

The Team:



Scott A.



Christian M.



Adrian H.



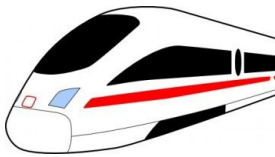
Ashwin K.

The Theme:



Sustainability

Problem Domains:



Commuting



Performance Metrics



Childhood Habit Formation

Initial POV:

We met Aparna, a middle-aged Stanford librarian. We were amazed to realize that her daily Caltrain commute was a major social event that she looked forward to every day. It would be game changing to make sustainable transit more social for those who want it to be.

Additional Needfinding/Interview Results:



Mike, 40, works from coffee shops.

Do you think about sustainability in daily life?

Mike's answer to this question is surprising because it is contradictory. He is not interested in saving the world from global warming because there is too much uncertainty in whether the world is going to end. Although, he does "many things that probably end up saving the world," such as saving water and biking.

Why do you think sustainability is important?

Mike mentioned that sustainability is important because of the current water shortage in California. He said these ideas do not stem from politics or news, but instead arise from the teachings of his parents whom lived during the Great Depression.

In regards to commuting, do you talk to people on the caltrain?

Mike sometimes speaks with other people on the Caltrain and says "it's hard to remember why or why not I talk to people on the Caltrain." He senses that people are not interested in talking. He notes that the bike car is the most communal one because people share a common lifestyle.

Insights And Needs: Mike is a person who seeks the approval of others, but wishes to be viewed as an individual who does things because he chooses to do them, not because society tells him to do it. In terms of commuting, an insight we had was that the bike car is the most communal. In addition, we learned his sustainable habits are habits learned from his parents.



Andy, 31, runs a sustainable groceries business.

What do you do?

I'm a health food entrepreneur. I've been interested in the field my whole life, working in it for two. My current company is called Cub Snacks. It's a subscription healthy snack service.

It sounds like healthy living and sustainable living are really tied together in your mind?

Yes, absolutely. I think that what's good for the planet is good for you and the other way around. It's really a symbiotic relationship between the two of them.

Why do you think health and sustainability matter to you? Is it a social thing?

It's really not. I do it for myself. I think that it was just the way that I was raised. When I was a young lad, my teachers always told me "recycling goes here, waste paper goes there". I was always told not to leave food on my plate. We also didn't really eat a lot of processed foods. I wasn't always perfect, but I think I just formed a lot of habits then.

Do you feel that you do enough to live sustainably?

I do. I don't own a home, but if I did I would get solar panels. If I was rich enough, I would get a tesla. But I'm not quite ready for that. I avoid waste, and I try to buy only sustainably sourced food. I'm careful about recycling and all that.

So, do you think other people share your views on sustainability?

how you are sustainable is really a function of your income level. Just getting food on the table is hard enough for some people. But it's interesting how that's also about what country you're in. Back in Ireland, all cows were "grass-fed" cows. Here in America, that's a special label.

But also, something that's come up for me in my company is that sometimes people don't like the better option. They say, "I don't feel like healthy food right now". You try to tell them that it's not just one decision they're making when they say that (it's actually about habits), but they don't care. There's a real disconnect between what people want, and what people say they want. They may say they want healthy food, but actually they don't.

So you believe that sustainable/healthy habits come from parents. Why do you think parents so often fail to imbue good habits in their kids?

Every parent wants the best for their children. It's not a question of whether they want their child to have healthy and sustainable habits. But there's also a disconnect here. Parents don't realize that every decision they make in regards to their child's eating, while their child is still young, is building toward the habits of that child as he grows up. They don't realize that when they give their kid a coke, instead of a glass of milk, they're telling their kid that drinking coke is ok. If you want to change people's habits, you have to do it while they're still children.

Insights and Needs: Andy exhibits a lot of the sustainable behaviors that we would encourage on a personal level more broadly. He credits this mainly to his rearing, which ties together well with the insights from Mike. We are discovering that there is a need to intervene in habits early to make the world more sustainable, or else create incentive programs stronger than simple sustainability branding.



John, 55, works at the Stanford Medical Center.

Why Caltrain?: Station is close to home, and “driving sucks”.

Story of a bad experience on the train?: Just the occasional delay.

Do your coworkers take Caltrain?: No. Most drive.

Why do you think this is?: None live in SF but work to Palo Alto, like him.

What do you do to pass the time on the ride?: He usually reads a book. We observed before approaching John that he was playing solitaire on his phone.

Do you ever have a desire to socialize on the train?: He doesn't have a huge urge to socialize or interact with others. Most people do things on their phones and stick to themselves.

Was sustainability a factor in your decision to commute by train?: No.

Insights and Needs: John doesn't have urgent needs to improve his commute, but this doesn't mean that every rider is as content with their commute as he is. John didn't strike us as the most social person, so perhaps he represents the type of personality we do not want to target.



Leila, 27, is a consultant and graduate of UC Berkeley.

Why ride the Caltrain?: Driving is a tough commute.

How do your coworkers get to work?: Most take Caltrain for the same reason.

Was sustainability a factor in your decision to commute by train?: Sustainability was a secondary reason. However, being sustainable is important to her.

Can you remember a bad Caltrain experience?: Her worst Caltrain experiences were all because the Caltrain was late and/or extremely crowded.

Can you recall a positive Caltrain experience?: Her best experiences on Caltrain were when it operated properly and on time, and gave her a “mellow” ride.

What do you usually do on Caltrain?: She typically sleeps, works, or plays on her phone.

Do you ever have a desire to socialize on Caltrain?: She actually has some interest in socializing with people on the train, but would much rather know for a fact that she has something in common with them.

Insights and Needs: Leila was interested in the idea of socializing on the train. This could be because she was so young. This provides insight into possible users of a social commuting platform. She identified the public commute as an area in need of innovation.

New Empathy Map:

<p>Say: "Not interested in saving the world from global warming." "I do a lot of things that probably end up saving the world." "I was always told not to leave food on my plate." "Childhood habits..." "Driving sucks." "Caltrain is mostly reliable." "I hate driving." "I would actually be open to talking to a stranger, as long as we had a common interest." "My best experience was mellow."</p>	<p>Think: Mike thinks that his sustainable habits are from habits he learned from his parents. He does not think these habits are impacted by politics or news. Andy thinks there is a disconnect between people's stated goals and practiced habits, but those habits are hard to change after childhood. John says there's no urgent need to try to improve the Caltrain experience. Thinks most others wouldn't want to socialize. Leila believes that sustainability is important, and the transportation sector is in need of improvement, and would be open to social interaction on a train.</p>
<p>Do: When we approached Mike, he was sitting alone in the cafe with earphones on. This probably leads to the view that he doesn't socialize with others on the Caltrain. Andy had a confident smile, and was excited to speak. Made eye contact, and spoke with a lot of gravitas. John didn't hesitate at all to respond "driving sucks." Playing solitaire on phone before we talked to him. Hesitated before replying that he would not want to socialize on the train. Talked somewhat softly. Leila seemed very willing to talk to us. Challenged me and was quick to defend her beliefs when I suggested that she wouldn't be open to talking to strangers on Caltrain.</p>	<p>Feel: We infer that Mike felt uncomfortable in this interview. He seemed to often seek approval of his views. Andy was excited to find people who were also excited about changing lifestyles. He felt that we would be receptive to his thoughts. John is mostly content with his commute. He might feel that we are trying to find a problem that doesn't exist. Leila feels boredom and sometimes frustration when commuting. Has a desire to be sustainable. Feels enthusiastic about finding a solution to make the Caltrain commute better for the passengers as well as the environment.</p>

Revised POVs:

POV #1: We met Justin, an expert on the atmosphere and energy usage. We were amazed to realize that even though he was well versed in sustainability and what we should be doing to live more sustainably, he still wasn't doing much to change his lifestyle. It would be game changing to make sustainable living more convenient.

Sample HMW's:

- how might we make people believe that the small stuff counts?
- how might we make the small stuff that people could do more convenient?
- how might we make living sustainably more like personal hygiene?

POV #2: We met Aparna, a middle-aged Stanford librarian. We were amazed to realize that her daily Caltrain commute became a major social event for her, and something that she began to really look forward to every day. It would be game changing to make sustainable transit more social for those who want it to be.

Sample HMW's:

- how might we leverage the beauty of nature to encourage sustainable behaviors?
- how might we make commuting sustainably more fun/social?
- how might we integrate fitness and commutes?

POV #3: We met Saul, hospitality manager at Stern. We were amazed to realize that a lot of information on current sustainability practices is not easily shared with students. It would be game changing to inspire the general public to live more sustainably by educating them.

Sample HMW's:

- how might we encourage people to eat and shop at places that practice sustainable behavior?
- how might we incentivize companies to practice sustainable food sourcing?
- how might we educate people better about the environment?

Top 3 HMW's:

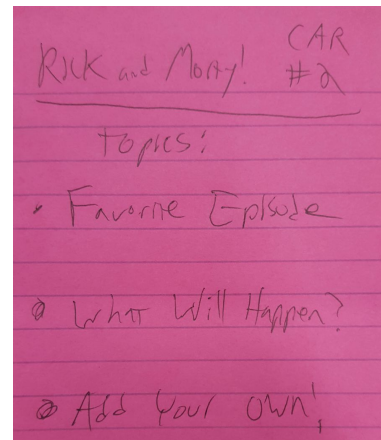
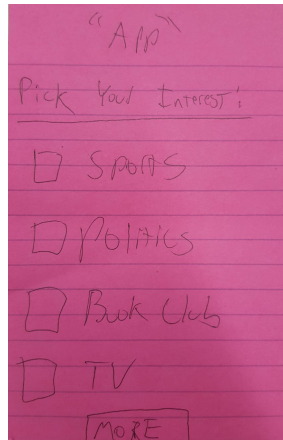
how might we make people believe that the small stuff counts? - Justin

how might we make commuting sustainably more fun/social? - Aparna

how might we incentivize companies to practice sustainable food sourcing? -Saul

Experience Prototypes:

Social Train App:



The idea of the app is to provide a semi-structured way for people to socialize on the train with other people who have similar interests. There would be a range of topics to choose from (books, news, sports, TV, etc.) and each topic would have its own designated area on the train. People could then use the app to find where to go to discuss whatever topic they're interested in. There would also be a list of suggested discussion questions with the ability for users to add their own. The entire app could also be integrated as part of an overall social network, however this was not included for the purposes of the test.

The assumptions we made for this idea were that some people want to socialize on the train and they want to socialize with people they have common interests with. We also assumed that media is an area where many people share common interests.

The prototype was simply drawn on large Post-Its. Due to the way the test was designed, the UI was not crucial.

The prototype was tested on three students, two of whom knew each other well and one who knew the other two only somewhat. We first had to find a common interest among all three students, and they very shortly decided that they all liked the television show Rick & Morty. We then gave them the post-its and let them have a discussion while sitting next to one another on a couch, or the "train."

The users had a five minute discussion about the show, but then they began to talk about other things. This is probably due in part to the fact that Rick & Morty isn't the most substantive show (it's a light comedic cartoon) and also due to the fact that normal conversations often change subject. The suggested questions also did not work, and we think that's because it made it seem too forced rather than natural. One participant also suggested that there be a way to see profiles of others who would be in the discussion, so this supports our idea of integrating the app with a social network.

Since this was not tested on an actual train with actual strangers, it is difficult to know whether or not our assumption that some people want to socialize on the train is valid. After the test however, the participants agreed that the concept (with some work) could be something that they would use in a real life scenario. The test also caused us to reevaluate what type of topics we should include in the app since the topic used in the test seemed to be limiting. Another important new assumption is that while people like to meet people with similar interests as themselves, they do not usually keep the conversation topics to just their similar interests. We now assume that we should only include very broad topics, or “lifestyles.” This could be cycling, sports, politics, art, etc.

Educational App:

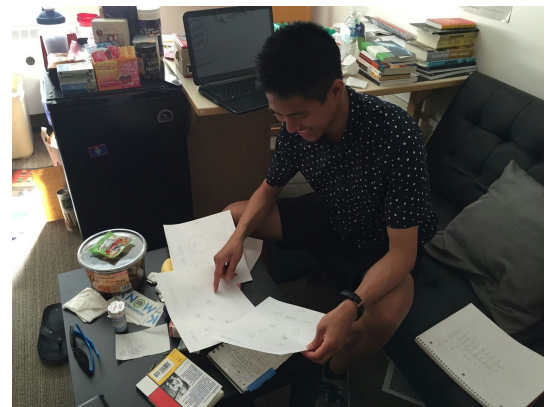
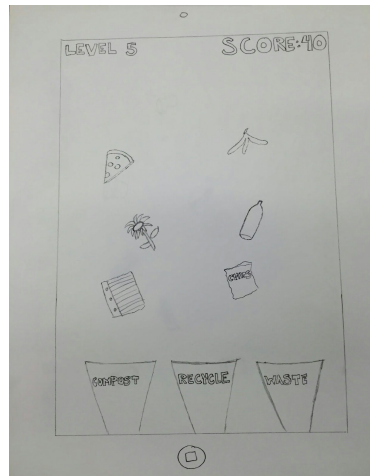
Our main assumption is that this prototype is meant to help children in developing sustainable habits. We reached this assumption from both interviewees,

Andy and Mike, who mentioned that to change people’s habits, you need to change them while they are children.

The prototype was constructed out of 3 pieces of paper each displaying three sketches of an educational game. The first image is a simple menu that displays “New Game” and displays two options: Recycle Ninja and Sorting Dash. The second image shows Recycle Ninja where the user is supposed to only swipe across recyclable items. If the user swipes on a non-recyclable item, the user loses points. The third image shows Sorting Dash, where the user must categorize waste as fast as possible into the “Recycle”, “Compost”, and “Trash” bins.

Although the intended target audience of this app is for small children, it is difficult to test this app on children when on campus. Thus, we enlisted the help of a Stanford student, Joshua de Leon, in testing this prototype. Upon showing him the initial app, he became excited. He said this is a game he would definitely play and likes the idea of an educational experience disguised as a game.

Josh mentioned that even if kids are swiping at the recyclables or sorting waste into different categories, that will subconsciously impact the habits of these kids in a positive way. Josh thinks that children will see the app and immediately start playing the game. Thus, he would like to see some tutorial to teach kids why some product fits a specific category. Although, he doubts that kids will actually want to see this.



Since we tested this prototype on a Stanford student, and not on a young kid, it is hard to know whether the app met our initial assumption. However, from Josh's thoughts, we learned that it may actually be a valuable tool for kids to use in developing sustainable habits. Josh mentioned that this is a tool that could be aimed for elementary and middle school teachers to tell their students about. Thus, this raises a completely new assumption whether parents would actually encourage their kids to use this game.

Usage Tracker App:

Our main assumptions were that people place importance on sustainable living, and that competition is a strong motivator for most people.

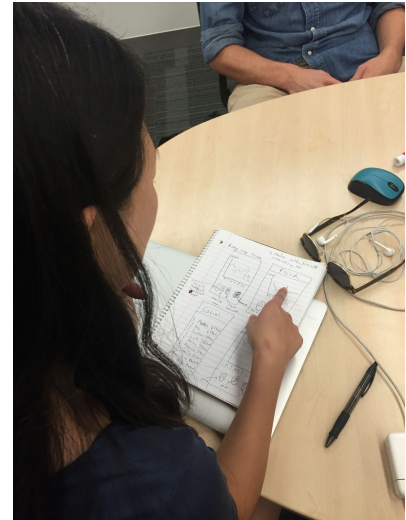
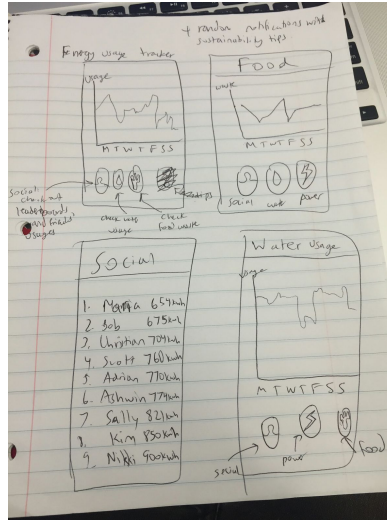
This prototype was made with drawings on pieces of paper. We used rough sketches to show different screens (waste production, power and water usage, and social).

The prototype was tested on a student, Krysten. To test the prototype, we briefly gave her context about our project theme, handed her a piece of paper with the screens drawn on it, and then waited to see what she would do.

This model worked well. Krysten gave a running commentary of what she was doing as she interacted with our prototype, so we could hear about the things she liked about our design and, more importantly, what she disliked. Overall, we learned that this type of app could actually be something that would encourage sustainable energy, water, and food usage. In fact, Krysten, who comes from a family that doesn't place a large emphasis on sustainable consumption, said that she would be willing to try such an app, and thought that the competitive aspect of it was a great motivator.

Krysten mentioned several obstacles that we could run into, such as requiring our users to buy a piece of external hardware to measure food waste and getting access to the power and water usage data from energy and water suppliers.

Our assumption was valid. Krysten was raised in a household that didn't practice sustainable living, but she still identified herself as someone who did care about the environment. In addition, she specifically mentioned the competition with friends aspect of the app as the most important feature to motivate people to live greener. This makes us wonder if this app could actually sway environmentally apathetic consumers into practicing green habits.



Most Successful Prototype:

The prototype that we found was the most successful in achieving the desired solution was the educational game. Since this is a game, the prototype is intuitive for most users. We found through our user testing that it has a potential to educate, which addresses our finding that habits are formed in the early years.