SAFE WALK

Process Capture

Design Principles

Encourage lower threshold for action

Provide opportunities to organize community efforts

Provide better risk assessment

Encourage open and natural communication

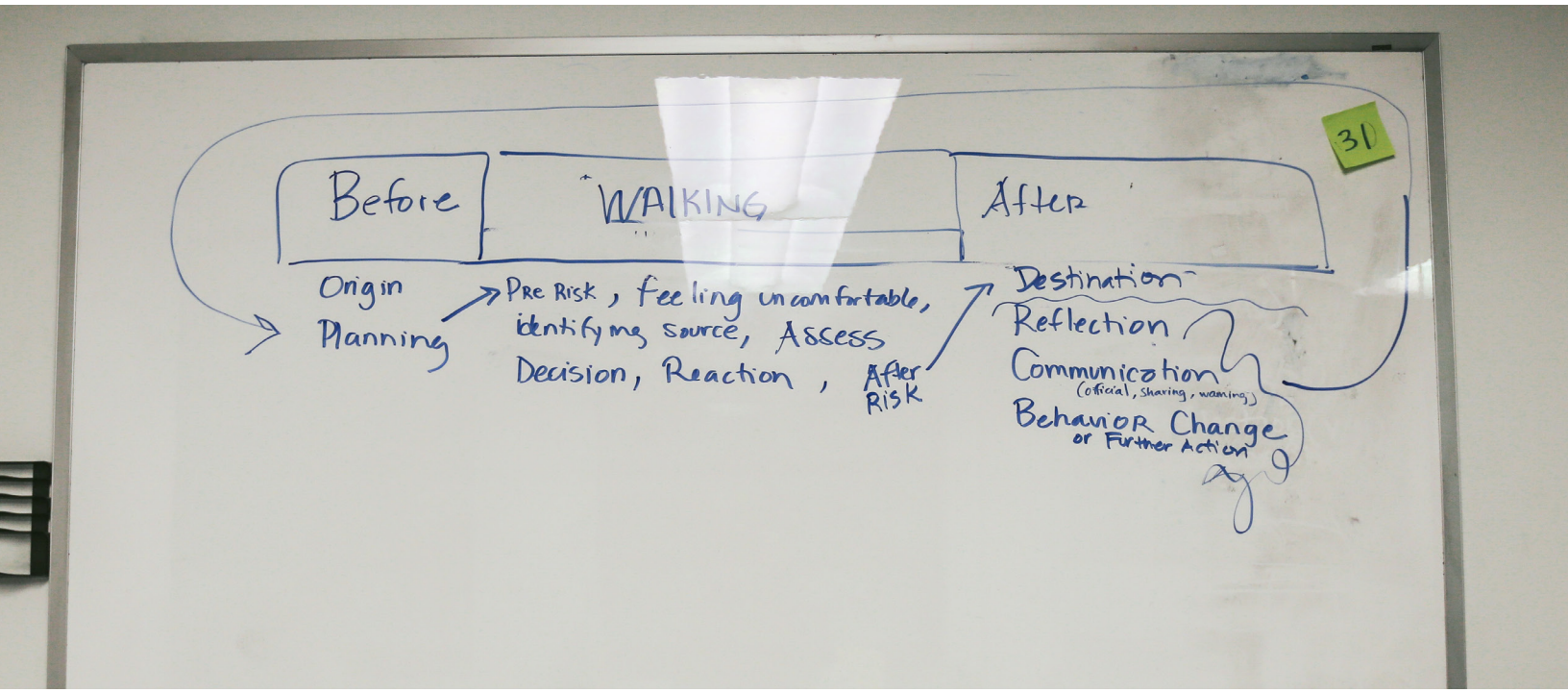
Compliment existing personal strategies

Provide opportunities for conversation

Encourage the inclusion and support of other people

Initial Ideation Prompts

How can we make women feel the least safe?
What are ways to make women invincible?
How can we allow the person walking alone to not actively have to reach out to anybody?
How can we improve [insert experience map stage here]? (ex. discerning the current risk)
Stakeholder Lens: How can we improve [insert stakeholder here] role in here?
Ecological Approach: What is a system that could involve an individual and her friends? What about her and strangers? An individual and a connected community? An individual and her government?
How can we make it more difficult for assaulter to act?



Whiteboarding the Walking Experience
Structured / Group

We began by laying out the stages of the solo walking experience. It consisted of before, during, and after.

01 Concept Development

Idea Generation

Individual Ideation
Unstructured / Individual

We started with idea generation, beginning with individual ideation. This exercise was meant to be mostly unstructured, but we also created a series of prompts of things to consider in order to help get passed any ideation obstacles. These included straightforward prompts like considering different experience stages or stakeholders and also prompts meant to stretch our ideas: like worst case scenarios or wish list devices.

This exercise resulted in 130 initial ideas to start our ideation discussion for our next methods

Concept Generating Matrix
Structured / Group

Our second method was a concept generating matrix where we sorted our initial ideas into the different stages of our experience map and then we used it to guide us to more ideation in each of these stages. Forcing us to really exhaust all ideas for the entire experience instead of focusing on just one or two stages that are easy to ideate for.

Our experience stages were:

- Origin
- Planning
- Unease
- Identifying Source
- Assess
- Decision
- Reaction
- Destination
- Reflection
- Communication
- Behavior Change

Principles to Opportunities
Structured / Group

And then our third generation method was a structured principles to opportunities matrix where we based our brainstorming on our design principles, focusing on individual opportunities, system opportunities, and strategy opportunities. This exercise really helped us bring out some overarching system ideas and business strategy ideas that were missing from our other ideation methods.

01 Concept Development

Idea Refinement

Concept Sorting
Unstructured / Group

We began refinement by doing concept sorting, grouping all of our ideas together into main directional themes: like “community conversation” or “aiding risk assessment”. And then we voted on ideas that were our favorites to continue to the next stage.

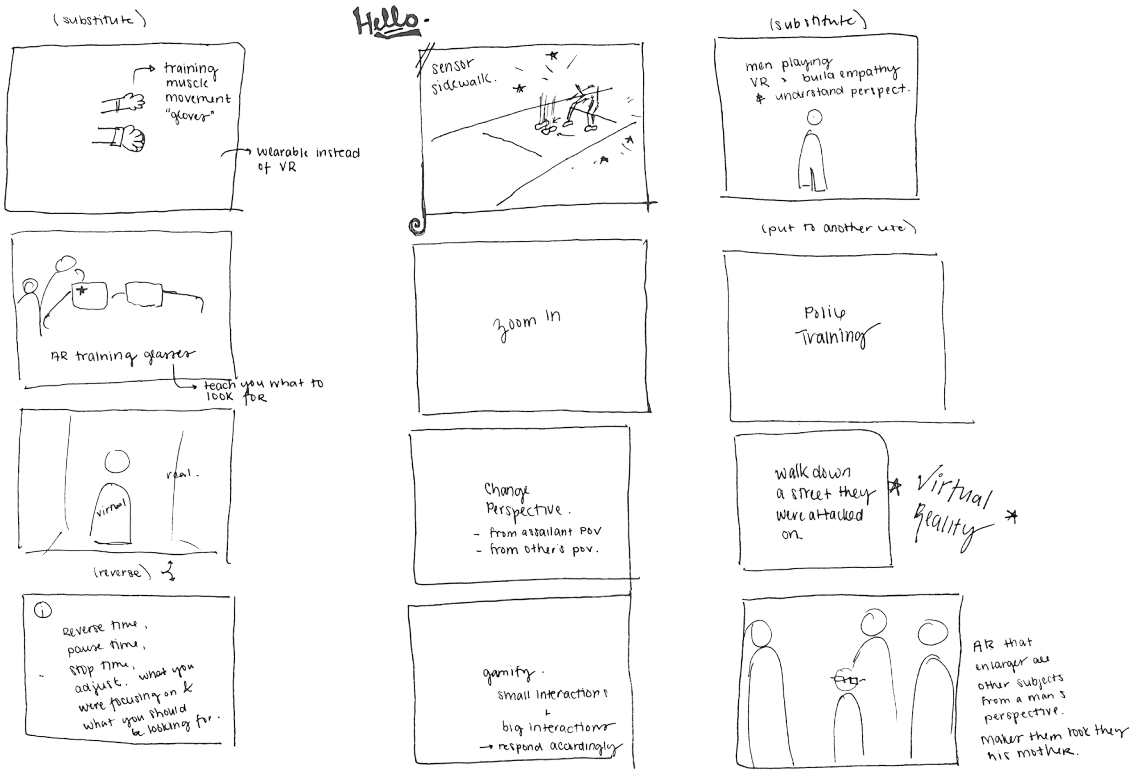
Concept Synthesis
Unstructured / Group

From these ideas, we began pulling out aspects of what was making these good ideas. And then moved into a concept synthesis where we started selecting our favorite ideas and mixing and matching ideas and aspects to refine them into even stronger ideas.

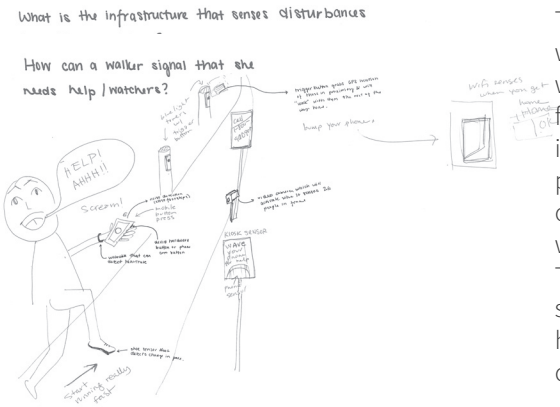
02 Concept Refinement

Action-Verbs

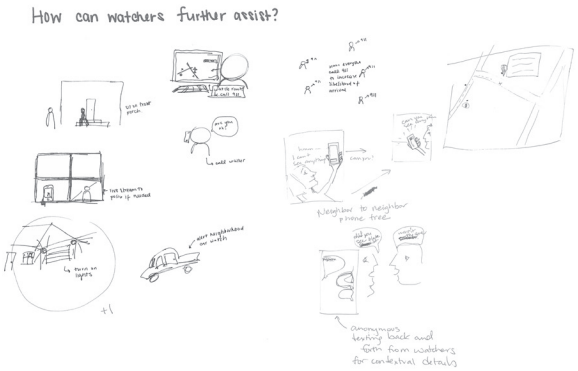
Justin advised us to try a new ideation method called Action-Verb, coined by Ellen Lupton in a book titled Graphic Design Thinking, to ideate on new dimensions of concept directions we felt 'stuck' on. In a group ideation session, we made a list of action terms (e.g. magnify, maximize, minimize, combine, substitute, put to another use, re-arrange) and then through sketching and thinking aloud, tried to think of how we could apply those terms to our ideas. For example, by applying the term "substitute" to our Virtual Reality Self-Defense Training concept, we came up with the idea to use the VR game as a tool to help men empathize with the female walking experience. While a quirky process, we found the Action-Verb method to be tremendously useful for building off of and diverging from our existing ideas.

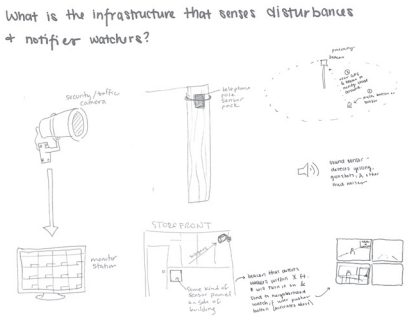


Brainwriting



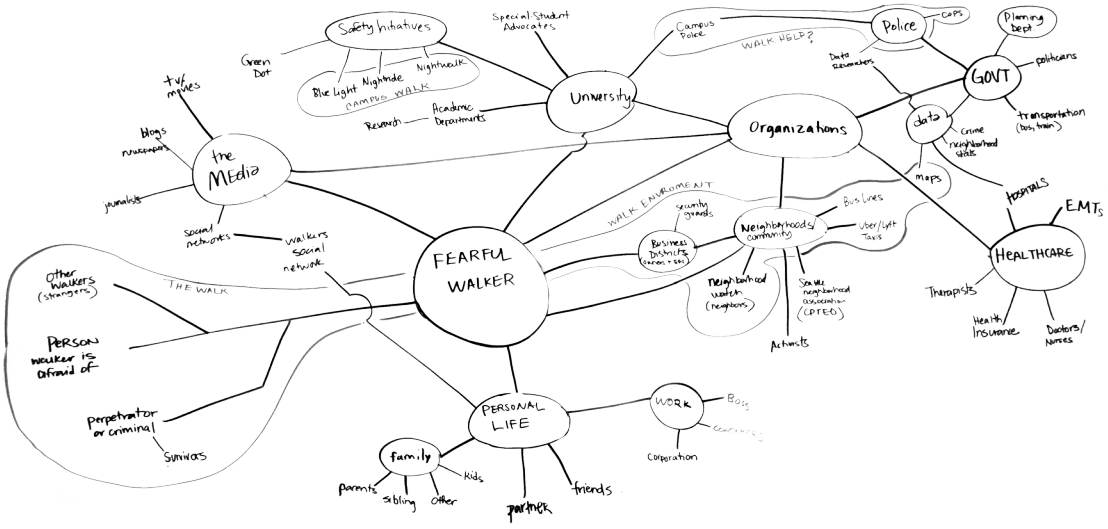
Throughout our discussions, we were interested in the idea of a neighborhood watch to include others who care about the safety of the neighborhood into the walker's experience. To determine how this could actually be implemented, we formulated a series of five prompts, each focusing on a different aspect of how it could be implemented, and we then performed a brainwriting session. Each prompt was written onto a sheet of paper and then two of us did five minutes of ideation on each prompt, sketching our ideas onto that sheet of paper. Then, without discussing the sketches, we passed the pieces of paper to each other. The next person could review what was already drawn, iterate on the existing sketches, or add any additional ideas they have. At the end of this process, we had a dozen ideas for each stage and then worked together to piece together a coherent overall experience.





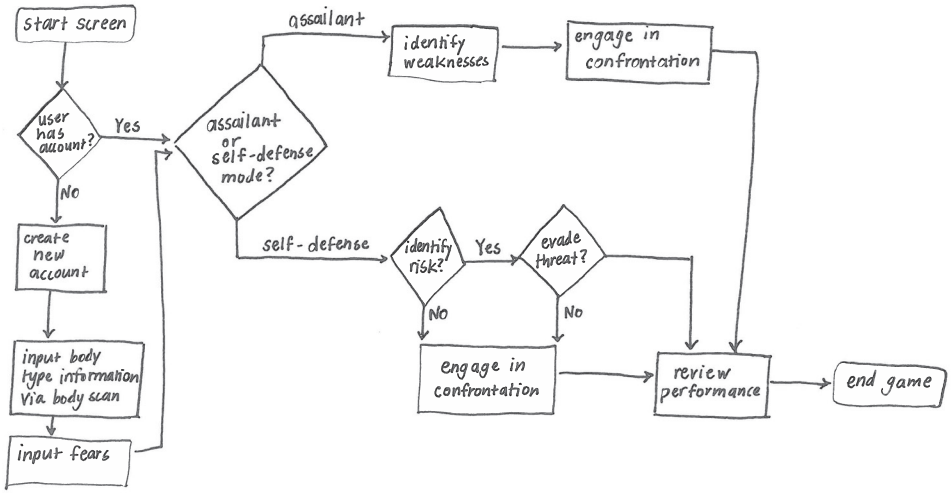
Stakeholder Map

Conducting a stakeholder analysis allowed us to understand current attitudes regarding safe walking practices. Distinguishing between primary, secondary, and key stakeholders allowed us to understand the relationships between the relevant parties involved in solitary walking, and how their interactions could be facilitated through our potential design interventions.



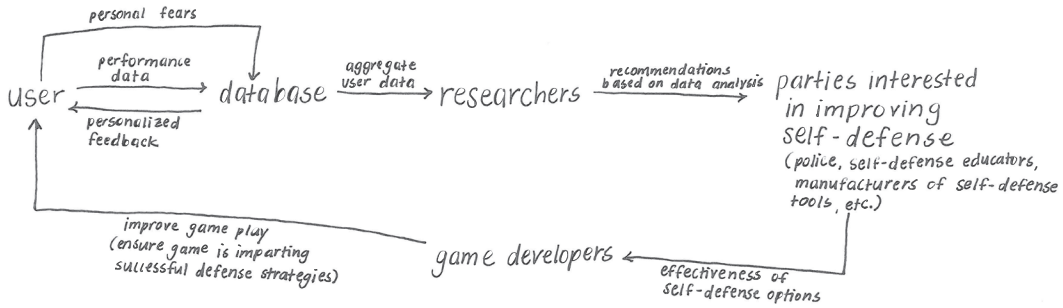
Interaction Flows

Creating interaction models allowed us to identify generalizable features or experiences provided by our design concepts. Our models defined a series of steps a user would need to take in order to complete a given task.



Systems Map

We created a Systems Map for each of our three concepts, which involved listing out stakeholders or entities involved and information transfer/inputs/outputs between them on a whiteboard and then connecting those concepts together.

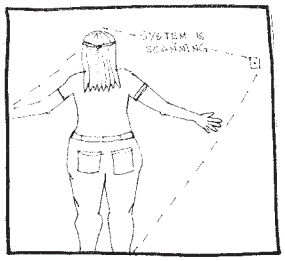


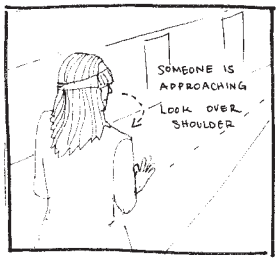
Assumptions & Dependencies

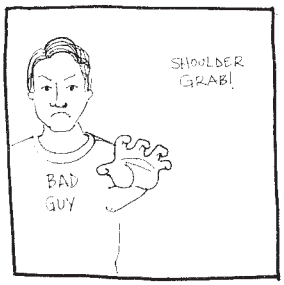
The success of our concepts were contingent on assumptions and dependent on various inputs, but this was the first time that we listed them out and discussed them. We realized that some of our assumptions might be too high of stakes to move forward with certain concepts as is. For example, for our Virtual Reality Self-Defense Training concept, we were assuming that making women more confident in their ability to defend themselves would be a positive thing, but it could potentially encourage them to engage in riskier behavior, ultimately decreasing their safety. Similarly, performance in the game could give them a false sense of confidence that doesn't translate to real life behavior, putting them at further risk.

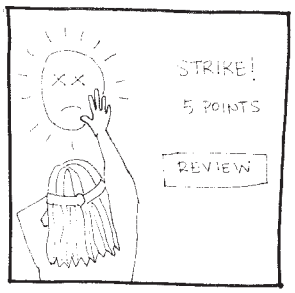
Storyboards

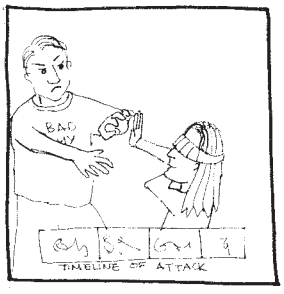
Storyboarding served as a mechanism to describe high-level concepts as opposed to demonstrating low-level interactions (like the flow through a given user interface, for example). We attempted to convey the key requirements of our concepts in a quick and cheap manner that would be difficult to understand in a text format. Our storyboards allowed us to describe the characters (the relevant stakeholders), setting (the environment or context in which the interaction takes place), sequence (what leads a person to use a design and the steps involved in completing tasks supported by the design), and satisfaction (motivation and end result) derived from our proposed concepts.











PROJECT FOCUS

How can we help women-identifying individuals feel and be safer when walking alone...

PROJECT FOCUS

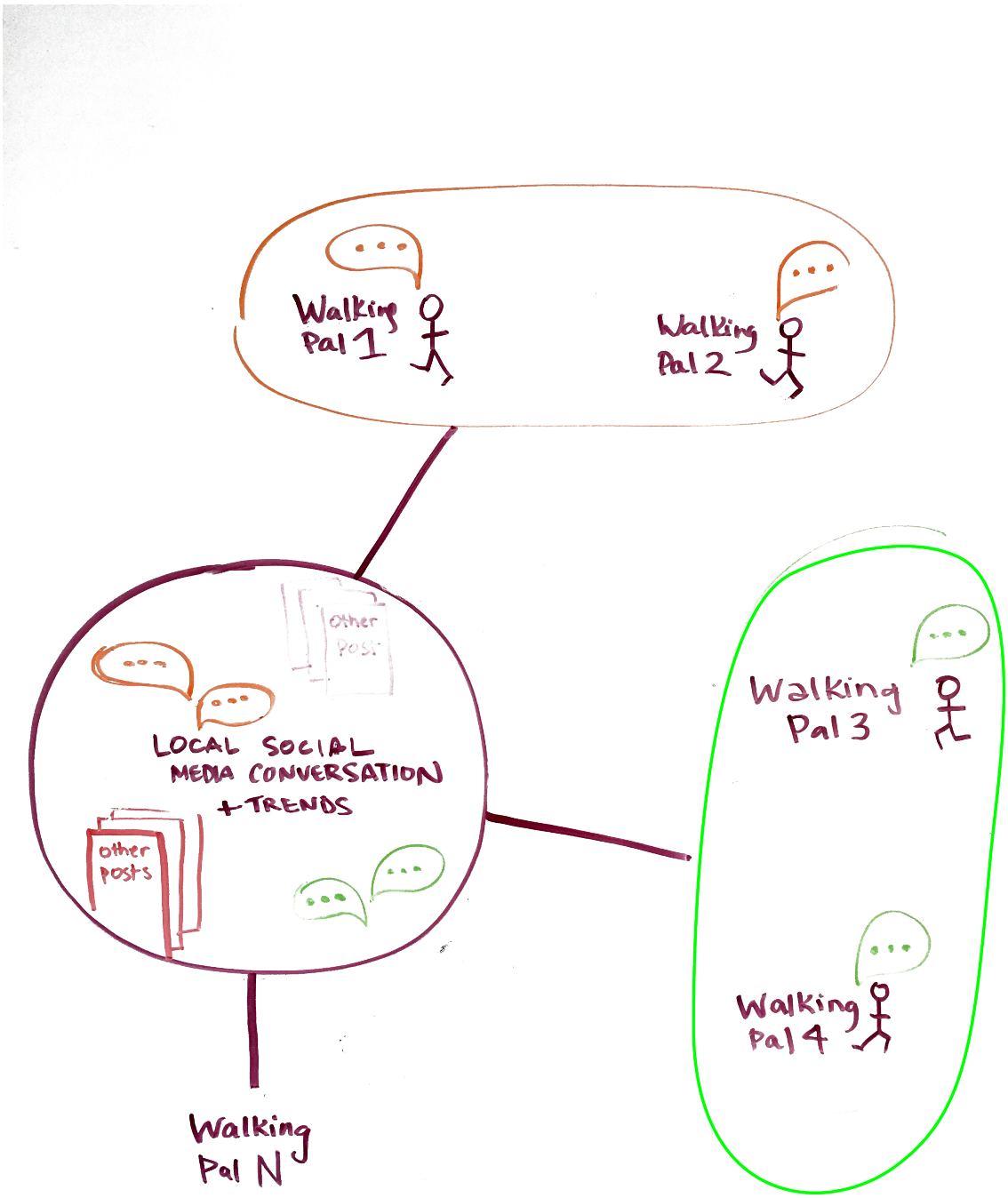
...while increasing conversation and education about personal safety?

03 Finalized Concept

A mobile app that promotes safer walking by connecting walkers through anonymous interactions and social media conversation.

Our application bridges the real, in-the-moment need for women to feel “watched out for” with the broader scale social support needed for validation, education, and advocacy.

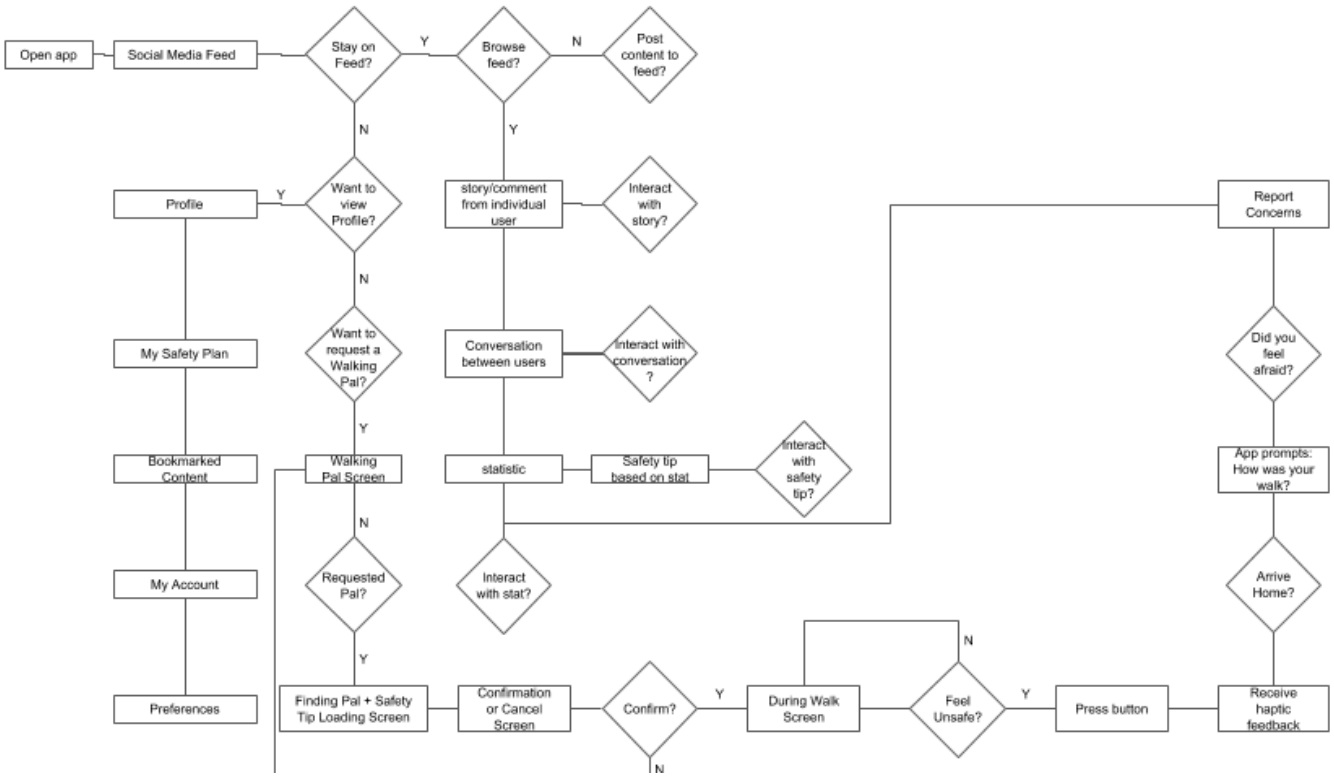
Concept Model Sketch



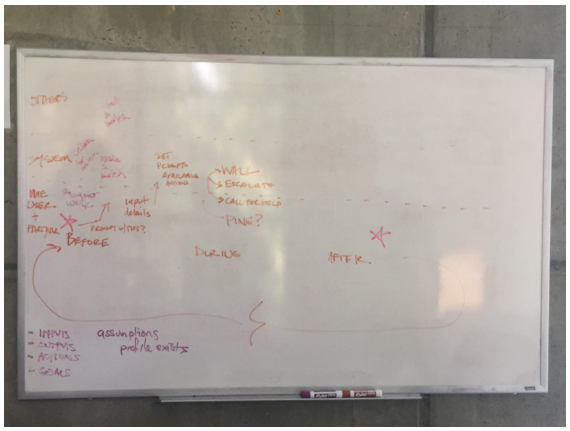
04 Prototyping

User Flow

Our design solution attempts to normalize conversation and increase education about walking safety in numerous dimensions, something we believe is necessary, given the multi-faceted, societal nature of the problem. At the same time, this means we have many possible use cases and options for our product. In order to make sense of the many moving parts we've considered, we created an interaction flow, where we mapped out possible user-app interactions and how information could move between different components of the app. Doing so illuminated opportunities to connect the anonymous walking pal feature of our app to our social media feed, thereby strengthening both. For example, data collected about walks can be used to create trends or polls that users can interact with on the social media feed.

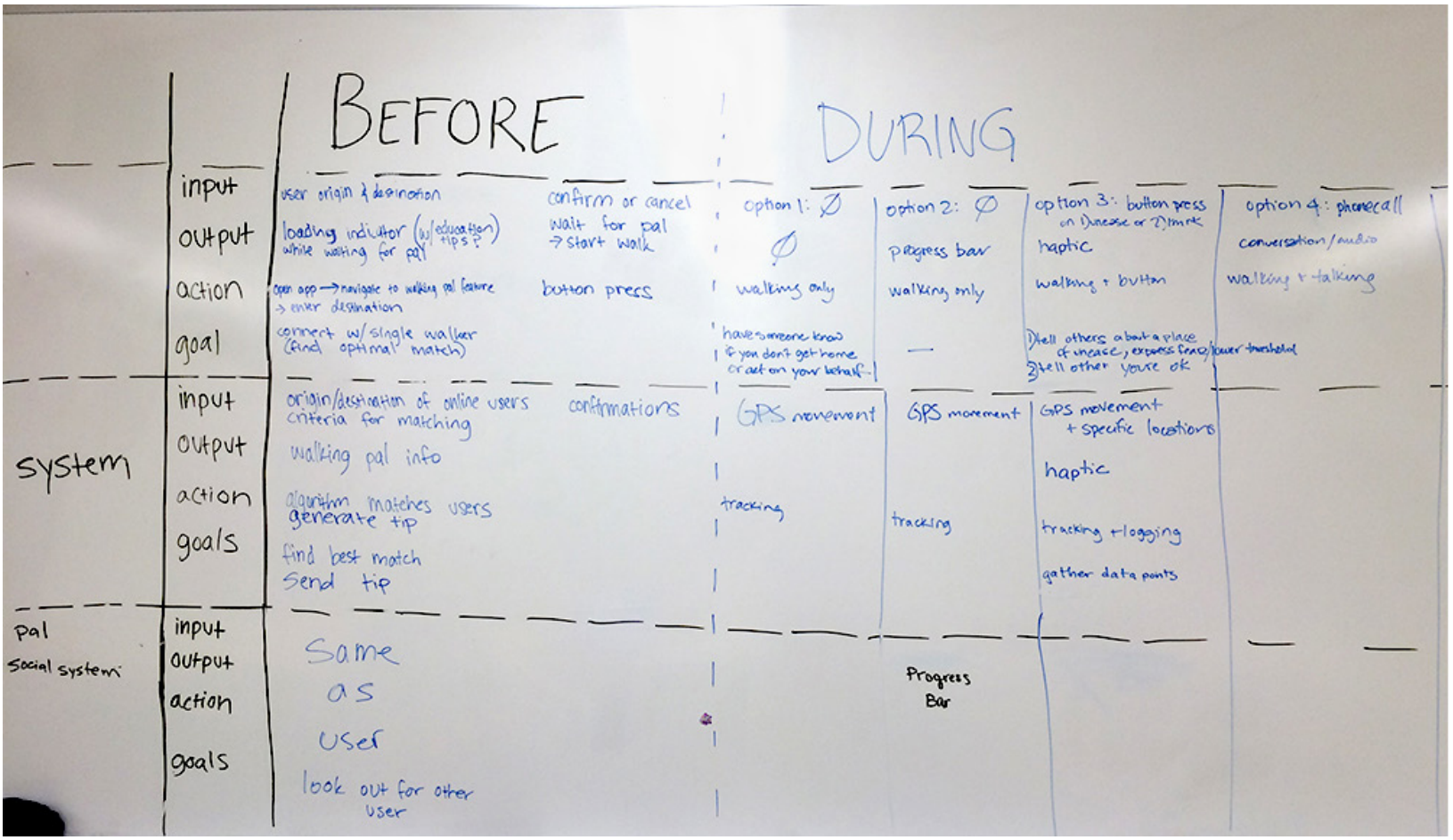


Service Journey Map



Linda showed us a framework for considering and visualizing how information moves between the users and the system at multiple stages (before, during, and after) of the walk. This framework involved mapping out the input, output, action, and goal for both of the walking partners and the system. For example, at the pre-walk stage, if the user's goal is to request a walking partner to monitor whether they safely reach their destination, their action would be to input the necessary information (origin and destination), view an output that their request is being processed (e.g., loading indicator). In this case, the system's goal is to find a good walking match, which would require the input of both users origins and destinations and the action of an algorithm to match and notify walking partners.

Collaboratively completing this map allowed us to conceptualize the load on users and systems for each feature we were considering and further organize the way in which our various features fit together. The load on the user was of particular interest to us because we want this to be a tool that they can use for every walk. To increase convenience and thus frequency of use, input required from the user ideally be either passive or minimal at most and furthermore, for safety reasons, it is crucial that during the walk interactions require as little active engagement as possible.



Design Hypotheses

In order to create our prototype, we started out with design hypotheses and assumptions that we wanted to evaluate:

1. Users will want to engage with a walking partner or system in some way during the walk because people who feel uneasy reach out to others.

If test participants are given the option to either interact with their walking partner during the course of their walk or not interact with their partner during the course of

their walk, we believe that test participants will have a preference for interacting with their walking partner. We are basing this assumption on the fact that our primary research participants expressed that they felt safer when they could feel the presence of another person. By directly interacting with their walking partner, we believe our participants will experience this comforting feelings articulated by our primary research participants.

Note: this is being tested by comparing and contrasting the results of Task 1 against Task 2

2. Presenting users with safety tips before a walk will increase their ability to assess risks and their awareness of their surroundings.

If participants are presented with safety tips before they embark on a walk, then this will increase their ability to assess potential risks because they may become more aware of their surroundings.

3. Sharing safety related information with other locals will empower others through validation.

If a user shares and views safety-related information with other locals, then the social media component of our application could serve as a tool for empowerment because knowing that her experiences are common to her region may validate her intuition. This could potentially lower the threshold for the user to reach out for help the next time she feels in danger during a walk because she will feel more confident that she has accurately identified a potential threat.

Research Questions

From our design hypotheses, we formulated our top three research questions focusing on the three major components of our concept: the walking experience, social media channel, and integration of education. These questions then guided our prototyping protocol.

1. What is the desired level of interaction during the walking experience?

Our first research question focuses on the desirability of pairing walkers up with one another and testing how this interaction would actually pan out. To test this we planned to explain our concept to the participant and then give them a paper prototype to interact with to provide more context about how this would work.

We then planned to send our participants out for two walks while asking them to look for specific things. The walks would vary based on whether or not they were able to interact with one another.

This exercise would help hone what the desired level of interaction in the walking experience is and what was the minimum amount of interaction to provide comfort, what is troubling or tiring to the user, and how the user felt about being paired up with another user.

2. What form and culture should the social media channel have?

We planned to test our second research question by sitting down with a participant and having them interact with our paper prototypes.

We planned to have participants think aloud while going through our screens which will have actual social media posts which we took from reddit, facebook, etc. We also plan to have the participant write in her own responses, drawing emojis and writing short text responses.

Finally we planned to talk to participants about topic categories that posts might fit into and the types of moderation and security they would expect.

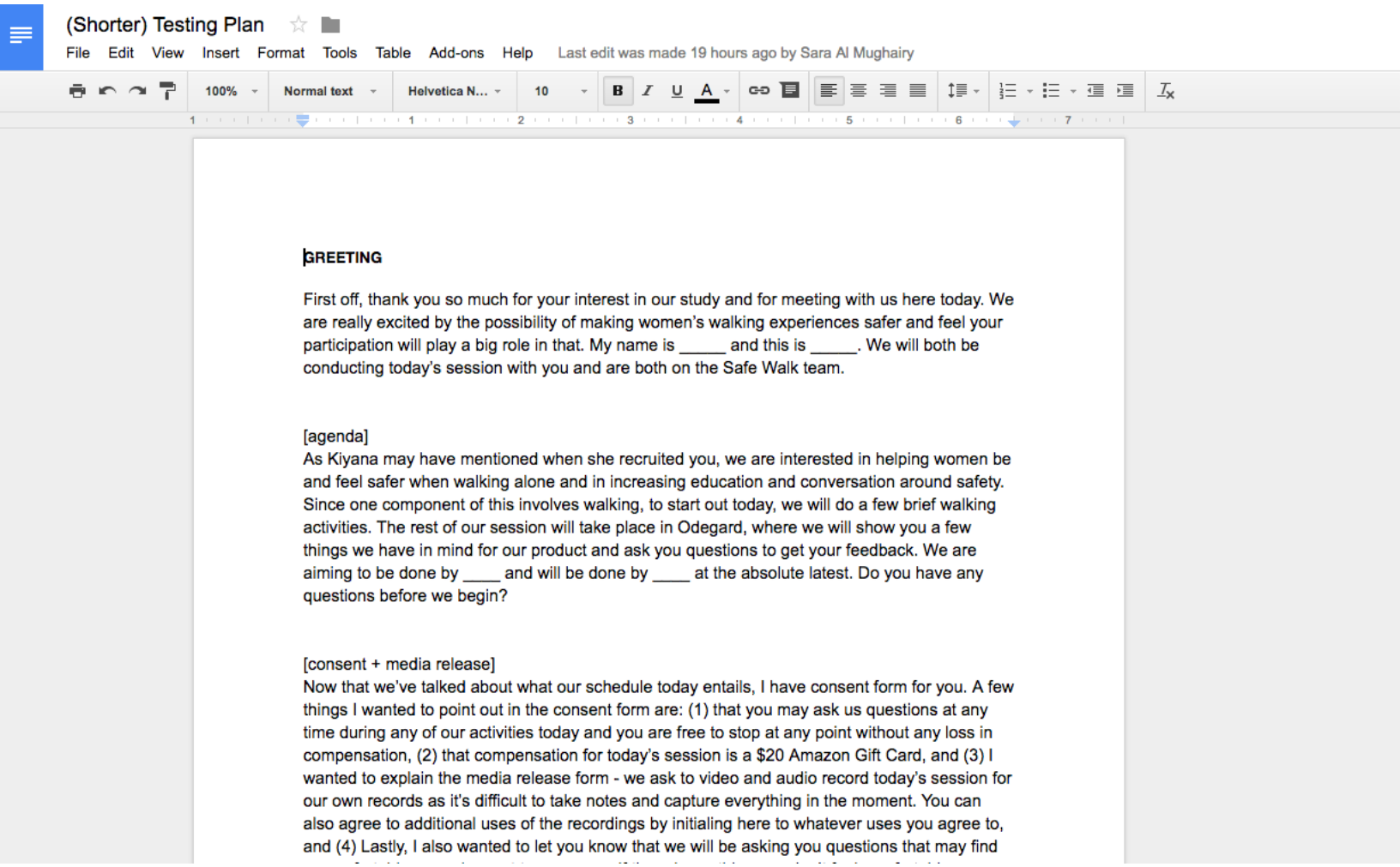
3. What type and form of education are users most perceptive to?

We planned to test our third research question by watching participants interact with different types of educational prompts and tips. We wanted to know, first of all, would they like these tips at all? Secondly, is there is a part of application that seems most natural to view them: before or after the walk, or in the social media stream? We also hoped to elicit what types of statistics are preferable and what might elicit too much fear?

Testing Guide

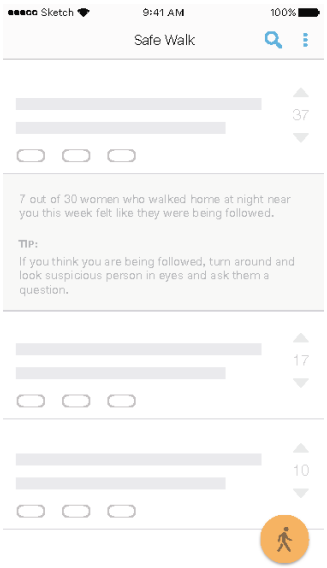
We created a testing guide for our prototype protocol and then reviewed and ordered our wireframe screens to match.

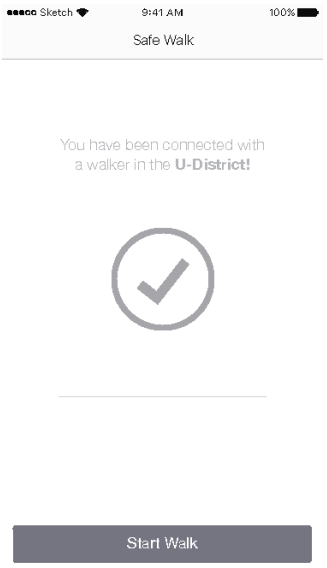
You can view our testing guide here

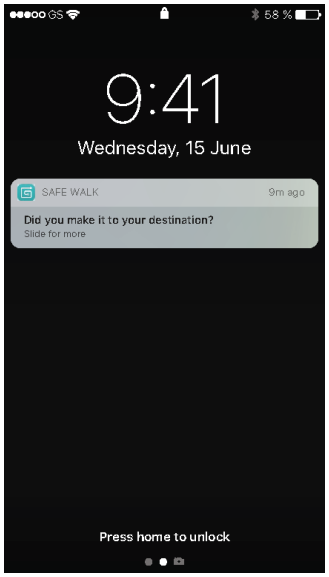


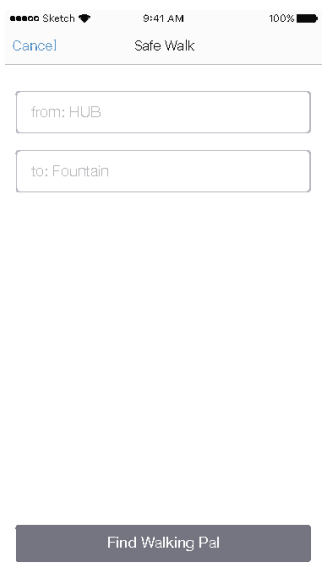
Prototype

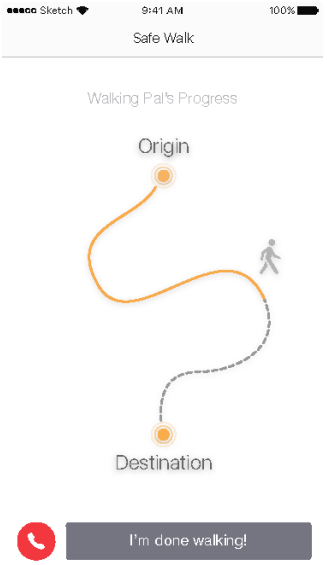
Once we had an idea of what we wanted to test, we had a sense of what screens our first prototype would need. We created wireframes in Sketch, depicting the beginning and ending of the walking experience, the social media feed (incorporating relevant posts that we found on Reddit, Facebook, and stories our participants shared in our primary research), and different locations and formats by which informative data and safety tips could appear. While we created digital screens, we decided to have our prototype be a paper prototype both so that our fidelity was low enough for participants to be candid and so we could make changes to the screens quickly and easily during and between participants.











In-Class Exercise with Natural Disasters

We explained our refined concept with the Natural Disasters team and discussed our plan for prototyping. Team Natural Disasters asked follow-up questions and discussed their own idea and it became apparent how closely related parts of our concepts were. They shared with us some research they had done on trust frameworks for peer to peer applications. The next part of the activity consisted of our two teams talking about the other team's concept privately and creating our own mental model and scenario of them. We incorporated their feedback into our testing protocol. For example, we added to tasks to our protocol intended to simulate real feelings of fear into an artificial exercise. Additionally, we added tasks and interview questions to our protocol intended to determine what types of moderation would be necessary within the social media component of our app.

Piloting

In order to maximize pilot testing with our participant, we decided to pilot our research protocol within the team first, in order to identify any glaring issues ahead of time. We then were able to pilot with two participants who were not members of the team. The majority of revisions to the research protocol involved changing the language used in the script in order to avoid using "system-oriented" terms. For example, as the researchers and designers of the project, we have started to use terms like "solitary walker" as a shorthand method of communication within team meetings, but we realized that this terminology may not be obvious to individuals who are not familiar with our work. Other revisions including changing the order in which certain tasks will be presented to the test participant and adding additional follow-up questions in response to completing particular tasks. Finally, we realized that the creation of a few additional wireframes would be necessary, as would revising the content of some of the existing wireframes.

Reflection

Prior to this week, feedback from instructors and classmates surfaced the lack of connection between the two major components of our app: the walking partner feature and the social media feed. Rephrasing our project focus, as well as creating an Interaction Flow and Service Journey Map, enabled us to see and create clear connections between the two. While we did not have a lot of time to create a prototype and research protocol, focusing on how we could evaluate our major design hypotheses led to a strong research protocol and the low fidelity of our prototype will allow us to iterate as needed. Based on instructor feedback from today's presentation, we plan to make the walking portion of our research protocol more contextualized either by having participants walk in dark hallways or in deserted campus buildings, which we hope will better simulate the scary experience of walking alone at night. Additionally, for future presentations, we will introduce our topic more visually, by including a concept diagram and a user flow.

05 Prototype Evaluation

Prototype Evaluation Testing

During our prototype evaluation test sessions, Kiyana edited paper prototypes in real time to accurately reflect user “input.” In addition to editing the paper prototypes, Kiyana and Sara recorded instances in which participants struggled to understand content or carry out particular tasks. We used this information to iterate between test subjects. For example, a paper prototype included a visual depiction of a progress bar, but the progress bar was stylized to look like a path. This confused participants and caused them to believe that their walking partner knew the path they would be taking, so we updated the screen between test sessions to make the progress bar better indicate the passage of time as opposed to location tracking; in other words, we updated the progress bar so that it would be linear, and this alleviated a considerable amount of confusion.

Synthesis of Findings

To synthesize our findings, we made a list of key takeaways from each participant and then documented trends between participants (e.g., 3 out of 4 participants said X). We had trouble interpreting the design implications of some of our more ambiguous or contradictory findings. For example, our participants recognized that ignorance is bliss, and thus were concerned about having a social media feed full of fear-mongering negativity. At the same time, they requested knowledge that is actionable and wanted to know about incidents near them. Our sponsor, Tom Iurino, emphasized that our job as designers is to attempt to understand underlying premise of what participants were asking for, rather than trying to implement their literal suggestions. In this case, we realized that while participants requested features like a heat map depicting a concentration of incident reports (which they felt would be actionable for route planning purposes), that these design alterations could actually scare them further and that the lack lack the contextualization to be actionable. Therefore, we focused on changing the content to be less fear-inducing and more educational and actionable by including safety tips, ways for users to express themselves through polls and Questions of the Day, and advertising reports of aggregated incident report data that was sent to city planners and police.

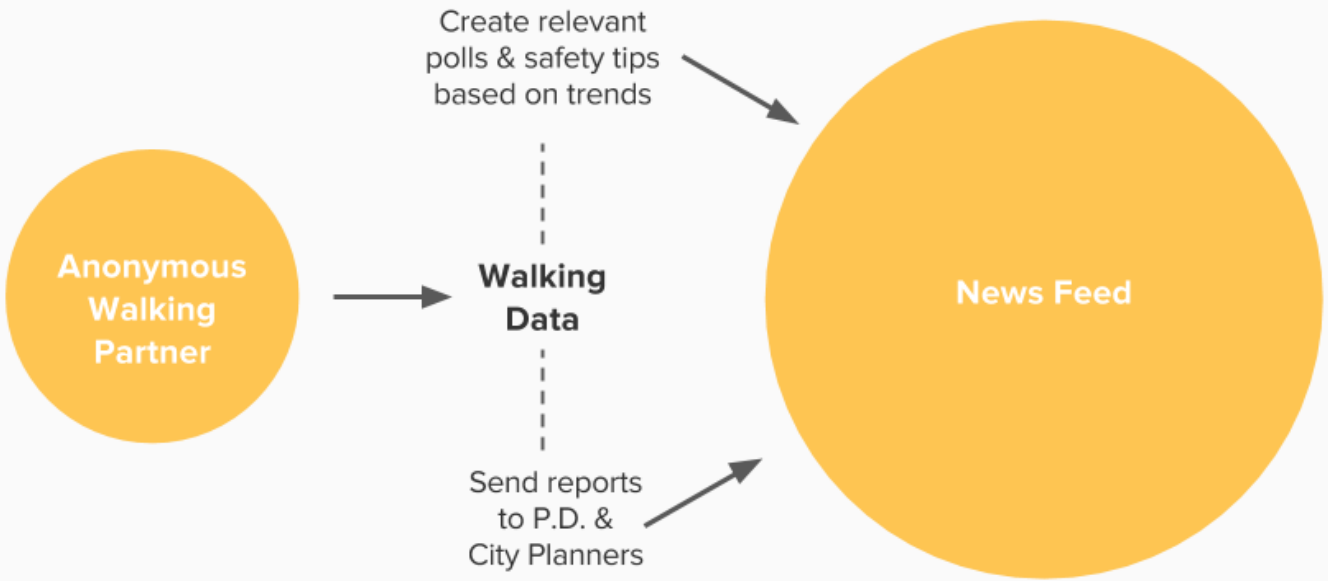
> I don't want to go on the app and read all of these horror stories... and then not want to walk at night anywhere
>
> Participant 2

Definition of Feature Set

After synthesizing our findings, we met as a group to discuss our research findings and decide on the final features set that we planned to include. For example, based on the finding that our participants wanted escalation during the walk to be gradational, decided to modify the Anonymous Walking Partner feature to include two modes of escalation: one volume press to alert your partner that you feel uneasy and rapid pressing of the volume button to contact police.

Concept Diagram

Due to the numerous features of our product, we were encouraged to create a visual diagram depicting our how features connect. Further, we noticed that when we would explain our concept without the aid of a diagram, people found the relationship between the two main elements of our app (Anonymous Walking Feature and the News Feed) to be unclear. The goal of this diagram was to visually communicate our concept in a simple way that bridged these two main elements together, while making sense of the other features. We created a few versions of this diagram, ultimately deciding on the one shown here because it was the most simple. This preliminary model of our application shows the activity of the walking partners in the first circle on the left. Walking partners contribute walking data in the form of incident reports. We use aggregated incident report data to create relevant polls, safety tips, and reports to city planners or the police, all of which would be available to view in the browseable news feed, depicted in the circle on the right.

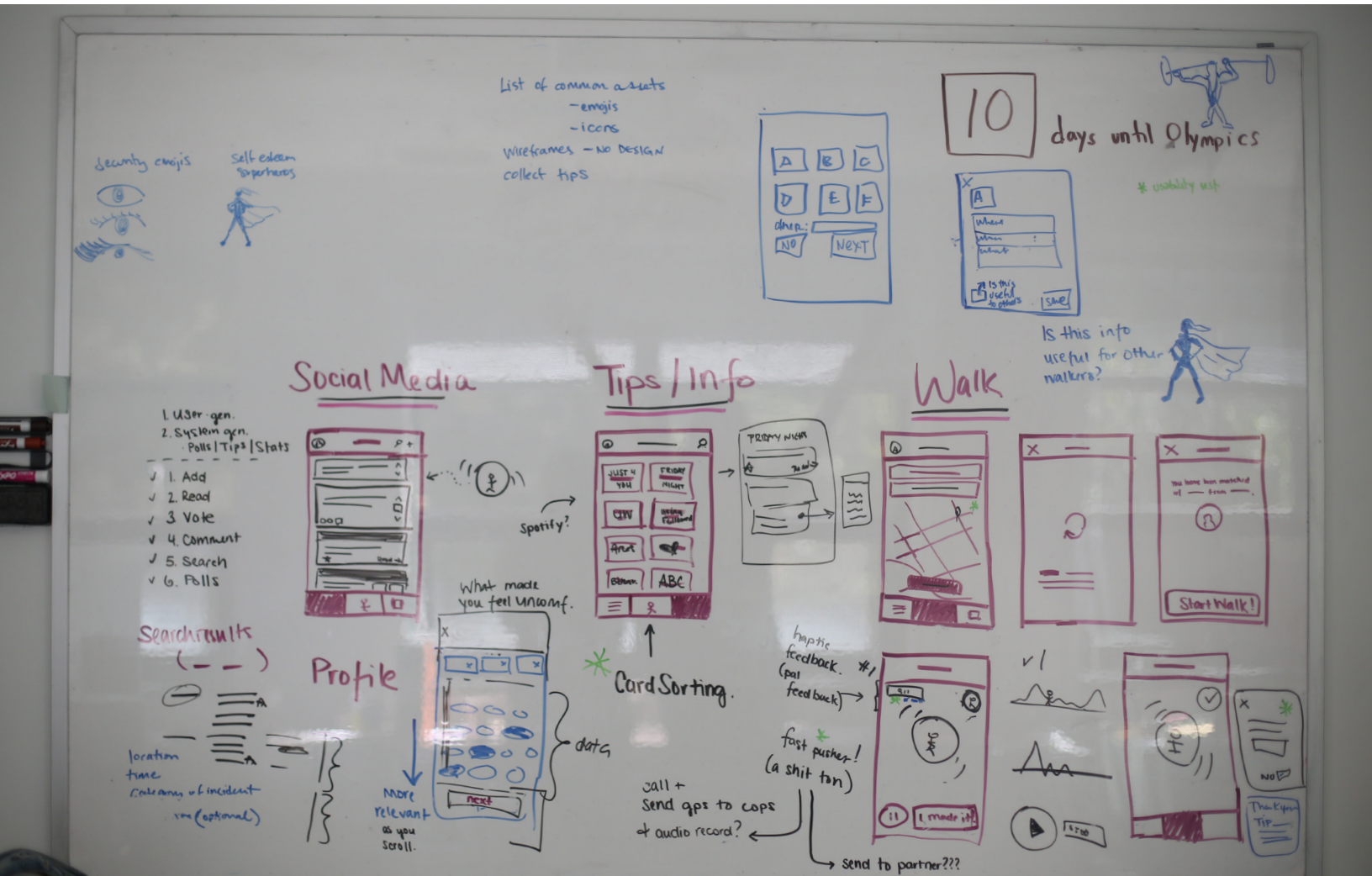


Iteration on Wireframes

Once we defined our final feature set, Julie and Sarah set out to iterate on the wireframes. From the conceptual prototype, we already had a rough idea of how each task would flow, but we did not make any decisions about how the app would actually be structured, so we began by ideating how to structure the app to encompass the three main modules: the news feed, the walking experience, and the tips and education component.

This resulted in the root structure of a navigation bar and base toolbar to move throughout the app. From this point, we dove more in depth with each module. For each module we defined the goals and requirements and then began sketching different options for how these could be implemented.

From these whiteboard sketches, we are now updating them in Sketch to move into InVision for our next round of usability testing.



Usability Testing Protocol

We chose to break our prototype evaluation into two phases. Concept evaluation took place last week, and we tested our prototype with UW students we had recruited during our primary research phase. We incorporated feedback from these testing sessions into our wireframes and are in the process of constructing a usability test protocol. We plan to pilot the protocol as a team, as well as with a third party, on Thursday (7/28). We will conduct usability tests on Friday, and the tests will be led by Sarah and Julie, because Sara and Kiyana led the concept prototype evaluation test sessions. We have scheduled a test session with a UW undergraduate student that we had originally contacted during our primary research phase, and we are awaiting a response from an additional 2 participants. If we cannot recruit another two participants from our primary research phase recruiting "database," we will reach out to personal acquaintances.

Subject Matter Expert Interview - Gailyn Perrin

We had an interview with Gailyn Perrin, a martial arts instructor and owner of the Jae Hun Kim Taikwon-Do Institute, who regularly leads women's self-defense workshops. Given that we are including safety tips and recommendations for users to defend themselves, we asked Gailyn questions about her curriculum, her experience teaching, and her opinion of our app. Surprisingly, she felt that the majority of what she teaches could be effectively taught verbally over an app, as in her workshops, she primarily focuses on women preventing attacks through awareness, walking confidently, and as for physical self defense, aiming for options that are memorable and doable without complicated proper form (e.g., stabbing the eyes of your attacker using your keys or fingernails) or staring a potential attacker in the eye and yelling "fire" if you feel like they are following you. One thing she said students have trouble with is accepting that they have the right to defend themselves and if it were to come down to it, they may need to do so in these bolds and graphic ways. Our concept evaluation corroborated this: we presented a safety tip suggesting that if someone is following you, you should stare them in the eye and ask them a question. All of our participants were surprised by this and were concerned they wouldn't have confidence to actually carry this out. We are currently working on ways to make this information more digestible and empowering rather than scary.

Reflection

During our concept prototype evaluation, we learned that the dummy content used in wireframes can drastically alter a user's perception of the proposed application they are testing. In our case, we provided users with the following safety tip: "If you think you are being followed, turn around and look the suspicious person in the eyes and ask them a question." Our participants viewed this tip as being particularly "extreme," and questions regarding perceived usefulness or "executability" of the tips was colored by this particular tip. Participants were interested in safety tips, but were not sure if they could

successfully carry out this particular tip. Our wireframes also contained multiple references to being followed, meaning that there was quite a bit redundancy and participants noticed said redundancy and articulated that they would only be interested in an application like this if there was more variety in the information they were being presented with. Of course, we had always intended for our final application to include a wide variety of information, but our wireframes did not necessarily accurately reflect this intent. Going forward, as we conduct usability tests, we are going to be more cognizant of the content we include in our wireframes because we don't want content to unnecessarily distract from the underlying user flows.

Because of utility of rest of app, it seemed obvious for participants to dislike the less useful parts of social media. Going forward, we realize that we need to be more deliberate about task order, or, just know that task order can affect participant responses.