

User Empathy Reflection

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SECTION U
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1 Introduction

The goal of our User Empathy Experience was to put ourselves into a situation where we could gain a deeper understanding of the struggles of people who are living in food deserts and whose primary monetary resource for purchasing food is the USDA's Supplemental Nutrition Assistance Program (SNAP) [1]. To do this, we used public transportation to visit a food desert and obtain enough food that everyone on the team can eat and enjoy a meal together.

Food deserts are areas where residents have limited access to grocery stores within convenient traveling distance [2]. Because of the limited access to these food retailers in food deserts, access to affordable fruits, vegetables, whole grains, low-fat milk, and other foods that make up the full range of a healthy diet is limited [3]. In many cases, the people living within the food desert do not own cars [4] further limiting their access to healthy food options.

SNAP is a USDA program which provides food assistance for low-income individuals and families [1]. SNAP provides approximately \$4.32 per person per day to its beneficiaries [5]. For a family of five, that works out to be \$21.15 for the entire family for the day. Since my team consists of five members, we also held ourselves to the \$21.15 limit for our Empathy Experience.

Our goal was to follow the USDA's nutrition recommendations found on <https://www.choosemyplate.gov/> when choosing the food for our meal. According to this website, if we were buying food for a whole day, we would need the following quantities of each food type for each person [6]:

- 2 cups fruit
- 3 cups vegetables
- 8 oz equivalents grain
- $6\frac{1}{2}$ oz equivalents protein
- 3 cups dairy

Since we were only buying food for one meal, the actual quantities would be different, but the proportions would be approximately the same.

2 Anticipated Bugs

Before embarking on the User Empathy Experience with my team, I compiled a list of "bugs" that I anticipated my team would encounter while in the food desert. Below is that list with an explanation of each item:

1. **Difficulty finding enough fruits and vegetables.** Because food deserts are characterized by a lack of affordable fruits and vegetables, I anticipated that it would be difficult for my team to find enough fruits and vegetables.
2. **Difficulty staying under the SNAP budget.** I anticipated that we would have problems staying under the self-imposed SNAP budget. I made this judgment by looking at the receipt from a recent grocery trip where my family spent about \$177.00. Dividing this number out between the four people in my family results in about \$69.00 per person. \$69.00 divided by \$4.32 is about 16 meaning that we would have had to live solely off of the food we bought during that shopping trip for 16 days. In my family, it is common to buy groceries once a week, so our changes to our eating habits would be required in order for us to consume the proper amount of each food category.

3. **Difficulty finding low-fat protein sources.** In many food deserts, fast food chains and convenience stores are the closest, if not only, food retailers in the area [7]. Although many of these food retailers serve forms of protein, they are often high in fat content. Because of this, I anticipated that it would be difficult to find low-fat protein sources.
4. **Difficulty finding low-fat dairy.** Judging from my past experiences at gas station curb stores, high-fat dairy such as ice cream is in abundance, but low-fat dairy such as milk or yogurt is not as common. Since curb stores are often the only retailers of food in food deserts, I anticipated that it would be difficult to find such low-fat dairy.
5. **Difficulties using public transportation.** I have used public transportation in many places around the world with varying degrees of success. In some cases, such as when I used the Tube in London, things went smoothly. Other cases, such as when I attempted to ride a bus in New York City, were not so successful. Despite having grown up in the Denver Metro area, I am not very experienced in using the public transportation so I decided to assume the worst case scenario. Judging from past mistakes while using public transportation, I thought that it would be likely that we might miss the bus, get on the wrong bus, have to wait a long time for the bus, or miss a connection with the Light Rail.
In addition, I expected that it might be cumbersome carrying the groceries on public transportation. While in Boston for vacation this summer, I used the public transportation system to get around the city and I was often carrying a backpack. This was rather cumbersome at times, therefore I expected carrying groceries to also be cumbersome.
6. **Significant amount of time to find proper foods** I anticipated that it would take a significant amount of time to find the proper foods (if we were even able do to) because of all of the aforementioned factors.

3 Actual Bugs

During my teams trip to our assigned food desert, we encountered many difficulties. Some were expected, but others were surprising. All of them gave me insight into the difficulties faced by people living in food deserts.

1. **Public transportation issues.** During my team's User Empathy Experience, we used three types of public transportation: Light Rail, bus, and walking. We didn't fully succeed at any of them. The Light Rail trip from Golden to Wadsworth was uneventful. While on the train, I took a picture of the light rail and later sketched it [Fig. 1]. Our troubles began after we arrived at the Wadsworth station because we had mistimed our ride and the Wadsworth bus was not going to come for another forty-five minutes. We ended up walking one mile from Colfax to 26th Avenue. By the time we had walked this distance, the bus had caught up to us and we took it from 26th to 38th. Had we waited for the bus to come to the Colfax stop, we would have arrived at the same time, without the mile of walking.

In our food desert, there were some stretches with nice paved sidewalks, but in other places the sidewalks were either in poor condition or nonexistent. For example, along Wadsworth near the Morning Side Retirement Community, there is no paved sidewalk, it is merely trampled down grass and dirt. I thought that it would be difficult for some of the less mobile residents of the retirement community to go to the store if that was the only sidewalk. When I returned on my own last Friday, I found that there are sidewalks on the other side of the retirement

community that are in good condition, but when we were there as a team, we didn't find those sidewalks.

After our time in the food desert, we mistimed the bus and ended up walking 1.5 miles from the food desert to the Light Rail stop at Colfax. The bus passed us about a block before we got to the Colfax station. As we were coming up to the Light Rail station, we saw the train leaving the station so we had to wait for the next train. While we were waiting, we took our team photo [Fig. 2].

As we walked back to the Light Rail station, I was carrying the bag of groceries. Though not very heavy, it seemed as though the bag's weight increased with the distance walked. I have much more sympathy for people who must carry groceries long distances after having done it myself.

Overall, we were not successful in our use of public transportation. Overall, however, using public transportation gave me a greater appreciation for people who rely on public transportation for all of their transportation needs.

2. **Difficulty finding quality fruits and vegetables.** We bought our food at the Shell curb store at 38th and Wadsworth. We found a great lack of fruits and vegetables in this location. There were no fresh fruits or vegetables in the store when we went as a team. There was a stand for bananas, but it was empty [Fig. 3]. When I returned on my own to the food desert, there was one banana in the stand. There was no shortage of fruit-flavored candies in the store, but no actual fruit. While at the curb store as a team, the closest food product to a fruit that we were able to find was a jar of grape jam, a highly processed derivative of a fruit. I knew that it would be difficult to find fruits and vegetables, but I was surprised at how sparse the selection was. I expected that there might be some apples or bananas consistently available for purchase but after two visits to the curb store, it was clear that this was not the case.
3. **Difficulty finding low-fat protein.** Like fruits and vegetables, protein was not in abundance at the Shell curb store. There were packages of beef jerky, but they were relatively expensive and high in sodium. There were also some nuts, but those, too, were high in sodium. We ended up settling for a jar of peanut butter which is high in protein, but also fairly high in fat content.
4. **Difficulty finding dairy.** When we went to the food desert as a team, the only milk we were able to find was a small individual container, entirely insufficient for all of us to get the required amount of dairy as per the USDA. When I returned, I found that they also had gallon jugs of milk. I'm not sure if these jugs were in stock when we visited the first time, but I'm guessing that they were out of stock because we looked in that location for milk when we were there as a team. These jugs of milk cost \$3.99 so buying it instead of the small container would not have caused us to go over our budget. However, carrying the full gallon back to Mines with us would have been much more difficult than merely carrying the small container.
5. **Difficulty transporting perishables.** For our dairy product, we purchased some milk but did not account for the fact that it needed to be refrigerated. By the time we got back to the Mines Campus, the milk noticeably warmer. If the temperature that day had been any warmer, or if we had waited longer to prepare our food upon our return to campus, the milk may have been warmer and less safe.

6. Possible language barriers. Our team's food desert was in a mixed-ethnicity neighborhood. Much of the area, especially the stretch along the south side of 38th Ave seemed predominately White. At 32nd and Wadsworth, there was a small shopping center with an Italian bakery and a store which sold products primarily from Eastern Europe. Right next to those stores was a Tax Services office which had their services listed in Spanish on the windows. Slightly south of the gas station was a Hispanic *joyería*, jewelry store. The fact there was signage in both English and Spanish, the existence of language barriers is likely.

4 Analysis

4.1 Demographics

On our initial visit to the food desert as a team, we did not see many people. We wandered around inside the curb store for quite some time, but only two or three other people came in. None of the guests, except the lady who came in wearing a bikini, stood out to me in any way. The employee at

the gas station looked Hispanic. It appeared that he was either very shy or that he was uncomfortable speaking English because when I tried to ask him some questions about the types of people who come to the curb store, the only response I received was a mumble and the price of our food.

As we walked around the food desert area, we saw a very few people. We saw a Hispanic man working on his yard and we saw a group of teenagers. I do not recall the exact ethnic makeup of this group, but I do recall at least some of them looked Hispanic.

I felt like I didn't have sufficient time to experience the area when I went with my group so I returned to the food desert on Friday, 9 September 2016. This time, I drove my car up to the food desert and drove the perimeter. I also drove about 8 miles through the streets within the food desert and walked the Northern border of the food desert (the south side of 38th). On this trip, I saw a few more people. I ended up at the retirement community by accident and saw an older man walking in the area. There were also some people holding what appeared to be a garage sale. The people at the garage sale appeared to be middle-aged White people primarily. (I did not want to stare or appear like I was stalking, so I only had a short glance at the people there.) I also saw a father and his two sons walking home from school. The father was very overweight but his children seemed average weight and height for their age.

On this second trip, I stopped at the small shopping center on 32nd and Wadsworth where, as I described above, there were a variety of stores catering to immigrant populations. The lady working at the Euro Market Delicatessen looked like she could have been Eastern European herself. I talked to the lady in the Italian bakery to see if she knew of any major immigrant populations in the area. She did not seem familiar with the food desert area and was unable to give me any information. Before leaving the shopping strip, I took a picture of the Euro Market Delicatessen storefront [Fig. 4].

As I drove around the neighborhood, one thing I noticed was that there were apartments intermingled with homes. Overall, these homes seemed well kept up. Almost all of the houses had green-grass lawns and were in good condition. There was one house along Wadsworth which was rather run down. I took a picture of it and sketched it [Fig. 5]. Most of the houses as well as the apartments looked like they were built in the '60s. I took a picture of one of the apartments and later sketched the apartment [Fig. 6].

Overall, the neighborhood seemed much more mixed than my own. Whereas I rarely see anyone who is not White in my neighborhood, probably only 80% of the people in people I saw were White.

4.2 Food Quality

As described above, the Shell curb store had no good fruit or vegetable options except that one banana on my second trip. Of the three and a half isles with food displays, three full isles had junk food such as candy, chips, and cookies leaving only one isle with actual food.

One interesting thing about the bananas was that they were right next to the ice cream freezer. While the banana stand was not very well stocked, there were plenty of options in the ice cream freezer. This disparity demonstrates the apparent lack of demand for healthy food at this curb store.

When I went to the curb store on my second trip, I ended up buying a bag of Funyuns® because I hadn't eaten lunch. The fact that I choose chips over a healthier alternative demonstrates one of the main issues with curb stores: it is so easy to buy junk food.

The food prices were similar to the prices I've encountered at my local grocery store in Ken Caryl, Colorado, however, being on a budget made me conscious of the often-restrictive prices of foods. The small container of peanut butter was nearly \$6.00. Cereal cost another \$4.00. These two items alone used nearly half of our budget immediately.

5 Remaining Unknowns

Although I gained a significant amount of insight into the Wheatridge food desert, and food deserts in general, I still have a few questions remaining about food deserts. Below is a list of those questions:

- **Number of immigrants living in that area.** When I returned to the food desert and found the small shopping center with the Italian bakery and the European Delicatessen, I began wondering if there was an immigrant population in the area. I was unable to find out whether or not this was the case and I think that it would be insightful to see what cultures and languages are represented in the area.
- **Age demographics of people living within the food desert area.** While in the food desert, I saw people of all ages from children to retirees. My sample size was extremely small, however, so I would like to know more about the age demographics of the area.

6 Summary and Conclusion

6.1 Our Meal

Our meal ended up consisting of the following items:

Item	Food Type	Price
Honey Nut Cheerios	grain	\$3.99
Yup Vanilla milk	dairy	\$2.19
Best Choice Grape Jam	fruit	\$2.59
JIF Creamy Peanut Butter	protein	\$5.89
Club Crackers	grain	\$1.39
Subtotal		\$16.05
Tax		\$ 1.22
Total		\$17.27

Our logic for choosing these items was as follows. We were only able to find jam for a fruit product. We did not want to eat it straight out of the jar, so we bought the club crackers to spread it on. In addition, we bought the peanut butter to be able to have peanut butter and jam crackers. For dairy, we bought milk and decided to buy Cheerios as well. We somehow forgot that we were getting two grains.

6.2 Eating Experience

Preparing our food was extremely easy as all we needed was a bowl and some utensils. I took a picture of my meal which can be found in [Fig. 7].

The meal components tasted as one would expect them to taste. The only thing that was different than what I was expecting was the added vanilla flavor in the milk. It made the milk noticeably sweeter. All of these items are relatively common in my diet. I eat peanut butter and jelly fairly often and cereal is not an uncommon item either.

6.3 Dietary Analysis

We were obviously unable to fulfill the daily dietary requirements as recommended by the USDA. The vegetable category is entirely missing and we were unable to find a good source of fruit (see #2 in Actual Bugs). We were also not able to acquire a satisfactory source of protein (see #3 in Actual Bugs). Even the dairy we acquired was insufficient for all of us (see #4 in Actual Bugs).

For the most part, lack of availability determined which food categories we neglected. Understanding this was one of the most important insights I have gained through this experience. Before embarking on this experience, I thought that people ate unhealthily because they had poor self control. Now I understand that it is often not a choice to eat anything but unhealthy food.

6.4 Calorie Analysis

I estimated the calorie count for our meal. Here is the result of that calculation:

Item	Quantity	Calories
Honey Nut Cheerios	1 cup	114
Yup Vanilla milk	1 cup	103
Best Choice Grape Jam	2 tbsp	100
JIF Creamy Peanut Butter	2 tbsp	190
Club Crackers	15	150
Total		657

Assuming that every meal during a day has the same calorie content, we can calculate the total calorie count for the day: $657 \times 3 = 1,971$. Although all people have different calorie intake requirements, a rough average yields 2000 calories per day [8].

6.5 Conclusion

After my User Empathy Experience, I have a much better understanding of the struggles of people living in food deserts. I've also gained insights into what food categories are lacking in food deserts. Overall, the User Empathy Experience has been a good way to learn more about the context in which we will be working and has helped me focus my thoughts as I develop a problem statement with my team.

1 PT PERSPECTIVE 09-06-2016

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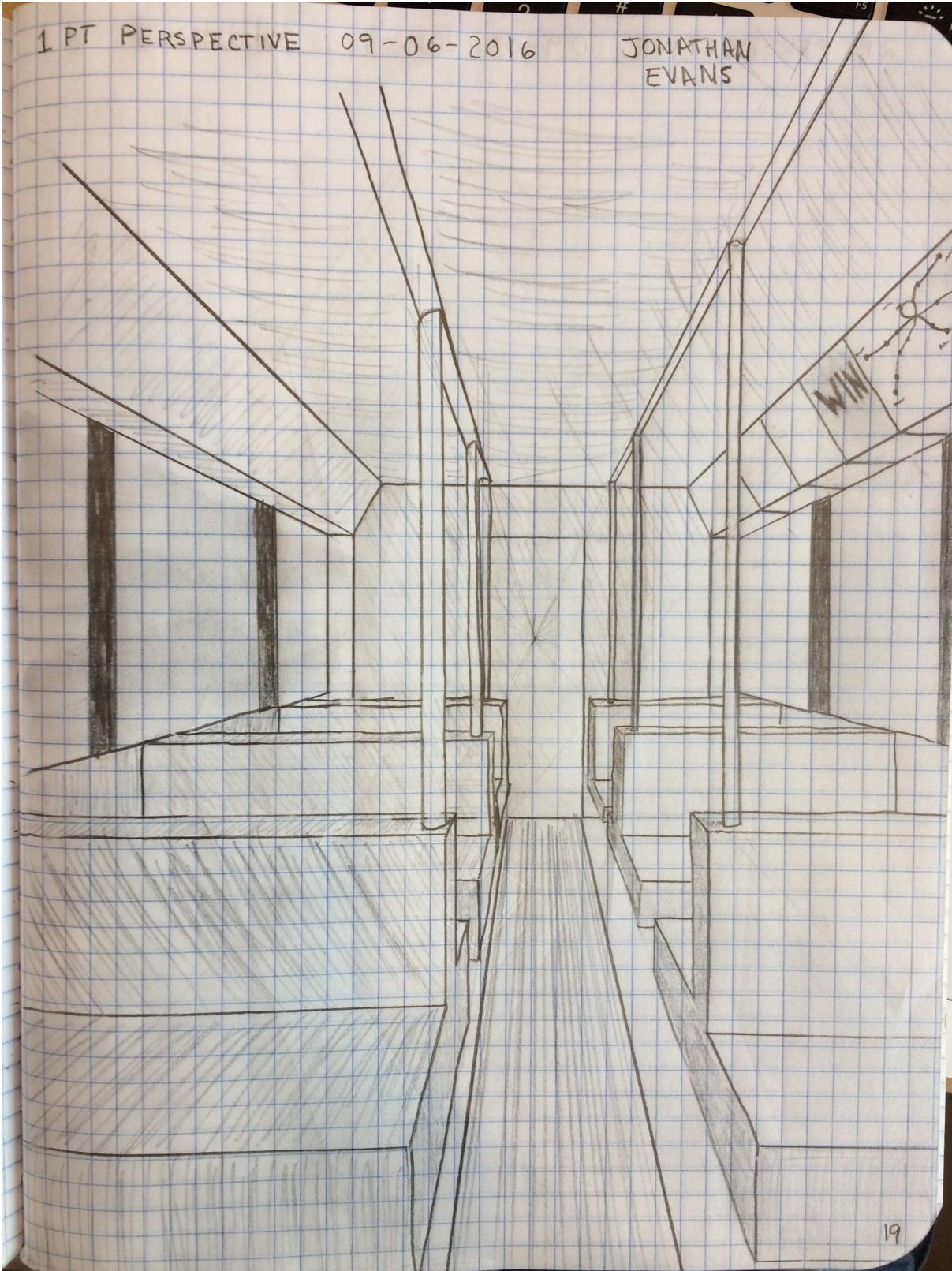


Figure 1: Sketch of Inside of Light Rail



Figure 2: Our team waiting for the next Light Rail train to come



Figure 3: The banana stand was empty but the ice cream freezer was not



Figure 4: The Euro Market Delicatessen on Wadsworth and 32nd

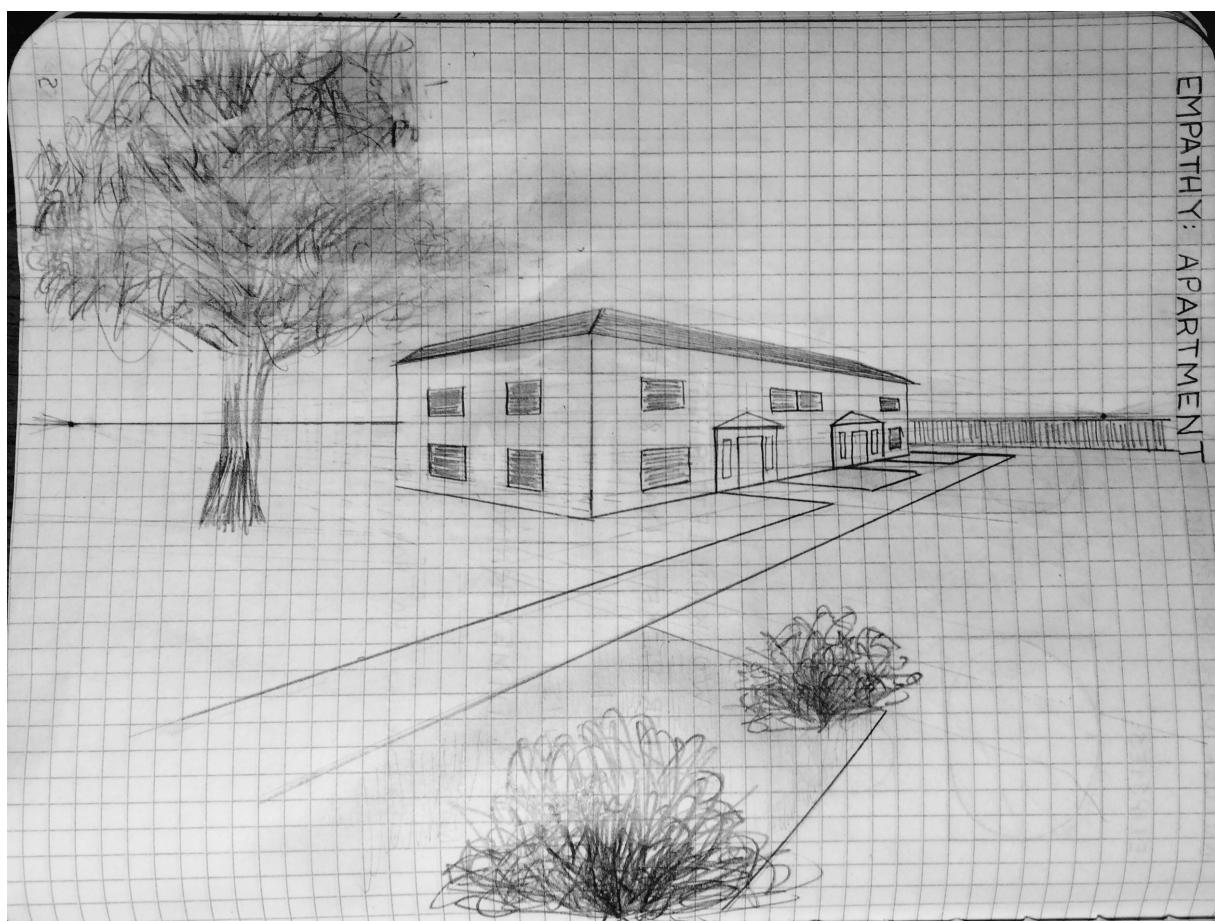


Figure 5: Sketch of the inside of a Light Rail train

EMPATHY: HOUSE ON WADSWORTH

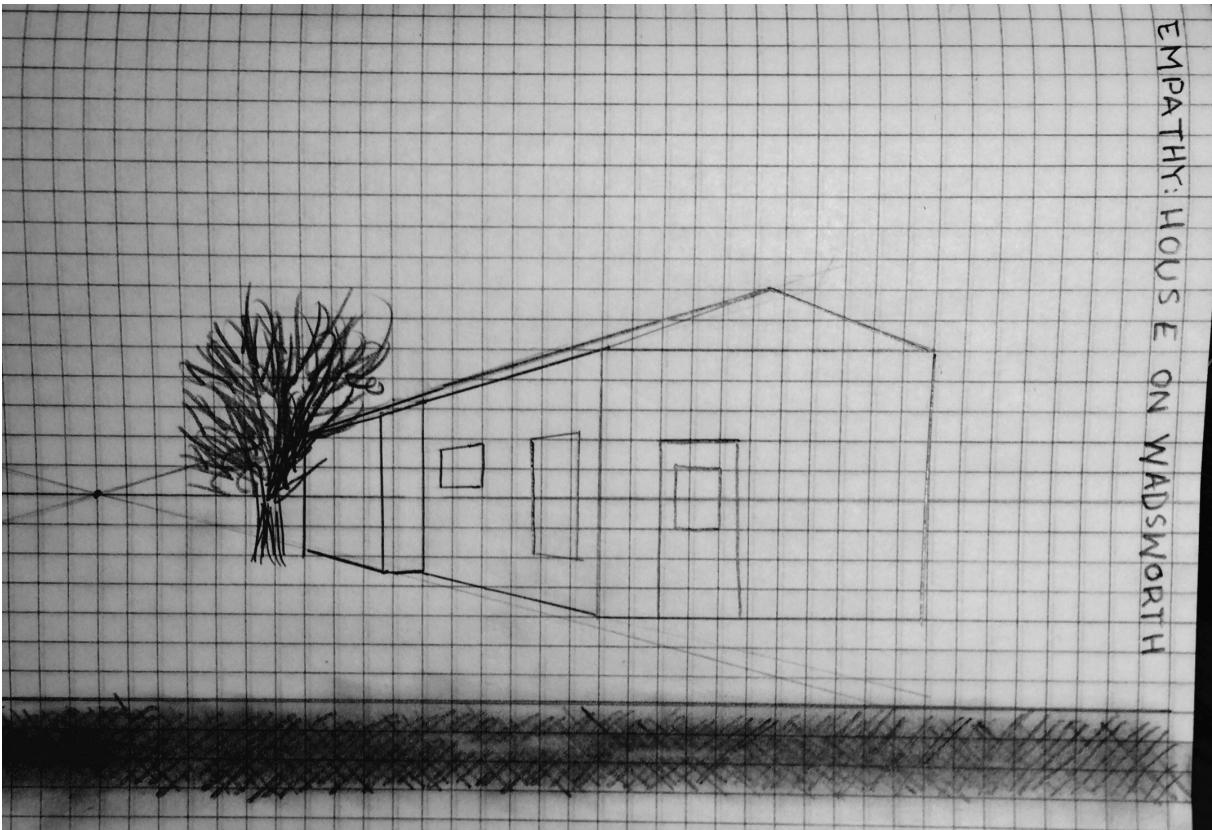


Figure 6: Sketch of a slightly run-down house



Figure 7: My "meal"

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