

AGENCY AND ACCOUNTABILITY IN THE ANTHROPOCENE

an exploration by Hajira Qazi



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PROBLEM SPACE

INTRODUCTION

The Anthropocene marks the epoch of significant human impact on the environment, indicating that human activity has significantly altered the geological makeup of the planet. The Carnegie Museum of Natural History (CMNH) recently introduced its *We Are Nature* exhibit, the first exhibit in North America that explores different aspects of the Anthropocene. Though the exhibit does an excellent job of demonstrating the profound and long-lasting effects of human activity, it does not take a strong stance on humans as actants.

I believe that one cannot talk about the Anthropocene without talking about human accountability and agency. Thus, this project explores the potential of a supplementary interactive system to *We Are Nature* that communicates human's role and agency in the Anthropocene and sparks consumer behavior change through a greater familiarity of use and disposal of everyday consumer objects.

VISIT TO THE MUSEUM & INITIAL IDEAS

We visited the CMNH as a class on November 6, and I was most struck by the *We Are Nature* exhibit. It is a topic of particular interest to me, so I knew I wanted to do my project around some aspect of that exhibit. Some initial ideas the visit sparked:

- Going from natural to post-natural: a visualization of change in the world
- How our actions impact those in other countries (e.g. tracing flow of winds, maybe?)
- Personal stories related to the Anthropocene and its impacts
- Exhibit of sustainable design solutions, considering emotional durability in particular
- Infographics of America's resource use versus other countries (what is the relevance to Pittsburghers?)
- Indigenous philosophies; compare indigenous object to modern, sustainable equivalent, and give a breakdown of resources used. More on this:

When reflecting on this project, my mind kept returning to The Museum of Anthropology at the University of British Columbia in Vancouver, Canada. By highlighting First Nations (indigenous) artifacts, they communicated not only a relevance to indigenous cultures and practices, but to the inherent value of nature itself. In one exhibit, they had first-person reflections of contemporary First Nations people on ancient artifacts, which communicated the reverence these people have for the earth and for others as part of a collective community.

I started out wanting to bring that same sense of reverence of nature by highlighting indigenous philosophies about the earth and the artifacts that reflect that. Laurie had mentioned that she was surprised by the philosophical reactions visitors were having to the exhibit, so I thought this was a valuable problem space to explore. Ultimately I chose not to go this route, as I was concerned about appropriating and misrepresentating a culture that is not my own. Nevertheless, the underlying concept of reflecting on the Anthropocene through artifacts influenced the rest of my project, and one particular object—a beautifully carved wooden spoon—was the inspiration for how I would communicate it.

Vanessa Campbell

Musqueam language
researcher

If I was spinning wool for a carver, I would spin the best wool I could for this person, and this carver would make me the best spindle whorl that he could. I think it speaks to the way we would all work together to create the things that we needed in life.

When a person is working with that tool, their mind is in the right place. They're also thinking of the next generation, just as the generation before did. In thinking of us, they made sure to manage things properly so that we can utilize it and have the same good, full, human experience as the generation before.

**Xwelíqwiya,
Rena Point Bolton**

Stó:lō matriarch and artist

Whenever I'd go into the woods, I'd ask permission. You don't have to yell it out loud. You don't even have to talk it out loud, as long as you feel it inside. You're humbling yourself, and asking to come in and take whatever it is you want.

Example plaques from the Museum of Anthropology, Vancouver, Canada

DEFINING THE PROBLEM

As a visitor to the We Are Nature exhibit, I felt myself wanting more from it. It provided a very good overview of the results of human activity on Earth, but the human as an active agent in that destruction is not clearly communicated. The Anthropocene was depicted through nature—we see the impact on plant and animal life, but the human as an actant is relegated to the background. Thus, I left feeling depressed and overwhelmed by the magnitude and scope of the problem, a response the curators had mentioned they wanted to avoid. Though the “From Me to We” portion of the exhibit tries to get visitors to take an active role in caring for the environment, it does not communicate accountability nor trigger behavior change effectively enough. Unless people recognize their own accountability, they will be less likely to commit to change. Thus, communicating both accountability and agency became the most important part of this exploration.

Though multinational corporations play their role in contribution to the destruction of the environment, we each individually perpetuate those damaging practices through our consumer culture; our dollars fuel the continuous destruction of the Earth. In my view, changing consumer behavior is the single most powerful thing an individual can do to halt the negative effects of the Anthropocene. For this reason, I decided to communicate ideas of accountability and agency through everyday consumer objects, namely a spoon.

TARGET USERS

Target users are visitors to the CMNH and its website. Laurie Giarratani indicated that their target market for the exhibit was millennials; however, I would like to appeal to millennials in addition to a much broader age range and breadth of education levels, so that the interaction is engaging for a range of people. This will be reflected in the visual style as well.

REQUIREMENTS

As I was designing for a longstanding institution, for my project requirements, I looked to the CMNH’s strategic plan. I read through the entire plan and highlighted points that reflected the museum’s content and their goals for the future. I then compiled all of this into buckets, and kept these as a guide for myself. Ultimately, some rose in priority. Here is the final list of all my requirements. All except the first two are based on the Strategic Plan:

- Supplement the We Are Nature exhibit at Carnegie Museum of Natural History
- Communicate a sense of agency and accountability
- Communicate the unity and interdependence of humanity and nature
- Appeal to a range of age groups

- Incorporate a multi-disciplinary approach to the study of the Anthropocene
- Connect to “meaningful synergy between natural history, cultural history, and artistic endeavor”
- Extend beyond the walls of the museum
- “Focus on issues of direct social impact”
- “Maximize relevance of content to research and public interest”
- “Expose people to new experiences and explore the natural world in a rich, immersive environment.”
- Provide spaces for reflection, experimentation, inspiration, creativity, and enjoyment

GOALS / OBJECTIVES

PRIMARY

- Convey a sense of agency and responsibility
- Encourage people to evaluate their consumption habits
- Educate and inform visitors about objects, consumer behavior, and the consequences of those behaviors
- Bring awareness to the historic and multi-generational impact of our consumer habits
- Appeal to all age groups

SECONDARY

- Present alternatives and spark interest in new technologies
- Bring awareness to the relevance of ancient, more holistic practices and attitudes towards the earth
- Educate about the sometimes destructive practices of material extraction, production, and disposal on the earth
- Communicate different approaches and philosophies of human’s relationship to nature

EXPLORATORY RESEARCH

EXPLORATORY RESEARCH

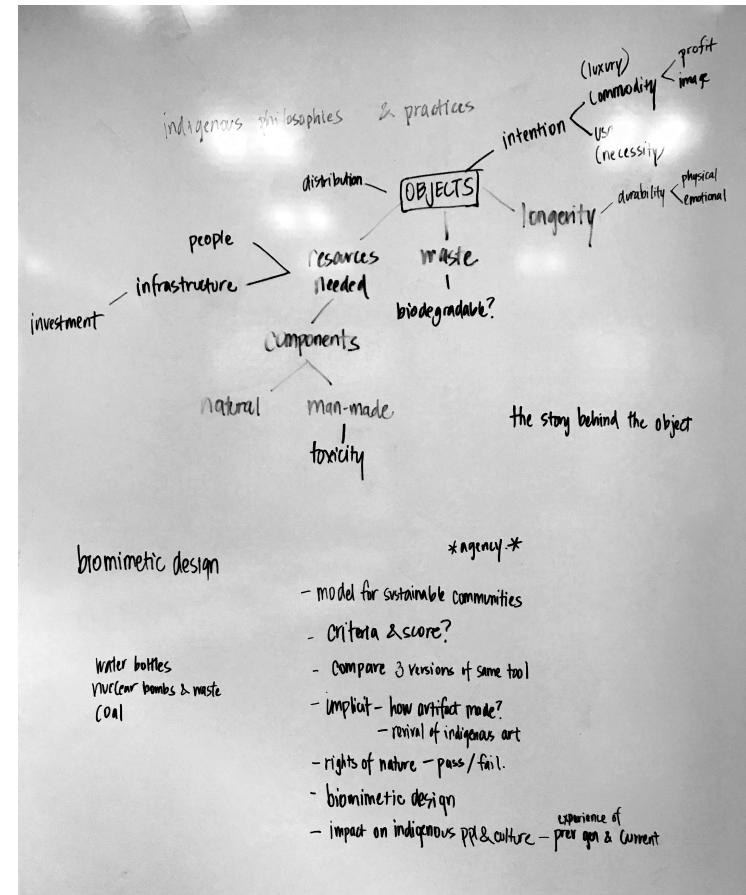
Most of my initial research came through a series of conversations with people about my topic. I had a general idea of wanting to communicate indigenous culture but was unsure about the most effective way to do that, so I did a considerable amount of brainstorming and discussing with people.

I began by making a map of all the different aspects of materiality one could consider, including different types of objects and different perspectives from which one could analyze an object (anthropology, design, history, and science). I also wrote down any ideas that came to mind about how I might communicate that. For example, there is a “Rights of Nature” addendum that countries like Bolivia now include in their Constitution. I considered analyzing objects or situations against those Rights and seeing how they measure up.

11/15 and 11/20: MARK BASKINGER

Associate Professor / Director, First Year Program in the School of Design at Carnegie Mellon University (CMU)

I presented my brainstorm session and my idea about focusing on indigenous philosophies to Mark, and it sparked an interesting conversation about man’s relationship to Earth.

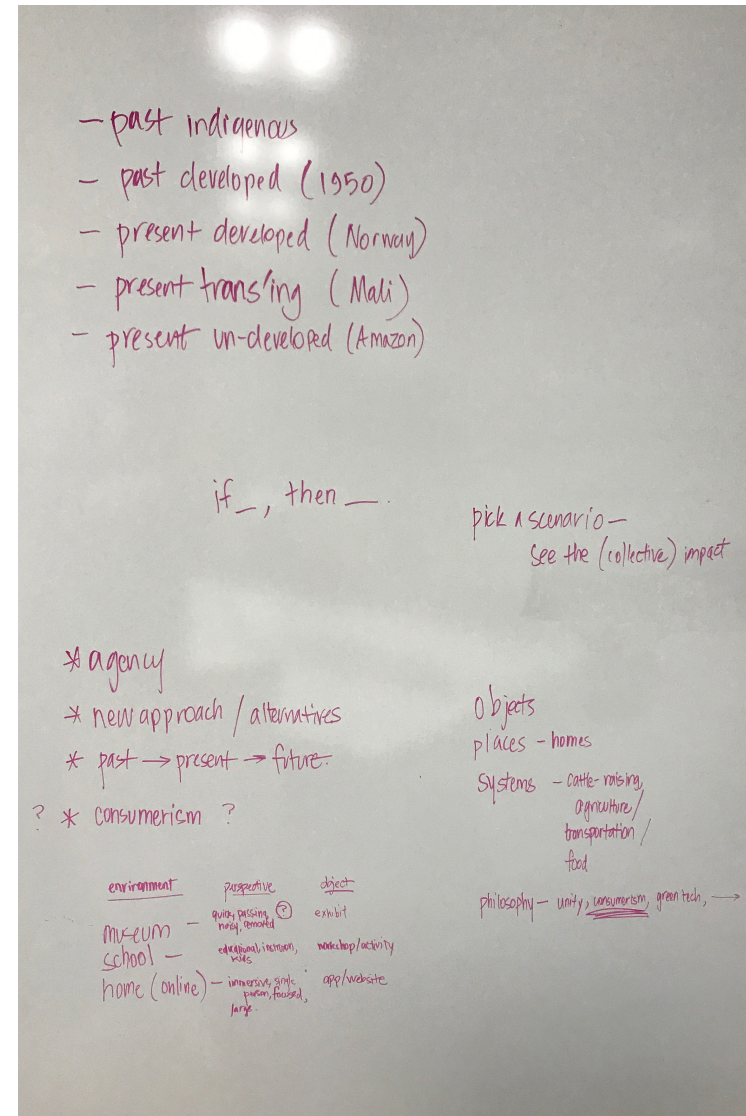


Mindmap and brainstorming

Key takeaways:

- Think about the role the object plays—artifacts versus commodities
- Concept of “ancient futures”—modeling ancient practices for the future
- “Sustainable” options are not all good; it is more nuanced than that. not black or white
- What am I asking of the museum?
- Inspire someone to find their path; put the person in the center of the issue. Make it transformative.
- Interaction design is the bridge between intent and action. It is a facilitator that bridges gaps of time, space, and knowledge
- Talk to Paul Eiss: history and anthropology professor at CMU

I reflected on this conversation and what I wanted to compare different phases of human interaction with the environment throughout history, so I brainstormed a bit more, thinking about different aspects to compare (objects, places, systems, and philosophies, increasing in complexity from least to most), and

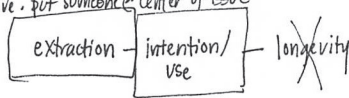


- impact extraction has on Earth
- longevity, durability.

- What is necessary? — **big Q**
- What is our relationship to the Earth? **big Q**

- Commodity for IT vs. artifact for use
 ↓
 longevity

- "ancient futures"
- "anthropological view of human-planet relations & belief structures"
- make it transformative. put someone @ center of issue
- focal things - extend beyond museum.
- bridge b/w intent & action



What abt Vancouver? — philosophy, approach,
 envision beyond themselves & in future generations

labor-resource — artifacts

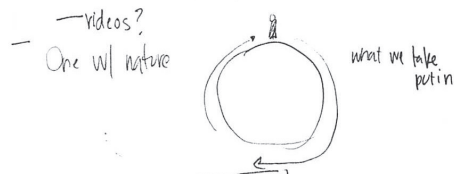
1. compare products — indigenous - current - new
2. only show new, innovative, & how it reduces impact — biomimetic design
3. sustainable communities
4. narrative behind an object — why & how it's made
5. Make your own?

extraction
 materials
 durability
 toxicity
 biodegradability.

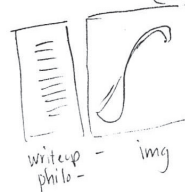
garbage patch.

"ancient futures"

- 3 objects — past, present, future — shows impact on Earth.
- SIM-objects — "make" an object to learn its impact — reflected as 'soot' on Earth
- narrative of an object — where it's from, how made, how they are impacted by climate Δ , why it's made.
- for past, present, future?



- Static:



"Creative Imagination & cultural inspo"

- Nights of nature rubric — what is existing
- # tell Bill Peduto you support est'ing a RIs of Native wisdom.
- What is your _____ Airing to the Earth?
- Data visualization — show build-up of ppl choosing plastic?
- Pick a scenario — see (collective) impact of choice. — see how we collectively can make the world better / worse. Informed decision or not?

natural beauty, simple objects / artificial beauty, dystopic world.

What future do you want? —

now - things are great as is. why fix what isn't broken

future - I want a world my grandchildren can appreciate.

then - those ppl had a respect for the Earth. I can give up my Fiji water for a more natural, synergistic world.

Children Like Me - map out scenarios -

what we play, how we drive, what we eat, etc.

maybe 4th scenario - Norway/Mali?

focus on a single place - ~~Elk~~ E/rn US - natives, now, future, to
~~show~~ keep it relevant & single-generational - compare apples to apples.

replicate objects - to use the object. - feed the difference.

- how things are made. - Workshop of process & consequence.

CMNH - workshops on how things are made. (avg. age).

- video? tools, materials, - talk to CMNH.

- prototype of outcomes of workshop.

add native quotes to existing exhibits. large, big, in-your-face.
- juxtaposed w/ what is there already.

- what does it look like to live one w/ nature?

practices → philosophy.

brainstorm session

different platforms I could use for the interaction and how that might define the result (such as museum vs. school vs. home). I switched to my sketchbook and tried to put every idea I had out on paper.

By this time, I was leaning towards comparing 3 phases of development of an object throughout history and comparing different aspects of it. But I was struggling to hone in on which aspects those should be, so I spoke to more people and got some good feedback.

11/27 AHMED ANSARI

PhD student in the School of Design at CMU, focusing on areas of decoloniality

I wanted to talk to Ahmed about my project because he studies issues related to culture and design, so I knew he would have valuable insight related to indigeneity.

Key takeaways:

- Speaking on behalf of another culture is dangerous territory and should be avoided
- The Anthropocene is not only a degradation of nature, but a dissolution of cultures and way of life. Colonialism is an artifact of The Anthropocene
- Indigenous people have a reverence for nature because they have direct access to it. It is embedded in their culture and cosmology. The Anthropocene divorces culture from nature.

- The West was not always modern, and the Anthropocene did not always exist. It was a progression over time, but the history is often ignored.
- Nature, culture, cosmology, and technology are all intertwined. All must be looked at in conjunction. Maybe create a timeline showing alteration over time?



concept sketch

Based on this conversation with Ahmed, I came up with another concept showing the change in Pittsburgh over time, with the four threads of nature, culture, cosmology, and technology running along the bottom, and changing over time. Users would slide through the timeline, and the change in Pittsburgh would be visualized on the screen.

I also narrowed down my idea to comparing 3 objects to focus on past, present, and future. So, for example, a spoon of the past is the carved wooden one I saw in Vancouver. A present-day spoon is a plastic spoon, and an emerging technology is edible spoons that don't need to be disposed of at all. I planned to have users pick one of the three as something representative of the type of artifact they would want to carry into their future, and then have a visualization of a globe either becoming greener or grayer depending on the collective decisions of all visitors.

11/27 CHECK-IN WITH MANDY

I presented these concepts to Mandy, Mark, and Q on 11/27.

They prompted me to think about

- What is the impact or end goal I hope to achieve
- Where does it come in the exhibit? Beginning, middle, end?
- How does this exist beyond the exhibit?
- What is the use life of an object? We use a plastic spoon for one hour but it spends hundreds of years in a landfill

11/29 VISIT TO CMNH

I decided to go back to the CMNH to refresh my memory and see if being at the museum would spark any ideas.

Key takeaways

- There is not a lot in the exhibit about how the Anthropocene has impacted people. There is a screen in the white post natural room that has quotes from people affected, and then there is a small window in the corner about climate refugees, but that is all.
- There are interesting quotes on the wall, which might be a good opportunity to add to
- There is a small feature on “shifting cognitive baseline.” What if my solution could play on that somehow?
- The Future thinking Lab and From Me to We segments try to communicate a sense of agency and to get people interested in committing to change, but it falls a bit flat and doesn’t demand anything of anyone.

Dr. Paul Eiss in the History department at CMU suggested I speak to his colleague Dr. Noah Theriault, who he said focuses on “indigeneity and the environment, and particularly on questions of ontology.” So I reached out to him, and he agreed to meet me to discuss my project. It was particularly useful to get the perspective of someone outside the design school.

11/29 DR NOAH THERIAULT

Assistant Professor of Anthropology, Carnegie Mellon University

Dr. Paul Eiss in the History department at CMU suggested I speak to his colleague Dr. Noah Theriault, who he said focuses on “indigeneity and the environment, and particularly on questions of ontology.” So I reached out to him, and he agreed to meet me to discuss my project. It was particularly useful to get the perspective of someone outside the design school.

Key takeaways:

- Be careful about appropriation when talking about a culture other than your own
- Take care not to represent indigenous artifacts as something existing in the past, because indigenous cultures still exist today and are creating their own futures.
- Who is the anthropos? Not all humans on Earth are contributing equally to climate change.
- Alienation enables the Anthropocene. Per Karl Marx, capitalism alienates people from the land, the labor, and the “social world the object creates.” Objects that aren’t alienated are relationship-strong.
- Humans are unaccountable in the Anthropocene
- The color of the globe changing might be an oversimplification of the issue; the Anthropocene is more than just an isolated consumer decision.

- Can I show more relationship-strong themes in a visual way?
- Maybe focus on objects that are still in use but have a strong cultural or spiritual significance.

Based on this conversation, I decided not to frame the 3 objects as past, present, future, but look at them through the lens of their material impact on the earth. I agreed with Dr. Theriault that the globe changing color was an oversimplification, but felt that what it communicated was clear, so decided to keep it in my next iteration. I wrote down several different variables that came up with thinking about the discussing materiality, and then picked the ones most related to consumerism from a capitalistic and sustainability perspective. I mocked this up in Adobe Xd with the images of the globes changing color for a higher fidelity representation of what I had in mind.



ARTIFACTS IN THE ANTHROPOCENE

The industrial revolution and rise of consumer culture caused an exponential rise in CO2 emissions and the impact on the environment. Let's see how these different objects measure up. Which one would you take into your future? Make your selection as you proceed through the portal.



concept mockup

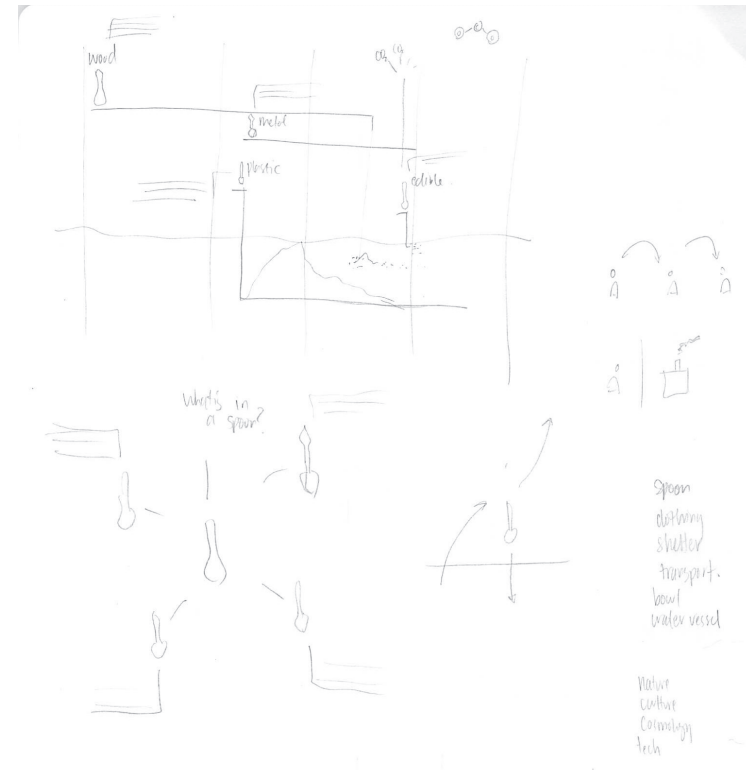
11/30 MARK BASKINGER

I asked to meet with Mark again for additional feedback on my concept and to identify what is working and what needed to be improved upon.

Key takeaways:

- Context matters: under what condition am I choosing the spoon?
- Disposability, whether sustainable or not, is still an issue, as it detaches a person from the material object.
- “If all humans do what you do everyday...” < Think about collective impact.
- What perspective am I looking at this? Capitalism, consumerism, or materiality?
- Look at different dimensions of an object; it is not so binary
- Raise the question as a provocation and exploration. You don't have to answer it.

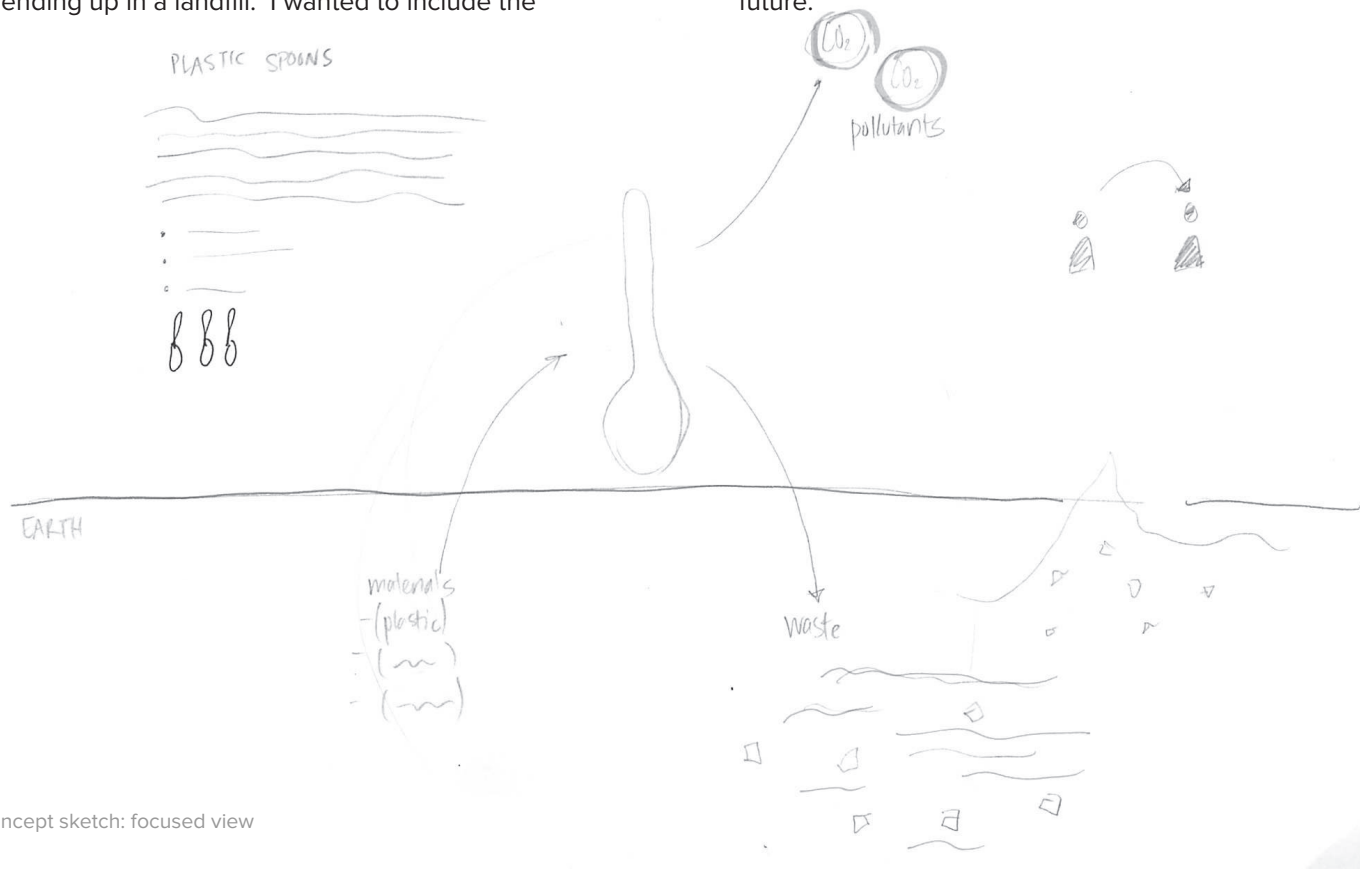
I adjusted my approach once again, and considered looking at it from a “What's in a Spoon?” perspective, with the intention that it might make viewers question what is necessary in an object and what is unsustainable waste. However, when speaking to a friend about this, she said that a visualization of the impact is important, and that without it it falls flat. So I brainstormed more options.



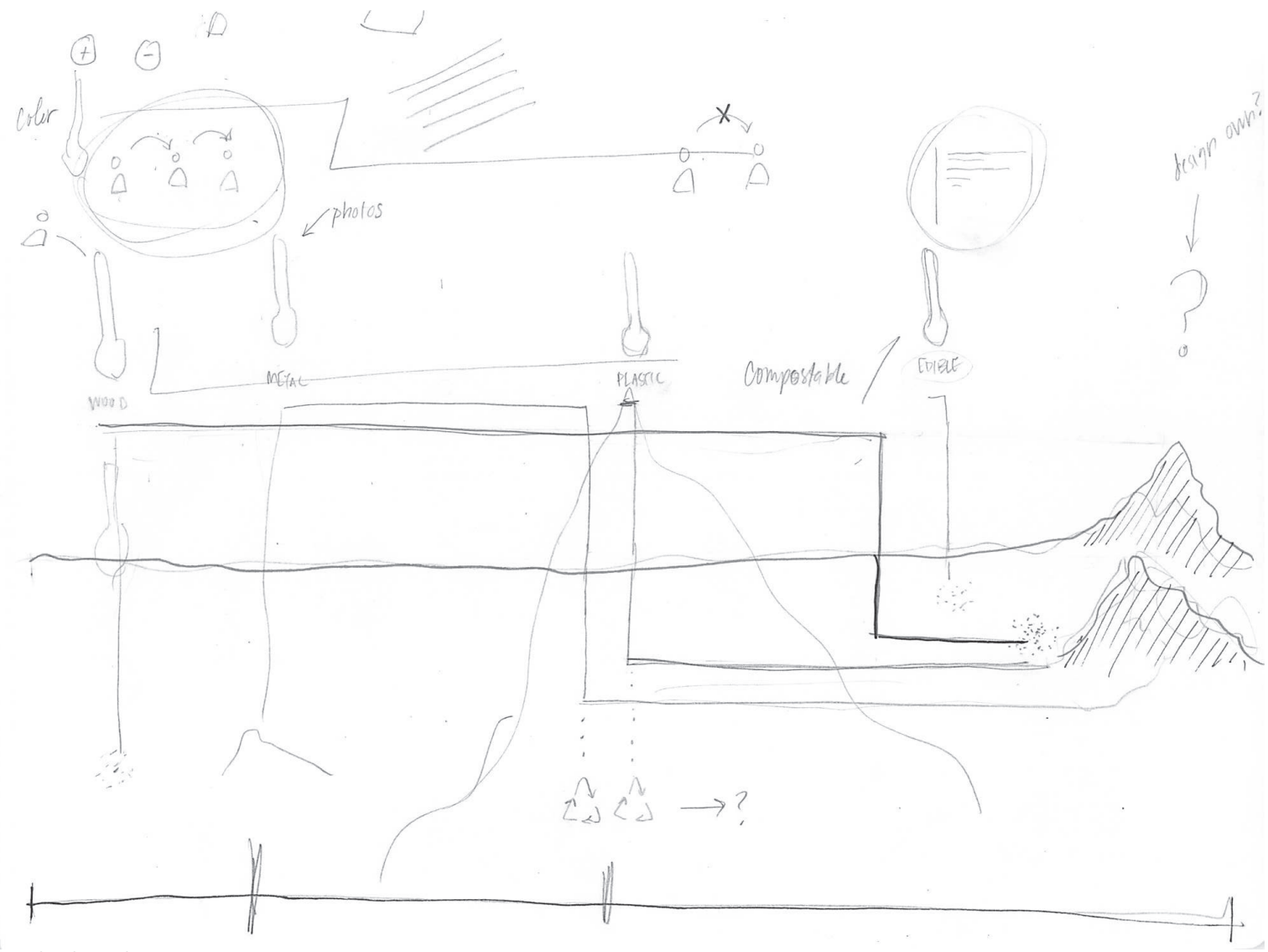
brainstorming representations of different spoons

I latched on to Mark's comment about plastic spoons being used for a day but persisting forever, and eventually decided on an interactive timeline, whereby a user sees different spoons throughout history, their use life (above ground), and their time to dispose (below ground). By this, users see how accumulation of "stuff" on Earth increased over time, eventually ending up in a landfill. I wanted to include the

option to zoom in on an individual spoon to read more details about it, see what materials come from the Earth to produce it, and what it puts back into the Earth and atmosphere as waste and pollutants. Finally, I added the option to Design for the Future, so that users can take everything they have looked at into consideration and design a better alternative for the future.



Concept sketch: focused view



Concept sketch: timeline view

12/4 FEEDBACK SESSION WITH MARK BASKINGER AND Q SHIM

I presented to the instructors my more refined idea about designing your own object.

Key takeaways:

- Think of the tragedy of the commons: personal good and collective bad
- Why would anyone want to interact with this timeline?
- Think about the six time scales of humanity: self, family, nation, culture, species, and life on Earth. How are people impacted at each of these scales?
- Make the timeline real to people

I was more clear on the concept, but still felt I was trying to communicate too much. There were so many different and important aspects of materiality that people had mentioned throughout my research and conversations that I was struggling to incorporate it all. I decided to talk to some more people to help me refine my concept.

12/6 FRANCIS CARTER

PhD student in the School of Design at Carnegie Mellon University, with a focus on food systems

Francis is a maker, and had produced a lot of projects for his PhD research and in his previous work. I decided to speak to him for some perspective on how to finalize my

concept and start making. He pointed out that I seemed to be most interested in consumerism, and I should stick to communicating aspects of that.

Key takeaways:

- Consider heirloom items that are passed on from generation to generation, particularly Oneida flatware group
- Consider the cultural shift in consumption with the advent of fast food, throwaway culture
- Looking at an object from the perspective of how many you accumulate over a year will trigger behavior change
- Consider ownership models and whether something is handmade
- Think through making

12/6 DR. THERIAULT

I found Dr. Theriault's insights useful the first time I met with him, so decided to talk to him again.

Key takeaways

- High alienation allows for high disposability
- Think about labor and the relationship with objects, its function and use
- Am I looking at this from a categorical perspective (the concept of a spoon), or particular items of use?

DESIGN IMPLICATIONS

DESIGN IMPLICATIONS

Although not everything that was discussed with these experts explicitly made it into my final product, every conversation influenced the design decisions somehow. Most significantly, conversations with Ahmed Ansari and Dr. Theriault shaped my overall concept, as I realized the precariousness of undergoing such an in-depth project without access to people of indigenous background. I still think there is a rich opportunity for an exhibit that communicates philosophies behind material culture, but in the end I do not think I had the expertise necessary to carry that out effectively.

Reading the Strategic Plan of the CMNH also guided a lot of my decisions. For example, they state that they wish to incorporate a multi-disciplinary approach to the study of the Anthropocene, so I approached this from a historical, anthropological, scientific, and design perspective, including different aspects of all four disciplines in the timeline. Mandy had mentioned that the CMNH wanted to expand beyond their walls, which convinced me to make this an online exhibit rather than a physical one in the museum itself (although it would work in the “Future Thinking Lab” as well). The Strategic Plan mentions their goal of communicating “the unity and interdependence of humanity and nature,” which confirmed the decision to focus on consumerism, as the materials we consume are taken from the earth, and our consumption habits in turn are impacting the earth we depend on for those materials. Furthermore, the CMNH wants to “focus on issues of direct social impact,” of

which the Anthropocene seems to be a priority, so I felt it was important that my project be designed to support that.

Regarding materiality itself, I was exposed to the breadth of topics that need to be considered when talking about consumerism, how we produce, and how we dispose of objects. Although there were many aspects I would have liked to include but could not, every additional layer of information that I was exposed to added depth to the final product.

Speaking to Ahmed Ansari made me think about the history of the Anthropocene, which directly influenced the timeline aspect of the solution. I was also forced to think about how culture and cosmology tie in to the Anthropocene, and how closeness to nature and the material sources greatly influences our regard for nature and the objects themselves. From this, I tried to communicate aspects of consumer- and throwaway culture, and how that influences our regard for objects.

From Dr. Theriault, I learned about alienation from land and labor, which directed my decision to include handmade and factory-made icons as a metric for the spoons in the timeline. He also talked about the issue of accountability, which influenced the theme of my project (agency and accountability). He mentioned in passing that compostable spoons might not be recyclable nor decompose in regular landfills—an important issue that I raise in my description of compostable spoons.

Mark's thoughts about disposability—that we use a plastic spoon for an hour and then it persists in a landfill forever—resulted in my adding the use life and decomposition time bars at the bottom of the timeline. His feedback that choosing between three spoons is too binary showed me that sustainability is more nuanced than we think, and that introducing that nuance allowed for a richer discussion about consumerism.

When speaking with Francis Carter, he raised the idea of considering heirloom objects in the timeline. He also suggested I visualize how disposable spoons accumulate over the course of a year, versus a single metal spoon which lasts a lifetime.

Finally, an photojournalism *Washington Post* article called “Drowning in Garbage” was so powerful and disturbing to me that I knew I had to include a landfill as part of the timeline.

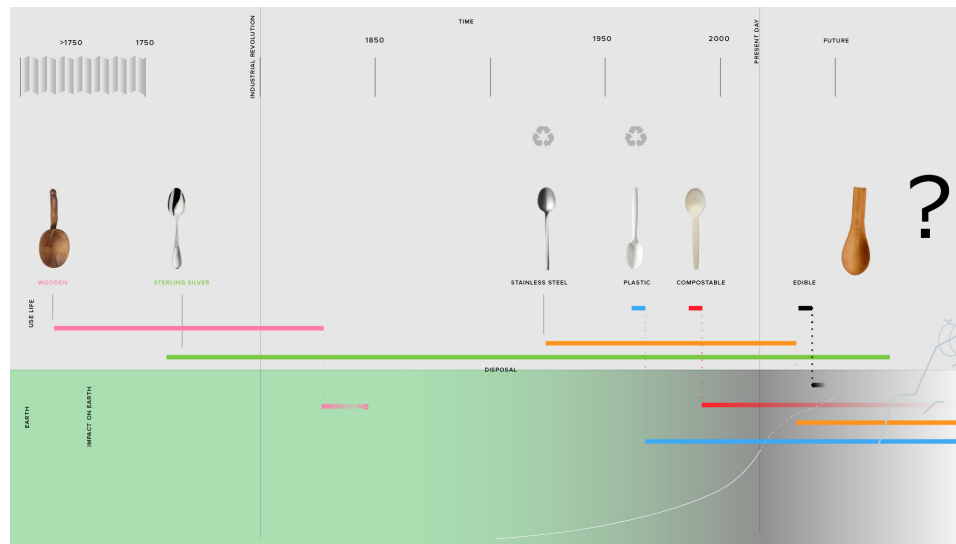
The timeline and “Design for the Future” page were intended to raise all of these issues in the consciousness of viewers.

MAKING

DESIGNING THE SOLUTION

By this point I needed to start making. I started out sketching the elements out in Illustrator, using the concept of the Earth as ground and the spoons above. However, I almost immediately realized that a lot more research is needed to be done in order to plot the artifacts at the right time, make the use and decay lines the right length, and write accurate descriptions. This took a significant amount of time, as I needed to research the history of flatware in general and of each material throughout time. I also needed to find out when the materials were introduced as spoons (this was the most difficult part), how long those types of spoons are generally used, and how long it takes for the materials to decay.

As I learned the information, I updated my Illustrator file to match. I initially tried to stay true to the increments of time, which created some crowding as well as gaps. I also initially planned on creating a different screen for each spoon with more detailed information about it. I played around with this for a while, not pleased with how it was looking. I then decided to look at examples of interactive timelines, and through Webby.com, found [In Space We Trust](#). It does an excellent job of using a horizontal scroll and bold font to make the site interesting, interactive, and informational. I reformatted my own version, which spaced the spoons out more, allowing for more detailed text to be provided in the timeline itself, and not as a pop-up or new screen.



initial Illustrator sketch

1000 BC



WOODEN

WOODEN SPOON



The earliest spoons were made with materials found in nature: bone, slate, and wood. These early spoons were handmade, which gave the craftspeople a closer relationship to the earth from which they were extracting their materials, the object itself, and of course, the labor that went into crafting it. Due to their reliance on the earth as a vital means of existence, these early people had an almost a reverence for nature. Wooden spoons are still made and used today, with bamboo being a popular choice, due to its natural antibiotic properties and its sustainability.

USE LIFE: 50-75 years
TIME TO DECOMPOSE: 1-3 years
x365 days: ↓

1750 AD



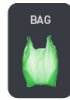
STERLING SILVER

segment of final timeline

ARTIFACTS OF THE ANTHROPOCENE

With over 7 billion people in the world, our collective choices have a profound impact on the environment. Here, we'll look at the Anthropocene through the lens of consumer objects. How do our individual and collective daily choices contribute to the Anthropocene? What might we do differently? Let's take a look.

Select an object to enter its timeline portal. Then use our interactive tool to design your own artifact of the future post-Anthropocene era.



Final home page

The Design the Future was screen was challenging, too, as I had to think through how to prototype it. I went through many versions of gifs, each time realizing there was a new update to be made.

DESIGN FOR THE FUTURE

By envisioning the future we want for ourselves and for our world, we can collectively take the steps to get there. What kinds of artifacts do you want in your future world? What materials will you use? What qualities will it have? Let us know! Write a short summary, submit your design, and we will feature our favorites online and in the We Are Nature exhibit at the museum itself.

FEATURES

USE LIFE 1-time ∞ **15 years**

DECAY TIME days ∞ **10 years**

MATERIALS (you may select more than one)

WOOD CERAMIC PLASTIC OTHER _____

FOOD GRAINS BIO-PLASTIC METAL

TIMELINE

TELL US ABOUT YOUR ARTIFACT!

Write a short description of your design for the future and submit to the museum. Our favorite solutions will be featured online and in the We Are Nature exhibit at the museum. Please provide your name and email address if you'd like to be notified if your design is selected.

NAME (optional)

EMAIL ADDRESS (optional)

SUBMIT

Final Design for the Design for the Future page

Once I had all my screens made, I thought the process of importing into InVision and adding hotspots would be simple and straightforward. However, I had issues with the size of my images, and every single one was expanding off the screen. I spent quite a bit of time (almost an entire day) trying to understand and troubleshoot this problem, researching other prototyping tools, resizing and fixing Illustrator files, exporting, adding to InVision, only to find the images were either too large or too blurry. I'm still not satisfied with how blurred the timeline page is, but I was unable to find a solution.

DECISIONS INTO MAKING

TIMELINE

Among a whole list of different aspects of materiality, I picked out the ones that relate most to consumerism. The ones that could be identified by “yes or no,” I converted to icons. Although handmade and machine made are two sides of the same coin, I thought it important to display both, to raise the concept of alienation in people's consciousness.

The change in color of Earth reflects CO2 levels to communicate the change in the earth over the course of history. It also demonstrates how the changes were subtle but also sudden.

Showing the use life and decay life visually in terms of bars allows for relative comparison: how long am I using this, and how long does it persist on Earth? The bars that remain in Earth

for a long time crowd up and lead to a landfill. The actual times are also written for people to get more specific metrics.

Communicating the number of spoons that get used over 365 days is another visual representation of how disposable objects accumulate over time. Multiplying by the entire population of Pittsburgh makes that even more clear.

DESIGN FOR THE FUTURE

This is the most important element of the interaction, as it is what helps people translate what they learned through the timeline into action. When designing, they are forced to consider factors like biodegradability, use life, materials, and the overall impact those decisions have on the earth in terms of the changing color of green. They learn that there is no easy answer; it's not just a matter of extending use life and reducing decay life, because the materials options also deactivate based on other factors. Users are alerted if their decisions are not sustainable or contribute to the degradation of the environment.

Though I recognize finances are an important part of this calculation, I chose not to include financial considerations like profit, cost, and investment 1) for the sake of a shorter, more simple interaction, but 2) because my focus here is on production, use and disposal and not as much on cost. I wanted the viewers to think more about the object itself than how much it costs them to buy it.

Nevertheless, I realize these factors are only one part of the story, and there may be other options users would want that are not listed here. For this reason, I provided an option to add a description to support the design. By offering to feature the best designs in the museum and online, users are encouraged to be creative to find the best solution for the future.

Designing one's own artifact of the future also helps to connect users to the future and make them invested in finding ways to improve it.

FINAL PAGE

The final page allows for advocacy by allowing users to save their reports and to share their ideas on social media. Recognizing that simply designing an object is not enough, there are additional suggestions for changing consumer habits to have less impact on the earth. These suggestions intend to drive home considerations like shortening the supply chain, reusing or donating items instead of throwing them away, and investing in products that last long. (Image on following page)



GREAT START!

Thank you for your submission! Thinking about better ways to use the Earth's resources in our everyday lives is an important first step towards realizing your vision for the future. We thank you for participating and will notify you if your design is featured on our website!

SUMMARY

SUBMITTED 12/9/2017 @ 3:15PM EST

[SAVE REPORT](#)



USE LIFE: 5 years

DECAY TIME: 1 year

MATERIAL: wood

CO₂ emissions: low

SPOONS OVER A LIFETIME: 45– 60

YOU WROTE: I'm taking a sculpting class in my high school this year, so I think it would be cool to carve my own spoon! It makes sense because it lasts a long time and it's natural. The only thing is, I wouldn't want to use the same spoon for my entire life, so I set the use life to only 5 years and didn't make it multi-generational either. I think that would be gross to eat from the same wooden spoon as my grandmother? Maybe I'll plant a tree instead lol

SHARE WITH YOUR FRIENDS!



WHAT CAN I DO NOW?

Changing our consumption habits—what we buy, the resources we use, and what we discard—is one of the most powerful things we as individuals can do to slow down climate change. Here are a few simple things you can start doing now:

- Avoid using plastic and styrofoam. Bring reusable water bottles, bags, and utensils with you. It's easier on the planet and easier on the pocket, too!
- As the saying goes, "one man's trash is another man's treasure." Instead of throwing household items away, try donating them or selling them. Craigslist, eBay, Etsy, and Amazon are all great resources for finding buyers.
- Buy things that will last long, so that they won't need to be replaced and thrown away. A little investment up front pays off in the long run, for you and for the planet.
- Support local businesses. Buying local gives us a stronger emotional connection to the place, the product, and the people. Plus they make one-of-a-kind goods!
- Recycle! If you must use plastic, remember that it will never decompose, so recycling is critical to reducing the amount of garbage that goes into landfills. The same is true for glass bottles.

Final Design for the Final page

VISUALS

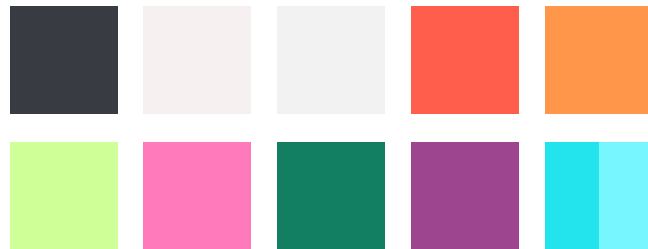
I wanted the visuals to connect somewhat to the We Are Nature exhibit at the museum, so decided to go with punchy, saturated colors matched with muted greys.

FONTS

PROXIMA NOVA

DIN

COLORS



FURTHER CONSIDERATION

If I were to take this concept further, I would definitely consult with experts like Jonathan Chapman to explore integrating ideas of emotional durability and Stuart Candy to flesh out the “Design for the Future” page. More user testing would have been helpful, too.

For the website itself, I would also build out additional timelines for a water bottle and plastic bag. And I would add a CO₂ and garbage counter to the top of the timeline screen so that as you scroll through the timeline, you see how CO₂ levels and tons of garbage produced increase over time.

Finally, it might be interesting to take the Design for the Future a step further and do a workshop around making your own product, to bring an even closer connection between consumer and the product.

RESOURCES

IMAGE FILES

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