Norman Design Principles:

Consistency: There are definite inconsistencies in the selectable items in the app. Some items such as "change bean" or "order coffee" are surrounded by a box, indicating that they are "pressable". Options like the drink choices have no indication that they are selectable. They look identical to many non-selectable options. White box background is used in several places to indicate that the user should or has pressed a button, but this isn't consistent through the app. Some buttons highlight white, others immediately take you to another page to confirm their selection. Text size is also inconsistent. Some important features are displayed in large, bold text while other equally important options are in small, easily overlooked, text. The back button is consistently located in the same place.

Visibility: The change bean button is small and located in the upper corner of the app. Café X proudly advertises the ability to choose between coffee beans, but 6/7 of my user evaluation participants didn't find the button despite selecting the button being the first step in the given task list. Oatly is a milk option that was often overlooked or confused as a coffee brand. Nowhere in the app is there an explanation or description defining Oatly. This information is only available on the company website or a rotating advertisement to the side of the machine. The buttons to change payment type or add a promo code are also very small. On the order summary page, the sales tax value is displayed in larger text than either the payment or promo code buttons. "Metreon" (the only current location) is also displayed prominently on every page of the ordering process, often larger and bolder than the main selection options. When asked to read me what he saw on the order summary page after he paid, one user was able to list Metreon and the name of the drink, but even upon further prompting hadn't noticed the order confirmation text appear at the bottom of the page.

Affordance: The use of arrows to indicate a drop-down menu is a good use of affordances, but the inverted triangle didn't afford the idea of a drop-down menu as much as the

traditional arrow downward triangle. Swiping between coffee brands is indicated by a row of dots on the bottom with the highlighted dot showing the current position in the list. Other than these dots, there is no indication that the user should swipe. Adding arrows between options, using a scrolling menu, or allowing parts of the other brands to appear on the edge of the screen would help indicate the navigation intentions to the user. When "change bean" is selected, a blurred version of the previous screen is present in the background. If the user presses the blurred background, they will be returned to that page.

Mapping: The app uses very little mapping. Some of the "buttons" are boxed to imply that it's something you can push. This is inconsistent though as many of the buttons don't have boxes or any other indication that they can be selected. The app uses white to indicate that a box has been or can be selected. Again, this feature isn't consistently implemented. Syrup and sugar levels are adjustable by a pop-up menu, indicated by an inexplicably upward facing arrow. Each of the three option boxes has a default listing of "low" even when no flavoring is selected. Upon pressing the up triangle, users are presented with three options: low, standard, and insane. If the user selects standard or insane, the default listing adjusts accordingly, and the selection box turns from transparent (with the background) to white to indicate selection. Users can also press the selection button itself to turn the presence of flavor on or off. Confirmation of these additions appears next to the order summary, but several users assumed all three syrups were set to low, not that they weren't selected at all. The default "low" option (this can be changed to standard or insane in the apps settings) confused users into assuming low was already selected, not just had potential to be selected. A default option that was entirely blank or said "no flavor" would likely fix this confusion. The use of white vs. transparent is helpful once the user has taken the time to select it, but not helpful for a first-time user that doesn't realize that the "low" hazelnut button is misleading.

Feedback: Feedback is provided with various changes to the text when a button is pressed. There are several versions of this from text blinking, color changes, to color fading. (Activational) Feedback is provided by changing the background color on some, but not all buttons. To summary pages lists the drink making steps and places a checkmark next to each along with changing the text from gray to white when the step has been completed. (behavioral) A pick-up code appears upon completion of these steps.

Constraints: Constraints are accomplished through display simplicity. Invalid options simply aren't available such as adding flavor syrups to plain espresso or hazelnut syrup to a matcha latte.