show a significant difference in the number of responses from one age category compared to the other.

**Individuals That Go For Breakfast**

The data reveals that 19% of the respondents from the 40+ age group, or 17 total people, said they went to the fast-food restaurant for breakfast (Table 15). Slightly fewer people in the 18-39 age group (13%), responded that they went to a fast-food restaurant for breakfast.

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-39</td>
<td>12</td>
<td>13.3</td>
</tr>
<tr>
<td>40+</td>
<td>17</td>
<td>18.9</td>
</tr>
</tbody>
</table>

**Individuals That Go For Lunch**

Age did not play a role in the results about which age group visited the fast-food restaurant for lunch most often. The results show that for both age categories, 31 individuals, or 62 total people, tended to visit the fast-food restaurant for lunch (Table 16).

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-39</td>
<td>31</td>
<td>34.4</td>
</tr>
<tr>
<td>40+</td>
<td>31</td>
<td>34.4</td>
</tr>
</tbody>
</table>
**Individuals That Go For Dinner**

The data revels that 36% of the respondents from the 18-39 age group, or 32 total people, said they went to the fast-food restaurant for dinner. Meanwhile, 23%, or 21 total people, in the 40+ age group responded by saying they went to a fast-food restaurant for dinner (Table 17).

Table 17. Dinner Age Distribution (N = 90)

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-39</td>
<td>32</td>
<td>35.6</td>
</tr>
<tr>
<td>40+</td>
<td>21</td>
<td>23.3</td>
</tr>
</tbody>
</table>

**Individuals That Go For Snacks**

Eight individuals in the 40+ age group said that they went to a fast-food restaurant for snacks while only 3 from the 18-39 age group said they went for snacks (Table 18).

Table 18. Snacks Age Distribution (N = 90)

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-39</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>40+</td>
<td>8</td>
<td>8.9</td>
</tr>
</tbody>
</table>

**Open-Ended Question Responses**

There were two questions that allowed for open-ended responses. The first question asked the individual to, “please describe something you like about ordering food from a menu at a fast-food restaurant.” The second question asked if the individual could, “please add suggestions for how the fast-food menu could be improved (color, more or
less pictures, hierarchy, etc.).” Overall, there was a good response rate for the number of responses for the two questions. Eighty-five people out of the 90 answered the first question and 72 respondents out of the 90 people answered the second question.

Because these were open-ended questions, tabulating the results involved a different process than that of the previous data. Each answer was typed in a Microsoft Excel document and then tabulated to validate if that response came up more than once. Appendix D. has a list of all of the exact written responses.

**Something They Like**

The chart in Table 19 shows a tabulated approach to some of the answers to the question, “please describe something you like about ordering food from a menu at a fast-food restaurant.” Because this was an open-ended question, respondents could write more than one thing that they liked about ordering food from a menu at a fast-food restaurant. Not surprisingly, the top response among the respondents was “speed.” Eighteen separate individuals recorded that answer. The second top response was “pictures” with 16 individuals writing that answer. People seemed to like the numbered choices and value menus, too, as 10 different people noted that what they like about fast-food menus is the pictures. Not too far from the idea of pictures and numbered choices was the response from 7 different individuals: “categories defined by color headings.”

Five individuals responded by saying they liked the convenience and familiarity of fast-food menus. Just as individuals bond to certain brands, they can also bond to and trust familiar locations and places. For instance, if an individual was traveling away from home and approached a fast-food restaurant with which they have had a prior positive
experience, they may stop at that restaurant again believing they will have the same positive experience. Because of this trust, it is important that the menus and restaurants remain consistent from one location to another to make the experience more pleasurable and consistent for the consumer.

Table 19. Tabulated Answers for what Individuals Like About Fast-Food Menus (N = 85)

<table>
<thead>
<tr>
<th>Response</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>18</td>
</tr>
<tr>
<td>Pictures</td>
<td>16</td>
</tr>
<tr>
<td>Numbered Choices / Value Menus</td>
<td>10</td>
</tr>
<tr>
<td>Choices</td>
<td>9</td>
</tr>
<tr>
<td>Categories Defined By Color Headings</td>
<td>7</td>
</tr>
<tr>
<td>Cheap / Prices</td>
<td>6</td>
</tr>
<tr>
<td>Nothing at all</td>
<td>6</td>
</tr>
<tr>
<td>Convenience</td>
<td>5</td>
</tr>
<tr>
<td>Consistency/ Familiarity</td>
<td>5</td>
</tr>
<tr>
<td>Easy</td>
<td>4</td>
</tr>
<tr>
<td>Organized Menu</td>
<td>3</td>
</tr>
<tr>
<td>Easy to Read</td>
<td>3</td>
</tr>
<tr>
<td>Concise Descriptions</td>
<td>2</td>
</tr>
<tr>
<td>No Clean Up</td>
<td>2</td>
</tr>
</tbody>
</table>
Suggestions for Change

The chart in Table 20 shows a tabulated representation of the answers to the second open-ended question, “could you please add suggestions to how the fast-food menu could be improved (color, more or less pictures, hierarchy, etc.)” Again, because this was an open-ended question, respondents could write more than one answer. The most popular answer from the suggestions offered by individuals was that they wanted more pictures on the menu. Respondents recommended that pictures be placed next to each item on the menu. They also wanted better pictures. One individual stated, “There is no need to put pictures of fries by every sandwich, we all know you can get fries with the value meal.”

The second most popular suggestion was to make the words and numbers larger. Twelve of the 72 respondents suggested this. This was consistent with the typography research. It is interesting that individuals suggested more pictures more frequently than larger type.

Categorization and grouping similar items together also seemed to be a popular suggestion. One individual wrote, “I’d like to see categories: Drinks, Chicken, Sides, Desserts…” Someone else suggested, “groupings are important, as well as hierarchy with typographic treatment and type size. Color coding might be a good way to improve the
menu items, too.” Color categorization and coding was also an item suggested by more than one individual. One person suggested, “categorizations (perhaps color coded): i.e. burgers, chicken based items, snacks, etc. versus just a conglomeration of meals and options.” Overall, the responses seem to indicate that the respondents would like the menus to be more readable.

Table 20. Tabulated Answers for what Individuals Recommend for Fast-Food Menus
(N = 72)

<table>
<thead>
<tr>
<th>Response</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>More Pictures/ Pictures Next To Each Item And Better Pictures</td>
<td>18</td>
</tr>
<tr>
<td>Larger Fonts/ Numbers</td>
<td>12</td>
</tr>
<tr>
<td>Categorize &amp; Group Items Together</td>
<td>11</td>
</tr>
<tr>
<td>Less Clutter / More Organization</td>
<td>10</td>
</tr>
<tr>
<td>Color Categorize Items</td>
<td>6</td>
</tr>
<tr>
<td>More Signs Before You Get To Menu To Order</td>
<td>2</td>
</tr>
<tr>
<td>Reduce the Number of items</td>
<td>2</td>
</tr>
<tr>
<td>More Value Selections, Less Individual Sandwiches</td>
<td>2</td>
</tr>
<tr>
<td>Make Colors Brighter</td>
<td>1</td>
</tr>
<tr>
<td>Only Have On There What Is Offered</td>
<td>1</td>
</tr>
</tbody>
</table>
Summary of Data

Because this was just a pilot study of only 90 respondents, the data collected for this research serves mainly as a structure to base future studies from. To better support the data presented, the future study would have results from respondents all over the United States and possibly the world. With more respondents, a future study could provide more support when looking at how language, education, gender, age, etc. impacts how individuals order food from a menu at a fast-food restaurant.

Though the responses were limited to just 90 individuals, the data was enough to get a better understanding of how individual’s order food from a menu at a fast-food restaurant. Also, the results from the open-ended questions answered a lot in terms of consumer’s wants and needs in order for effective menu design.

Evaluation Matrix

Four fast-food drive-thru menu displays have been assessed and evaluated based on a series of five critical factors: (1) Colors of the background, (2) Typeface choice and color, (3) Contrast between text color against the background, (4) Proportion of the photographs to text areas, and (5) the Overall hierarchy/organization.

Each menu has been deconstructed with the 5 critical issues in mind. A grid has been placed over a photograph of the menu to gain a better understanding of the overall menu structure. Then, a separate image of the stand-alone grid has been illustrated to see the actual breakdown. Next, a third image with the grid has been illustrated; only this
time color has been placed. And finally, a full illustration of the menu has been created to help analyze the proportion of the photographs to text areas.

From the assessment, an evaluation matrix has been constructed rating each of the four fast-food drive-thru menu displays on a scale of 1 (optimal design solution) to 5 (poorest design solution). The result of the evaluation matrix was to produce optimal design recommendations for each of the four menus in terms of color usage (such as color contrast and color-coding), the type of text used, the contrast between the text and background.

**Wendy’s Menu Deconstruction**

Wendy’s has a defined grid system that has been used throughout the entire menu (Figure 59). The “Combo Meals”, “Frescata Sandwiches,” “Salads”, and “Sides” are all shown in photographic form on the far left side of the menu. Each photograph is divided up in a strict geometric grid. The items on the right side of the menu are also structured within a grid system, though they are not as tightly confined as the items in the left side.

The hierarchy and organization of the menu itself is poor. Designers did not use the grid as effectively as it should have been used. As mentioned in Chapter 3, there are a few items repeated in the menu. To create consistency, the section called, “Kid’s Meal”, which is in panel 3, should be located near the photographs of the other combo meals on panel 1. The far right side of the menu is all text, and could be more successful if the text-heavy information was divided by using photographs.

There seems to be an attempt at keeping the colors consistent throughout the menu. Some areas have a brown/red bar meant to signify the subheadings, while others
have a bright green bar. Though the bars may not be as effective as they could and should be, having bars to break up the space and signify a new type of selection is helpful in aiding the eye around the menu.

Figure 59. Wendy's Menu Deconstruction
When looking at the illustration in Figure 60, the actual breakdown of text and image is even more obvious. Color contrast can also be observed from this illustration. First, there seems to be a fairly even distribution of text and image. When dividing the entire menu in half (with the exclusion of the middle panel which displays the ordering intercom), there is a slightly larger use of photographs over text. This is positive when considering the findings from the data provided from the questionnaire: customers want pictures.

When evaluating color contrast, Wendy’s menu has some problems. First, the text for the combo number and name is very difficult to read because it is placed against a busy washed-out photograph. If using light or white text for the combo items, using a dark divider bar, like what was used for McDonald’s “Value Meals”, would help make the contrast greater and give the combo name and number more emphasis. The color of
the type for the basic menu items could be improved if the background behind the type was just a little bit darker. Currently, the color behind the text is a medium-dark gray/brown and if the color were changed to a rich, dark brown or black, the contrast of the white type would be ideal. The same goes for the text color for the subheadings in the green bars. Right now the contrast is very weak, but if designers use the dark type against a lighter green bar the contrast would be better.

**Steak n’ Shake Menu Deconstruction**

Steak n’ Shake uses a very structured grid system (Figure 61). The content below the value meals, or as Steak n’ Shake names it, “Takahomasak” meals, is very organized and the hierarchy is very clear. However, the division of the “Takahomasak” meals seems a bit cluttered. The five meals are all defined as pictures on the topmost panel going all the way across the menu. The area directly below the photographs, however, is divided by menu board structure itself. Right below this division is vital content information regarding the “Takahomasak” meals. When comparing the overall organization of the menu to Wendy’s menu, it is obvious that the overall hierarchy and organization of information is much stronger in Steak n’ Shake’s design.

Color use is very poor in Steak n’ Shake’s menu. Designers tried to give the menu a “retro feel”, but the way the color is used is not effective. For instance, white type against a red background is very difficult to read. The design would have been more effective and the text would have been more readable had the background been black. Also, parts of the serif typeface get lost because the strokes are so thin. Using a different
typeface, such as a semi-bold or bold sans serif typeface would have helped eliminate this problem.

Compared to Wendy’s menu, Steak n’ Shake uses far more text than it does photographs. The text dominates Steak n’ Shake’s menu, and because of this, becomes difficult to read. Like Wendy’s, the leading between the menu items is too tight and the typed information seems forced into one very small space.

Figure 61. Steak n’ Shake Menu Deconstruction
Steak n’ Shake makes no obvious attempt at color-coding menu selections. Designers probably did not consider this because of the consistent retro-feel they wanted the menu to achieve. Because Steak n’ Shake’s menu is so structured, color-coding would probably not make much of a difference in the way the information was processed. The organization of the menu is far superior to Wendy’s, but could be even more stronger if the designers re-evaluate the color and typeface choices.

**McDonald’s Menu Deconstruction**

McDonald’s grid is also very structured (Figure 63). The content on panels 2, 3, and 4 is all very well organized. This is probably because the proportion of images to type is well-balanced. McDonald’s uses far more pictures than it does type. Panel 1 is more type-
dominate than the other three panels, and the organization of the information is not as well structured.
The color use is fine, though color-coding could be a very effective solution to the menu. As mentioned previously, the bars containing the “Value Meal” number and name could be color-coded. The use of color-coding would be a very easy change and would dramatically improve the quality of McDonald’s menu.

Numbering the value meal items is a very successful solution. It is also helpful to have the colored bars dividing one “Value Meal” from another. The use of the grid is especially strong in the areas with the pictures.

The contrast of type on the background is relatively good on panels 2, 3, and 4. However, the contrast on panel 1 is poor. The white type is in all uppercase and extremely condensed. This makes it very difficult to read and decipher actual words.

The information on panel 4 (the “Breakfast Value Menu”) is only offered during limited times of the day and should be removed when it is not available. Having this
information removed, or blacked out, will make the hierarchy and organization of the overall menu even more successful. In fact, there would be enough room for the information in panel 1 to be shown in entire photographic form.

**Culver’s Menu Deconstruction**

When compared to the other three fast-food restaurants evaluated, Culver’s menu does not seem to have as much of an effective grid-structure (Figure 65). Culver’s uses far more type than image. This is problematic because it is very hard to differentiate words because everything is so condensed. In fact, the type is so condensed on the Culver’s menu that the text seems to blend together.

Though six photographs are used on the top of the menu, these photographs are of nothing specific. The pictures are just six examples of menu items available on the menu. Unlike the other three fast-food restaurant’s menus that were analyzed, Culver’s menu does not display their entire “Value Baskets” in photographic form.

Culver’s menu uses over six separate typefaces (Figure 66). It does not seem as if there was much thought put into the selection of typefaces used because many of them are very difficult to read. The type would also have had more contrast against the background if it were a slightly darker shade of blue.
Figure 65. Culver’s Menu Deconstruction
The overall organization and hierarchy of information on the Culver’s menu itself is extremely confusing. The menu jumps from one item to a completely different menu item. The photographs do not have a sense of structure of organization of why they are placed where they are placed. Subheadings jump from “Specialty” to “ButterBurger Classics” to “Side Choices & Drinks” to “Culver’s Favorites”. There is no sense of direction or hierarchy whatsoever in this menu.
**Final Evaluation Matrix**

The results from the menu deconstruction data have been combined and constructed into a final evaluation matrix. Each of the four fast-food menu displays have been rated on a scale of 1 (optimal design solution) to 5 (poorest design solution). Again, the result of the evaluation matrix was to produce optimal design recommendations for each of the four menus in terms of color usage (such as color contrast and color-coding), the type of text used, the contrast between the text and background.

**Optimal Design Solution Criteria**

In order to rate the items on the evaluation matrix, it is important to provide criteria for an optimal design solution for each of the five critical issues. Because the five critical issues are rated on a scale of 1 (optimal design solution) to 5 (poorest design solution), the overall best total score a menu could have is 5 and the overall worst score an individual menu could have is 25. Each of the four menus was rated using a subjective scoring rubric based from what is known about design research today.

1. **Colors of the background**

   The colors of the background should be either very dark or very light so that there will be enough contrast with the type against the background.
2. Typeface Choice and Color

An optimal design solution for typeface choice would be a semi-bold sans serif typeface with ideal leading. There should be enough space between each line that words are recognizable. The color of the text should be bright and vibrant both when illuminated and not illuminated. Having too many typefaces is confusing and should be avoided. Using all capital letters in areas other than the subheadings should also be avoided, because all uppercase letters are especially hard for older individuals to read. Avoid using condensed typefaces because the letters become hard to distinguish from each other and legibility decreases when typefaces are condensed.

3. Contrast between Text Color Against the Background

Contrast is critical for typographic information. The desired contrast between what is being read must be clearly and easily differentiated from the background it is against. Highlighting the subheadings is also a good idea because it shows emphasis on specific content. This can be achieved by color change, changes in the weight of the typeface, using a contrasting typeface, using all caps, or using divider bars.

4. Proportion of the Photographs to Text Areas

Based on the preliminary findings of this pilot study, the more photographs the better. The images in the photographs should be easily recognizable and have good contrast and resolution.
5. Overall Hierarchy/Organization

Having structure in the menu is critical. Using a grid will allow for a controlled system of organization and help provide distribution of visual elements in an understandable order. Grouping or categorizing similar items also helps aid in organization.

### Table 21. Final Evaluation Matrix

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wendy’s</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Steak n’ Shake</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Culver’s</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>McDonald’s</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>11</td>
</tr>
</tbody>
</table>

1= Optimal Design Solution. 5= Poorest Design Solution
Wendy’s Evaluation: Total Score = 20

1. Colors of Background: 3
   The brown/gray background could be darker. The pictures are very washed out and hard to see.

2. Typeface Choice and Color: 5
   The text used for names of the individual “Combo Meals” is placed on top of a color photograph and is extremely difficult to see and read. The text used for the remainder of the items on the menu is also difficult to read because it is so condensed.

3. Contrast between Text Color Against the Background: 5
   The color of the white type on the text-heavy portion of the menu would be more vibrant and have greater contrast if were a brighter white. The white looks like it has faded with time and there is not much contrast against the brown/gray background. Also, as mentioned previously, the contrast of the type against the colored photographs is almost non-existent. The text against the colored green bars is also difficult to read because the green is so bright. This green bar should be toned down quite a bit to make the text on top more readable.

4. Proportion of the Photographs to Text Area: 3
   The areas where photographs have been used for showcasing meals are very successful and the menu would benefit greatly if there were more photographs.

5. Overall Hierarchy/Organization: 4
   This is a very unorganized menu. The choices for sides are offered in two separate places on the menu and both places list a different assortment of side selections. The overall organization of the menu is poor.
Steak n’ Shake Evaluation: Total Score = 20

1. Colors of Background: 5
The background does not have an effective use of color. It is too bright and does not provide enough contrast for the information being displayed.

2. Typeface Choice and Color: 5
The serif typeface is difficult to read- especially when it is white. Individual parts of the letters fill in and the strokes are too thin.

3. Contrast Between Text Color Against the Background: 5
White type on the red background is not an effective use of contrast.

4. Proportion of the Photographs to Text Area: 3
The pictures of the “Takahomasak” meals are great and this menu would be even more successful if there were more pictures throughout.

5. Overall Hierarchy/Organization: 2
If the gray bar did not divide up the “Takahomasak” meals description, this would be rated optimal because the information is categorized correctly and is listed in an order that is understandable to the customer.

Culver’s Evaluation: Total Score = 18

1. Colors of Background: 1
White is especially bright when illuminated.

2. Typeface Choice and Color: 4
The type would have more contrast if it were a darker blue. However, the typeface choice is poor. The designers used far too many typefaces in the design. It does not seem as if much thought was put into the consideration of the typefaces being used. Also, text should never be placed on top of a colored and patterned bar.
3. Contrast between Text Color Against the Background: 3
The contrast is not as effective because the leading is so tight. Because of the leading, it is difficult to read individual words on the menu. The contrast would be greater if the text was a little darker shade of blue.

4. Proportion of the Photographs to Text Area: 5
There is far more text than image in the Culver’s menu. In fact, the photographs just seemed placed in their location with no real reason or structure.

5. Overall Hierarchy/Organization: 5
The menu jumps from one item to a completely different menu item. The photographs do not have a sense of structure of organization of why they are placed where they are placed. Subheadings jump from “Specialty” to “ButterBurger Classics” to “Side Choices & Drinks” to “Culver’s Favorites”. There is no sense of direction or hierarchy whatsoever in the menu.

**McDonald’s Evaluation: Total Score = 11**

1. Colors of Background: 3
The black background behind the text-heavy panel could be improved, because we know white type against a black background is not as effective for older people to read as black text against a white background. However, the colors used for the bars behind the subheadings are effective.

2. Typeface Choice and Color: 3
Again, this research has suggested that white type against a black background is difficult for older adults to read. The type used in the first panel is all uppercase and all very condensed. This research also suggests staying away from this typographic
configuration because older adults have a difficult time reading text set in all uppercase. However, the text used as subheadings works well.

3. Contrast Between Text Color Against the Background: 3
Overall there is enough contrast. However, there are still issues with the first panel where the menu displays a condensed all-caps white font against a black background.

4. Proportion of the Photographs to Text Area: 1
This research suggests that people enjoy pictures.

5. Overall Hierarchy/Organization: 1
The menu is very well organized. There is a definite grid used throughout the menu. Items on the “Value Menu” are numbered and divided from one another with lines and bars.

Recommendations from Final Evaluation Matrix

This collected data shows that individuals like photographs, organization and hierarchy of information, categorization of menu items, color-coded information, numbered value meal choices, and large type. From the collected data through the questionnaire and the information from the evaluation matrix, a series of recommendations for optimal design solutions have been made for menus at fast-food restaurants with the aging eye in mind.

Some of these recommendations include:

1. Americans with Disabilities Act recommends the following typefaces to be used on signage design: Bodoni Book, Times Roman, Garamond Semibold, Century Schoolbook, Futura Heavy, Fruitger Bold, Syntax Bold, Glypha Roman, Helvetica Bold, and
Univers 65. Interestingly, none of the fast-food restaurant menus observed during this study used any of these typefaces. In fact, most of the menus evaluated in this research use a condensed typeface—which would be nearly impossible to read at a distance for those with impaired vision.

2. Research suggests that bodies of text set in all uppercase letters are very difficult to read by older adults and those person’s with impaired vision. Uppercase letters should be avoided, unless used in small areas such as titles and subheadings.

3. Research suggests that text set with a sans serif typeface is more readable by older adults and those person’s with impaired vision.

4. Contrast in weight can help define the hierarchy of information. For instance, if the subheadings are set in all uppercase and bold, but the rest of the menu was set in lowercase and semi-bold, the eye would first be drawn to the darker type.

5. White text on a dark or black background has been found to be less legible and more difficult to read over larger areas, and white type on a colored background is even more difficult to read.

6. A problem with all four menus evaluated in this study seems to be inappropriate use of leading. Because the designers are trying to get as much information into the space as possible, information has been forced to fit into that space. However, we know that when there is not enough distance between the lines of type (or leading), the individual lines of type might not be readable.
7. The findings from this research show that individuals like pictures. However, the quality of the photographs should be considered. Fading, overall resolution, cropping, and contrast are all issues that need to be considered.

8. This research suggests that the organization of the menu is important. Placing related elements near each other helps with the overall organization and hierarchy. Using a grid can help solve part of this problem because the grid allows for a controlled system of organization.

9. Having empty space where the eye can rest helps create visual repose. Menus should not be overcrowded with information.

10. Though not directly rated or evaluated on the evaluation matrix, issues with glare and illumination should also be considered. This would also involve placement of the menu display in the environment.

**Summary of Evaluation**

Not one of the four fast-food drive-thru menu displays rated as having an optimal design solution for all five of the critical issues evaluated. When considering the background colors, Culver’s design was a more optimal solution than Steak n’ Shake’s. The background color used for Steak n’ Shake’s menu was not effective because it is too bright and does not provide enough contrast for the information being displayed. Meanwhile, Culver’s was more successful because they used a white background, which becomes especially bright when illuminated.
Not one of the four fast-food menus analyzed had an optimal design solution for typeface choice and color. However, both Wendy’s and Steak n’ Shake rated exceptionally poor because the typefaces used were extremely condensed. Steak n’ Shake had many issues with their typeface choice, especially because they used a serif typeface that was difficult to read. This was further complicated by the fact that the type was white. As a result, individual parts of the letters filled in and the strokes were too thin.

Also, none of the four fast-food menu displays had adequate color contrast within their menu designs. There were especially problems with text being layered on colored photographs and colored bars.

McDonald’s had an optimal design solution for the number of photographs compared to text areas. The findings from the pilot study suggest that individuals tend to prefer more photographs than text. McDonald’s menu used far more image than text. Meanwhile, Culver’s used far more text than image. Culver’s use of text is a prime example of information overload.

McDonald’s menu design also rated as optimal when considering the overall hierarchy of information and organization. Because of the use of photographs, and the strong, obvious grid structure, McDonald’s menu seemed more organized than the other three menus evaluated. Both Wendy’s and Culver’s had randomly placed information on their menus—Wendy’s even listed things more than once.

Design research has provided a strong informational base for successful design in terms of typographic considerations, color contrast recommendations, and organizational strategies for the aging eye. It is critical that these needs are met, and it is clear that these four fast-food drive-thru menus have not considered those needs.
Discussion

From this research there is still not a definitive conclusion with regard to how individuals 40 years and older order food from menus at fast-food restaurants. However, the results from this pilot study did provide some answers about what these individuals like and want in the designs of the fast-food menus. Based on the survey responses, the data suggests that individuals in the 18-39 age group tended to order food from reading a menu, looking at pictures and from suggestions from someone else more often than individuals in the 40+ age group. The data suggests that more individuals in the 40+ age group go for breakfast and snacks more often than those in the 18-39 age group.

The results from the open-ended questions regarding what individuals like about ordering food from fast-food menus were relatively consistent. Speed and consistency were two suggestions that were reported by multiple respondents on the surveys. Also, there seemed to be a strong preference for pictures. Several individuals noted that they liked the numbered choices or value meals. Another popular response was “categories defined by color headings”.

Similar to the responses regarding what individuals like about fast-food menus, the responses to the open-ended question regarding improvements with fast-food menu design were also fairly straightforward. Individuals seemed to want more pictures, larger fonts, and categorization or grouping of similar items. People also suggested the menus have more organization and color categorization.

The findings show that there is not a universal standard in terms of outdoor fast-food menu display design. When considering how people order food from menus and what people like about menu design, it is obvious that not one of the four evaluated fast-
food menu designs responded to everyone’s needs. A relatively easy task such as color-coding, has not been used as an effective design element on any of the menu displays. Considerations of type size and type choice have also not been well researched and implemented. Glare and illumination issues are still major problem areas for each of the four fast-food restaurant menu displays. Though contrast works well for some menus more than others, it is still not being used as effectively as it could be.

Designers need to understand the needs of their audience. The respondents tested in this study were individuals ages 18 and over, and many offered fairly straightforward responses as to what they need and want in a menu design. In addition, these individuals represent the general public—half were under the age of 39 and have yet to experience vision changes related to aging. Though they may not have experienced age-related vision changes yet, they still offered insightful suggestions with regard to how fast-food menu designs might become more legible and readable.
CHAPTER 5: RECOMMENDATIONS AND CONCLUSIONS

Summary

As visual communicators, it is our duty to consider the wants and needs of society. Graphic designers and visual communicators need to understand the power they have over the aging population—power that can assist them in remaining active, independent individuals within today’s society. Designers should make every effort in researching how to best design for an elderly audience. All individuals, regardless of age or ability, will benefit as we learn more about designing for an aging population.

Recommendations

Based on the results of this study, several important conclusions about the design of fast-food menu display can be drawn. First, the designer should present the hierarchy of information on the menu in a clear way. If the fast-food restaurant is a franchise, it would help if the format, presentation, and order of food choices is consistent with all other stores in the chain; this will make the customer more comfortable and help to eliminate confusion.

The menu display boards should have very high luminance and contrast. It is recommended that the designer use a dark typeface on a lighter background rather than a white typeface on a dark background. The location of the display should also be considered. To reduce glare on the menu’s screen, the designer should use indirect lighting, glare-resistant materials, and avoid narrow incident angles from light sources.
With regard to typography, the designer should use a larger typeface so that the menu can be seen from a greater distance. Text set with a sans serif typeface has been found to be read more easily by older adults (Gabinger Osman-Jouchoux, 1996). Examples of Sans Serif typefaces are Helvetica, Univers, and Futura (examples also recommended by the ADA). A non-condensed sans serif typeface is recommended. To be viewed from a distance, a semi-bold version of these typefaces would be more legible because it would be more distinguishable.

Type set in all capital letters should be used strategically, if at all. We know that bodies of text set entirely in capital letters are difficult to read (Hartley, 1994). It is recommended that all capital letters be used only for subheadings. Actual menu items should be set in upper and lower case.

Designers should be aware that older adults have difficulty distinguishing certain color differences and avoid using these colors in close proximity. Decreased sensitivity to color can make distinguishing between certain colors very difficult for older adults (Echt, 2002). Yellow and blue/green combinations are especially difficult to distinguish as one ages.

Evidence indicates that photographs work well on the menus, and it is important that fast-food restaurants continue using photographs to help differentiate between menu items. Things to consider when using photographs are the placement of the photograph, how the price is placed on the photograph, and the overall tonal range of the photo. The photographs on Wendy’s menu seemed a bit washed out and hard to distinguish from the green background, and this is something that the designer should consider.
Every menu that was observed during this study had some type of information overload. Clarifying the information of the fast food outdoor menu displays and displaying only the photographs and text of what is currently being offered is one way the designer can eliminate information overload. This could be as easy as an employee reorganizing the menu at certain times of the day.

The possibilities for making the design of drive-thru menu displays more user-friendly to the aging population are endless. A menu could potentially be presented as an electronic ordering kiosk where customers could customize their own orders. Customization features such as native language choices, typeface size, and color contrast are all things that could be changed at the touch of a button on an electronic kiosk. In addition, the menu could be completely digitized and presented in a Liquid Crystal Display screen. The LCD screen would be helpful because it could have features that would allow the contrast to change during certain times of the day when glare and illumination could be an issue.

If each restaurant chain used certain guidelines to keep the menu consistent within their own chain, users would have a much more positive experience. Providing a universal standard in terms of color and lighting systems for the backlit screen and the overall typographic treatment would improve user interaction with these outdoor fast-food menu displays. For these menus to function well, they must display useful information, be placed at an accessible point in the environment, at a proper viewing height, and be adequately illuminated. Text must be the “proper size for readability from the required viewing distances, and must contrast clearly against the background” (Nini,
When looking at current menu displays, it’s quite obvious that many of these considerations have been overlooked.

**Opportunities for Future Research**

Increasing the number of respondents to this survey and diversifying their demographics would provide more valuable information in how individuals order fast-food. The text, space and graphic design elements were not tested individually in this research project and could be tested in a future study with carefully designed user tests, interviews and/or more questionnaires.

A user test designed to see how participants order food from drive-thru menus at fast-food restaurants could provide details as to how individuals comprehend the information presented on these menus. Testing an elderly audience with two different menus containing the same information but with different layout designs (one having more pictures and less text, and one having more text and less picture) could lead to a greater understanding of how that target audience processes information.

This study only focused on designing for aging eyes. However, it is known that aging also comes with a decline in cognitive and motor abilities as well. With more research, this study could further explore how design can help individuals with a larger set of age-related changes and issues such as perception, concentration, and adaptation.

These questions and many others remain to be answered by researchers. A great deal of interesting and valuable research remains to be done before we fully understand the aging audience and are able to design appropriately for them.
Conclusion

This research is just a small part of a larger set of age-related issues. Combining knowledge from other fields, such as gerontology, psychology, and sociology with graphic design allows for designers to gain a better understanding of the larger issues surrounding design for an aging population.

The designer can no longer assume that everyone sees the world through the same eyes. It is a visual communicators’ duty to step outside his or her own perceptions and design for a specific target audience or audiences. More research on design for the needs of the aging population is needed. We must discover who the elderly really are, how they read, and how they respond to the designs they encounter on a daily basis. Visual communicators are ethically responsible as creators of visual information to do everything possible to ensure that designs communicate at a more “universal” level.
APPENDIX A. INSTITUTIONAL REVIEW BOARD APPROVAL
DATE: February 25, 2008
TO: Kimberly Melhus
    158 Design Bldg.
CC: Deb Satterfield
    158 Design Bldg.
FROM: Jan Canny, IRB Administrator
       Office of Research Assurances
TITLE: Visual Identity of Fast Food Menu Displays
IRB ID: 08-053
Study Review Date: 18 February 2008

The Institutional Review Board (IRB) Chair has reviewed this project and has declared the study exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b). The IRB determination of exemption means that:

- You do not need to submit an application for annual continuing review.
- You must carry out the research as proposed in the IRB application, including obtaining and documenting (signed) informed consent if you have stated in your application that you will do so or if required by the IRB.
- Any modification of this research should be submitted to the IRB on a Continuing Review and/or Modification form, prior to making any changes, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.

Please be sure to use the documents with the IRB approval stamp in your research.

Please note that you must submit all research involving human participants for review by the IRB. Only the IRB may make the determination of exemption, even if you conduct a study in the future that is exactly like this study.
APPENDIX B. LETTER OF INFORMATION
LETTER OF INFORMATION

Title of Study: Visual Identity of Fast Food Menu Displays
Investigators: Kimberly Melhus, BFA

Major Professor: Debra Satterfield

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time.

INTRODUCTION
The purpose of this study is to discover the proper design strategies for large-scale fast food menu display designs by enhancing the visual hierarchy. The following questions are to be answered in this research:
1. How do people order their food at fast food restaurants?
2. How can user experience be enhanced through simplified menu design?
3. Can Information Architecture (IA) be simplified and still maintain current menu features?
4. How can we design a more organized, universal fast food menu display?

DESCRIPTION OF PROCEDURES
If you agree to participate in this study, your participation will last for approximately ten minutes. You will be given one survey-- first asking basics about your demographic information and then questions pertaining to fast food restaurants.

RISKS
There are no foreseeable risks in this study.

BENEFITS
This survey will not yield a direct benefit to you. However, the knowledge or information gathered in this research will help future research in designing a more effective fast food menu display.

COSTS AND COMPENSATION
You will not be compensated for participating in this study and there is no cost in participating in this survey.
PARTICIPANT RIGHTS
Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled. During the testing, if you feel uncomfortable at anytime you can quit.

CONFIDENTIALITY
Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent permitted by law, the following measures will be taken:
There is no identifier in this questionnaire and the participant’s identity will be anonymous all throughout the survey. Only the researcher will have access to the data. The data will be entered and kept in a password-protected computer located on the PI’s personal computer. The questionnaire will be tossed away or shredded after all the information is entered into the computer.

QUESTIONS OR PROBLEMS
You are encouraged to ask questions at any time during this study. For further information about the study contact Kimberly Melhus at 309-335-0950 or email kmelhus@iastate.edu or Deb Satterfield at debra815@iastate.edu.

If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, Office of Research Assurances, (515) 294-3115, 1138 Pearson Hall, Ames, IA 5
APPENDIX C. QUESTIONNAIRE INSTRUMENT
Visual Identity of Fast Food Menu Displays Survey

1. Age:
   - 18-29
   - 40-49
   - 60-69
   - 80-89
   - 30-39
   - 50-59
   - 70-79
   - 90+

2. Gender
   - Female
   - Male

3. Native Language
   - English
   - Spanish
   - Other (Please specify: ______________________)

4. Education Level
   - Some High School
   - High School Graduate
   - Some College
   - College Graduate
   - Masters
   - Other (Please specify: ______________________)

5. Employment
   - Employed
   - Volunteer
   - Unemployed/retired

6. What is your marital status?
   - Single
   - Married
   - Widowed
   - Divorced

7. How often do you **eat** a meal from a fast food restaurant?
   - Less than Monthly
   - Monthly
   - Weekly
   - Daily

8. How often do you personally **order** a meal from a fast food restaurant?
   - Less than Monthly
   - Monthly
   - Weekly
   - Daily

9. When you go to a fast food restaurant, do you go for (Mark all that apply):
   - Breakfast
   - Lunch
   - Dinner
   - Snacks
10. When you go to a fast food restaurant, do you tend to go:
   □ Alone
   □ With your spouse
   □ With family or friends
   □ Other (Please specify: ____________________________)

11. How do you usually select your meal? (Please Circle One for Each Question)

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>More than Likely</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>You know what you want before you go</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>You order by reading the menu</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>You order by looking at the pictures</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>You order from suggestions from someone else</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>You order what someone else is having</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Other: ____________________________ 5  4  3  2  1

12. Please describe something you like about ordering food from a menu at a Fast Food restaurant:

13. Could you please add suggestions to how the Fast Food menu could be improved (color, more or less pictures, hierarchy, etc.)
APPENDIX D. OPEN-ENDED QUESTION RESPONSES
### Answers for what Individuals Like About Fast-Food Menus

(N = 90)

<table>
<thead>
<tr>
<th>Number</th>
<th>Age</th>
<th>Sex</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>18-29</td>
<td>Female</td>
<td>I like the images that go along with the numbered items.</td>
</tr>
<tr>
<td>2</td>
<td>30-39</td>
<td>Male</td>
<td>I like the pretty pictures</td>
</tr>
<tr>
<td>3</td>
<td>18-29</td>
<td>Male</td>
<td>menus are set up well and are easy to read</td>
</tr>
<tr>
<td>4</td>
<td>40-49</td>
<td>Female</td>
<td>It has the price and selection in one spot</td>
</tr>
<tr>
<td>5</td>
<td>18-29</td>
<td>Male</td>
<td>NA</td>
</tr>
<tr>
<td>6</td>
<td>40-49</td>
<td>Female</td>
<td>Categories/color headings Pictures Price Point/Value Menu</td>
</tr>
<tr>
<td>7</td>
<td>40-49</td>
<td>Female</td>
<td>You know what choices you have.</td>
</tr>
<tr>
<td>8</td>
<td>18-29</td>
<td>Male</td>
<td>If I don't know what I want, pictures are key.</td>
</tr>
<tr>
<td>9</td>
<td>40-49</td>
<td>Male</td>
<td>Consistent quality and taste and of course fast</td>
</tr>
<tr>
<td>10</td>
<td>40-49</td>
<td>Female</td>
<td>pictures give you a fair idea of what the food is supposed to look like---especially sandwiches.</td>
</tr>
<tr>
<td>11</td>
<td>18-29</td>
<td>Male</td>
<td>NA</td>
</tr>
<tr>
<td>12</td>
<td>50-59</td>
<td>Female</td>
<td>I like ordering the meals...you only have to specify the meal number and what you want to drink</td>
</tr>
<tr>
<td>13</td>
<td>50-59</td>
<td>Male</td>
<td>FOOD CHOICES ARE USUALLY NUMBERED</td>
</tr>
<tr>
<td>14</td>
<td>18-29</td>
<td>Female</td>
<td>NA</td>
</tr>
<tr>
<td>15</td>
<td>30-39</td>
<td>Female</td>
<td>NA</td>
</tr>
<tr>
<td>16</td>
<td>30-39</td>
<td>Female</td>
<td>Quick</td>
</tr>
<tr>
<td>17</td>
<td>60-69</td>
<td>Male</td>
<td>Nothing</td>
</tr>
<tr>
<td>18</td>
<td>40-49</td>
<td>Female</td>
<td>Few Choices</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>Gender</td>
<td>Description</td>
</tr>
<tr>
<td>----</td>
<td>-----</td>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>19</td>
<td>50-59</td>
<td>Female</td>
<td>I don't use the menus, I don't like them. They confuse me. I like to order the two fish for $3 during lent. Occasionally I order a cappucino.</td>
</tr>
<tr>
<td>20</td>
<td>40-49</td>
<td>Male</td>
<td>NA</td>
</tr>
<tr>
<td>21</td>
<td>18-29</td>
<td>Female</td>
<td>NA</td>
</tr>
<tr>
<td>22</td>
<td>40-49</td>
<td>Female</td>
<td>Concise Descriptions</td>
</tr>
<tr>
<td>23</td>
<td>30-39</td>
<td>Male</td>
<td>Consistency</td>
</tr>
<tr>
<td>24</td>
<td>40-49</td>
<td>Male</td>
<td>Consistency and speed</td>
</tr>
<tr>
<td>25</td>
<td>18-29</td>
<td>Female</td>
<td>That there are pictures and there is a time restraint.</td>
</tr>
<tr>
<td>26</td>
<td>18-29</td>
<td>Male</td>
<td>Quick</td>
</tr>
<tr>
<td>27</td>
<td>18-29</td>
<td>Male</td>
<td>they tend to be east to read and have a large selection</td>
</tr>
<tr>
<td>28</td>
<td>18-29</td>
<td>Male</td>
<td>how each item is priced both as meal and alacart</td>
</tr>
<tr>
<td>29</td>
<td>50-59</td>
<td>Male</td>
<td>NA</td>
</tr>
<tr>
<td>30</td>
<td>18-29</td>
<td>Female</td>
<td>It’s fast and no long wait</td>
</tr>
<tr>
<td>31</td>
<td>50-59</td>
<td>Female</td>
<td>Food is served promptly</td>
</tr>
<tr>
<td>32</td>
<td>50-59</td>
<td>Male</td>
<td>NA</td>
</tr>
<tr>
<td>33</td>
<td>18-29</td>
<td>Male</td>
<td>Different types of food are listed in different section (example Taco Bells Menu)</td>
</tr>
<tr>
<td>Age</td>
<td>Gender</td>
<td>Reason</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>--------</td>
<td>------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>it is basic and usually there aren't too many choices</td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td>Male</td>
<td>value menu / window display of specials on posters</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>I like pictures because it gives me the quickest and best idea of what I am ordering.</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>You don't have to say the full title, but you can just say a number.</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>It’s convenient</td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>Female</td>
<td>I like to have several choices available when ordering.</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Male</td>
<td>Fast food is cheap</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Male</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Male</td>
<td>It is easy</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>Cheap! So if I don’t like it it’s okay</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Male</td>
<td>One thing that I like is that when I go to a fast food place and make my order I know that my food will be ready shortly. Also, there are pictures of the most popular items.</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Male</td>
<td>Being able to sit down the entire visit!</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>All the choices and the pictures to see what you are getting</td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td>Female</td>
<td>If I go to a fast food restaurant it’s a last resort. Salads and fresh fruit would be my choice. FRESHNESS of food is what I like most and cleanliness of establishment.</td>
<td></td>
</tr>
<tr>
<td>Age Group</td>
<td>Gender</td>
<td>Preferences and Observations</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>--------</td>
<td>------------------------------</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Male</td>
<td>Get to see it all.</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>If it's a food I am familiar with or haven't had before, I like having a picture of it so I know what I am getting into. Also like larger fonts and a clear breakdown of items (i.e. appetizers, main courses, etc.).</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>Fast food restaurants generally have pictures of the food you're ordering whereas most normal restaurants do not have photographs of the meals and food.</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>the value meals, comes with sides and a drink</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>I like when they are organized in a way that people that are not familiar with fast food can understand</td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>Male</td>
<td>I like when items are highlighted by a large price, so I know what the &quot;value&quot; is; I also like the numbering system, so I can just order, say, &quot;value meal 1,&quot; for example. I always look first for groupings...ie, where are the drinks, where are the sandwiches? If things are not grouped, I find menus very hard to navigate, which is oftentimes more likely than not.</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Male</td>
<td>Usually when you order there is a picture which gives you an idea what is on the food item, because it takes too much space to write out what all comes on the sandwich.</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>There are usually pictures of what you're going to order, so if you don't know what you want the pictures might be able to help you choose.</td>
<td></td>
</tr>
<tr>
<td>60-69</td>
<td>Female</td>
<td>Fast and easy</td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td>Female</td>
<td>Absolutely nothing</td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>Female</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>70-79</td>
<td>Female</td>
<td>My husband is an invalid and we eat our food in the car.</td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>Female</td>
<td>Quick service (sometimes), like that some menus have value meals, also have more kid choices to choose from like milk, apple sauce, pudding, etc. like the menu that</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Gender</td>
<td>Reason</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>--------</td>
<td>------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Female</td>
<td>Can’t think of a thing.</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Female</td>
<td>Pictures and Large print.</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Male</td>
<td>Often using the numbers for combos saves time</td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>Female</td>
<td>Speed and convenience</td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>Female</td>
<td>Convenience</td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>Male</td>
<td>Nothing in particular</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>Male</td>
<td>Well sometimes the service is good and sometimes not but I hate when they mess my order up.</td>
<td></td>
</tr>
<tr>
<td>68</td>
<td>Female</td>
<td>There are good, nutritious foods on the menu that you can get with not much waiting and that are inexpensive.</td>
<td></td>
</tr>
<tr>
<td>69</td>
<td>Female</td>
<td>Variety of choices to accommodate everyone. Quick- no personal preparation. No mess to clean and fairly cheap.</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Female</td>
<td>Numbers are helpful, pictures are helpful, bright colors &amp; usually always well-lit.</td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>Male</td>
<td>Time</td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>Female</td>
<td>No clean up, choices</td>
<td></td>
</tr>
<tr>
<td>73</td>
<td>Female</td>
<td>A lot of choices</td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>Female</td>
<td>The different choices you have and full descriptions of what is on each sandwich.</td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>Female</td>
<td>Quick and easy</td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td>Age</td>
<td>Gender</td>
<td>Comment</td>
</tr>
<tr>
<td>-----</td>
<td>-------</td>
<td>--------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>76</td>
<td>18-29</td>
<td>Male</td>
<td>It’s fast and don’t have to wait for a server</td>
</tr>
<tr>
<td>77</td>
<td>30-39</td>
<td>Female</td>
<td>Very fast</td>
</tr>
<tr>
<td>78</td>
<td>30-39</td>
<td>Female</td>
<td>NA</td>
</tr>
<tr>
<td>79</td>
<td>70-79</td>
<td>Female</td>
<td>Fast food on the go</td>
</tr>
<tr>
<td>80</td>
<td>40-49</td>
<td>Female</td>
<td>It is convenient</td>
</tr>
<tr>
<td>81</td>
<td>50-59</td>
<td>Male</td>
<td>I like the picture and specials.</td>
</tr>
<tr>
<td>82</td>
<td>70-79</td>
<td>Female</td>
<td>It is fast!</td>
</tr>
<tr>
<td>83</td>
<td>70-79</td>
<td>Female</td>
<td>Occasionally order a fish sandwich from McDonalds. Do not really care for fast food.</td>
</tr>
<tr>
<td>84</td>
<td>40-49</td>
<td>Female</td>
<td>Quick- easy- more choices lately of salads and fruits</td>
</tr>
<tr>
<td>85</td>
<td>40-49</td>
<td>Male</td>
<td>Nothing</td>
</tr>
<tr>
<td>86</td>
<td>30-39</td>
<td>Female</td>
<td>The menus are usually lit up with pictures of items for easy choices</td>
</tr>
<tr>
<td>87</td>
<td>80-89</td>
<td>Male</td>
<td>NA</td>
</tr>
<tr>
<td>88</td>
<td>60-69</td>
<td>Female</td>
<td>NA</td>
</tr>
<tr>
<td>89</td>
<td>60-69</td>
<td>Female</td>
<td>NA</td>
</tr>
<tr>
<td>90</td>
<td>40-49</td>
<td>Female</td>
<td>The prices are usually easy to read and the special values are prominently displayed.</td>
</tr>
</tbody>
</table>
### Answers for what Individuals Recommend for Fast-Food Menus

(N = 90)

<table>
<thead>
<tr>
<th>Number</th>
<th>Age</th>
<th>Sex</th>
<th>What They Recommend/ Suggest</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>18-29</td>
<td>Female</td>
<td>The value menu is sometimes hard to find and that's what I order off of most often. There also are rarely pictures of the value menu items.</td>
</tr>
<tr>
<td>2</td>
<td>30-39</td>
<td>Male</td>
<td>Pictures of girls in Bikinis holding the food</td>
</tr>
<tr>
<td>3</td>
<td>18-29</td>
<td>Male</td>
<td>Sometimes it's hard to match up the pictures to what the actual menu item is</td>
</tr>
<tr>
<td>4</td>
<td>40-49</td>
<td>Female</td>
<td>Group by breakfast and other, have value menu separate.</td>
</tr>
<tr>
<td>5</td>
<td>18-29</td>
<td>Male</td>
<td>NA</td>
</tr>
<tr>
<td>6</td>
<td>40-49</td>
<td>Female</td>
<td>Categories  Color  Value Menu Listing the price of a sandwich and a meal side by side</td>
</tr>
<tr>
<td>7</td>
<td>40-49</td>
<td>Female</td>
<td>Larger print, less pictures</td>
</tr>
<tr>
<td>8</td>
<td>18-29</td>
<td>Male</td>
<td>More pictures, simple, defined, organized</td>
</tr>
<tr>
<td>9</td>
<td>40-49</td>
<td>Male</td>
<td>Probably more pictures to catch your attention. Also segregate choices by type of food etc. i.e. healthy-burgers-sides</td>
</tr>
<tr>
<td>10</td>
<td>40-49</td>
<td>Female</td>
<td>Not all menus list all items at all times of the day. I'd like to see things grouped on a menu-type list with repetitions if necessary. Pictures are good---especially to get a general idea for sandwiches. Temporary/new/trial</td>
</tr>
</tbody>
</table>
items shouldn't be left off the menu. Don’t forget to let the customers know what line of fountain beverages is available and what special drinks there are in all flavors. (Sometimes the customers forget with so much information out there.) If there is a move toward a health-conscious menu, list it separately and also with the more 'traditional' fast foods. Maybe it's possible to organize a menu family-tree-style?

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Gender</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>18-29</td>
<td>Male</td>
<td>All pictures all the time</td>
</tr>
<tr>
<td>12</td>
<td>50-59</td>
<td>Female</td>
<td>When they add new menu items, they don't always tell you what is in it. They should tell you what is in the item. The menus inside the restaurant do tell you, but I usually go through the drive through</td>
</tr>
<tr>
<td>13</td>
<td>50-59</td>
<td>Male</td>
<td>THE MENU IS SO LARGE THAT YOU CAN'T FIND THE ITEM YOU ARE LOOKING FOR.</td>
</tr>
<tr>
<td>14</td>
<td>18-29</td>
<td>Female</td>
<td>A description of toppings or details about the food makes it easier to decide.</td>
</tr>
<tr>
<td>15</td>
<td>30-39</td>
<td>Female</td>
<td>NA</td>
</tr>
<tr>
<td>16</td>
<td>30-39</td>
<td>Female</td>
<td>Don’t know</td>
</tr>
<tr>
<td>17</td>
<td>60-69</td>
<td>Male</td>
<td>Health factor info</td>
</tr>
<tr>
<td>18</td>
<td>40-49</td>
<td>Female</td>
<td>Different choices.</td>
</tr>
<tr>
<td>19</td>
<td>50-59</td>
<td>Female</td>
<td>I have trouble finding drink prices. The menus confuse me, pictures do not help. I'd like to see categories, Drinks, chicken, sides, desserts, red meat</td>
</tr>
<tr>
<td>20</td>
<td>40-49</td>
<td>Male</td>
<td>NA</td>
</tr>
<tr>
<td>21</td>
<td>18-29</td>
<td>Female</td>
<td>NA</td>
</tr>
<tr>
<td>22</td>
<td>40-49</td>
<td>Female</td>
<td>The menus that break things into understandable categories helps</td>
</tr>
<tr>
<td>23</td>
<td>30-39</td>
<td>Male</td>
<td>More pictures and graphics</td>
</tr>
<tr>
<td>24</td>
<td>40-49</td>
<td>Male</td>
<td>I like pictures</td>
</tr>
</tbody>
</table>
| 25 | 18-29 | Female | No need to put pictures of fries by every sandwich, we
all know you can get fries with the value meal.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>26</td>
<td>18-29</td>
<td>Male</td>
<td>Bigger Fonts</td>
</tr>
<tr>
<td>27</td>
<td>18-29</td>
<td>Male</td>
<td>More value selections, dollar menu etc. Also if they were placed lower and closer to the customers that would improve ordering</td>
</tr>
<tr>
<td>28</td>
<td>18-29</td>
<td>Male</td>
<td>Menus should list item by category and then in category by sales/popularity so people know what’s good without having to ask others</td>
</tr>
<tr>
<td>29</td>
<td>50-59</td>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>18-29</td>
<td>Female</td>
<td>Food should be healthy</td>
</tr>
<tr>
<td>31</td>
<td>50-59</td>
<td>Female</td>
<td>I like pictures and would order something new based on a picture</td>
</tr>
<tr>
<td>32</td>
<td>50-59</td>
<td>Male</td>
<td>Larger print, less picture</td>
</tr>
<tr>
<td>33</td>
<td>18-29</td>
<td>Male</td>
<td>Add calorie content to menu</td>
</tr>
<tr>
<td>34</td>
<td>18-29</td>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>50-59</td>
<td>Male</td>
<td>Heart healthy logos</td>
</tr>
<tr>
<td>36</td>
<td>18-29</td>
<td>Female</td>
<td>A hierarchy of price would be good...from cheapest to most expensive.</td>
</tr>
<tr>
<td>37</td>
<td>18-29</td>
<td>Female</td>
<td>Fast food menus could have more pictures.</td>
</tr>
<tr>
<td>38</td>
<td>18-29</td>
<td>Female</td>
<td>Organization is often confusing when there are a lot of options. Headings, subheadings, they all look the same!</td>
</tr>
<tr>
<td>39</td>
<td>40-49</td>
<td>Female</td>
<td>Menu choices categorized (ex. all chicken choices grouped together)</td>
</tr>
<tr>
<td>40</td>
<td>18-29</td>
<td>Male</td>
<td>More Healthy choices</td>
</tr>
<tr>
<td>Age Range</td>
<td>Gender</td>
<td>Comments</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>--------</td>
<td>----------</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Male</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Male</td>
<td>Fast Food menus are fine.</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>A picture next to each item would be kind of nice. I also don't like fancy names for food items, sometimes the name gets in the way of me reading what the meal actually consists of.</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Male</td>
<td>More pictures on the menu would be nice as well as including everything that is available is on the menu.</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Male</td>
<td>Change the lettering color to something other than white. Decreasing the overall area of the menu so that an individual doesn't have to strain while reading the outer margins. Have a section for the &quot;new meal&quot; so that the drive through attendant doesn't always have to ask if you want it.</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>Not so monotone in color, not so small of print, prices bigger at some places</td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td>Female</td>
<td>Seeing actual fresh food does more than any picture. The color Red stimulates all appetites! Spaces between choices sets things off and makes them more noticeable. Good luck, Kim! Have a Great day, too!</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Male</td>
<td>More sexy pictures</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>Pictures are nice. Sans serif fonts that are on the larger side and a clear hierarchy of information</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>Categorizations (perhaps color coded): i.e. burgers, chicken based items, snacks, etc. versus just a conglomeration of meals and options</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>More hierarchy of the categories of food perhaps</td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>Female</td>
<td>The hierarchy to be clearer to the customer</td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>Male</td>
<td>There is a definite need for hierarchy in fast food menus. Groupings are important, as well as a hierarchy with typographic treatment and type size. Color-coding might be a good way to improve menu items, too. And,</td>
<td></td>
</tr>
</tbody>
</table>
sometimes a nice serif font makes things a bit easier on the eyes, and can be helpful in distinguishing letterforms, particularly when reading menus from a distance. As an interesting experiment, it might be fascinating to treat a fast food menu like an eye doctor's eye chart, set in Rockwell and gradually becoming smaller line-by-line. (Just a conceptual thought...good luck with your research, Kim!)

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REFERENCES CITED


