

Stories that Move

Contextual Inquiry & 1st Rough Sketches - HCI (INFO 6410)

Team Members: Brandon Plaster (*bp364*), Robit Jain (*rj288*), Alap Parikh (*akp76*), Jonathan Huang (*jhh283*)

TITLE

Stories that Move

VALUE PROPOSITION

“Stories that Move” engages users with interactive storytelling, where the characters will come to life in the user’s real environment and allow the user to become part of the story.

PROBLEM/SOLUTION OVERVIEW

Physical inactivity, common in 1 out of 4 adults, has been identified as the fourth leading risk factor for global mortality. Though often the scapegoat, connected digital platforms/devices cannot be blamed, as it is the applications created for them that define their utility. We propose that by adding physically-interactive storytelling, we can make digital technology the solution, rather than the problem. The proposal is to create an Augmented Reality (AR)-based story platform that will engage the user with a story, while simultaneously requiring the user to actively explore the physical world in order to progress the story forward.

CONTEXTUAL INQUIRY CUSTOMERS

Because our problem area lies at the intersection of gaming, reading, and exercising, we selected our target CI customers by filtering for these criteria. We looked for subjects who regularly engage with any of these activities in order to understand: what parts they enjoyed most, the underlying thought process, and the tasks that make up these activities. In all of the CI activities, we engaged as the “apprentice” by observing the subjects engaging in their daily activities and asking questions about their thoughts and opinions.

The first of our interviews was a finance professional in his mid-20s who works 65 hours a week and spends his free time playing video games, reading, and listening to music. As an acquaintance of one of our team members, we had prior knowledge of his relevant interests and were excited to learn his perspective as a professional as compared to the other interviewees, who were students. The activities we observed were his perusal of the latest edition of the *New Yorker* and a thrilling online game of *Super Smash Bros*. The skills we observed were: literacy, knowledge of how to use a Wii U controller (fine motor skills), and knowledge of the *Super Smash Bros* moveset (advanced combinations of buttons).

The second of our interviews was with a Design/Film graduate student in his early-20s. As a second degree connection to our team, we knew that he self-identified as an “inactive” person, spent a large amount of time on his computer, and regularly went on hour-long walks (only when the weather was good). Our contextual inquiry with him aimed at observing his “inactive” lifestyle and the activities/mindset (why, when, how) associated with going for a walk. The skills we observed were: ability to navigate and walk.

The third of our interviews was with a NYU Masters student in his mid-20s. Another second degree connection to the team, we were interested in learning more about his preferred hobbies: playing FIFA, reading fiction, and exercising. The longest of our sessions, we observed his activities for 8 hours, talking through his experiences while playing FIFA with housemates and reading a novel. The skills we observed in this were: fine motor skills for FIFA on the playstation, literacy, and a strong imagination.

CONTEXTUAL INQUIRY RESULTS

Because we approached contextual inquiry with a broad set of criteria for subject selection (people who fell into the 3 general groups of interest -- readers, exercisers, or gamers), our results were quite different across the board. Each group displayed fundamentally unique beliefs. However, at a high level, we

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did see some themes and activities that all of our participants shared. Across all three interviews, we found that people: cared a great deal about having structured experiences, embraced opportunities for stress relief, and were all asked to move, explore, and learn in their respective activities.

Regardless of whether it was subject #1's *New Yorker* reading rituals in navigating the magazine, subject #2's typical route for walks, or subject #3's preferred group of FIFA buddies, all of the people we spoke with valued having a prior idea of how a experience would be structured. All three mentioned how having a general game plan going in made it easier to stop stressing about the specifics of "how" to do things and be more observant of their digital/imaginary/physical surroundings (the part that they most valued).

Another overarching theme was that the tasks we were observing were all perceived and described as "stress relief" by our interviewees. Person #1 mentioned how video games were relieving for him after a long work week, person #2 described how walks were his opportunity to decompress, and person #3 found FIFA a relaxing social gathering.

Even though each of these activities are done through a different medium (reading: imagination, exercise: physical, games: virtual/digital), they all involved "interacting" with an environment, "making observations" to gain knowledge, and "traversing" the environment to explore their surroundings. When person #1 reads *The New Yorker*, he flips through the pages and skims in an exploratory manner like how person #3 keeps track of the ball in *FIFA* or how person #2 takes new shortcuts while trekking around Brooklyn. All of the people we observed loved the idea of "exploration" in their respective setting.

There were also several unique and interesting observations from the individual interviews. Person #1 displayed a preference for reading fiction over non-fiction (as displayed by the books that we found in his collection). In his words, he got enough facts while at work and needed to add "imagination" to his routine. He enjoyed keeping up-to-date on current events but felt like fiction (in reading and games) were things that he "needed" to maintain his mental edge. These observations suggest that there is value in providing interesting (both in structure and plot) stories for people to experience in other settings than just reading.



Person #2 presented an interesting idea on the preferred length of experiences, requiring >1 hour blocks of time to even consider going for a walk. We observed this at the beginning of our interview when he debated for several minutes whether the interview slot would be long enough for his desired amount of physical activity and people-watching. Also, even though he goes on walks to be more active, he mentioned that he didn't believe that walking contributed much to his physical fitness. Walking was his default because it was more than just "exercise" for him, and more physically intensive exercises are something he

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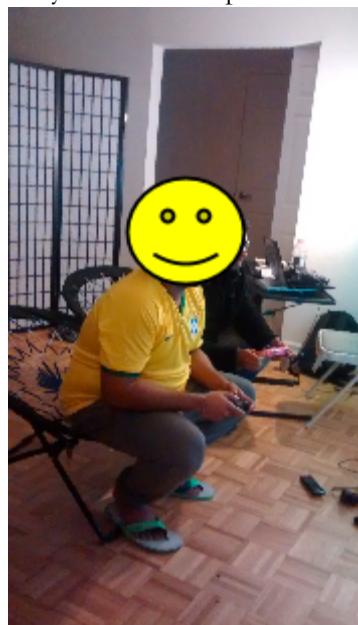
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intends on doing in addition to walking. Both these observations suggest that there is room to create “shorter” experiences and more regular experience for person #2 to get his low-stress physical activity and observations.



Person #3 provided unique views on how activities should be structured socially. For games (FIFA), he demands a physically social experience. Even though he “loves FIFA” he doesn’t play if there aren’t others to play with (even perceiving online play as inadequate). Reading, on the other hand, is perceived as a purely solitary experience. He doesn’t read when other people are around and hates audiobooks because he feels as if having a narrator is “intrusive.” He doesn’t game on a computer (only playing FIFA on a TV console) because there was less physical strain (neck movement) associated with the activity (something he discovered relatively recently after trying the new platform). These observations suggest that different people have very strict ideas of how the experience of gaming and reading should be, but can also be swayed to try new things if they see how it improves their current situation.



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ANALYSIS OF TASKS

- “*Traversal*”

- Description: Users will need to traverse the physical environment while using the interface. This task is required in order to progress the story forward and to see other parts of the story world. The stories will be segmented into multiple locations, or waypoints, and the user will need to physically move to get to the locations. (Example: the city, the jungle, the palace) In order to see other parts of the story's location, users may need to bend and crouch to reveal aspects of the location.
- Frequency: As the story relies on the user to traverse and interact with the environment, the frequency at which traversal is required will only be **medium**.
- Importance: As the interface requires the user to traverse the environment to progress the story forward, the importance is **high**.
- Complexity: Traversing the physical environment will be of **low** complexity, as the primary usage setting is indoors.
- Similar Tasks:
 - On existing gaming platforms, walking and running usually just require a person to press and hold down a directional button. This is the most frequently used aspect of most games, and is the easiest function to perform (requiring almost no effort).
 - Another similar task is physically walking with a destination in mind, although in this case there is no need to perform any activities such as bending/crouching in order to traverse; just the simple act of walking.

- “*Knowledge Acquisition*”

- Description: In order for users to gain more information about the story and to help the characters progress through the story, users will need to listen to and watch the characters interact with the environment, and will need to use context clues to extract information. This may require the user to look around, listen to dialog, and recall previous parts of the story.
- Frequency: Knowledge acquisition will happen with **high** frequency, as the user will need to be paying attention to what is going on in the story, and in the environment around them at all times.
- Importance: Knowledge acquisition is of **high** importance, as the story and the environment will be changing frequently, and the progress of the story will only make sense if the user is paying attention.
- Complexity: Knowledge acquisition will be of **medium** complexity, as the majority of the involved subtasks will be passive listening and looking. It will require the users to pay attention to these occurrences and to actively think about what they see.
- Similar Tasks:
 - Looking around in a first person shooter game (such as ‘Call of Duty’ or ‘Counter-Strike’). This is done to figure out what the layout of the game map is and to orient oneself appropriately in the landscape. It could also be to locate one’s teammates and discover new items. Usually done with the help of a joystick or mouse.
 - An audiobook (or any kind of commentary/dialogue) is another source of knowledge acquisition, for which a user needs to pay attention to the perception of sound. A

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difference between an audiobook and the new task at hand is that an audiobook is not usually accompanied by visual information.

- Any placards/text blobs/signposts (whether in a virtual or physical world) gives one information in the form of text. A combination of these three similar tasks forms the basis of the overall task of knowledge acquisition in our application.

"Interaction"

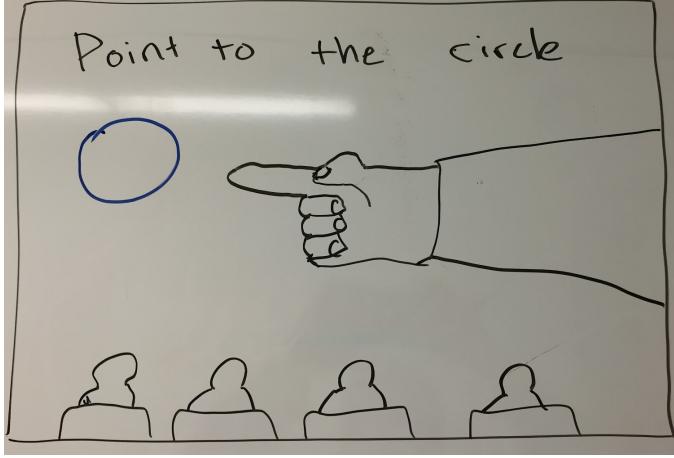
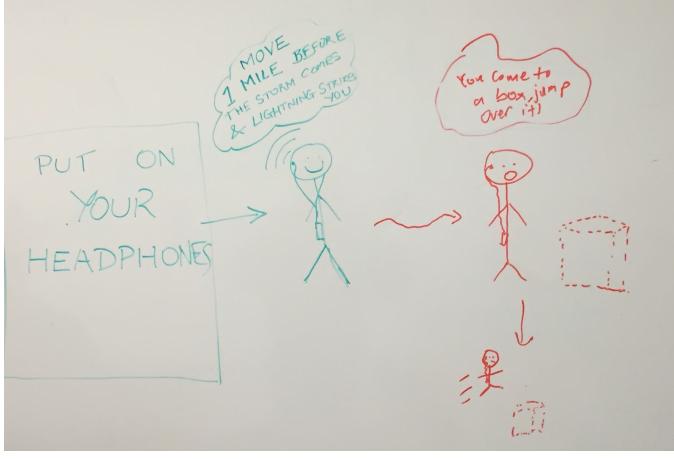
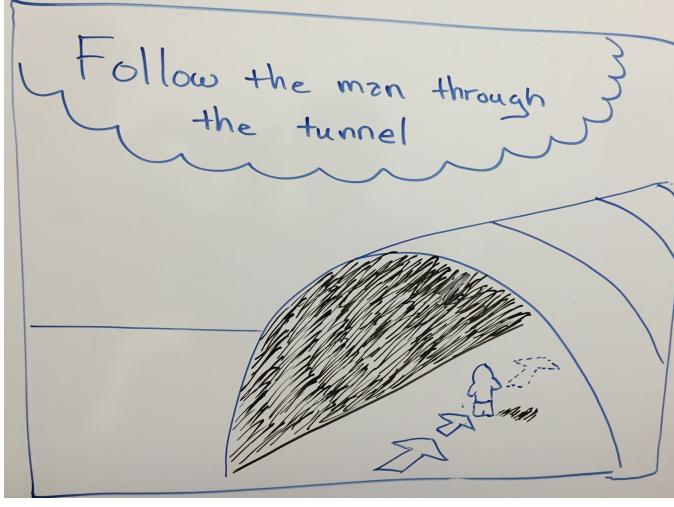
- Description: Users will need to manipulate items in their environment (such as moving objects from one location to another), as well as interacting with the virtual environment (such as pressing an augmented button on a real surface). These interactions will be required in order to make decisions about where the story will progress. The story will adjust according to the users decisions throughout story (such as whether they interacted with one object in the story or not may determine if another piece of the story is revealed to them.)
- Frequency: Compared to traversing the environment and observing the story, interactions will occur with a **low** frequency, as the story will only be able to adjust slightly with pre-specified deviations.
- Importance: Interactions are of **medium** importance to the story, as the story will progress forward regardless of how the user interacts with it, however, the outcome of the story may change based on the user's interactions.
- Complexity: Interactions will be of **high** complexity as they require the user to physically interact with virtual elements, which will require the user to learn how best to engage with non-haptic feedback.
- Similar Tasks:
 - An example of a similar task is attempting to shoot the ball into the goal in FIFA, a soccer video game. This requires knowledge of what direction to shoot the ball in to have a maximum chance of beating the goalkeeper, how much time to hold the shoot button down to get the optimal amount of power, and deciding when exactly to perform this interaction. It takes gamers hours of practice to get the right balance of these 3 components, and often a newcomer to the game will have to be tutored by somebody or go through an existing game tutorial. However, in this case the user does not have to move anything but his fingers in order to achieve the final goal.

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SKETCHES

Sketch	Explanation
 <p>Point to the circle</p>	<ul style="list-style-type: none"> - This sketch shows an iPad screen, where the ball is a real object and there is a persistent virtual audience. - The persistent audience on screen provides commentary and instructions for interactions with the real world objects(in this case the ball/circle). - User-in-camera interaction with real world objects (point at the actual ball) makes the experience much more immersive and enjoyable.
 <p>PUT ON YOUR HEADPHONES</p> <p>MOVE 1 MILE BEFORE THE STORM COMES & LIGHTNING STRIKES YOU</p> <p>You come to a box, jump over it!</p>	<ul style="list-style-type: none"> - In this idea we propose to deliver stories to the user as audio via a smartphone. - The audio will narrate an interesting story with description of virtual objects and sets of tasks that need to be performed around them. - In the sketch, a user is asked to jump over a virtual box to proceed in the story. - Doing these tasks will increase the level of engagement and require the user to do some physical activity.
 <p>Follow the man through the tunnel</p>	<ul style="list-style-type: none"> - This idea is to overlay a virtual environment with instructions (such as text and arrows) over real world objects to increase engagement. - In this sketch the user is asked to follow the protagonist of the story through the tunnel. - To do this, the user will need to crouch and then he/she would need to go inside the tunnel. - The intention is to use augmented user-sized objects for obstacles and make them part of the physical activity.

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- This idea aims at amplifying the user experience by introducing audio-based speech interactions between augmented objects themselves.
- Also, using a navigation lens, the user can be guided to other locations in the story.
- In the sketch, the user can turn right with the Ipad to see what is going on in the Marketplace and left for Agrabah.
- Such movements make the story more interactive and require the user to move at the same time.