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Information Design Project: Oven Pancake

From the outset, my goal with this design project was to put into practice, the theory we have been investigating throughout the quarter. Specifically, I wanted to develop a design that relied upon the theoretical principles we've studied for the purpose of making the viewer perform a task. In addition, to further validate the efficacy of the design, I wanted to create a deliverable that was useful in the "real world." With these goals in mind, I sought to define a project that would meet the following three criteria:

- The essential goal of the design must be to instruct the user in completing a specific task with a defined end state.
- To stretch my understanding of design theory into the practical realm, the design ought to rely, as much as possible, on graphical, as opposed to textual, elements.
- To be useful, the resulting deliverable must be a digital format that is reasonably portable. As well, it should maintain informational fidelity when printed on a standard, non-color printer.

A secondary goal of defining the project according to these criteria was to contain the project. The hope is that these criteria would provide enough direction to identify a suitably complex and "doable" task that was just within my capability to deliver as a neophyte designer.

The attached document is a recipe that describes how to make an oven pancake. An oven pancake is a soufflé-like breakfast dish. The oven pancake recipe serves as an ideal design according to my criteria: as a recipe, a successfully executed design will guide a user towards an achievable, assessable, and edible end product. To achieve my goal of relying mostly on graphical elements, I defined my audience broadly as a person with limited cooking

skills from a Westernized culture who may be semi-literate or non-native English speaking. And as for delivery, the goal was to create a design that prints on a single 8.5" x 11" sheet of paper, or could be displayed on the screen.

This quarter we've discussed and studied the foundations of Gestalt-based visual design. As such, many theorists, including Grice, Kostelnick, Riley and Parker, McCloud, and others, informed my decisions as I designed this project. While the goal of this paper is to shed light on how visual and information design theory shaped my design choices, I assume the aforementioned theorists and their ideas are well-understood by those reading this paper. If a significant design choice I made was the result of the influence of a specific theorist, then I have called it out. But in some cases, for the purposes of readability and brevity, I refer to theoretical concepts we've discussed without citing the theorist from which they emerge. Instead I have focused my commentary and citations on the theoretical concepts—principally genre theory and procedural discourse theory—that we've not covered in class.

Genre and Conventional Context

As a recipe, the oven pancake is relatively simple: it has only four ingredients which are minimally processed. A cursory look at a handful of random cookbooks reveals that the recipe format, as an information type, is a highly standardized and well-understood genre. As such, the genre provides a familiar context for users. I use *genre* according to Bhatia's theoretical (2001, 6) definition: as "instances of conventionalized or institutionalized textual artifacts in the context of specific institutional and disciplinary practices, procedures, and cultures" where "members of specific discourse communities construct, interpret and use these genres to achieve their community goals." Given this definition, my hope is that users of my design will recognize it as a recipe and use genre type as a primary and initial means of interpreting the discourse. As a result, a controlling principle for my design is that it should "look" like a recipe.

As such, users that recognize the designed task as a recipe will then approach the task within the proper context, thereby framing their interpretation of the design and the elements within according to the realm of food preparation. If the user then approaches the symbols and icons presented in the design within the context of food preparation—that is, expecting to encounter elements such as ingredients, tools, and kitchen-related tasks—then interpretation of these graphical elements can rely, in large part, on Kostelnick's notion of conventional context.

The benefit to the user of recognizing and framing the task in a conventional context should be a more efficient implicature. Establishing and relying on conventional context impact the graphical elements in a profound way. This quarter, we have talked about icons and symbols and their ability to represent an idea versus their ability to resemble a thing. As a designer, if I am unable to rely on conventional context, the task of creating an icon that resembles a thing, such as a specific tool, can be fraught with ambiguity and misinterpretation. However, provided within a framework of a strong conventional context, creating graphical elements that resemble specific instruments for a given task ought to require less concrete detail. The result is that designers can rely on more abstract resemblances of tools that users expect to encounter in the realm of the convention that they have interpreted. This is a benefit for me specifically given my lack of experience in creating highly precise, detail-specific icons.

The notion that conventional context provides an interpretive framework for the user is perhaps easiest to illustrate by evaluating the evolution of the icon I created to resemble an oven mitt. I originally found this icon online in the context of "mittens."

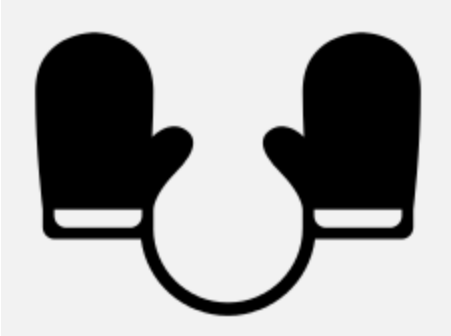

Fig. 1 Mitten source clip art for oven mitt.

The original clip art included an asymmetric pair of mittens that was attached with a cord (Fig.1). To transform these mittens into an oven mitt, I copied one of the mittens and cleaned up the spot where I "cut" the cord. By establishing the genre as recipe and thereby relying on the user's recognition of the conventional cooking-related context, shown in Fig. 2 along with other kitchen tools, this singular mitten is transformed into an oven mitt.

Fig. 2 Mitten becomes oven mitt in context of recipe genre

Clearly, the users' recognition of this task as a recipe is a fundamental requirement for the overall success of the design. So, the final question to consider in the context of genre, is, what elements of the design define this task as recipe?

There are two essential characteristics that I've implemented in this design in an attempt to associate, in the mind of the viewer, this task with the recipe genre: first, I emulated the basic format of the vast majority of recipes that I have encountered; and secondly, I analyzed the task and the design in the context of procedural discourse theory.

In emulating the basic format of most recipes, I relied on my anecdotal experience with hundreds of recipes over the years. The nearly universal components of recipe format in Western culture include a title, a list of ingredients, and a method. At a minimum, my design

would need these components. So in this context, even with my criteria to minimize text, a written title becomes a requirement. As for the list of ingredients: I found it fairly easy to reliably map ingredients to their iconic counterparts.

Translating the method to a graphical format, however, was more challenging.

Procedural Discourse Theory

Almost universally, it appears that the "method" section of the recipe genre is composed of a set of steps. In the context of information design, recipe methods are an implementation of procedural discourse. Farkas (1999) argues that procedural discourse is an inherently rhetorical form that derives from the theory of "human problem solving in the context of systems theory" (42). As such, "procedural discourse describes system states and actions that change system states" (42). After describing and contextualizing these abstracted notions of states and actions, Farkas goes on to use them as a framework from which to analyze "streamlined-step procedures." His analysis provides practical guidance for my design, which I'll discuss. But first, I will briefly describe my oven pancake task according to Farkas' definition of state in procedural discourse theory. My purpose in the following description is to illustrate how Farkas' state theory influenced two specific changes towards my goal of making my design look like a recipe.

Farkas defines four system states: desired state, prerequisite state, interim states, and unwanted states (1999, 42-43). As defined, the first two of these states tenuously map to the existing recipe format genre that I've enumerated. First, Farkas' *desired state*, which he defines as "the goal that is presented to the user," is in part, contained in the title of the recipe, which defines the goal by identification. My choice to add an iconic representation of the oven pancake next to the title is an intentional design change to make the desired state, or goal, explicit. In addition, I show the desired state as the last frame of the procedure. As a result of Farkas' discussion of desired state, I decided to emphasize the final frame, which shows the goal, by breaking the repetition of enclosure style that is establish with the preceding numbered

steps. The second state, the *prerequisite state*, is analogous to the recipe ingredient list. Farkas defines this state as the one "that is a condition for moving toward the desired state;" users often must "align [their] current state with the prerequisite state." I illustrate the prerequisite state and the correlation to the ingredient list in recipe genre by grouping the ingredients and required kitchen tools at the beginning of the recipe. Specifically, I rely on Gestalt principles of closure, similarity, and proximity to illustrate prerequisite state.

As noted, Farkas' analysis of streamlined-step procedures in the context of procedural discourse theory provided practical guidance for my design. Farkas enumerates the defining characteristics of *streamlined-step procedures* thusly: 1) "steps are brief;" 2) "the formatting is simple…most steps are nothing more than simply formatted paragraphs;" 3) "action statements are built around an imperative verb;" 4) "there is some, but relatively little, information preceding the steps;" 5) "conceptual overviews, definitions, and other information do not always appear in the procedures" (1999, 45). The format of traditional written recipe instructions clearly falls into the category of streamlined-step procedures. So given my overarching goal of producing a design that "looks" like a recipe, I evaluated the design in light of Farkas' five characteristics. Two major changes emerged from my evaluation: making "steps" more explicit and implementing the concept of the imperative verb.

In early draft versions of the design, I attempted to represent the notion of a procedure by simply representing "steps" in order of execution. Given my goal of minimizing textual content, I resisted numbering the steps. As a result, I attempted three different layouts where I arranged the steps with a goal of "finding" an "organic" design that would just make sense. The thinking behind an "organic" approach was that I could rely on other (non-numbered) design elements in a way that users could intuit the order of steps. I attempted a standard left-to-right sequence in both horizontal and vertical orientation. But, the layout, I think that held the most promise was one of a spiral. The theory behind the spiral was that it mimics many natural phenomena and would therefore be a familiar shape that users might intuitively follow. Perhaps

the spiral design could yield promising returns under direction from a more skilled designer, but I'd argue that while a spiral may be a natural shape, it doesn't follow that the shape is intuitive in this context. In the end, these flighty acts of design contortion were easily resolved by relying on basic procedural discourse theory: use numbers to identify steps. Alas, like the title, which seems a necessary component to the recipe genre, numbers are a necessary component to procedural steps.

As a professional technical writer, I use imperative verbs every time I write a procedure. My use of the imperative verb in written procedure is so embedded in habit that I missed the significance of the syntax until reading the Farkas study. Looking at my recipe as a set of imperative verbs shed light on the fact that constructing statements with an imperative verb results in a well-formatted, informational unit where the user performs an action upon a thing, e.g., "Pour batter into the pan," or "Put the pan in the oven" (See Fig. 3). Recognizing each step in its abstracted form as a well-formatted imperative statement persuaded me to seek strong visual consistency and a parallel construction for each step. To achieve these goals I used closure, color, and repetition.

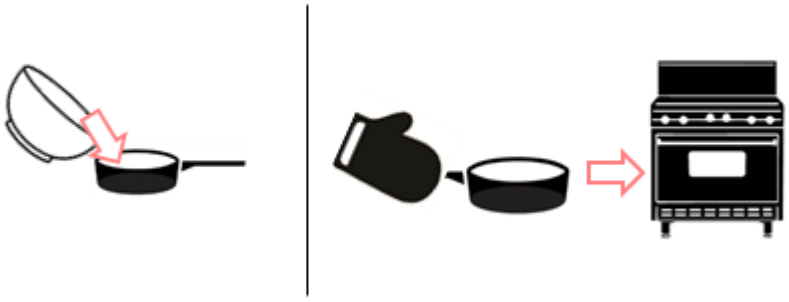

Fig. 3 The draft design of "Pour batter into the pan," "Put the pan in oven," before I implemented imperative statement design changes.

The first change I made to create imperative statements of each step was to rely more on closure. Throughout the process, I've attempted to keep the design as sparse as possible. I've tried only to add elements as theory justifies. Therefore, in my initial draft, I attempted to

segregate each step as minimally as possible. Fig. 3 shows a single vertical line that provides just enough implication of closure to imply segregation between steps. And while the design may have provided that segregation, I'd argue that's all it did. By fully enclosing each step in the final design (see Fig 4.), I achieve the segregation of steps, but I also make use of similarity to show the parallel construction of each step.

For the imperative verb, I use pink arrows—or in the case of "Turn on the oven," pink numbers—to signify user action. By using the same arrow across multiple steps, I rely on repetition to provide contextual hints to help users decode the imperative nature of the device. While the use of the arrow in Step 7 may appear to be a clumsy device in isolation, I argue that the repetitious use of the arrow as the imperative verb across the other steps provides context for the user to correctly interpret the arrow in Step 7 as "pour."

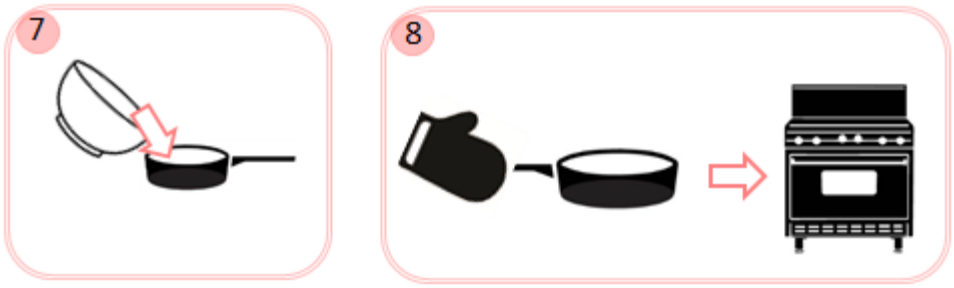

Fig. 4 Final design of "Pour batter into the pan," "Put the pan in oven," after I implemented imperative statement design changes.

The overall effect is that each numbered step conveys a brief imperative statement, thereby matching two characteristics of Farkas' streamlined-step analysis and providing my design with the essential building block of "steps."

So far, I've explained how genre theory and procedural discourse theory, coupled with the visual design theory we've studied this quarter has influenced my design. The primary goal I've described thus far has been to create a design that is easily recognizable as belonging to the recipe genre, and therefore provides a cognitive framework for the user to interpret the task

in the appropriate conventional context. Essentially, the design looks like a visual representation of the textual recipes we encounter in our culture. The “recipeness” of the design is further reinforced by its visual resemblance to the streamlined-step procedure as a series of brief imperative statement steps. If I’ve succeeded at creating a design that is recognizable as a recipe, and I think that I have, then creating a task that ensures success is a matter of mapping the recipe components—ingredients and the actions users must perform—to corresponding graphical representations of ingredients and tools. As such, the final section of my commentary will briefly describe the theory that influenced my icon design to this end.

Icons

As I’ve mentioned, by focusing my efforts on establishing the conventional context of the recipe genre, I’ve hoped to reduce the informational “density” that might otherwise be required of the icons. One fear going into this project was that I’d back myself into a situation where the success of my design would rest largely on the quality of the icon craftsmanship. Initially, my way out of this situation was to rely on McCloud’s notion of cartoon. Specifically, I figured his idea of “amplification through simplification,” might allow me to use simple icons by “focusing on specific details” to resemble the ingredients and tools in my recipe. There is a singular fault with this thinking. It is this: the degree to which an icon looks “simple” is not proportional to the amount of time and effort required by me to produce it. Producing good icons —especially those that look “simple”— is *hard*.

Secondly, in rereading McCloud’s essay, I may have mistook the tree of simplification for the forest of broader cartoon implication: McCloud uses the idea of simplification and its relationship to universality as one element that builds toward a more complex argument of self-identity and iconic form in the context of cartoon as messenger. I’m still not sure if walking away from that essay with such a simplified conclusion is a mistake, but the notion of “amplification through simplification” sure seems to be at play with many of the icons I ended up using. An

example is the “flour” icon, represented by a single wheat stalk in a square. As I began putting together icons for this project, this flour icon was the first icon I “tested” on my 10-year-old daughter. Much to my disappointment, when I showed her this icon in isolation, she said it represented wheat. However, she instantly and correctly identified the icons I had created or found for milk, eggs, and butter. Upon reflection, I discovered that she was apt at identifying—absent of conventional context—icons that resemble their targets. Eggs are simple. And while the cow on the milk icon is a nod towards representation, I’d argue the shape of the carton sells the resemblance to milk as an ingredient. The butter icon is my least favorite, but it “tests” unambiguous as a resemblance of butter so far in those to whom I’ve shown it.

But the flour is an icon of representation more than resemblance. Compared to the other icons, I am expecting a more rigorous decoding of the viewer as I present the flour icon. The viewer must know that the image is a wheat bud and they must further extrapolate that wheat becomes flour and that the enclosure around the wheat flower resembles a bag. However, I’d argue that in the conventional context of recipe, as the icon is presented with the other baking-related ingredients, the flour icon loses most of the ambiguity for my audience.

I should note that with the exception of the slice of oven pancake on the plate, I found all icons on the internet. I made small changes to some of them, but I only created the slice from the ground up. Had I more time and skill, I would make some changes to the pan and oven icons. Specifically, I would attempt to make the pan icon better resemble a cast iron pan, or at least, an oven-safe pan. I’m relying on users’ “limited cooking skills” to use an appropriate pan. I would also simplify the oven by perhaps removing some of the fill color, as it looks too heavily “weighted” to my eye, taking up too much of the figure of the overall design, and therefore, I fear, is needlessly over-emphasized. As for the icon of the slice of oven pancake, I’d like a more finished and compact look. Where the oven seems too weighty, the slice seems not weighty enough for me, especially given its importance as the desired-state of the procedure.

I'd like to spend my final bit of commentary on a couple of the open issues and elements I'm not satisfied with. Firstly, the color choice is worth mentioning. The color combination of pink and black was more a result of attempting to match the color of the strawberry jam than it was a specific design choice based on color theory. That said, I find the overall effect aesthetically pleasing and my 10 year-old daughter seems to find it inviting. Pink, as a warm color, and as a color associated with young girls should imply a lighthearted, non-technical procedure. An area that I didn't spend enough time studying is the use of font. As such, the font appears to be "off" in a way that I can't verbalize. Specifically, the alignment, size, and font type used for the title just doesn't quite work. While we spent some time talking about the theoretical effects of text upon discourse, I didn't dig into the practical application of this theory for this project. Finally, I am disappointed with some print and fidelity issues that highlight my lack of experience in the post-production realm. The color on screen becomes too washed out in the print version. The greyscale print version is really degraded in specific areas: the eggs are too faint and the union of the filled number steps with the enclosed frame is clunky. A faint frame around the bowl emerges in both print versions. And the face of the timer (Step 9), which is a circle on the screen, is distorted and ovalized in the print versions.

Works Cited

Farkas, David K. “The Logical and Rhetorical Construction of Procedural Discourse.” *Technical Communication* 1999: 42-54.

Bhatia, Vinjay K. “Applied Genre Analysis: A Multi-perspective Model.” *Ibérica 4* 2002: 3-19.