

Human Factors Plan

As Aymeric noted during our interview, textures are easily identifiable for the blind, so our game was designed with this factor in mind. Players can trace their hands along the game pieces and “feel” possible paths they might be able to take, even if they can’t visually see them. They can also differentiate between game tiles and empty game spaces via texture versus no texture. Thus, it is highly reliant on texture, allowing it to be played by both sighted and blind individuals. It also contains virtual components (e.g., trivia questions) that blind individuals can download and access via their screen readers, so we also tried to incorporate auditory components. Additionally, Aymeric noted that although he wasn’t an avid gameplayer, one thing he appreciated about games was their social aspect—that is, how games allow people to practice benevolence with each other. We took this into account in the design of our third game—Island—which has players playing cooperatively against the gameboard, allowing each player to feel important, included, and supported.

Andrew’s original design approach had us create a modular gameboard (i.e., one that has separate components of a larger system) capable of being played in three different ways. This makes the game highly empathetic because players can enjoy different types of gameplay based on their respective ages and/or cognitive abilities; however, it also allows for pieces to be reused across gameplay thus reducing user confusion. Each game has been designated with directions for different age groups, though players are also welcome to use their own judgment on which game is most appropriate for them. The sections below details the design plan and/or process we engaged in throughout this project.

What We Know

- **User Group:** they are sightless and likely rely on other senses to orient themselves in spaces and function throughout the day
 - Blind individuals are very diverse. In other words, their contexts are diverse. The design of their environments play a large role in how they navigate spaces
 - The example of Aymeric being able to sense the height of the staircases (and the staircases being all different)
 - Just because they are sightless does not mean they “lack” – **focus more on understanding what they CAN DO**, rather than what they CANNOT DO

Design Problem

- The game must have the ability to be used by a blind person
 - Both a blind and sighted person must be able to play it
 - Since most games rely in “sight” think about ways to adapt a game that doesn’t rely solely on the ability to see what a player is doing
- Think about how the scale/size of the game will affect their gameplay experience
- Game Parameters:
 - **Modularity** - It will be modular (a system that is separated into modules or components)

- **Multi-function** - Game pieces and board must be re-usable so they can be played in three different ways
 - Thinking about game pieces that can represent multiple “things” / “ideas” / “concepts” across different games
 - The idea of METAPHOR

What We Need to Know / What We Researched

1. Artifact-Focused

- a. What are some existing games and products for blind users?
 - i. [Games and Activities](#) for the Blind
 - ii. [Braille and Tactile Games](#)
- b. Understanding Tactility (texture vs. shape)
 - i. [Read existing literature or research](#) on technology that allows blind users to identify and/or visualize things

2. Designer-Focused

- a. What materials can we use? What are we capable of creating?
 - i. 3-D printing plastic
- b. Embodied map - how do our own experiences affect how we will create the game?

3. User-Focused

- **Understand what blind folks CAN DO**
 - Method: Ethnography-ish
 - Watching films and/or videos; allowing you to immerse yourself into the users’ community/ daily life
 - [A Day in the Life of a Person Who is Blind or Visually Impaired](#)
 - [Living Blind: A day in the life of Chris Wright](#)
 - Reading testimonials and blogs about blind users and what their daily lives look like
 - [Reddit: Some questions about people who are completely blind and live alone](#)
 - [Reddit: r/Blind](#)
 - [Reddit: Blind people of reddit, what texture is your favorite or one that you would describe as beautiful?](#)
 - [Life of a Blind Girl: Frequently Asked Questions on Sight Loss](#)
 - [A Day in the Life of a Blind Person](#)
 - Method: [User Interviews](#)
 - A structured user interview where you prepare questions that are targeted at understanding certain aspects of your users’ daily lives
 - [Aymeric Vildieu](#)

What is still left to do? What would you have done differently?

I think it would have been very valuable to conduct our user interview as the first step in the design process. By having the insights that Aymeric gave us early in the design process, I think we could have approached our design a little bit differently, because there were instances where we had to recreate some of the games we had come up with based on his insights. We also think it would have been valuable to incorporate a lot more user testing throughout the process, marking set areas where this might have been beneficial. I especially think it would have been helpful when deciding on game ideas and evaluating the functionality of the virtual components.

Usability testing the instructions is also something we still have left to do and that—had this been a real-world project—we would have built into our design schedule. Additionally, we only had enough time to test games one and two: Labyrinth and Island. We still need to play Around the World and make changes to the game instructions.