# Team La Yuqawam's Group Heuristic Feedback:

**Overall Evaluation:**

Little Tree's ambition in designing an Augmented Reality shopping experience comes with interesting ways to find out how sustainable certain grocery products are. Aspects of good design that we noted were the visual design decision of making most of their screens have a fair amount of transparency, a deep dive into understanding their users and creating personas, and their innovative leaf and star system. Major hurdles that we encountered surrounded the user's inability to leave/exit certain flows, while also not informing users of their current state within the app, causing confusion and frustration while navigating the experience.

**Recommended Changes:**
**\*/-**
**3.0**

To tackle the user control and freedom and also error prevention during the user experience of Little Trees, we recommend adding buttons or options that allow users to undo or cancel important actions. To tackle the error prevention issue, we recommend adding more "are you sure?" or add more general status visibility on different options. To tackle the standards and consistency issue, we recommend looking over the prototype and making sure that the language and location stays the same when referring to an object/option. Lastly, to tackle the persona issue, we are conflicted on this and feel that maybe a different approach of tailoring/personalizing the shopping experience would be beneficial while still demonstrating the research done.

# Configuration Flow:

1. **H1 - System Visibility – Severity 2 -  5 (✋) people found this**
   a.  Problem: Lack of progress bar
   b.  Solution: Add progress bar

2. **H2 - Match between system and real world – Severity 3.5 – 5 (✋)  people found this**
   a.  **Problem**: Personas are too general to be realistic/helpful, negative connotations with description and persona creates bias.
   b.  **Solution**: We really like the research still. Maybe changing it to select certain traits of a persona to tailor the experience or changing it to questions that the user can answer?

3. **H3 - User control and freedom – Severity 4 – 5 (✋) people found this**

a. **Problem**: Lack of back buttons, exit, undo, etc.
  b. **Solution**: Add the necessary buttons
4. **H4 - Consistency and Standards – Severity 1 – 1 (☝️) person found this**
  a. **Problem:** Being consistent between words vs. icons for buttons, and being more explicit about what buttons mean.
  b. **Solution:** Try having a single/consistent design system for icons

5. **H5 - Error Prevention – Severity 2 – 3 (🤟) people found this problem**
  a. **Problem:** Lack of back buttons, lack of feedback upon selection.
  b. **Solution**: Add color change/outline for selection and add back buttons.

6. **H8 - Aesthetic and visual hierarchy – Severity 2 – 3 (🤟) people found this**
  a. **Problem:** Prominence in visual hierarchy
  b. **Solution:** Establishing the importance of certain information and using weight and size will allow your user to internalize what is most important on the screen. Digesting the amount of information will be easier for the user if you take this approach.

7. **H9 - Help users recognize, diagnose, & recover from errors – Severity 3 – 1 (☝️) person found this**
  a. **Problem**: The interface does not have a back button to allow the user to return to a previous screen, action buttons are not working properly and not added (exit, remove, undo, redo, etc.)
  b. **Solution**: Add "back-tracking" buttons to the interface

8. **H10 - Help and Documentation – Severity 2 – 1 (☝️) person found this**
  a. **Problem:** Lack of purpose/explanation in required action
  b. **Solution:** Add information from instructions pdf

## Pre-Shopping Flow:
1. **H1: System Visibility – Severity: 2 – 5 (✋) people found this problem**
  a. **Problem**: Lack of progress bar, users cannot determine where in the dialogue process they are and how much more they have to fill out
  b. **Suggestion**: Add a progress bar

2. **H3: User control and freedom – Severity: 4 – 5 (✋) people found this problem**
  a. **Problem**: Lack of back buttons, exit, undo, etc., users cannot go back in a set of dialogue, nor can they exit a dialogue until it is complete, and more importantly users cannot change any answers they have.
  b. **Suggestion**: Add back and exit buttons

3. **H4: Consistency and standards – Severity: 1 – 2 (✌️) people found this problem**
  a. **Problem**: Organize of options are messy, not ordered in any specific way

b. **Solution**: Create a level of organization to view elements in a more easy-to-follow manner.

4. **H5: Error Prevention – Severity: 2 – 3 (🤟) people found this problem**
   a. **Problem**: Lack of back buttons, lack of feedback upon selection
   b. **Solution:** Back buttons and color change/ upon selection

5. **H9: Help users recognize, diagnose, and recover from errors – Severity: 3 – 1 (☝️) person found this problem**
   a. **Problem**: Lack of back buttons, exit, undo, etc
   b. **Solution**: Back buttons

6. **H10: Help and Documentation – Severity: 2 – 1 (☝️) person found this problem**
   a. **Problem**: Lack of purpose/explanation in required action
   b. **Solution**: Add information from instructions pdf

## Explore Flow:

1. **H1: System Visibility – Severity: 3 – 3 (🤟) people found this problem**
   a. **Problem A**: Can't tell which items we are replacing in the you might like section
   b. **Solution A**: Highlight the item with the suggested replacements
   c. **Problem B:** Can't tell where you are in the search flow
   d. **Solution B**: Progress bar/similar item
2. **H2: Match Between System and the Real World – Severity: 2 – 1 (☝️) person found this problem**
   a. **Problem**: The add "add to cart"/"add to list" (whichever you pick to stick with) button should be in the floating action button region so it is more easily accessible to the user, similarly the "shopping cart" could be placed in the top right (which maps to e-commerce conventions)
   b. **Solution**: Take the best parts of platforms like Amazon and Ebay, and implement their strengths into a VR environment
3. **H3: User control and freedom – Severity: 3 – 2 (✌️) people found this problem**
   a. **Problem A**: No way to return to the exploration menu after clicking "add item"
   b. **Problem B**: No way to go back/exit to the user settings
   c. **Solution**: Add a way for users to have autonomy of navigating between different pages/scenarios
4. **H4: Consistency and Standards – Severity: 3 – 4 (🤛) people found this problem**
   a. **Problem A**: Menus and icons appearing at different locations
   b. **Solution A:** Keep the explore pop up in the same place
   c. **Problem B:** No clear indication where you are within the Search flow
   d. **Solution B**: Having a back/forward/exit button for the search flow
5. **H5 - Error Prevention – Severity 2 – 1 (☝️) person found this problem**
   a. **Problem**: There is no popup/alert that appears notifying the user that they might be closing an important modal and won't be able to get it back (such as the soy milk modal)

b. **Solution**: Allowing the user to re-open the pop up at a later time, or have them confirm that they will be removing the suggestion completely when "dismiss" is clicked (this is both for the suggestions in the top right corner, as well as the one next to the shopping list)

6. **H6: Recognition Rather than Recall – Severity: 2 – 1 (🤙) person found this problem**
   a. **Problem**: Exploration menu title disappears on soy milk, don't remember what it does specifically, and in order to get it back, you must re-attempt the steps of adding certain items to the cart
   b. **Solution**: (Same as H5) add a way to re-open the pop ups

7. **H7: Flexibility and Efficiency of Use – Severity: 2 – 3 (🤘) people found this problem**
   a. **Problem A**: There are a lot of inputs needed to add items
   b. **Solution A:** minimize the number of different varying buttons/steps needed to add items to cart/shopping list (i.e. types of dairy, types of milk, brand, etc. is a lot of dialogue for milk)
   c. **Problem B:** "Add item" button should have visual contrast/easier access for user
   d. **Solution B**: the design should stand out more, or move it to the left side of the screen where it is usually for other interfaces

8. **H8 - Aesthetic and visual hierarchy - Severity 3 - 3 (🤘) people found this**
   a. **Problem A:**Buttons and elements are grey, a color widely known to indicate an inactive/disabled state in design, hard to tell when one is toggled/pressed
   b. **Solution A:** differentiate when something is active vs inactive, finding another way to present notifications without having them blend into background
   c. **Problem B:**Shopping Cart and Toggle On/Off same through a visual hierarchy perspective
   d. **Solution B**: Highlight whichever is more important/is the preferred action

9. **H9: Help users recognize, diagnose, and recover from errors – Severity: 2 – 2 (🤘) people found this problem**
   a. **Problem A**: "Are you sure?" or a similar message should prompt when performing an action that adds/removes from list and switching from explore/shopping mode
   b. **Solution A:** differentiating or confirming when exiting/entering different modes so the user is clear about the purpose of each, and knowing instantly when the interfaces have changed, and the actions are now different
   c. **Problem B:** No way to minimize the "More info on an item" modal window
   d. **Solution B**: Add an interaction that lets it be minimized, but also can be reactivated at a later time after it's closed.

| | | | |
|---|---|---|---|
| 1. System visibility | Can't tell which items we are replacing in the you might like section | 3 | 3/5 |
| | No clear indication where you are within the Search flow | | |

| | No progress bar to help the user along through their shopping experience | | |
|---|---|---|---|
| 2. Match between system and real world | Add button should be around the "FTB" button on mobile apps | | 1/5 |
| | "Shopping Cart" is not where most websites have it. Makes it hard to locate on the screen | | |
| 3. User control and freedom | No way to return to exploration menu after clicking add item | 3 | 2/5 |
| | No way to go back/exit to the user settings | | |
| 4. Consistency and standards | Menus and icons appearing at different locations | 3 | 4/5 |
| | No clear indication where you are within the Search flow | | |
| 5. Error Prevention | There is no popup/alert that appears notifying the user that they might be closing an important modal and won't be able to get it back (such as the soy milk modal) | | 1/5 |
| 6. Recognition rather than recall | Exploration menu title disappears on soy milk, don't remember what it does specifically | 2 | 1/5 |
| 7. Flexibility and efficiency of use | There are a lot of inputs needed to add items | 2 | 3/5 |
| | Add button should have visual contrast/easier access for user | | |
| 8. Aesthetic and minimalist design | Buttons and elements are grey, a color widely known to indicate an inactive/disabled state in design, hard to tell when one is toggled/pressed | 3 | 3/5 |
| | Shopping Cart and Toggle On/Off same through a visual hierarchy perspective | | |
| 9. Help users recognize, diagnose, and recover from errors | "Are you sure?" or a similar message should prompt when performing an action that adds/removes from list and switching from explore/shopping mode | 2 | 2/5 |

| | No way to minimize the "More info on an item" modal window | | |
|---|---|---|---|
| 10. Help and Documentation | -- | -- | 0/5 |

# Walter's Feedback Appendix:

# Configuration Flow:

**1. [H1 Visibility of System Status] (S2)**

With this first screen where the "Welcome to Little Trees AR" is presented, I try to find out more about the description of the platform by clicking the icons in the middle, yet there is no information that shows up. If this is an introduction to the app, I would browse and learn a bit more about what I am going to be doing within the app.

Also, the visual hierarchy within this screen could be improved! "Welcome to Little Trees" should be larger than the box to the right of it, as well as with the same/darker weight of the "Feature description of platform".

**2. [H9 Help users recognize, diagnose, and recover from errors] (S3)**

Within the "What Type of Shopper Are You?" frame, there is no way to Exit the selection options -> what if I change my mind and wish to not start this process now? Users could be taken back to the Home Page.

# Explore Flow:

**3. [H8 Aesthetics and minimalist design] (S2)**

Visually speaking, the top options that are present to the user are at the same visual hierarchy as the shopping cart and the toggle on/off feature. I would try to create more visual contrast between these elements, as well as with the background.

**4. [H3 User control and freedom] (S3)**

In the Explore flow, there is no way to escape / go back to the user settings. It may trap the user in this view. It needs to have a way to escape this view!

**5. [H9 Help users recognize, diagnose, and recover from errors] (S1)**

When viewing an item in the Explore flow (in this case, the Folgers Classic Roast), there is no clear signifier to exit out of the screen. Even though after clicking around I realized I had to press the same item again to close it out, it would be nice to be presented with a small 'x' to minimize this.

**6. [H1 Visibility of system status] (S2)**

In your "Search" flow, having the progression into the items that you select "Dairy->Milk->Whole->Fairlife" visible to the user helps them understand where they are in the tree of options. I would consider having this visible to them as they make their selection.

**7. [H3 User control and freedom] (S4)**

In your Explore mode, there isn't a clear signifier to change from Explore mode to another mode. Being able to switch these might be great to have at the ready. Better yet, have something that allows you to change the View settings.

**8. [H1 Visibility of system status] (S2)**

There seems to be a disconnect from when you decide to "Add an Item" on the bottom left to the point where you are presented to the screen with a bunch of options (Dairy, Produce, Meat, Bakery). This transition does not feel seamless; I feel like I am lost in a sea of options. There is no clear indication of where I am in the flow.

**9. [H2 Match between system and the real world] (S3)**

The location of the shopping list is not consistent with where many apps place their "Cart Items" in. While I understand that this is an AR experience, the learning curve for many might be lessened if it followed web UX standards.

**10. [H7 Flexibility and efficiency of use] (S4)**

The "Add Item" button seems to be the primary CTA on the Explore flow. I believe the user would benefit from their being a visual contrast with this button in relation with all the other UI elements.

**11. [H2 Match between system and the real world] (S3)**

Having the "Add Button" in the bottom right corner (like many mobile FTBs (frequently tapped buttons) have) has the user's eyes navigate to a common place on the screen.

**12. [H1 Visibility of system status] (S2)**

When choosing the type of shopper I am, I would like to see a progress of how far I've come when customizing my profile. I feel like this flow is incomplete, but if it isn't, then I would like to know that this is the only thing that comes after the customization part of this app.

# Pris' Feedback Appendix:

# Configuration Flow

**1. [H1 Visibility of system status](Severity 2)**

The welcome page introduces the user to the interface, but the user might be left confused as to what to do next. Currently, there is no element that lets the user proceed to configure their user preferences.

**2. [H8 Aesthetic and minimalist design](Severity 1)**

The background behind the elements is distracting and the user might have a bit of trouble connecting the overall sustainability message with the interface.

**3. [H2 Match between system and the real world](Severity 2)**

The persona icons are biased for how an individual that is interested in sustainability might look. The user might be a bit discouraged if they are not physically represented by an icon. Icons that are more ambiguous would fit a wider range of users.

**4. [H8 Aesthetic and minimalist design](Severity 0)**

Icons are misaligned on the rectangle block.

**5. [H1 System visibility](Severity 2)**

The user does not have indication of how far they are along their configuration. A progress bar or some sort of progress status would help.

**6. [H3 User control and freedom](Severity 4)**

The interface does not have a back button to allow the user to return to a previous screen, action buttons are not working properly and not added (exit, remove, undo, redo, etc.)

**7. [H5 Error Prevention](Severity 4)**

If a user selects a button or element, the user cannot return back to previous system state. The user is forced to continue with the error.

**8. [H8 Aesthetic and minimalist design](Severity 2)**

Hierarchy of visuals should be taken into account. For example, in the first screen, the welcome message is the most important piece of information and should be bold and bigger than the other items.

## Pre-Shopping Flow

**1. [Help and documentation](Severity 3)**

The user might be confused by rating system of both, the trees and stars. A pop-up screen describing what each means before prompting the user to select preferences would help the user get familiar with the rating system of the interface.

**2. [H1 System visibility](Severity 2)**

The user still does not have an indication of their progress.

**3. [H5 Error Prevention](Severity 4)**

State of system is continuous and not cyclical. User should be able to have the option to return, redo, undo, etc.

## Explore Flow

**1. [H5 Error prevention](Severity 1)**

The user might accidentally toggle the ON/OFF toggle for explore mode. A message should be given to the user that they have entered explore/shopping mode.

**2. [H8 Aesthetic and minimalist design](Severity 3)**

Buttons and elements are grey, a color widely known to indicate an inactive/disabled state in design, hard to tell when one is toggled/pressed.

**3. [H7 Flexibility and efficiency of use](Severity 2)**

A lot of buttons are missing for users to add items. More choices should be given to the user.

**4. [H4 Consistency and standards](Severity 2)**

Locations of icons should remain the same throughout the flow. Different locations might confuse the user when using the interface.

**5. [H3 User control and freedom](Severity 2)**

The user should be given the option to return to explore mode after adding items to the list/cart.

# Tolu's Feedback Appendix:

# Configuration Flow:

**1. [H2 Match Between System and the Real World] (S2)**

When I get to the "what type of shopper are you" screen, there are blank labels that I have to click into to see what they are. I'm not sure if you want this to be left a mystery and have users simply click on who they vibe with the most, but I was a bit confused by this. It could be helpful to explicitly write out who means what rather than leaving filler text, and if the mysterious aspect is intentional I would just suggest to opt for something other than using "xxx" due to the connotations associated with that term.

**2. [H1 Visibility of System Status] (S2)**

I understand that the configuration/onboarding process has not been fully fleshed out yet, but I think it would be helpful to add some sort of progress bar to help the user know how deep into the configuration dialog tree they are when trying to find out what shopping archetype they best fit into.

**3. [H3 User Control and Freedom] (S3)**

When going through the configuration/onboarding process I realized that there was no real way to go back/up the dialog tree for figuring out what shopping archetype someone is. Now this could be intentional but if so I think that the user shouldn't have their archetype determined at the beginning, but rather at the end after a series of questions. Either way the user still should be able to navigate between paths in the event that they change their minds.

**4. [H4 Consistency and Standards] (S1)**

This is a bit more nitpicky, but for the buttons I would try to maintain a consistency of either using only words, only using icons, or only using icons next to words within the buttons. Also more explicitly defining what "y" and "n" mean would be helpful especially to those who are color blind and may not realize they are shorthand for "yes" and "no" respectively.

# Explore Flow:

**5. [H7 Flexibility and Efficiency of Use] (S4)**

I believe that having the ability to quickly add and remove priority items from your shopping inventory in under 2-3 taps/keystrokes would do the user a world of good, rather than needing to go through the menus to find something every time.

**6. [H5 Error Prevention] (S3)**

The first time I used the UI I accidentally closed out the modal in the top right, and was then no longer able to pull it up again. I would probably just chalk this up to the fact that I might have gone out of bounds for the user test, but I think that it would be helpful to have a confirmation popup appear when users are about to close out a modal that might be important.

**7. [H4 Consistency and Standards] (S2)**

At first glance I thought that the text within the three item boxes at the top for the coffee, cereal, and tea were not properly aligned, but after second glance I realized that the two lines of text are center aligned based on the surrounding elements, but because of the different sizes of each product's name it looks a bit off. I would suggest left-aligning the text in these boxes just so that it appears more aesthetically pleasing.

**8. [H9 Help Users Recognize, Diagnose, and Recover From Errors] (S3)**

As was mentioned before when I accidentally closed out some modals I was no longer able to get them back. I would try to add a way to recover modals that the user accidentally closed and just ensure that changes aren't permanent without the explicit consent of the user.

**9. [H1 Visibility of System Status] (S2)**

Similarly to the configuration flow I would suggest adding some sort of progress bar or indicator to help the user along with their shopping experience and keep track of what they need vs. what they have.

**10. [H2 Match Between System and the Real World] (S2)**

In terms of this I would just propose to make the iconography more intuitive. Check and "x" marks are understandable but I think that in this case where you are developing something that has not really been done before, being deliberate about what buttons mean and do (with buttons labeled with words or icons next to words) would be helpful to the user in a space where conventions have not really been defined yet.

**11. [H8 Aesthetic and Minimalist Design] (S1)**

For this I would just advise to increase the contrast between the white text and gray modal backgrounds so that it is easier to read. On a computer screen I can read it alright but I'm not sure how it would map to a VR headset.

# Hannah's Feedback Appendix:

**Pre-Shopping Flow**

1. **[H5: Error Prevention] (severity 3)**
   a. On the first step of the Pre-Shopping flow, when you select a cereal preference, there is no indication of what cereal has been selected before the user answers "why did you select this?" It would be helpful feedback for users to indicate what has been selected in case they change their preferences or misclicked and do not realize it before proceeding. It would both add visibility of informing users what's going on, but more importantly, it would eliminate any error prone conditions and confirm that users chose what they meant to choose.

2. **[H3: User Control & Freedom] (severity 3)**
   a. Currently, there is no go forward/go back feature on the Pre-Shopping flow, which would be a good addition for users to confirm or change their answers. While the immediate going forward with the next set of options eliminates friction, a go back "undo" feature would help in case there is a misclick or a change of mind.

3. **[H1: Visibility of system status] (severity 2)**
   a. A progress bar/status indicator of some sort would help users be aware of how close they are to finishing the pre-shopping questionnaire and inform them of their progress.

4. **[H4: Consistency and standards] (severity 2)**
   a. Most industry selection options, when there are many to choose from, order to options in alphabetical order, and this may benefit the questionnaire position since some interest categories have a lot of things to choose from.

**Explore Flow**

1. **[H3: User Control & Freedom] (severity 2)**
   a. After dismissing the suggestions, there are no ways to get it back. If a user dismisses it temporarily/wants to see suggestions later, there isn't a button to see it again. This goes for both the suggestions next to the shopping list as well as the "explore" notification on the top right.

2. **[H3: User Control & Freedom] (severity 3)**
   a. In the search/shopping list interface, there is no way to exit or go back in between selections. These features would help in case a user clicked the "add item" button too soon and get stuck in the search feature until after they've added something. Additionally, if they misclick at any portion of the search feature, users cannot go back or exit until the dialogue is over.

3. **[H4: Consistency and standards] (severity 2)**
   a. Clarify the difference between "add item" vs "add to cart" and the green check marks when adding items to the cart. It was confusing at first on why "add item" brought me to the search option before realizing it meant adding new items to the cart/shopping list through searching for them. Either keeping the language

consistent that both options mean adding something to the cart or specifying the "add item" means searching (i.e. "search for item") to make it clearer would clarify the users' decisions in case they want to keep exploring item suggestions in the "explore" experience. It seemed like the "add item" button was just a confirmation for adding something to the list.

4. **[H4: Consistency and standards] (severity 1)**
   a. Keeping the pop up "explore mode" in the same corner to keep the design consistent and help form a habit for users while using the app might remove the friction of needing to find it in a new part of the interface each time users want to interact        with it.

5. **[H4 Consistency and standards] (severity 1)**
   a. In the explore feature, in the expanded description of the recommended item, it says "add to cart" but it is added to the "shopping list" portion – keeping that language consistent would eliminate confusion on whether there is a difference between the shopping list and the cart

6. **[H4 Consistency and standards] (severity 1)**
   a. Keeping the search bar at the top for all screens of dialogue when selecting, so that users can search for specific categories/brands they may be looking for. Even if stores may only carry the displayed options, users typically would like to confirm that by searching and having no results come up.