p2p: Connecting Parent to Parent
Low-fi Prototyping & Pilot Usability Testing

Catherine B (Development)
Cindy L (Design + Documentation)
Karen L (Management + User Testing)

Table of Contents

Introduction

Mission Statement

The mission of p2p is to promote wellbeing for parents through an online community centered around honest sharing and reciprocal support.

Problem / Solution Overview

We started the process of developing p2p by interviewing a variety of parents and individuals who work with them in order to better understand what parents experience on a daily basis. We discovered that parents often feel isolated in their struggles and experience external pressure to be a perfect parent. Much of this parental guilt is caused by the overabundance of advice from parenting books, blogs, or other sources. In addition, traditional social media platforms tend to focus only on the happiest and most positive moments of the parenting journey, which most of the time is in fact tiring and full of challenges. Through this mobile app, we hope to give parents the ability to share honestly about their experiences as a parent and encourage one another along the journey.

Sketches

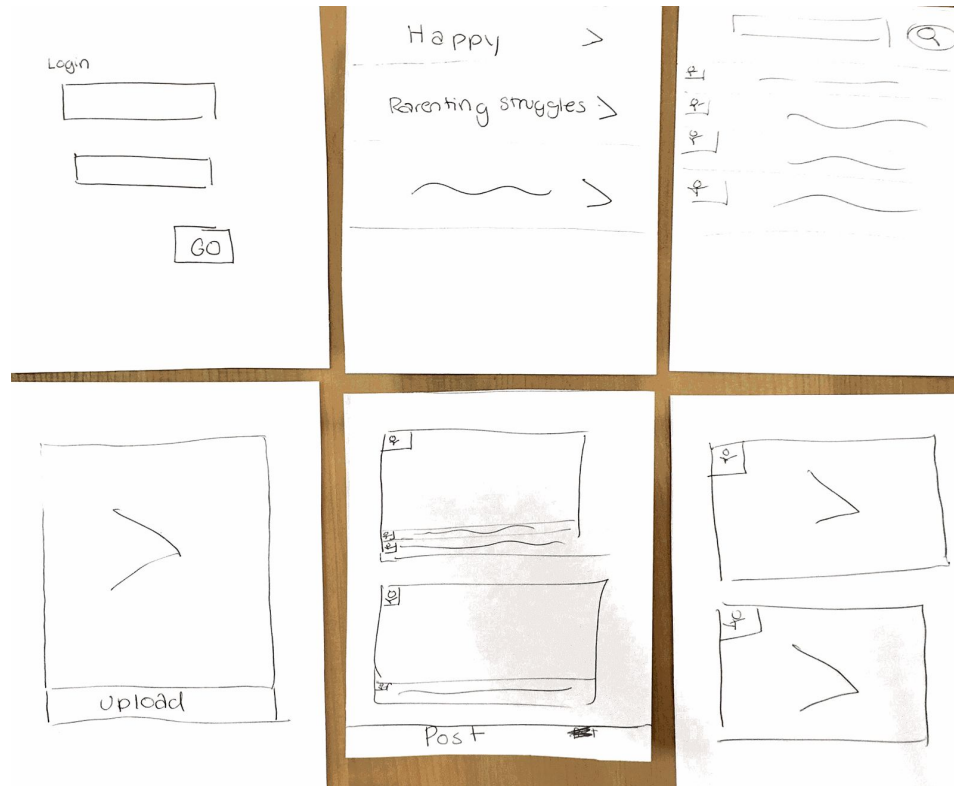Preliminary Sketches

10 Seconds a Day

Figure 1. Preliminary sketches of 10 seconds a day of video idea.

Our first six preliminary sketches illustrate the concept of a "10 seconds a day" video upload app (see Figure 1). These sketches illustrate:
1. Login
2. Search through different categories
3. Find friends
4. View my journey (video compilation)
5. Home screen
6. Top videos in each category

The idea is similar to Snapchat's concept of personal and communal stories. Users can upload video clips onto a personal story, a compilation of many of the user's video clips. Users can then view either individual users' stories or a communal story for fellow parents/friends in the area.

3

Social Media Platform

Figure 2. Preliminary sketches of parent-focused social media platform.

This next group of preliminary sketches illustrates the idea of a social media platform focused on connecting parents (see Figure 2). Parents can post about their experiences and also ask for encouragement, advice, and celebration from friends. These sketches illustrate:

1. News feed
2. Write a post
3. Share photos or videos
4. Send and receive encouragements
5. Send and receive advice
6. Celebrate with friends

This social media network gives parents a space to post text, photos, videos about their own lives, as well as to send encouragements and advice to other parents. Together, this creates a more consolidated platform for sharing within the parental community. One can also create a more focused experience by viewing content by category -- advice, encouragements, etc.

Diary in a Jar

Figure 3. Preliminary sketches of parent-focused shared diary.

This third set of preliminary sketches illustrate one of our ideas for a leaner, more focused method of communal sharing. These sketches include:
1. Landing page with welcome text
2. Login page
3. Home page with two jars, one daily and one of a random friend
4. Zoomed-in version of one jar, showing its note content
5. Posting page 1, allowing users to add their own notes to the daily questions jar
6. Archive showing past jars
7. Posting page 2, allowing users to add their own notes to the random friend's jar
8. Zoomed-in version of a note, showing number of likes and allows for user comments

Taking into account the busy schedules of most parents, the diary in a jar idea allows for only two posting incidents: one for an answer to the daily question, and the other to add encouraging notes to another randomly generated friend's jar. Interaction with other members of the community include the passive viewing of other's answers to the daily question, active liking and commenting on other's notes, and engaging in direct messaging by adding notes to individual friends' jars.

Storyboards of Top Two UI Sketches
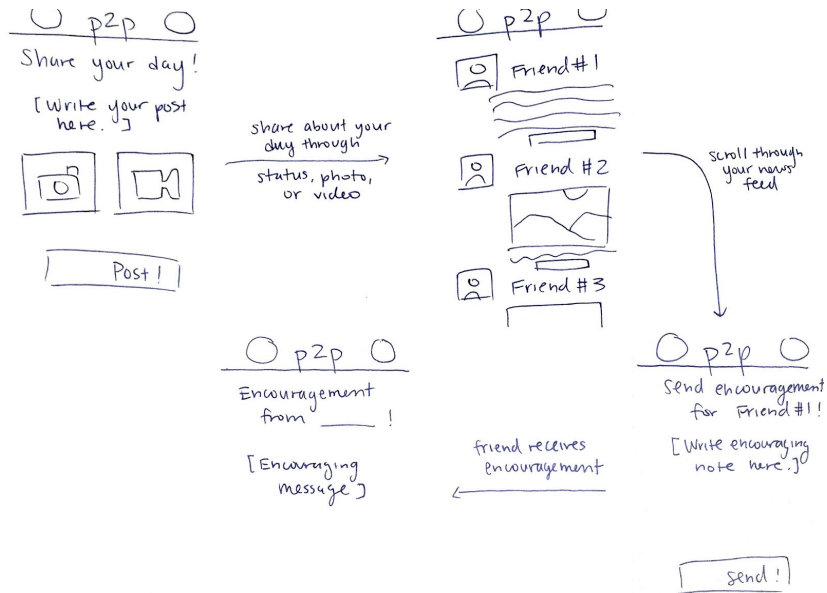
Social Media Platform

Figure 4. UI sketch storyboard of p2p Social Media Platform based on sketches in Figure 2.

Diary in a Jar

Figure 5. UI sketch storyboard of p2p Diary in a Jar based on sketches in Figure 3.

Selected Interface Design

We chose to continue the design process with developing a user interface and storyboard for the Diary in a Jar idea (see Figure 5 for UI sketches), shown below.

User Interface Storyboards

Task #1: View your friends' responses to the daily question
Our simple task was to open the jar to view a friend's response to the daily question.
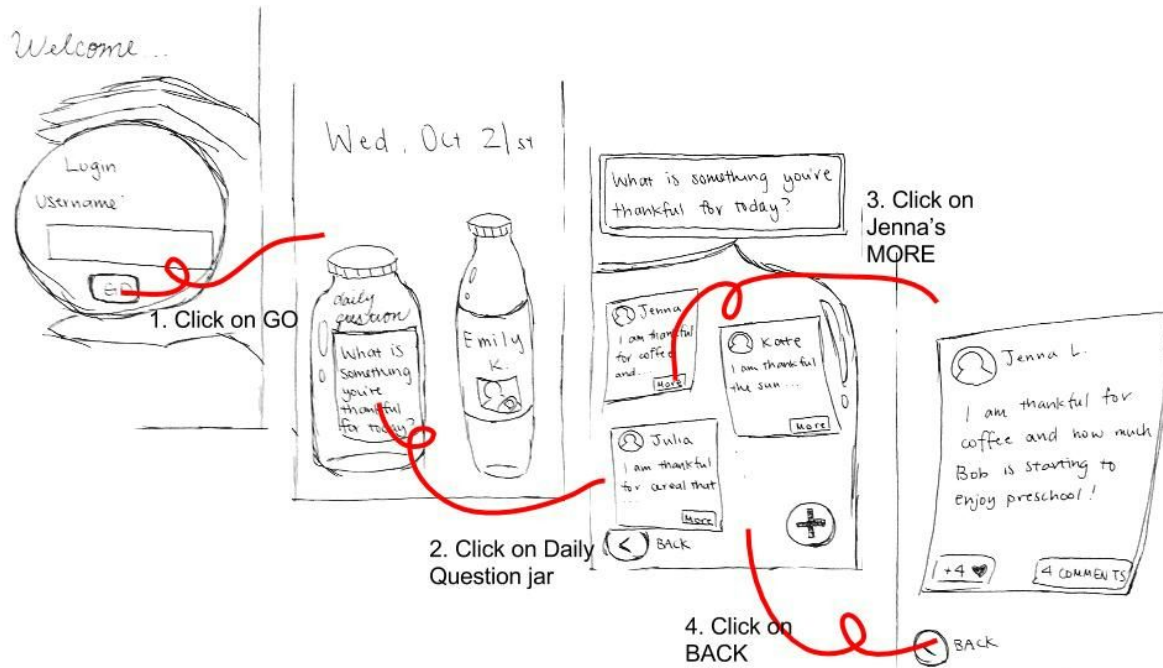
Figure 6. UI storyboard for Task #1.

The following are detailed as page name: intended user action
1. Login page: enter username and press "GO"
2. Main page showing today's date and a table with 2 jars: click on Daily Question jar to explore others' answers
3. Daily Question jar with question on top, name of users and a shortened form of their answer: click on "MORE" on one user
4. One user's note showing number of likes and comments: click on BACK
5. Daily Question jar

Our moderate task was to add your own response to the daily question.

Figure 7. UI storyboard for Task #2.

1. Daily Question jar: click on +
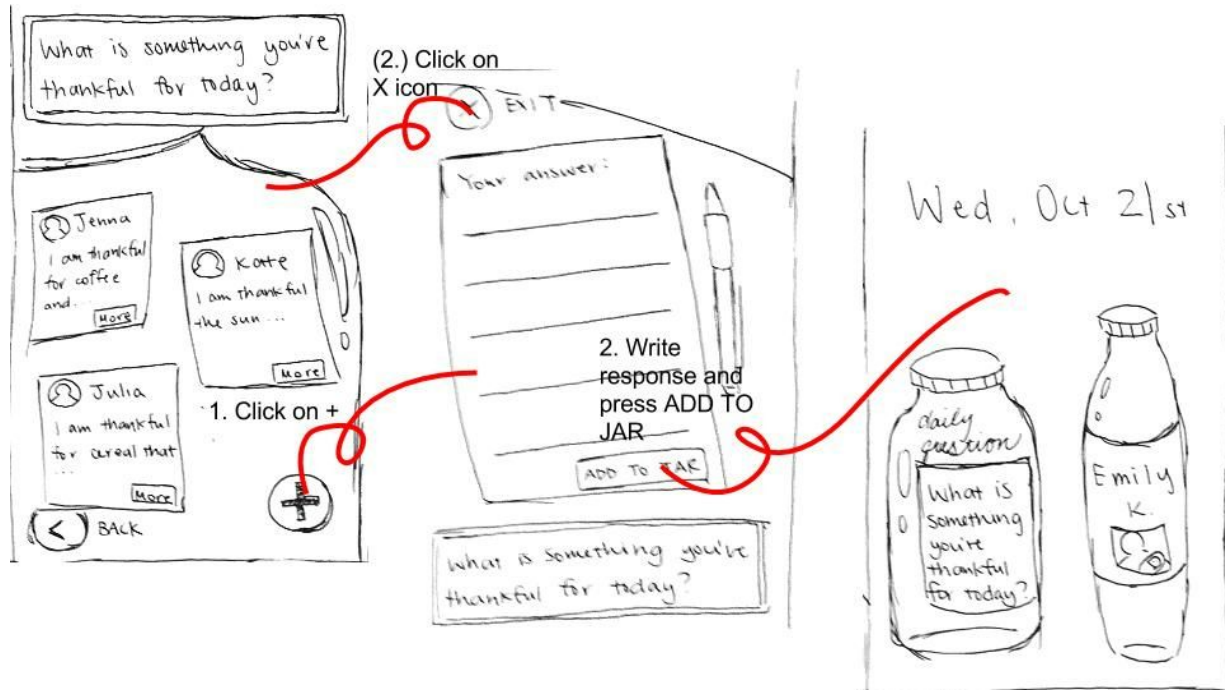2. Posting page with question and lines: user types response and clicks on ADD TO JAR
3. If the user clicks on X Exit, will return back to Daily Question jar
4. Main page with a table with 2 jars

The complex task is to leave a note of encouragement or advice in a friend's personal jar, which also displays the most recent responses written by that friend.
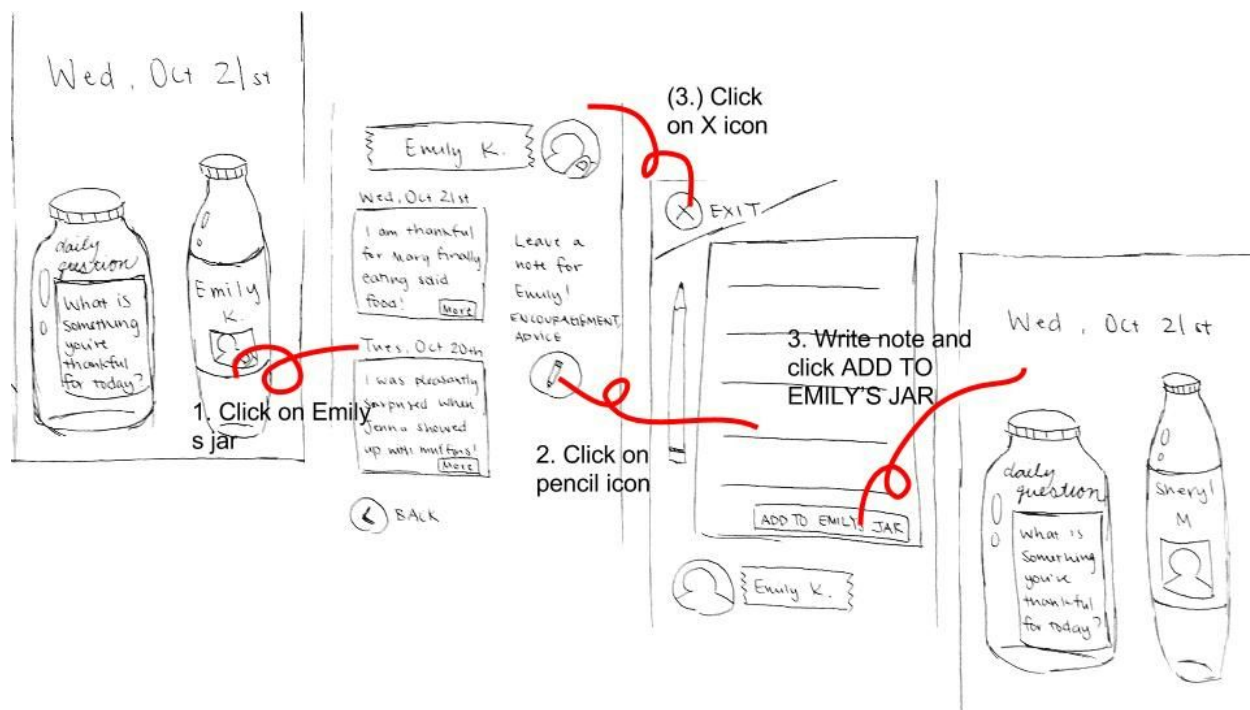

Figure 7. UI storyboard for Task #3.

1. Main page with a table with 2 jars, where the right one is labeled with the name of a random friend: click on Emily K's jar
2. Emily's Jar with recent notes from Emily: click on pencil icon to leave an encouraging note
3. Posting page with friend's name: user types encouragement and clicks on ADD TO EMILY'S JAR
4. If the user clicks on X Exit, will return back to Emily K's jar
5. Main page with a table with 2 jars, now with a different friend's jar featured on the right

Reasoning for Selection

We chose to select the Diary in a Jar sketches to storyboard because we felt that it was the simplest and most intuitive idea. We were less excited by the 10 Seconds a Day idea because it did not seem to foster community interaction as easily as our other two ideas. It is also difficult to imagine parents taking videos on their phones during the busiest moments of their days. Our Social Media Platform was the most comprehensive in its scope and had the most options both for what to post (text, photo, video) and how to interact (celebration, advice, encouragement). However, this also introduced added complexity. We think parents would be most likely to use our Diary in a Jar because it is easier to use and feels more intimate/personal

than the other UIs. Parents can view and post answers to questions at any point in the day, and there is no pressure to post every day. By displaying a random users' jar each day, the app also promotes direct communication with many friends.

Prototype Description

For our low-fi prototype, we sketched the following screens on paper, scanned them into a document, printed multiple copies, and cut them out. We left blank spaces where we wanted the user to enter text, such as the "your answer" section on the fifth screen.
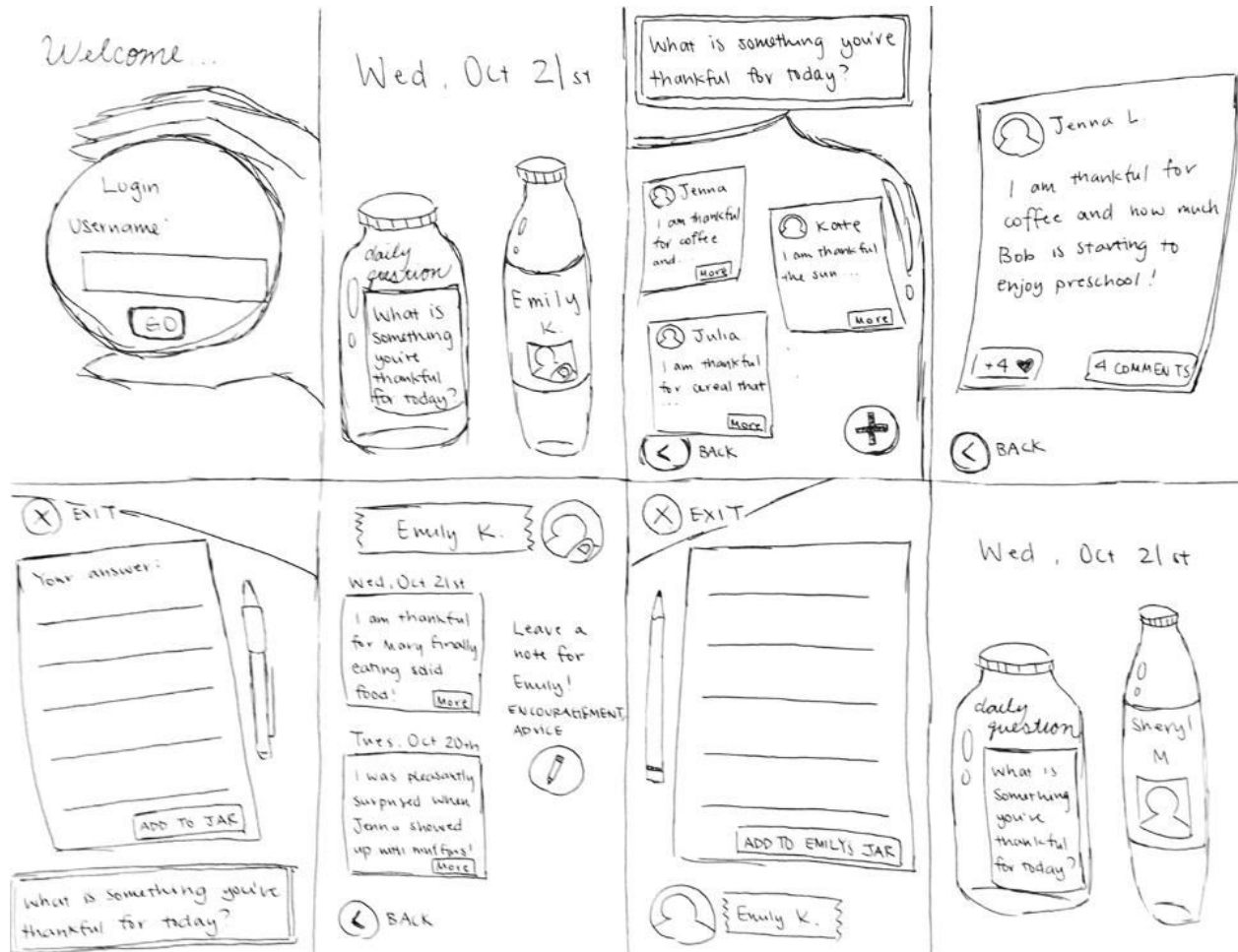

Figure 8. Final sketches used in our low-fi prototype.

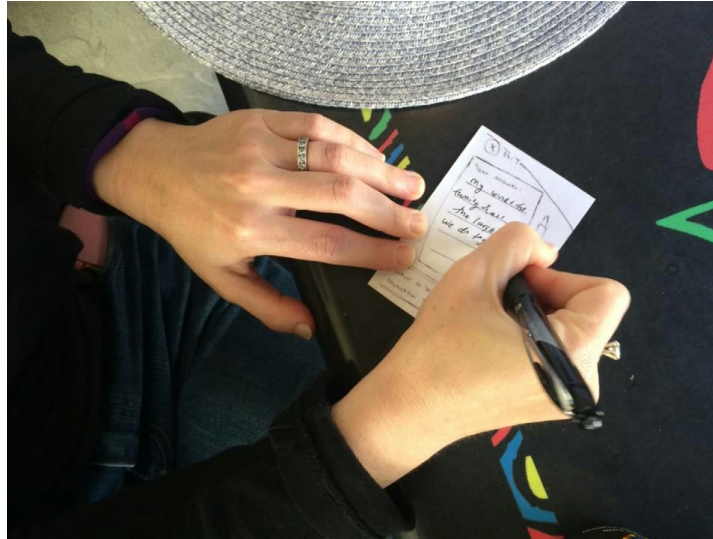Here is what our prototype looks like in action:

Figure 8. User 2 interacting with our low-fi prototype.

Method

Participants

We chose three participants for pilot user testing with our low-fi prototype. Our participants are all parents and represent diversity in age, gender, profession, and number and age of children. User 1 is currently a grad student at Stanford University (aged 20-30), and he is married with 2 children. User 2 is a young mother (aged 30-40) working in the tech industry with a kindergarten daughter. User 3 is a mother aged 50-60 working in the pharmaceutical industry with 2 children in university. We recruited them through phone and email. They did not receive any monetary compensation.

Environment

We conducted our user testing in three common, everyday locations where parents might spend their day. User 1's test was conducted at Stanford's medical school campus. User 2's test was conducted at Coupa Cafe in downtown Palo Alto, during a break from work. User 3's test was conducted in the user's home.

Tasks

Task #1: View your friends' responses to daily question (Simple)
To complete the first task from the home screen, the user taps the jar labeled with the daily question. This displays a new screen that shows notes inside a jar, each note containing a friend's name and the first few words of their response. Tapping the MORE button on the note shows a new screen with the entire response visible.

Task #2: Add your response to the daily question (Medium)

The user adds his/her own answer to the question from the screen that shows notes inside the jar. After tapping the plus sign button in the bottom right corner, a new screen appears showing a piece of paper labeled "Your answer" and a pen. After typing an answer, the user taps the ADD TO JAR screen at the bottom of the page.

Task #3: Leave a note of encouragement or advice in a friend's jar (Complex)

To complete this more complex task, the user returns to the home screen and clicks the second jar, which is labeled with a friend's name. A new screen shows the inside of this jar, which contains the most recent responses by this friend. The user then taps the new post button under the instructions ("Leave a note for [friend's name]!"). This brings up a new post screen similar to the one described in Task #2.

Procedure

We initially contacted our participants over phone or email and set up a 10-20 minute time slot to meet individually with each user. We printed consent forms (see Appendix A) and asked the participants to sign them. Using a prepared script (see Appendix B), we briefly explained the project and gave a demo of how to interact with our low-fi prototype. For each task, we stated the expected task but did not tell the users how to complete the task. The user then interacted with each screen through tapping the paper or writing with a pen to simulate typing. One of us conducting the user test switched paper screens depending on the user's actions. At the end of the test, we thanked the user for participating.

Test Measures

When observing and evaluating the user testing process, we focused on ensuring that p2p Diary in a Jar's UI was understandable without the need to incorporate a deliberate NUX. We noted down questions that the users asked, screens and corresponding tasks that they paused on before proceeding, and actions that the user took with our UI that we had not originally expected to occur. See Appendix C for a more detailed Critical Incidents log.

Results

User 1

The user generally enjoyed the idea behind our application, and he thought that generally straightforward. There were a few points where he did not understand our design choice (i.e. he did think that it made sense that our application showed him random friends instead of letting him choose one). He also was confused by the functions of our home screen, and mixed them up. However, generally, once he got passed the home screen, he was able to complete the tasks.

See Appendix D for more detailed observations and feedback from User 1's test.

User 2

The user enjoyed our app's simple UI and said she felt that creating more support for parents was a worthwhile endeavor. There were some points during the test where she looked a little confused, such as when deciding which of two jars on the home screen to tap. Generally, however, she was able to navigate the screens easily and locate the correct screens to complete all three tasks. She knew where to "type" by writing in answers with pen, and she wrote answers that were appropriate in the context of the app. The user stated that it would have been difficult to understand the purpose of the app without the verbal overview at the beginning of the test. See Appendix D for more detailed observations and feedback from User 2's test.

User 3

The user reacted positively to the graphics of the p2p Diary in a Jar paper prototype, commenting on the appropriateness of the jar idea and the innovativeness of the user interaction with jars and note posting. The user was generally confused about the purpose of the two jars on the home screen, as they lacked adequate labeling. When asked to, for example, read their friend's answers to the Daily Question, the user would instead click on the randomly generated friend jar, as that one is directly labeled with a friend name. There was also a lack of understanding of icons, the + sign for posting, the X sign for closing a page, and the pencil icon for writing encouragements in a friend's jar. The user thinks an overview of the app's purposes and possible uses would have been useful before she was told to perform the tasks.

See Appendix D for more detailed observations and feedback from User 3's test.

Discussion

From our paper prototype user tests, we found that participants were appreciative of the app's ultimate goal and aesthetic. Some remarked that the app enabled them to (theoretically) read uplifting messages from friends, while others specifically mentioned the pleasantness of the jar graphics. Surprisingly, we found that users who are a little older struggled with the page flow control: proceeding forward, enlarging notes, posting, and moving backward.

More specifically, we found that every single user, when instructed to view their friends' answers to the Daily Question, clicked on the jar labeled with the friend's name instead of the Daily Questions jar labeled with the question itself. Our assumption that users would simply disregard the presence of the randomly generated friend jar until we specifically asked them to complete a task regarding the jar was false. This suggests a potential UI change that requires more specific labeling: one that definitely tells the user about the reason for the friend name jar, and why it changes after you post in that jar. This could possibly be incorporated into the NUX and disappear once the user has been informed.

All in all, all users successfully posted without much hassle, quickly realizing that the + button allowed them to add their own answers to the Daily Question. As this is a standardized indicator for user contribution, we did not think that users would struggle with the task. They also did not find it difficult, once they are finished with typing up a response, to post the answer to the jar.

Lastly, most users were confused about the randomly generated friend jar and why the name changed after they finished posting in the initial friend jar. They asked for a verbal explanation, which was given by the team member overseeing the test. Moving forward, we could possibly adapt this into yet another pop-up textual explanation in the app itself, informing the user as to why the jar has been modified.

In conclusion, our users found the app interesting and impactful for a demographic that they believed would benefit from developer attention. They found navigation to be the most challenging part of the task-engagement process. There are also pages in the app (ie. the home page) that could benefit from either more extensive labeling or an incorporated and interactive explanation pop-up as user proceeded through tasks. We are extremely appreciative of our user feedback and will definitely pay attention these points moving forward.

Appendices

Appendix A: Consent Form

The Null/p2p application is being produced as part of the coursework for Computer Science course CS 147 at Stanford University. Participants in experimental evaluation of the application provide data that is used to evaluate and modify the interface of Null/p2p. Data will be collected by interview, observation and questionnaire.

Participation in this experiment is voluntary. Participants may withdraw themselves and their data at any time without fear of consequences. Concerns about the experiment may be discussed with the researchers (Karen Lu, Cindy Lin, Catherine Borsting) or with Professor James Landay, the instructor of CS 147:

James A. Landay
CS Department
Stanford University
650-498-8215
landay at cs.stanford.edu

Participant anonymity will be provided by the separate storage of names from data. Data will only be identified by participant number. No identifying information about the participants will be available to anyone except the student researchers and their supervisors/teaching staff.

I hereby acknowledge that I have been given an opportunity to ask questions about the nature of the experiment and my participation in it. I give my consent to have data collected on my behavior and opinions in relation to the Null/p2p experiment. I also give permission for images/video of me using the application to be used in presentations or publications as long as I am not personally identifiable in the images/video. I understand I may withdraw my permission at any time

Name _____

Participant Number _____

Date _____

Signature_____

Witness name _____

Witness signature_____

Appendix B: User Testing Script

Introduction

We are working on a quarter long project for our Human-Computer Interaction class. Our project is focused on promoting community and well-being for parents. We interviewed a number of parents and people who work with parents to better understand what parents experience on a daily basis. We discovered that parents often feel isolated by their busyness, and external pressure to be a perfect parent. Through this mobile app, we hope to give parents the ability to share honestly about their experiences as a parent and encourage one another along the journey. We are currently conducting user testing on a prototype of our app in order to get feedback about its usability. (Explain and give consent form. Also explain that you will take pictures, but none of them will be identifiable).

Demo

Before I get started, I'll show a quick demo so you know how to interact with our test interface. After the demo, we will explain different tasks and give you an opportunity to complete them.

Each screen will be represented by a paper screen like this (show screen). You can interact with the screen by pressing the paper in the same way you would on a phone screen. You can also write on the screen to simulate typing on a phone. For example, this is how I would log in to the app (write username and password and press login button). When your actions require a new screen, I will switch the screens for you, like this (switch login for home screen). Are there any questions?

Task #1

Your first task will be to view at least one of your friends responses to this question: What is something you're thankful for today.

Task #2

Your next task will be to add your answer to this question to the jar.

Task #3

Your final task will be to add an encouraging note to a friend's jar.

Final Remarks

(Remember to thank your user for participating in user testing).

Appendix C: Critical Incidents Log

Problem	Severity	Possible Fix	Task #
Clicked on friend jar instead of Daily Questions jar	High	Start with NUX or explain the content and purpose of the friend jar	1, 2
Clicked on note body instead of MORE button when expanding a note	Low	Remove the MORE button completely or make its function more obvious	1
Confused as to why posting an answer was followed by redirection to home page	Moderate	Consider alternate paths for redirection, such as to the Daily Questions jar itself	2
Clicked on the caption instead of the intended pencil icon to start an encouragement	Low	Get rid of the pencil icon and rely more on textual buttons	2
Confused as to why the friend jar had a new name	Moderate	Incorporate an explanation: "we want you to interact with as many friends as possible!"	3

Appendix D: Raw Data

User Test 1

The user is currently a grad student at Stanford University (aged 20-30), and he is married with 2 children.

Task #1
- Not confused by instructions, thought they were straight forward
- When asked to view responses, his immediate reaction was to tap on friends jar
- Was not obvious that the general question jar could be tapped
- Was confused as to why he saw multiple questions

Task #2
- Realized that main jar could be tapped from instructions
- Completely this task relatively quickly
- Found add button very quickly
- Looked confused as to why he was directed back to the home screen after adding question

Task #3
- Thought it was interesting that he could see multiple friends responses
- Completely this task relatively quickly and easily
- Thought process was pretty straightforward
- At the end, confused as to why a new friend showed up
- Tried to view other friends, and confused as to why that wouldn't happen
- Confused as to why he couldn't see an entire list of friends

General Feedback
The user generally thought that the home page was confusing. He did realize that both jars were tappable at first. He also was generally confused as to why he could only view one friend at a time, and why he got a new one after he left a note in one of their jars. Besides this specific detail, he generally found most of the interactions to be straightforward. He also appreciated the UI of our app.

User Test 2

About the User
The user is a young mother (aged 30-40) working in the tech industry with a kindergarten daughter.

Task #1
- Started out staring at page with two jars for 3-5 seconds
- Finger on chin, looked like she was thinking
- Tapped on individual user jar for Emily instead of on the expected question jar

- Commented aloud that she wouldn't have understood what the app was about without my previous verbal introduction
- Once she entered the screen with Emily's jar's contents, easily found the MORE button

Task #2

- Since she started on someone else's detailed response page, she couldn't immediately find the button to add a response
- Quickly realized that she should tap the back button twice in order to return to home screen
- Tapped on the question jar quickly this time by process of elimination
- Tapped on the plus button to add a response
- Wrote in the correct area of the screen
- Wrote an appropriate response: "my wonderful family & all the laughing we do together"
- Tapped ADD TO JAR button

Task #3

- Since she had seen Emily's jar before, she easily navigated to it by tapping back button and then tapping Emily's jar
- Tapped ENCOURAGEMENT (meant to be part of the instructional caption: "Leave a note for Emily! ENCOURAGEMENT, ADVICE") instead of the post button (circular with pencil symbol)
- Wrote in the correct area of the screen
- Wrote an encouragement

General Feedback

The user is a software developer, so she knew a little about the process of user testing. She felt that we chose a good group of target users (parents) for our project, since "parents need more support." She also showed us some other apps she uses which are dedicated to parents, including an app where she can track her kindergarten daughter's educational goals. In comparing it with our prototype, she commented that she appreciated the simple UI of both. She also suggested that we could add some emojis to help parents express their emotions more easily through the app.

User Test 3

About the User

The user is a mother aged 50-60 with 2 children in university.

Task #1

- Owns an iPhone, seemed to be a little confused about what the instructions entailed, even after the initial login procedure was demoed.
- When on home page, didn't know what to tap: "Why are there 2 bottles; why is Emily K shown as well? You should only have one bottle if there's only one question."
- "It's interesting, so you have more than one note in this jar?

- User didn't tap on MORE button but just tapped on the note when attempting to enlarge one particular note.

Task #2
- When asked to add their own note while on the main jar page, user hesitated for a good 3 seconds before finally tapping on the + button.
- Once on the posting page, user wrote on paper and tapped on ADD TO JAR with no additional hesitation or prompting.

Task #3
- When asked to add an encouraging note to Emily's jar, user first tapped on one of Emily's own notes before noticing the pen icon and tapping on that instead.
- Once navigated to the posting page, asked to go back and read Emily K's page again for additional inspiration / hints on what to write as an encouragement.
    - Instead of tapping the X button to do so, the user reached out directly to take the previous piece of paper.
- Once the note was written, user tapped on ADD TO EMILY'S JAR with no additional hesitation.

General Feedback
User was confused about why there were two jars on the landing page in the first place. User also took a while to notice that, after putting a note in Emily's jar, that Emily's jar was replaced by someone else's jar on the landing page. She asked about the purpose of this replacement later and did looked a little puzzle without providing further commentary. Overall, the posting pages seemed to have the most straightforward user interaction, while other less obvious button-pressing tasks were more challenging for the user to discern without a clear NUX.

Appendix D: Additional Figures
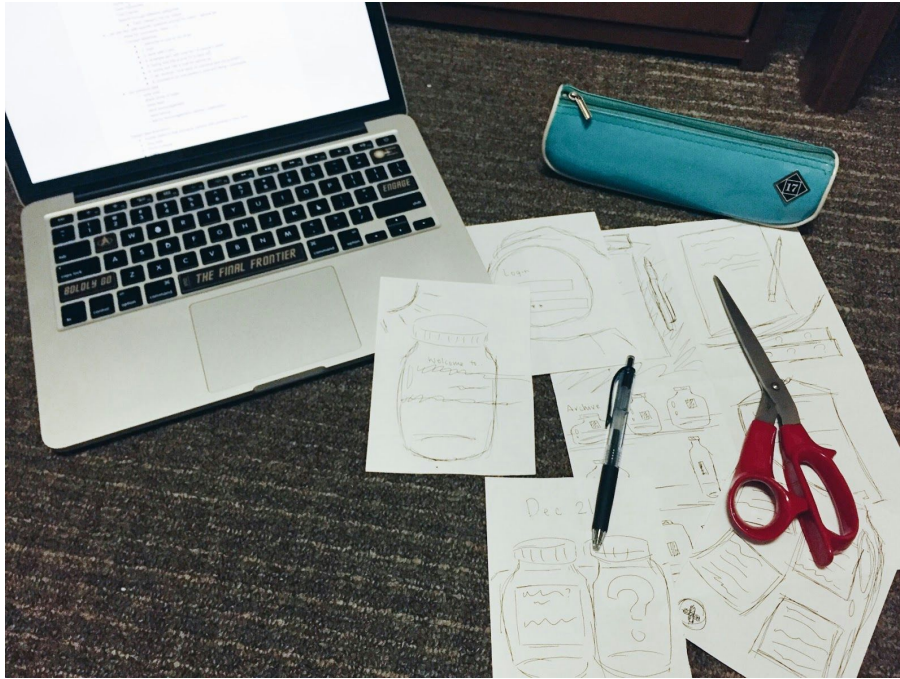
Figure D1. The creation process of the low-fi paper prototype

Figure D2. User 1 interacting with our low-fi prototype

Figure D3. User 3 interacting with our low-fi prototype