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1637 Intro to HCI

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Interaction Report

In order to get a more in-depth understanding of how people with different perceptual abilities interact with certain devices, I observed my grandmother operating a gas stove and recorded observations. Every day my grandmother makes chai for my grandfather and herself, so for four days as I was eating lunch I observed and recorded notes on how she interacted with the gas stove.

Steps Involved (Gas Stove):

The first step in operating the gas stove in my household is to decide which of the four

burners you wish to use. Each dial is marked with a diagram of four circles where the corresponding burner's circle is filled in red. For each of the knobs we have the perceived affordance that they are meant to be turned. Once the desired burner knob has been located, the next step is to turn the knob left until the red marked side is aligned with the text that says "LITE". At this point the stove will make a clicking sound as the igniter attempts to light the gas ablaze. Once the

flame has appeared the dial can be turned further from left to right to adjust the intensity of the output, HI being the max and LO being the minimum. Turning the dial towards the right past the HI indicator and towards the OFF indicator will shut off the gas and turn off the corresponding burner. The design relies on the user to understand that the dial must remain on the LITE indicator until the flame appears, otherwise if the dial remains on any of the intensity indicators there will be a constant flow of gas which can be a safety hazard. A perceptual ability that assists in detecting a leak is our sense of smell. The smell of the gas can be distinguished easily, but this is the only indicator that would let the operator know that the gas is still running.

Observation (Gas Stove):

As I mentioned earlier, the person I observed was my grandmother. My grandmother has had one cataract surgery in her right eye and now requires another in the same eye. According to her, her vision out of her right eye is close to blind. This limits her ability in accomplishing certain tasks, but she is able to operate the stove easily. I made my observation while she was making chai (an indian tea) for herself and my grandfather. My grandmother has had 50+ years of experience with operating gas stoves which has made operating a stove an automatic cognitive task for her. All these years of experience make it so that she no longer has to rely solely on her vision to operate the stove but rather can complete the task based on her procedural memory. When lighting the stove she was able to listen to the clicks of the igniter to distinguish when the gas had been ignited. After igniting the stove she turned the dial to the indicator labeled “3” in order to get the chai to a slow boil. She did not necessarily care whether the dial was turned exactly to the number, but rather that the dial was turned to the lower half of the intensity scale. Finally, after a few minutes the chai was ready and she went on with her day. The device design was simple and provided additional cues (such as the clicking of the igniter) to assist with

operation. My final observation for the design was the visual depictions on the stove dial. For someone like me who does not have any serious deficiencies in vision, the diagrams were simple and effective in showing which dial corresponds with which burner. But for my grandmother with her deteriorating vision it becomes difficult to comprehend which dial corresponds with what, luckily her previous memories are able to make up for that. By observing my grandmother I was able to see that the design of the stove was simplistic, efficient, and effective while still accommodating for possible deficiencies in a person's perceptual abilities. Although the design is effective in its use, it does lack a degree of safety as there is no indicator other than the literal flame to indicate to the user that the gas is flowing. During my observations I did not see her leave the gas on, but there have been instances over the past few months where she has forgot that the gas was on and someone had to rush to the stove. The lack of an indicator is definitely a flaw in the safety. For people who are older and have worse short term memories these flaws can be costly.