The Colorfood system

Mary Monkowski

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Faculty of The College
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Industrial Design

Mary Rose Monkowski
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The Committee

Chief Advisor
David Morgan, Professor
School of Design, College of Imaging Arts and Sciences

Date: 2-27-03

Associate Advisor
Bruce Ian Meader, Professor
School of Design, College of Imaging Arts and Sciences

Date: 2-27-2003

Associate Advisor
Stan Rickel, Professor
School of Design, College of Imaging Arts and Sciences

Date: 2-27-2003

Chairperson
Patti LaChance, Professor
School of Design, College of Imaging Arts and Sciences

Date: 3-10-03

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Date: 2-28-03
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Project Definition

Design. It is everywhere. No age, race, nationality, class, or gender is untouched by it. The fact that it is so pervasive means that it has great potential to promote change. This is one of the main reasons I was drawn to the design profession.

This thesis is based on the above philosophy. I decided to focus on food decision making as my site for change. After researching nutrition and "balanced diet" information, promoting the consumption of plant foods became my main focus. The application of this idea eventually became a system which worked between the grocery store and the home to promote plant food consumption. I designed a Listmaker Kiosk situated at the entrance to the grocery store which created grocery lists based on past food purchases. The print-out lists items chosen by the consumer from all sections of the grocery store. Along with those items plant foods that are in season or on sale -- regardless of whether the consumer chose to put them on her/his list -- are automatically printed. These items are printed in colors corresponding to the color of the fruit or vegetable. The color works to catch the consumer's eye, but also reminds the consumer that brighter colored foods are more
healthy. (refer to page 26 for more information) The next system item is seen as the consumer enters the produce section. S/he is greeted by a Scale Kiosk that is visually similar to the Listmaker Kiosk. This item prints two bag tags. One tags stick to the grocery bag and gives cost, storage, and best-by date. A removable sticker in a color corresponding to the plant food color is located at the bottom of the bag tag which can be removed when the item enters the home. It can be placed in a more visually prominent spot, so that the consumer is reminded to eat it when it will have the most pleasant taste. The second tag is a simple recipe that uses the plant food in question as the main ingredient. This gives the consumer easy access to a quick meal idea.

Two kiosks, two interfaces and three print out items were all designed in order to complete this thesis. Lee Amarakook, my fellow student, deserves special thanks for making my interface dynamic by taking my Illustrator files and making them into HTML files. The final presentation of my work was in the form of a Power Point presentation and HTML interface demonstration. My advisors, fellow graduate students, and family all participated in the thesis presentation which took place December 17, 2002.
Research: Diet

The design is food related. This meant that understanding the connection between healthy diet and overall body health/quality is necessary. Beginning with defining what “good nutrition” is and how that idea is relayed was the first priority. This is important to coalesce a smaller, more manageable topic and for the design application. By understanding healthy nutrition, one can uncover which foods or eating practices were the most harmful to body health and make those the issues for change. This focus would form the basis for the system’s primary goals.

Healthy Diet

The definition of “good nutrition” changes depending on who is defining the term. To some, it is the ability to consume enough calories for the body to function properly. To others, it is a delicate balance of nutrients that optimize the body’s ability to function. Americans have not had a history of chronic food shortages, so the question “What do I feel like eating?” rather than “What food is available?” factors more heavily into decision making.

With one being able to focus more on the experience of food rather than the need for it, what tools are there to satisfy both and remain healthy? The United States Government has tried to aid with this decision-making. The Basic 4 (Figure 1) comprised of the milk group,
meat group, vegetable/fruit group, and bread/cereal group was one attempt at teaching the public about variety in the 1950s. By the 1980s the Food Guide Pyramid (Figure 2) became the most prominent way of disseminating this information. (Nestle 2002, 6 & 36) The Food Guide Pyramid attempts to graphically depict variety and relative quantity of foods for an individual's daily consumption. Its regular form and basic nutrition information helps with simple understanding, but does little to answer more in-depth nutrition questions.

First consider how this graphic, which 60% of Americans can immediately identify, works. (Escobar 1999, 75) Using Figure 2 for reference, one immediately understands that different foods are placed in different categories and that the groups vary in size. Since the pieces form a common shape, one can conclude that these smaller pieces create a whole. Upon reading the heading, one realizes that this is supposed to represent a healthy daily eating regimen. This makes visual sense. Another plus for this graphic is its versatility, Figures 3 & 4 show how the category areas can be divided differently but still convey the same idea. For example, comparing the Asian Diet (Figure 4) with the Food Guide Pyramid (Figure 1) the pinnacle is either meat or fats, oils and sweets respectively. Both connote small consumption of those food groups, but each system uses that space for different kinds of food types.

This very basic information is also its downfall. First, consider the visual problems. The idea that making the "Bread, Cereal and Pasta" group bigger than the "Milk, Yogurt, Cheese" group (Figure 1) gives the reader an idea that one should consume more
of certain category than the others. It does not give an idea of just how much to eat. The term “serving” is also not defined. Is one apple equal to one mushroom in this scheme? Because there are so many varieties of “the pyramid,” which one is the most healthy, if they are all associated with balanced diet?

Besides portion size, there is little discussion about how these foods are important. Why is fiber needed? What should a diabetic do? Exactly what is meant by oil? Questions abound because there is little information about what these food groups do to aid the body in this graphic. This lack of information causes great confusion and fosters a way to dismiss positive information that it can impart.

Now that a well-known nutritional aid has been deconstructed, why even bother considering it at all as an example of “healthy diet”? There are two primary reasons. First, this nutritional scheme is one of the most consistent and well-recognized ways of deciding how to eat well in American society. Its message about variety is nutritionally sound, albeit, very basic. It is also an association that Americans have with information about diet. This is a psychological factor that must be into account for the design application. Second, it is important to see what was effective and ineffective in a pre-existing food information graphic so that similar problems will not be perpetuated.

**Body Health**

So what is the effect of this information graphic? In a recent study, only 30% of kids ate the *Food Guide Pyramid’s* recommendations for
fruit, grain, meat or dairy products. (Williams 1997, 90) To put this in perspective, one should have five servings of fruits and vegetables per day. The fact that only a half-cup of cooked or raw foods constitutes one vegetable/fruit serving, means only two and a half cups of vegetables makes up the daily allowance. This is like eating one big apple and a cup of fruit juice! Most kids are not doing this. Is it because these kids choose to eat this way? Or are they eating few fruits and vegetables because their parents do not choose to have them eat these foods? Either way, looking at diseases stemming from diet, the strong connection between food and quality of life was easily understood. Reaching the individuals who were making the food buying and preparing decisions became the target consumer for the design. Promoting vegetable and fruit consumption became the design focus because a diet lacking in them strongly contributes to two prominent diseases in American society: cancer and obesity.

25% of Americans die of cancer. (Tunics 2002, paragraph 9) According to an American Institute for Cancer Research study published in 1994, about one third of these can be avoided if these individuals ate more plant based foods. (Cowley 1998, 61) This information about cancer shows the severe ramifications poor food choices have on the body’s health.

The second medical condition is more visually prominent in our society, but is often times thought more of a social disease rather than a health one. This is being overweight or obese. This body condition is only second to cancer as a leading cause of death in The United States. (Schlosser 2002, 241) It can be combatted with change in diet, but certain changes are more effective than others.
The State University of New York, Buffalo concluded in their recent studies that “Eating more fruits and vegetables is more effective at combatting excess weight than eating less high-fat/high-sugar food...” (Carper 2001, 4).

**Conclusion**
Researching about the *Food Guide Pyramid* and its strengths and weaknesses, recognizing the link between little fruit and vegetable consumption and its health ramifications, the design intent began to emerge. Taking the idea of promoting fruit and vegetable consumption and translating it into a design application, however, remains nebulous. Further research surrounding fruits, vegetables and food choices, therefore, seems to be the next logical step.
Research: Food Choice

How to change an everyday habit? How to make people think about such a mundane thing as ‘eating your fruits and veggies’? It is at this point that information on how and why Americans choose what they eat needs to be discussed. By understanding the habitual food decision making process, one can begin creating an alternative to it. There are three basic ways food choices are made: sensory reactions, emotional considerations, and practical reasons.

The senses
There are five senses: Taste, smell, touch, sight, and hearing. Of the five, look and taste* are the two most important for food choice. They are also related to one another.

The number one reason why people eat what they do is because it tastes good. (Mirsky 1999, paragraph 1) This makes sense in a climate where food is plentiful. Defining taste is quite subjective; however, so it will be referred to it as flavor, as well as texture.

Before enjoying the taste of a food, it is seen. So, sight plays a large part in food choice. For example, imagine buying straw-
berries. They are a lush red color, shiny skins, perfectly tapered and pleasantly rounded forms topped with a rich, green leafy fringe. They look delicious. Waiting to get them home and take a bite is torture. The time arrives and one is greedily standing over the sink having just washed them off and... they are not tasty at all. Had they not looked so perfect would they have been bought? Had they looked less good would enthusiasm about consuming them have been less?

Visual appearance also affects perception of how food will taste. (Lyman 1989, 97) The inherent look of food leads one to believe certain things. Rich colors are associated with a rich flavor. (Linder 1999, 16) However, presentation also effects perception. How does the average household convey the message that vegetables are not that important? They present them as ‘sides’. On most dinner tables, vegetables get the least preparation consideration of all parts of the meal. (Paisley 2001, paragraph 19) Compared to the standard American meal of meat and starch, vegetables are simply steamed or boiled and fruits rarely served at all. This lack of vegetable embellishment makes them less visually interesting. So, this visually sad depiction (or absence) of plant foods tacitly connotes the lowly position of vegetables and fruits. This philosophy is taken from the kitchen table and affects food decisions for snacks and other meals. More care with presentation would make a big difference in people’s interest in eating vegetables.
Emotional Considerations

Emotions associated with food range from negative to positive. There are negative* and positive responses stemming from family meal times, fun associations with celebrations, as well as comforting associations with familiar flavors.

Spoken, not just visual, associations with food can negatively impact eating habits. One such detrimental association is with control. If children are forcibly made to eat certain foods when given an option, they will stay away from those foods through adulthood (Jain et al. 2001, paragraph 32-33) So, the less attractive the vegetable or fruit, the more need for a parent to exert force which forms a negative association with plant foods. Cajoling also creates a problem. Citing “health” as a reason to eat vegetables does nothing to encourage individuals to eat vegetables. (Paisley, paragraph 17)

On the other hand, family meals can stimulate positive responses. Simple exposure to foods enhances acceptance of it (Lyman, 24) If it is familiar, then the willingness to try it is greatly increased. So, if someone creates a beautiful arrangement of broccoli garnished with slivered almonds, the person who could identify the vegetable will have a higher chance of trying it than the one who needs to ask “what is that green stuff?”

Moving toward the more positive part of the food-perception spectrum, fun and celebration factors prominently in food choices. Food is social and that is why many people relate food with fun. (Thomas 1991, 5) Does “Let’s go out to dinner to celebrate your promotion” or “Let’s make that fabulous cake since it’s Anne’s

*Eating disorders are a manifestation of emotional issues. While they deserve attention, they are beyond the scope of this project.
birthday” sound familiar? Eating something more elaborate than normal or more grand than usual is an emotional response to feeling good. No one is more aware of this food/emotional response than the fast food franchises. Ever wonder why there is so much vivid colors to their packaging and decor? It’s to associate fun and celebration with their product, so people come back to “buy happiness” through their food. (Ritzer 1996, 52)

Fast food is also popular for having tapped into another emotional association with food: familiarity. A new and novel taste can evoke fear or apprehension in an individual if it is too different than what they are used to. (Lyman, 27-28) Fast food franchises understand that, so they offer basic choices and change little. (Lubow 1998, 39 and Ritzer, 79) This human desire for predictability, familiarity, or lack of change, aids the fast food business. This ability to control flavors is not limited to fast food. Look at the grocery store. How big are the packaged food sections compared with the fresh food section? They are significantly larger. It is also significantly more prominent -- 70% of food advertising is for convenience foods as compared to 2.2% for fruits and vegetables. (Nestle, 22) Plant foods, which are less often packaged than other items, are not as easily engineered to have consistent taste and texture. Human want for familiarity and predictability, therefore, is at odds with the nature of fresh produce.
Practical Concerns

There are numerous practical reasons for choosing foods. Cost, availability, preparation time, and convenience are but a few. Vegetables and fruits have at least these four issues working against them.

The cost of fresh fruits and vegetables has had the highest percentage increase in price since 1982 compared to other food categories. (Brownlee, 142) This is cited as one reason why lower income families do not eat many fresh foods. (Paisley, paragraph 1)

Availability is also a factor. Fresh produce is more directly dependent on seasons, so a favorite item might not always be available. This hiatus forces people to be more adaptable which can cause anxiety. Avoiding this feeling can result in cutting out seasonal produce all together.

Convenience is an important concern for a mobile society. If it needs a utensil or preparation, many do not plan ahead enough to remember a fork or take time to prepare it. This is why pre-packaged fruit snacks (Hunts™ DelMonte™ and others) are more common in lunch bags as opposed to fresh fruits and vegetables that need preparation.
Conclusion

Having determined the major factors for food choices, specific issues will factor prominently in the design goals. First, encouraging people to buy fresh foods when they are most likely to be good tasting. If they buy what is ‘in season’ they will have a higher chance of experiencing consistently optimum taste and texture.

Second, reminding people how long their fresh produce will keep after they have bought the item at the grocery store. This helps people enjoy foods when they taste best.

Third, develop a way to remind people to eat more vegetables and fruit products.

Fourth, make the system easy to understand and fun. This will serve to inform the look and function of my design so it will foster positive associations with plant foods.
Research: Habit

In the last section “Why do people choose to eat what they eat?” was asked. Focus on the “hows” and “whys” of what Americans eat to determine what evolved those eating habits. However, this looks at the current state, rather than to the future. The design is for tomorrow, not the present, so how to forecast what will be? Developing new habits that will replace the old is a priority. The only way to effectively accomplish this is though understanding how to break old habits and adopt new habits.

There are five stages in changing behavior according to Prochaska and DiClimente in their 1983 study: Precontemplation, Contemplation, Preparation, Action, and Maintenance.

(www.crha_health.ab.ca/hithconn/items/changestg.html 4.27.02)

These five stages form the basic functions the design needs to address in order to aid people with creating the habit of consuming more fruits and vegetables.
The Five Stages of Habit Change

Precontemplation and Contemplation
These phases are more internally driven than the latter stages. Precontemplation is defined by knowing what is not 'good,' but also not too convinced that change is necessary. (Ibid, paragraph 2) Contemplation differs in only one regard -- wanting to change. (Ibid, paragraph 3) These two phases are more internally driven than externally driven.

Preparation
This is the phase where internal drives are more open to external voices. The want to change is still in place, but, confidence that change can occur and starting simple steps to make change occur, are now happening. (Ibid, paragraph 4) This is where the design system can make a difference -- aid confidence and help with small changes.

Action
Actual change occurs and you face those things which set an individual back from her/his goal. (Ibid, paragraph 5)

Maintenance
This is a time where a new behavior is nurtured in order to become a new habit. Support is one of the most important aspects of this. While having a conversation with a mentor is the best way, there are visual ways of stimulating the brain to say "that's the old habit, try this now." (Resnicow 2001, paragraph 30)
Application of Habit Phases to the Design

Precontemplation and contemplation must first be addressed. What role does it play in the design? As mentioned before, 60% of Americans know about the *Food Guide Pyramid* (Escobar, 75) So, it is not too big a jump to think that most individuals know what is 'good' food and what is not. Concluding that about 60% of Americans are in the contemplation stage, therefore, is quite valid. This is work that society has already accomplished.

Preparation is the next phase in habit formation. One simple way to elevate fruit and vegetable consumption is by making people more aware of them. Saying "start looking for xyz" aids this endeavor. Interest motivates someone to pay attention. (Rupp 1998, 266) Focusing on the common supermarket is a way to introduce a new idea because the majority of people are familiar with them, and enter with the mindset that they are going to buy food. Interest is peaked; However focusing that interest toward plant foods as soon as they enter the store is key. An effective way of doing this is by creating visual elements that are associated with fresh produce. (Rupp, 37 and Gladwell 2000, 10)

How can this be accomplished? Consider habits that people already have when they go grocery shopping. They bring their grocery store swipe card, along with their mental, sometimes tangible, grocery lists. Why not use these items to form one aspect of the system? Developing a card swipe kiosk which creates a grocery list based on past shopping purchases is one way. The look of the unit will have a visual connection to the swipe card, as well as a tangible association with other pieces of the system.
The grocery information which comes from this unit when activated by the smart card will draw from past purchases, but will be used to aid the consumer with her/his food choices for this grocery trip. It can automatically print information about what fruits and vegetables are in season on the grocery list in a prominent manner. This will help remind people to take time in the produce department. Also by buying what is in season can promote that positive taste association with the plant product. (mentioned in the Food Choice Research section)

This simple persuasion may be a bit light for some, but there is good reason for it. Too often people who try to change their diet too radically have trouble maintaining a new diet habit. (Bauer 2002, 98 and Gladwell, 8) By introducing something new and not abandoning the old, there is more chance for success because it is about inclusion rather than deprivation.

The result of interacting with the unit will hopefully cause an action. In this case, it is making the move from buying the habitual minimum amount of fresh fruits and vegetables, to picking up more and/or a different variety of foods. Since one is talking about changing an intent-to-buy action, it is necessary that this part of the system is in the fresh produce department.

Color will play an important role in making fresh produce decisions fun and easy to incorporate into a daily routine. Using Dr. Joseph’s food color groups (at left) from The Color Code (2002), one proposes to use only the colors he mentioned. This way color not only draws attention to the objects, but by using habit-changing objects s/he will become more aware that eating a variety of color is beneficial.
Making sure that process of buying produce in a grocery store anticipates and alleviates any negatives associations with buying fresh produce is the next design task. Today, many grocery stores expect the buyer to take the produce item from one of the bins and place it in a bag. The item is then taken to a scale where a number is punched in with a code taken off a roster (or the bin tag).

Following this, a UPC symbol sticker and the name of the food is printed by the scale. This process can be expanded to do more for the customer. The scale will remain the point of interaction, but can work in a much different manner. A touch screen interface with four buttons associated with each of the colors mentioned previously can replace the numbers. Pressing the button corresponding to the color of the produce can activate the interface. The next screen shows a menu of plant food pictures contained in a button confinement that relates to the color chosen (foods easily mistaken for another color food group, i.e., a green apple is really part of the red group rather than the green group will also appear). Simply selecting the photo that corresponds to the item can produce a colored tag complete with item name, USB code, date to be eaten and detachable reminder sticker. This reminder sticker is intended for a highly visible place at home. Its color corresponds to the color of the produce item and gives best-by information to remind the viewer to eat it when it is at the peak of freshness. The scale can also produce a 3-4 step recipe from the unit, so the buyer does not have to search for a recipe using that fresh food item. These print-outs make it easy to try new things by taking the mystery out of preparing unfamiliar items and wondering how long it can be stored.
Maintenance is the next and final step in changing a habit. Since eating takes place outside of the grocery store, creating a way to remind people to actually eat what they have bought is important. Most people place fresh foods on their counter or in opaque vegetable or fruit drawers. If the item is out on the counter, a simple glance can help remind a person to eat the produce. However, if they are in the opaque drawer, a quick glance into the fridge will not remind the person to eat the fresh items. This is precisely why the color coded sticker, mentioned before, is necessary. This is a visual way to connect and confirm that one is buying more plant foods in order to incorporate them into new eating habits.

**Conclusion**

This entire section is a conclusion of sorts. The design of a system that promotes healthier living starts to take shape. Intent, national health concerns, personal decision-making and habit research all begin to interrelate enough for a system to emerge. It is only now that a solid foundation has been built for all of these elements. Now is the time to move ahead and design a network of four items -- a smart card, a list-producing kiosk (referred to as Listmaker from here on out), a tag and recipe printing scale, and printed labels -- which can encourage people to live more healthfully.
Preliminary System Design 1

This is the first system design presentation of this project that was shown and commented on by the entire committee. The system was also named *The Colorfood System* and will be referred to by that name from this point onward.

The physical presentation was printed material. It was developed by collaging colorful printed elements mounted on long rolls of tracing paper. Four to five foot long compositions were hung on the wall for easier viewing. The interface for the Scale and Listmaker were printed out and taped together to show the overall flow of the design, 1:8 scale technical drawings were produced, renderings of the Listmaker and Scale were present along with color studies.
Listmaker

The Listmaker is at the front of the grocery store. It is bright and colorful presence draws attention. The hues also serve as both informational and visual elements underscoring the information contained in the interface.

Committee Comments
- Took-up a lot of floor space.
- When two people are standing at the Listmaker, they will look directly at one another. This could be awkward for some.
Committee Comments
- Interface design for buttons was confusing.
- Wanted to have active update for what foods you placed on your list.
- Main Menu?
- Way to start over?
- Should look-up be independent of your list creation?
- The logo takes up a lot of room that could be used for informational content.
- What nutritional research was this based on?
Scale

This Scale is used in the produce department. Its bright and colorful finish serves the same purpose as the Listmaker. The intertwined interface panels allow you to see multiple colors at the same time, encouraging eating a variety of colors. The interface makes check-out tags with storage information printed on them.

Committee Comments
-Took-up a lot of floor space.
Committee Comments
- How do you go back to the previous page?
- Can you print out recipes from the kiosk as well?
- Use color judiciously
- Can we have information about the health system that says colorful vegetables and fruits are more healthy?
Overall Commentary

This presentation helped focus the remainder of the thesis work. The most important decisions are as follows:

A presentation rather than a gallery show will be a better forum for this project.

This thesis is made up of an overall macro-system. Understand the relationships in one system and delve into it rather than treat each system with the same importance.

Creating a full-scale model for the next generation of the design will help improve comprehension.
Preliminary System Design 2

The second system presentation was a tremendous improvement from the previous presentation because the material shared had greater clarity and depth.

A full scale model of the Scale, a Power Point presentation and dynamic interface (done in HTML format) was presented to the committee. Comments throughout the presentation focused more on refining the Listmaker/Scale designs for manufacturability, increasing system coordination, as well as refining the interface navigation. Human factor questions regarding the physical Listmaker and Scale were raised.
Research Section

The presentation began by sharing research about diet, food choices, and habits based on the first section of this documentation. The reason for starting here was twofold. First, the thesis is an in depth study, so it seemed natural to show the research. Second, being so familiarly with this project, the designer was not sure if the audience would understand why each piece of the system supports the other without this background information.

This section dealt more with background material. For this reason, I used a light gray confinement. It progressively became more saturated in the following sections as the information became more immediate to The Colorfood System Project.

Committee Comments
-This section can become effectively integrated throughout the presentation. It does not need its own section.

-Start the presentation with lively information to keep the audience interested in the primary goals of the project.
Design Section: Listmaker

Following the research phase, a theoretical trip to the grocery store was in order. The presentation began by emphasizing that the project is a system and briefly introducing the pieces using the slide at the top left of the next page. From there, the trip to the grocery store began. Upon entering the store, the Listmaker was displayed prominently at the entrance and it was approached. At this point the dynamic interface was uploaded and the audience was walked through the information. The pages regarding *The Colorfood System*, how to look-up items by aisle or by item, and how to make and modify a grocery list were all explored. Once I had shown the interface, I went back to the slide presentation and showed how the Listmaker produced this information in printed form.

Committee Comments
- More information regarding how color and nutrition information relating to color would be helpful since that forms the basis for the system.

- The arrows for the interface should be more directional and have more visual relationship to the buttons.

- When modifying the list, give the user a sense of where s/he is in the process, at the beginning, middle, end, etc.

- Make navigation buttons on the left have more relationship to the buttons in the scale interface. Add typography beneath the icons to increase comprehension of the buttons.
The ColorFood System helps you incorporate fruits and vegetables into your shopping and eating routine. This tool and the scale in the produce department will help you choose what fruits and vegetables are in season and aid you with simple preparation ideas. If it tastes good, you'll eat more.

The reason color plays such an important part in this system is because of the independent nutritional research conducted by James Joseph Ph.D and David Heber M.D. Their research shows that incorporating newly colored foods benefits all of the body's systems.

Besides being fun to eat and look at, each color 'group' provides these benefits:
- Green/Blue/Purple: Aids in erythrocyte production in the bone which breaks down cancer-causing chemicals
- Blue/Purple: Aids in heart disease by thinning the blood
- Yellow/Orange: Aids in eye health
- Red: Aids in heart disease by thinning the blood
- Excellent source of antioxidants

ColorFood System

Overall View of Listmaker Interface

Grocery List over past 30 days

Main Grocery List Screen Detail
Design Section: Scale

The Scale was presented similarly to the Listmaker. The Scale was shown in its environment, how to use it, the dynamic interface, and how the label prints. Two scale interface versions were shown to depict how it can be used to buy fresh foods by weight as well as by quantity. It also was an opportunity to show how the interface coordinates with the color of the fruit or vegetable in question. Following the interface demonstration, the next slides showed how the label is printed and how it looks on the bag that is taken home.

Committee Comments
- More information regarding the color system would be helpful since that forms the basis for my system.
- All the arrows and buttons need to have more similarity in size and shape to the produce buttons. Remove the gradient.
Design Section: Bag Tag

This section illustrates how The Colorfood System works outside of the grocery store. The three slides at top focus on the tagged bag. It shows a familiar scenario of a produce bag being placed into an opaque drawer. However, the detachable sticker from the bag tag transcends this environment. The following slides show how part of the tag detaches from the bag and can be placed in a more visually prominent spot.

The final slide shows the entire system to reinforce the fact that all of the pieces work together to encourage increase fruit and vegetable consumption.

Below the slides is my full-scale mock-up model. In the presentation I approached it to show scale in relation to a mid 50 percentile woman. (I am 5'5" tall)

Committee Comments
-This section had no specific discussion.
Full-scale Scale Model
Design Issues: Human Factors and Systems Coordination

This was the last section of the presentation. It visually explained how human factors were considered for the interface and physical scale. This section showed how a systems relationship between design elements was developed. It also showed how human factors in the touch screen were considered by calling out button and space dimensions. Individuals were also shown interacting with the scale which illustrated how height, reach and kick space needs were considered. The screen directly following showed how the use of color and edge quality remained constant throughout all aspects of the design. The presentation was finished by reinforcing the importance of the system by showing all parts of the system.

Committee Comments
- What about manufacturability?
- Wheelchair accessible?
- What about the Listmaker?
Design

Issues

Human Factors

Visual System Considerations

At least a 4.5" allowance for feet
Saddle height is 2.5" inches lower than regular counter height to reach more ageriate groups.
Farthest arm reach falls well within range of women and men from 3rd teens upward.

Design

Issues

Human Factors

Visual System Considerations

Minimum space between track-system buttons is 0.35". Minimum use of touch screen buttons is 1.5" in each direction.

Rounded corners on all aspects of the design. Interface, Physical controls, and Presentation.

Design

Issues

Human Factors

Visual System Considerations

The ColorFood System

Mary Rose
MFA Thesis, Designer

MFA Thesis Presentation

Appendix 1
Appendix 2
Appendix 3
Appendix 4:
System
Proposals
Planning
Listmaker/
Interface
Thesis
Scale
Design

45
Overall Commentary

The outcome of this presentation was as follows:

Focus the presentation on how the system works and integrate the research throughout it.

For the final presentation, explain the system and manufacturing needs in more depth. A full-scale model may not be the best way to convey this information.
Final System Design

This third and final presentation of *The Colorfood System* was exhibited to the committee, a few industrial design graduate students and a few family members. The entire talk lasted about an hour and included the presentation and time for questions at the conclusion. The overall tone was informal and many thought provoking comments focusing on how the system can be expanded as well as perceptions about the form were voiced.

The revised presentation looks quite different. Fewer slides express the system content. More care was taken to explain the design considerations of both the Listmaker and Scale. The formatting was simplified and typography simplified. The Power Point presentation and HTML interface was maintained, however.
Colorfood System: Introduction and Listmaker

The presentation began by introducing *The Colorfood System* in its entirety. Following that the audience was walked through a trip to the grocery store. It began by going to the grocery store, entering the store and seeing the Liskmaker, then using the Listmaker interface. The splash screen at the bottom right launched the presentation into the dynamic Listmaker interface section.
The ColorFood System  
Mary Rose Monkowski, Designer

A thesis presentation submitted in partial fulfillment to the Faculty of the College of Imaging Arts and Sciences in Candidacy for the Degree of Master of Fine Arts
Presented December 17, 2002

Listmaker Kiosks
The ColorFood System

At Listmaker Kiosk
The ColorFood System

Final System Design
Appendix 1: Preliminary Thesis
Appendix 2: Preliminary System Proposals
Appendix 3: Listmaker/ System Planning
Appendix 4: Interface Design

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Colorfood System: Listmaker Interface

This portion of the presentation showed the capabilities of the system. One is first greeted with the splash screen which incorporates all of the colors of the system thus attracting attention and alluding to the system. The next screen, the main menu, helps the user find items throughout the entire grocery store, creates a list based on the last 30 days of card activity or based on past purchases in a specific month (this helps with seasonal items), and gives information about *The Colorfood System*. Mentioned on the main menu, but not developed, are ways of accessing information depending on sale items, special diet, and needs such as diabetic or low cholesterol foods. These are listed on the main screen to let the audience know that this system has great growth potential.

The slide on the lower right shows how the Listmaker produces the list created by the software and an individual’s choices.
Colorfood System: Scale and Scale Interface

Like the Listmaker, the Scale in its produce section environment. From there, oranges are seen being placed on the scale which begins the demonstration of this interface. Two main scenarios are presented. The first is simply buying either artichokes or oranges. The second is looking up a recipe by using a produce item as the starting point.
The ColorFood System

What is ColorFood?
A system that works between your home and your grocery store to promote fresh fruit and vegetable consumption.

Why is "color" part of the name?
Vividly colored fruits and vegetables have more nutrients in them than more neutral colored foods. So, if you remember color = more vitamins and minerals, you're starting to eat more healthy!

Green:
Enhances enzyme production in the liver which breaks down carcinogenic chemicals

Blue/Purple:
Helps fight diseases by stimulating the blood

Yellow/Orange:
Contributes to our health

Red:
Helps lower cholesterol by thinning the blood

Information Screen Detail
Colorfood System: Bag Label

The final component of the system is the bag label. It is the element that goes home with the user. It is produced by the Scale Kiosk and is placed on the bag for use at the grocery store checkout. This is not its only function, as it has a detachable sticker that can be placed in a more convenient place to remind the user to eat that plant food. The images at right show this use.

A slide of the entire system was also repeated. This reinforces the idea that all the elements are meant to be seen and considered together. It serves as a transition into the next section which deals with human factors and manufacture considerations.
Retrieving Custom Labels
The ColorFood System

Custom Labels on Produce Bag
The ColorFood System

Sticker Reminder at Home
The ColorFood System

The ColorFood System

Appendix 1
Appendix 2
Appendix 3: Listmaker/ Interface
Appendix 4: Design
Preliinary
Preliinary
System
Scale
Thesis
System
Planning
Design
Colorfood System: Human Factors

These slides show what kinds of human factors considerations affected the design. Interest focused on height, reach, glare reduction and kick through space with regard to the Listmaker and/or Scale. The interface had other human factor considerations. The buttons in particular. It was necessary that a touch screen button had adequate space between buttons as well as size of the button itself. Relatively high contrast elements were also needed so people with reduced vision could access the system.
Human Factors: Touch Screen
The ColorFood System Design

Select your fruit or vegetable

Human Factors: Height
The ColorFood System Design

Appendix 3: Listmaker/Interface
Appendix 4: Design
Colorfood System: Visual Systems and Manufacture

Since the system relationship between components was verbally and visually emphasized throughout the presentation, discussion focusing on how it was designed to be a system needed to be explored. The upper left slide depicts the interfaces, Listmaker, and Scale in one slide. This enables the viewer to see that the only colors used relate to the four colored food groups, and that softly rounded forms are seen in both the interface and physical objects.

The slide to the top right and bottom left relate to manufacturing. The color changes at the parting line, thus creating a clean line. It is also a modular system. The base dimensions are identical, so the upper portions are the only pieces that differentiate the Listmaker form from the Scale form. This requires fewer molds, thus reducing cost because the base mold is used for both. The lower slide depicts the entire system. A more saturated color is used on the base of the scale to balance out the greater mass of the upper piece where the projecting scale resides. The Listmaker has the more saturated color on the top to attract attention in the visually chaotic grocery store entrance where it resides.

The slide on the bottom right is the last slide of my presentation. It serves once again to depict the elements which make up The Colorfood System.
Visual System Elements
The ColorFood System Design

Unifying elements
- Contains user input on scale, trash, material, instructions, and procedures.
- Utilizes user input in interface and prompts signaling food production.
- Utilizes interaction to drastically reduce food waste.

Color Studies
The ColorFood System Design

Scale/Recipe Kiosk
- Used for the recipe.
Listmaker Kiosk
- Used for the recipe.

Production
The ColorFood System Design

The ColorFood System
- Mary Rosa Monkovich, Designer

A thesis presentation submitted in partial fulfillment to the Faculty of the College of Designing Arts and Sciences in Candidacy for the Degree of Master of Fine Arts.
Presented December 17, 2002.
Overall Commentary

The Colofood System was received positively, and worthwhile comments were shared. Here are a few suggestions:

- One concern was that this system discourages meat consumption, but I stressed that its primary purpose is to encourage eating more fruits and vegetables rather than limiting other food types.

- The form looked “feminine.” The primary reason for that comment was that it was not a massive form and that the silhouette looked like a woman in a dress. The small nature of the form responds to the confined spaces of a grocery store. Space is at a premium, so I wanted to use as little as possible. As for the shape of the form being feminine, the audience agreed that this was a subjective issue.

- In both interfaces, the audience wanted more options: more health information at the scale, a way for your healthcare provider to control your diet when forming a list, etc.

- Does knowing that your grocery store keeps track of your food purchases bother anyone? Could this information get sold to insurance companies? There were not many responses to this provocative question. One way to alleviate some of this concern is if the information is actually stored on a chip in the smart card rather than at the grocery store.
Appendix 1: Preliminary Thesis Proposals

This section contains material from the Thesis Research Class which began the thesis project. Reading through this section, will show that the focus of this thesis project has always been promoting healthy eating habits. The application, however, has changed dramatically. This section is interesting because it shows how The Colorfoood System began and shows the evolution of the system.
Original Mindmap

Major Probl: Health of society

- Lack of future consideration
- Conspicuous consumption
- I want it now
- Society will make me so

Diet
- Preliminary
- Food Choice
- Habit
- Design 1

Research
- Pseudo
- Health Club
- Pseudo
- Clothes
- Design 2
Thesis Proposal for the Master of Fine Arts Degree in Industrial Design

School of Design
College of Imaging Arts and Sciences
Rochester Institute of Technology

Prepped (working title)

Submitted by: Mary Rose Monkowski Date: 12.19.01

Thesis Committee signatures:

Chief Advisor: Craig McArt/David Morgan

Associate Advisor:

Associate Advisor:

Approval, Program Chairperson: Date:
Problem

American Society is preoccupied with body aesthetics. The way we look, or how others perceive us, has become an overarching concern. For this reason, many think about how their body looks on the outside rather than how healthy it is on the inside. One of the main ways people abuse their bodies is through food — some eat too much, some eat too little, most eat unhealthy foods perpetually. This abuse is caused by many factors from within us and from our environment. Much of this ambiguity over ‘portion sizes’ and what ‘healthy’ is can be alleviated by considering why and how Americans choose, store, prepare, and transport food. By understanding this, industrial designers who work in the food accessories arena can help design products that can aid those who wish to live a healthier lifestyle.

Method

In this thesis, I intend to specifically look at food preparation tools. Are they efficient? Do they address the user’s functional needs? Are they easy to clean either by hand or in a dishwasher? Are they easily storable? Intuitively understood? For the most part, the answers to these questions is ‘no’ which is most likely why quickly prepared foods (i.e. fast food, TV dinners, and take-out) are Americans’ primary eating choices. I intend to address these limitations in designing rethought preparation tools.

The focus tool areas:

*Segmenting tools:* The knife is the workhorse of the kitchen. I intend on looking at how Americans use them, why they use them, when they use them, how they are stored, and knowledge about them. From this research, I can ascertain...
whether the idea of ‘knife’ and its system helps or hinders fresh food preparation.

Taking this idea further, is there a better way of accomplishing the same tasks by using another form? Ways to approach this question: Consider ways people segment things from larger to smaller pieces, Observe food preparation practices in various countries around the world (primarily focusing on those outside of the Western European sphere), contrast institutional and domestic practices, contrast institutional and domestic philosophies, look at the different uses depending on age, look at the different uses depending on food interest level, look at the different uses depending gender.

*Quantity tools*: When thinking about this subject, the first thought relates to liquid or dry measuring devices and scales. While these are valid categories, not everyone places the same importance on their use. Taste, not measurements, ultimately determines what the ‘correct’ amount is in a particular food. Because of this schism, I believe it is more helpful to think of ‘quantity tools’ as something that helps with quantity judgement.

How can this be done? What if there was something that allowed less dependence on arbitrary volumes and more on personal taste? What if there were more personally involvement, little agony, but still success in the final outcome? When they are used? When aren’t they used? Why
are they used? Why are they not used? How do American
domestic cooks determine amounts? How do American
professional cooks determine amounts? How do non-cook-
ing Americans determine amounts? How various cultures
determine amounts?

By rethinking the food preparation phase, I intend on alleviating
some of the advantages prepared foods (fast food, TV dinners,
take-out — as mentioned before) have over freshly prepared, or
non-processed foods. This equalizing of convenience and ease can
pave a road for more healthy choices in the food arena.
Preliminary Thesis Proposal:
Master of Fine Arts Degree in Industrial Design

School of Design
College of Imaging Arts and Sciences
Rochester Institute of Technology

Prepped
Submitted by: Mary Rose Monkowski Date: 1.9.02
Chief Advisor: David Morgan

Problem
American Society is preoccupied with body aesthetics. The way we look, or how others perceive us, has become an overarching concern. For this reason, many think about how their body looks on the outside rather than how healthy it is on the inside. One of the main ways people abuse their bodies is through food — some eat too much, some eat too little, most eat unhealthy foods perpetually. This abuse is caused by many factors from within us and from our environment. Much of this ambiguity over ‘portion sizes’ and what ‘healthy’ is can be alleviated by considering why and how Americans choose, prepare, store and transport food. By understanding this, industrial designers who work in the food accessories arena can help design products that can aid those who wish to live a healthier lifestyle.

In this thesis, I intend to specifically look at food preparation tools — specifically “cutting tools”*. I plan to research how people use or do not use these tools in food preparation and how this impacts food choices. Through this understanding, I intend to create a product or series of products that alleviate some of the negative aspects to food preparation in the “cutting” arena.

* “Cutting” is used as an adjective relating to any kind of segmenting tool i.e. knife, choppers (mechanical or electric), scrapers.
Preliminary Thesis Proposal:
Master of Fine Arts Degree in Industrial Design
School of Design
College of Imaging Arts and Sciences
Rochester Institute of Technology

Prepped
Submitted by: Mary Rose Monkowski Date: 1.23.02
Chief Advisor: David Morgan

Problem
American Society is preoccupied with body aesthetics. The way we look, or how others perceive us, has become an overarching concern. For this reason, many think about how their body looks on the outside rather than how healthy it is on the inside. One of the main ways people abuse their bodies is through food — some eat too much, some eat too little, most eat unhealthy foods perpetually. This abuse is caused by many factors from within us and from our environment. Much of this ambiguity over ‘portion sizes’ and what ‘healthy’ is can be alleviated by considering why and how Americans choose, prepare, store and transport food. By understanding this, industrial designers who work in the food accessories arena can help design products that can aid those who wish to live a healthier lifestyle.

In this thesis, I will consider food transportation devices. Considering how and why people choose to eat (snack foods, fast foods, frozen foods, pre-cooked meals, etc) and the trends in food packaging, I will design a system that stays convenient, but also promotes healthy eating. It is my intention to create a non-disposable product that incorporates informational graphics while considering more content and user friendly forms.
January 30, 2002
Thesis Scenario
Mary Rose Monkowski

Ultimate Goal
Create a semi-permanent food container system sold in grocery stores that establishes:

1) Healthy eating habits for vegetarians
2) Alleviates complex food decisions
3) Helps people on-the-go (collapsible?)
4) Enhances food presentation (color, form of eating surface)

Primary competition
Pre-packaged Advantages:
1) large quantity = lower cost
2) No thought
3) No prep

Fast Food Advantages:
1) eat with one hand
2) no prep

This option is less of a concern for vegetarians bc of few options
Story Time

Suzie decides to eat healthier by forgoing meat. As a person on the go, she often eats fast, convenient foods bought at grocery store/fast food ‘restaurant’. Since she’s on this diet kick, she decides that she needs to go grocery shopping. When she gets there she realizes that the store offers pre-cut fresh veggies, but knows that that will not sustain her though her active day. The frozen food section is her next stop. Here she finds that the ‘healthy’ option is comprised of a meal, but no accompanying snacks or ability to ‘do it her way’. With the frozen entrée, she also realizes that if she eats in her car, no microwave is available thus no food. What to do?

Decides not to follow through on her new ‘wellness’ routine
Re-organizes her life to cook
Gets out nutrition books and sees what they suggest for ‘fast and easy’ (However, she will have to adjust these to compensate for meat. Another book. More time. More energy.)
Becomes anorexic bc everything is too much trouble
Decides to buy a cool-looking item that helps her decide what types of foods to buy in order to allow her to try a vegetarian lifestyle without leaving her hungry in a few hours. Easily portable, educational, and adaptable fits right into her lifestyle

The System

- A container line which aids the user with graphics and color signaling (i.e fruit = red, protein = brown)
- Sold in sets of 5, so that an entire week of portable meals is accessible
The System with Grocery store help

Buy (or rent w/ deposit) resealable containers with vegetarian meal inside. Grocery store supplies ‘menu’ and you use the color system to mix and match what components you want in order to make a balanced meal. They come in ‘hot’ and ‘cold’ options too.

1) Offers convenience of pre-packaged
2) Offers convenience of pre-prepped
3) One-stop/week (cuts down on travel time and hassle)
4) Fair amount of variety, but not too many decisions
5) Returning containers allows you not to have to wash containers
Problem

American society is in need of many reforms that it is a challenge to focus on re-thinking only one problem. So where to begin promoting change? By understanding that many problems stem from very personal struggles, it seems that aiding the individual is key.

The loaded question 'where to begin?' begs for consideration. Focus on society? Focus on person within society? Divorce society from individual? Or immerse individual in society? This is not the first time that these questions have been posed by an individual nor will it be the last. As a designer, I believe that I have to attempt to answer these questions when I design. In doing this macro and micro consideration, what physical creations I produce will serve to aid society rather than fragment it.

One of the largest problems underlying social ills is a lack of self-worth. Most of the time this is the core of what creates societal tensions. Low self-worth tires the spirit thus making people complacent when faced with injustice or choice. This internal decay also imbalances the physical and emotional sense of 'self'. When the internal self feels unworthy a person either focuses on making the physical-self desirable or it causes an individual to outwardly express the desperation inside.

Society factors into the myth that 'if it looks good it IS better.' For example, we all know that Raymond Lowey created demand for the Coldspot refrigerator in 1934 because of its streamlined finish – in spite of the fact that The Great Depression was in full swing. Things have not changed since 1934.
Redesign of America' from *Time* Magazine the author summed it up as 'If we learned something from the barbaric old '80's, we learned that... [we] want better -- or at least better looking.' (Gibney 2000, 66) While he was referring to objects, it spirals out from there. People feel more desirable when they look better -- not because they actually are better than the next person. but because they seem better. The consumer society perpetuates this association.

Now it is time to get back to the problem at hand. Society has many ills, but how can I as a designer change things? The most pertinent encouragement comes from the industrial designer Dieter Rams. "[I]t would be a tremendous achievement if we could improve thinking -- and design is in the front line of the thinking process." (Rams 1995, paragraph 34) On the macro level I intend to change the parallel way we judge people and things. People are more than objects and must be considered differently. In a sense I propose to create a meme¹ that attacks the way people currently judge their physical entity

One of the most universal ways people alter their appearance is by focusing on body weight, which is directly connected to food. This is where I intend to focus my energy. Food keeps a person alive, but food is also a way that consumer culture perpetuates the myth that a person's physical appearance reflects her/his worth. I intend to refocus how food is considered in our everyday environment by offering an alternative means to choose and buy food. By confronting this, the connection between object and physical appearance will be severed.

¹A meme is a unit of information that is passed from one person to another.
Method

Step 1: Consider what are current social trends
Continue to speak with people who deal with health, food production, food preparation and packaging
  • What are the trends they see?
  • What part of society gravitates to certain foods?
Continue with journal research focusing on similar questions, but this will give a more objective voice to the subjective information.

Step 2: Consider food itself
Connect what people buy with what the food 'looks' like in its packaging or environment
  • Is what sells closely related to popular non-food items?

Step 3: Redefinition
Begin to focus on one segment of food sales (most likely fresh meals).
Consider how to re-educate the consumer by offering a new way of considering food.
  • Create an integrated graphic/packaging program which focuses on how food affects the body rather than defines it.

1 'Meme' is a term coined by Richard Dawkins in his book The Selfish Gene. It is essentially a social equivalent to the biological gene. In brief, it is an idea that is better than the current belief system, so it becomes the dominant ideology. (Dawkins, 192)
Sources


DESIGN MUST ADDRESS SOCIAL PROBLEMS

PROBLEM OF SELF-WORTH

BODY IMAGE

BETTER LOOKING = BETTER

PEOPLE & THINGS SHOULD BE JUDGED DIFFERENTLY

FOOD DEALS WITH PEOPLE’S SELF-WORTH APPEARANCE

SUBJECTS OF PARAGRAPHS
Thesis Proposal for the Master of Fine Arts Degree in Industrial Design
School of Design
College of Imaging Arts and Sciences
Rochester Institute of Technology

Food for Thought

Submitted By: Mary Rose Monkowski
Date: 2.20.02

Thesis Committee signatures:

Chief Advisor:

Associate Advisor:

Associate Advisor:

Approval, Program Chairperson:

_______________ Date: _____

Project Definition
Research
Diet
Food Choice
Habit

Design:
Preliminary
System
Design 1

Design:
Preliminary
System
Design 2
The Problem

"[I]t would be a tremendous achievement if we could improve thinking — and design is in the front line of the thinking process.”
(Rams 1995, paragraph 34)

This statement is the ultimate goal for my thesis. It is a grand thought, but one that can be applied to a specific project. I intend to apply this type of thinking revolution on food. Now there are numerous ways in which food factors into society, but one of the common denominator is that everyone needs it. So if everyone needs it, does that mean that everyone knows why it is needed? For the most part the answer is ‘no’. This lack of understanding has a detrimental effect on both body and mind. For this reason, I will use both industrial and graphic design to educate consumers about food rather than continue to allow marketing to ‘educate’.

The first course of action is breaking certain connections we as a consumer society have. The first connection is that ‘goods’ i.e. books, phones, etc and food are both in the same category. Food is a fuel and effects our body in a very direct way, while goods are more removed from our biology. This association is lost in the way food and product are packaged and presented. It is necessary to form a distinction between the two. By doing this type of separation, the consumer’s thought process will consider differing options before buying an item.
Why is this consumer differentiation important? By connecting food with body rather than food with ‘good’, then people will begin to consider cause and effect. Marketing will be less of a decision-maker because people will consider their personal needs rather than ‘is it cool’. High calorie diets are not necessary for a computer jockey while it is for a construction worker, so why do both segments of society buy the same food items? If there were self-reflection s/he can aid the function of the non-disposable body rather than harm it.

This type of consideration is more important than ever to stress because the lack of it is starting to effect our population. The youth population is more obese than ever which causes a host of health problems that can spiral into mental problems. Youth heart attacks, adolescent diabetes, as well as anorexia and bulimia are a few negative physical and emotional ramifications of how food is NOT considered as a fuel, but as a commodity. This abuse eventually leads to health problems later in life.

The population on the other end of the spectrum is just as needy. As we become an aging society, physical and mental well being are just as important. Many physical problems stem from poor diets. Too few calories, too few vitamins and minerals, or too much hinders the aging body’s ability to participate in everyday activities. By stemming the abuse of the body in this
stage of life, then quality of life can be extended without the use of artificial means.

The re-consideration of food as fuel rather than 'good' also plays into how the consumer considers body image. By asking the question "How does this effect my body?" rather than "What will this make my body look like? Fat (undesirable)? Thin (desirable)?" shows a shift in perception. Food is no longer a way of selling image, so its affects are no longer connected with image either.

These currents and goals all lead me to my design challenge. As was mentioned previously, I intend to use industrial and graphic design to redefine food in society. Now, a plan needs to emerge. It is my intention to create a food system — an integrated container and graphic program — that aids the consumer in understanding how food has an intimate relationship with her/his own body. I will focus on a one serving meatless meal system that is freshly prepared. By focusing on the meatless option, I am more able to show just how important all types of food are for health and to dispel many nutritional misunderstandings.
**Deliverables**

- A modular container set with integrated graphics
- A kiosk for the set (will consider both a refrigerated and non-refrigerated display unit)
- A disposal system for container (deposit system, recycle system)

**Method**

*Step 1: Consider what are current social trends*
Continue to speak with people who deal with health, food production, food preparation and packaging

- What are the trends they see?
- What part of society gravitates to certain foods?

Continue with journal research focusing on similar questions, but this will give a more objective voice to the subjective information.

*Step 2: Consider food itself*
Connect what people buy with what the food ‘looks’ like in its packaging or environment

- Is what sells closely related to popular non-food items?

*Step 3: Redefinition*
Begin to focus on one segment of food sales. Consider how to re-educate the consumer by offering a new way of considering food.

Create an integrated graphic/packaging program that focuses on how food effects the body rather than defines it.
Sources


Title: Food for Thought

Submitted by: Mary Rose Monkowski
Date: 3.13.02
Food for Thought

Mary Rose Monkowski

'The most important function design has is to improve thinking' on this, both Dieter Rams and I agree. Throughout the course of my thesis, this will remain my primary goal. The way I specifically intend to apply this ideology is by using both industrial and graphic design to educate consumers about food rather than continue to allow marketing to 'educate.' More specifically I intend to create a food system – a container and graphic program – that aids the consumer in understanding how food has an intimate relationship with her/his body.

My basic methodology is comprised of three parts. First, continue speaking with health educators, food producers, and people in food preparation and packaging. Their perceptions, and more objective journal research, will enable me to define what and why people eat what they do. Second, compare the presentation of food and the presentation of popular items. This will help me discern what dialogues must be broken down or redirected. Last, focus on one aspect of food sales for redirection. For example, by focusing in on freshly prepared meals I can create a fully considered solution to the problems surrounding that niche market.

Deliverables

- Modular container set with integrated graphics
- A display kiosk (will consider both a refrigerated and non-refrigerated display unit)
- A disposal system for container (deposit system/recycle system)
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<th>Research</th>
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<td>Diet</td>
<td>Food Choice Habit</td>
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Appendix 2: Preliminary Systems Thinking

In this section, promoting vegetable consumption has already been decided on as the overarching goal. How to foster that habit change, however, was still nebulous. The next few pages will show the evolution of the thought process through to the beginnings of *The Colorfood System* idea. It incorporates goal outlines, sketches, and visual stories.
What is the best way to promote change? Portion sizes, adding veggies?

Abstract Goals
- give information
- habits over the day while
- have fun learning
- aesthetically pleasing

Personal Goals
- have fun making
- beliefs no message of research
- have physical object reflect
- ability to think (design)
- have time to go through
- many small steps to have

Project Definition
- Research
  - Diet
  - Food Choice
  - Habit
- Design:
  - Preliminary System
  - Design 1
  - Design 2
What do I want this project to accomplish?
How do I make veggies fun?

Food Anatomy Mobiles
Alexander Golden esque

So where did you come from?

Design:
Preliminary System
Design 1
Design 2

Project Definition
Research
Diet
Food Choice
Habit

Design:
Diet Preliminary System
Food Choice Design 1
Habit Design 2
Color, interaction, remembering...
Fun ways of choosing fruits and how much to eat...

Food bumpers... if it tastes good (not bruised) then you'll eat it!
First system drawing

1. @ store
   - Add list
   - Find out of stock
   - Highlight what you want

2. @ produce
   - Tag wall
   - Tips
   - Used before
   - Storage suggestion
   - UPC

3. @ home
   - Check the trolley
   - Label to save money
   - Last before use

Non activated
- Press color
- Toggle through menu
- Press Enter & label is printed

Activated
- Press color
- Toggle through menu
- Press Enter & label is printed

Project Definition
Research
Diet
Food Choice
Habit
Design:
Preliminary
System
Design 1
Appendix 2
Preliminary
System
Planning
Second system drawing

- Never forget your list
- Helps add veg/fruit to list & reminds
- Can promote the best tasting product, so don't get 'turnne't off by off-season foods
- Alternates "how fresh"
- Adds to your knowledge of portion
- Can be fitted into self-taping system

Fresh Today
3 servings
Keep suggestions: w/yogurt...
Bug tag idea

- have rewards
- deal w/ color
- life cycle
- reminder function for whole family
- 'game' aspect

Door reminds you to eat certain veggies/fruits
- contingent alternate brining veg/fruits (color lights)
- can be climate controlled for perishable

Deceptively simple

Project Definition
Research
Diet
Food Choice
Habit
Design:
Preliminary
System
Design 1
Design:
Preliminary
System
Design 2
Plan for the final system
<table>
<thead>
<tr>
<th>Project Definition</th>
<th>Research: Diet</th>
<th>Design: Preliminary System Design 1</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Food Choice</td>
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Appendix 3: Listmaker/Scale

2D Sketches
2D & Computer Sketches
2D, 3D and/or Computer Sketches

This section shows how the research begins to manifest itself in visual terms. There is form exploration of a single item as well as nascent attempts to design a system. The design time spent on the forms lasted five months.

**2D Sketches** The process began with sketching the Scale, then moved to considering the Scale and Listmaker form at the same time. It became clear early on that working with computer modeling and sketching would help with exploring more forms.

**2D & Computer Sketches** Following the above revelation, dimensions of a pre-existing produce scale were used as the basis for the design. In Alias 9.7, curves were made at the appropriate height and widths to start computer modeling some of the designs that were sketched. This anticipated applying human factors design considerations to the form.

**2D, 3D and/or Computer Sketches** Deviated from the strict dimensions and explored form with tangible wire models to which foam core, nylon stockings, and/or modeling clay was applied. Paper models were also created. The Scale/ Listmaker forms were considered as their own environment rather than existing in one during this phase.
2D Sketches
The next three pages of sketches were more influenced by current scale designs rather than evolving a new way to think of the scale form.
Project Definition

Research
- Diet
- Food Choice
- Habit

Design:
- Preliminary System
- Design 1

Design:
- Preliminary System
- Design 2
**2D & Computer Sketches**

Tried to design form based on actual dimensions and to consider both Listmaker and Scale at the same time.

* Wegman's Scale used for basic dimensioning for Alias 9.7 models
"Sails" Listmaker -- playing with planes

Project Definition

Research
Diet
Food Choice
Habit

Design:
Preliminary
System
Design 1

Design:
Preliminary
System
Design 2
"Sails" Scale -- playing with planes
2D, 3D and/or Computer Sketches

Double Interface Listmaker

Single Interface Listmaker

Project Definition Research
Diet
Food Choice
Habit

Design:
Preliminary
System
Design 1

Design:
Preliminary
System
Design 2
Exploring Shape with wire, nylon, low density foam, and foamcore

Wall Mounted Scale Idea
Considering the Listmaker as the environment
Paper, wire, and foamcore sketch models
Going organic, big and sculptural

Listmaker --
2D sketches in pen and charcoal, 3D sketches in clay with wire skeleton
Scale --
2D sketches in pen, 3D sketches in clay with wire skeleton
**Preliminary System Design 1**

These designs were inspired by the *Pantone* chairs by Verner Panton produced in 1959-60. The material and form worked well for the Listmaker or Scale form because of the curved space near the feet. It worked as a kick space, and created a large base for stability.
Alias Screen captures for Listmaker and Scale kiosks.
Preliminary System Design 2
This design occurred about one month after the design on the previous page. It focused on reducing the overall size of the elements and considering various height needs.
Working drawings for the model. Segmenting in computer model was carried through to the physical model.

Full-scale scale white model -- Cardboard to insulation foam models.
Final System Design
The sketch immediately to the left became the final design. It was greatly influenced by feedback from the previous design which focused on mass, height, and modularity.
Alias 9.7 model which remained constant from hand sketch to computer model.
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Appendix 4: Interface Design

Hand Sketches
Computer Sketches

This section shows how the Listmaker and Scale interface content and designs were thought through. These preceded the preliminary system scenarios. The design time was three months.

Hand Sketches Started working on the Scale interface first. Quickly decided that the interface would be a touchscreen. Human factors relating to button size and separation would play an important role in the interface dimensions. Needed to work on the computer in order to work with both human factors and aesthetics.

Computer Sketches At this point, the Scale screen was the focus and adopted a more regular screen shape because of content needs. The Listmaker interface was designed next. More information was needed in this application, so the same screen contour was maintained, but the dimensions were made larger.

The refinement process began at this point. The committee considered navigation elements, and creating a visual systems feel between the two interfaces.
Hand Sketches
These are two rough sketches for the scale interfaces. They only depict the most basic components necessary.
**Computer Sketches**
This first computer sketch depicts just one of the scale scenarios.

The overall layout for the scale form was undecided, so the interface containment was still under review.

Notes on the printed out page below show some of the questions raised by the committee.
Soon after working on the computer, designing both interfaces simultaneously made the most sense. This is the first attempt on the Listmaker interface.

Note: The screen size and shape are still changing.
Scale Interface for both weight and quantity pricing scenarios


National Center for Chronic Disease Prevention and Health website. WWW.cdc.gov/nccdphp/dnpa/obesity/basics.htm
Software Used

Adobe Photoshop 7.0
Adobe Illustrator 9.0
Adobe ImageReady 7.0
Alias/Wavefront Studio Tools 9.7
Macromedia Dreamweaver MX
Microsoft PowerPoint
QuarkXPress 5.0