Design Defense and Critique: An Eggsplanation of MiniProject 1

Information Design Studio 2
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View the final live webpage at ellenbechtel.github.io/projects/eggs

COMPONENT 1: A defense of your selected text

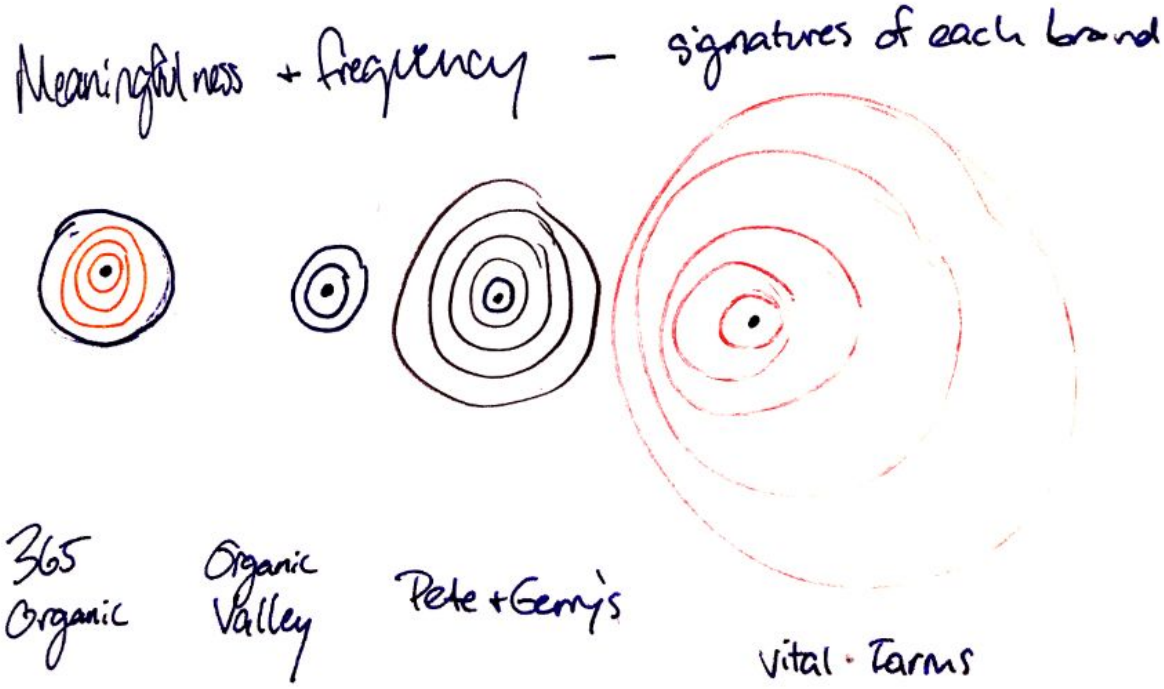
The text I've selected is the labels on egg cartons. The text is composed of English words, pictures, and graphic elements on the outside of a packaging material. What can, cannot, and must be said in the text is strictly regulated in some ways by the Food and Drug Administration (FDA) or US Department of Agriculture (USDA), but the final text itself is written by each egg company and their marketing team. The text is made up of a somewhat limited but always shifting lexicon - organic, cage free, free range, vegetarian, natural, etc. Some words mean something specific and regulated (like "USDA Organic"), while some are misleading in that they piggyback on values and pre-existing assumptions we have about certain concepts (like "No Hormones"). And still more of the words are essentially meaningless (like "Natural"). How can we learn to read the text to pick the best eggs possible?

The dimensions I am mapping in this design are meaningfulness - are qualities listed on the carton's label actually good, bad, neutral, or misleading? On a deeper level, I am also mapping frequency - how often do certain important concepts and words appear on the carton, since not every slightly-different word should count as an important marketing or textual concept?

There is certainly value in reading the "text" of the cartons - including the graphic placement of words and images - in their original form. But the fact that the original form is meant to persuade and even confuse, an extra filter of a visualization would actually bring clarity to what is intentionally a confusing text. What is real, and what is bullshit - that is not information that is clearly communicated in the original medium of the text. But given new information - such as what is regulated, what is not, what is misleading, what is actually a good thing for animal welfare - reading the text in the original medium can actually be a revealing exercise! For folks who know how to read beyond the text, reading egg cartons can actually become an experience in seeing into the mind of the people who want your money, and whether they take you for an idiot or whether they are genuinely concerned with clear communication, nutrition, animal welfare, agricultural practices, and so on.

Component 2: A defense of your selected medium

After some sketching, the following doodle stuck with me.



This kind of visualization, I thought, would be super fun and beautiful. It would essentially create encoded icons for each product, and that's what I designed. The finished product is now an interactive webpage driven by data. This, in my ideal world, is the beginning of a full report-out of the broader topic of egg carton labels, and would be fleshed out to a full article with a few other visualizations worthy of the Pudding.

In order to make this visualization beautiful, clean, and also underpinned by rich amounts of data and text, I had to make it web-based. This would give me tools like tooltips, which would reveal information on a mouseover hover listener. It would also give me the ability to loop each product - maybe even more in the future - through the same analysis and create consistent icons that are encoded the same. Finally, since the human eye is so keen at finding tiny imperfections in repeating patterns, it would free me from having to draw perfectly round, perfectly sized, and perfectly aligned circles by hand. Computers are great at that.

There is also the self-serving element to this choice of medium - my own learning. Coding is really hard, and I want to be really good at it. Doing projects in an educational setting, where I have smart people I can ask questions of, is exactly the kind of setting I want to be in when I push the boundaries of my skills like this. While I think there are lots of other ways to visualize the text of egg carton labels -like a game made out of plastic easter eggs, or explanatory

posters - I think this one is both the most vivid way to bring the data to life and uses the skills I most want to work on.

Component 3: A defense and critique of your visualization

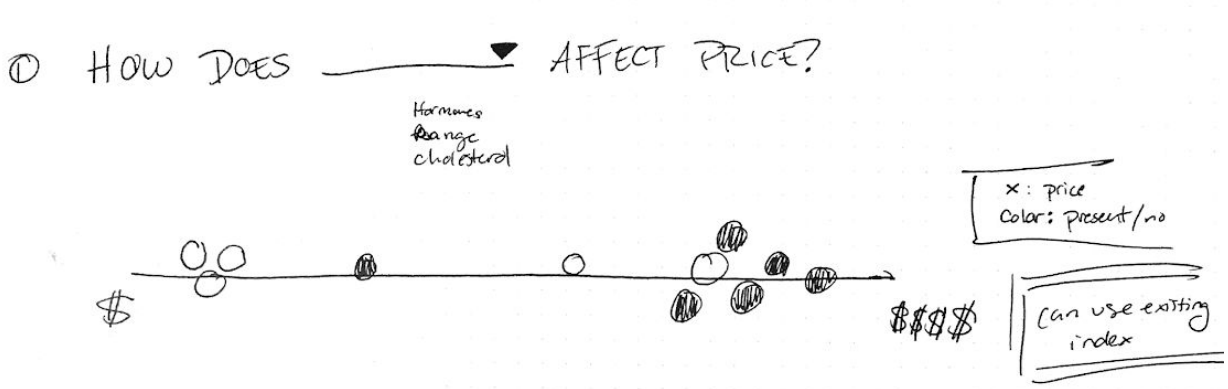
In this final visualization, each egg carton is represented by a single icon composed of color-coded concentric circles. The circles represent the important concepts in egg labeling, and function as an index. These circles are driven by two sets of data - one is an index (aka a lookup table, or in my case, eggsplainer.csv) which lists all the kinds of words that can appear on cartons, whether the words mean something good/bad/neutral/misleading about the egg itself, and has a bunch more information that I'll feed into future iterations of the visualization as I explain below. The other set of data is a product table, where each product is an object with a key-value pair listing what the carton actually says (value) about any given quality (key, as listed in the index).

The smaller circles in the center represent the qualities intrinsic to the egg (size, color, nutrition), the middle circles represent words about the chicken (range, food, medicines), and the outermost circles are about the packaging (container material, pictures, tag lines, extra claims). I think this order represents a meaningful order to the concepts and words used to market the eggs, and supports my goal of making the external marketing concepts (like container material, pictures, etc) the biggest and most obvious part of each small vis, since those are the places most ripe for manipulation and deceit. Additionally, in the case of egg labels, the sequence of words on the carton itself (organic, then cage free? Or cage free, then organic?) matters less than the fact that they are present on the label. That allows me the freedom to organize my visualization's encoding to mirror the fact that some of the text is closer in meaning to qualities of the actual egg (size, color, grade) and some parts of the text are external, even extraneous (like tag lines). Representing the presence or absence of certain words in each carton's text, as well as whether the carton gets right to the heart of the matter or verbosely dabbles in the external marketing is what I'd like to get across most.

For this visualization, there are few things lost in translation that I'll rectify when I have more time to work on it. I want to additionally encode each concept's regulatory status in the icon, this time with a solid-or-dashed stroke for each word's circle. I would also like to make a tooltip that highlights a single circle when it's hovered over, labels it with the original text on the carton, highlights the same circle in each of the other product icons, and overlays the legend with a short explanation (eggsplanation) of what the term means and why it's meaningful or meaningless.

Another piece of data that got lost is the price of the carton of eggs. That is a huge signal that communicates something about the quality of the egg, and the price is left out of this visualization. I did that intentionally, for two reasons. For one, if I listed the price right off the bat, that would be the thing that viewers would focus on first before any of the other text visualization, if they see the rest of the text at all. Price is an easily readable piece of text since

everyone knows how to read it, and it's a huge factor in why we choose the products we choose - in fact, it might be the biggest, when it comes to most people's grocery store choices. I wanted to give special attention to the text of the labels first, so I left it out of this iteration of the visualization. The second reason I left it out is because I have an idea for another vis, based on this first one. Now that each product has its own icon, that icon can be used as a point in many different kinds of plots or charts. To visualize price, I'd like to take each products' icon and put it on a scale representing price per egg, something like the doodle below.



But, since I don't have endless time, I needed to leave the price out of the visual translation, and I'll save it for next time.

There are two big things that stand out to me as important design features that I'm not sure if they quite work well enough yet - the color scale and the size of each small multiple.

The color scale is beautiful, in my opinion, but is something of an inversion of the usual red-yellow-green color scale that usually represents things that are good or bad. I wanted my visualization to have unique branding, and I wanted the colors to tie directly into the visual qualities of a good or bad egg (think of a healthy yellow yolk, or of a dry bluish overcooked hardboiled yolk). I'm unsure if the color scale is effectively communicated through the legend, even though I tried to include a teaching section inside the webpage to hammer home how to read the visualization. Additionally, the fact that yellow = good, but then orange = too good to be true might be confusing. Is it too complicated for both dark blue and orange to be bad things? Is it clear that we're looking for neutral pale blue or good yellow circles in the icons? I'm accustomed to it, but I haven't tested it out on a bunch of people yet, so I'm not sure.

The second thing I'm grappling with is how many small multiples to show, and what size they each should be. In my survey, I collected data on nearly 50 individual products across the three stores. Some were repeat products, found in multiple stores, so in this final vis, I took out repeats and only have 29 unique products. That is still a lot of small multiples! I'm wondering - is it too many for viewers to actually be able to take in any individual one? Does having so

many drown out each products' individual uniqueness? I'm wondering if it would be easier to compare them all in a glance if each individual icon was smaller, but then, would it be too small to see individual concentric circles inside each icon? Finding this balance requires more user testing, though in my small sample size of people I've shown this too, I think this is doing a good job of showing detail without being too overwhelming.

Finally, there were a few small tweaks that I'd like to have made happen if I had more time. One is the order of the legend - I wrote that in Javascript just to prove that I could, but I couldn't figure out how to sort the color bars in the correct order. Also, I wrote a whole page of code around making a quiz with toggle switches that would allow users to put in their own judgements about whether various qualities of an egg are important to them. Instead, I decided on my own what was important, bad, good, or misleading, and will have to come back to this in order to let the users deliberately explore the visualization on their own help them make their own decisions.