Understanding Initiative Preferences for Human-CUI Interactions

Chiko Nwachukwu and Dr. Aqueasha Martin-Hammond
Indiana University

ABSTRACT

- In this project, we will explore voice assistants and how people wish to interact with them. We designed and implemented a prototype CUIs using an online application, Voiceflow, to simulate multiple scenarios users might have with a CUI. These scenarios focus on instances where CUIs initiate interactions with users (sometimes unprompted).
- To develop our prototypes, we conducted a review of literature and held brainstorming session, to understand existing concerns with voice assistant privacy and trust and to create realistic scenarios that might occur in people's home. Our overall goal is to use these prototypes to better understand the types of interactions people might find acceptable or not by these new devices.
- In the future, we will test our prototypes and compare responses among different user groups including younger and older adults to understand whether beliefs differ. This study will give us more insight on how to make these devices more trustworthy and usable in daily-life situations.

INTRODUCTION

- Conversational user interfaces (e.g., Amazon Alexa, Apple Siri) are supported by artificial intelligence(AI) and are designed to respond to voice or textual commands with specific answers or actions.
- As conversational user interface (CUI) technologies advance, people begin to invite new devices such as voice assistants and chatbots and their capabilities into their lives and homes.
- However, research suggests that many users have privacy and trust concerns about these interfaces.

MATERIAL & METHODS

Our overall research objective is to understand privacy concerns about interacting with voice assistants and how users feel voice assistants should interact.

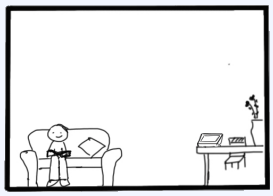
From a prior study with older adults, we found that certain interactions from a voice assistant can make people question privacy. For example, we found that people felt that the voice assistant was:

- listening to their conversations
- collecting data without their knowledge

Because of this, we wanted to test whether certain interactions would make people feel creepy. To test this question we created scenarios and built prototypes that initiate interactions (system initiative) with users in different ways.

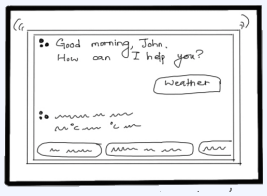
Scenario

First, we made scenarios. One for a voice assistant, one for a chat bot, and one that includes both voice and chat. These served as common types of CUIs that most people might use. In the scenarios, we included different ways that the CUI might initiate communication with a user for a basic task such as finding the weather.



1. John is at his living room, reading a book.

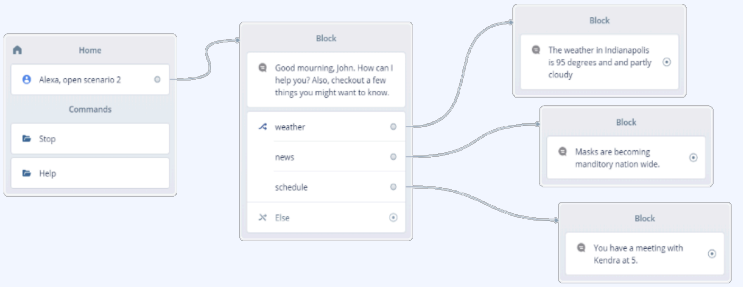
2. The voice assistant says a message. Also, the device shows the chat-bot with a list of possible options to select.



3. John clicks on 'weather' option on the device.

Prototype

We used each scenario to guide the development of prototype to simulate these situations. We used an application called Voiceflow which can be used to develop both voice and voice texts scenarios. We used an app called Invision for the only text scenario. In Voiceflow, you implement visual CUI conversational design and assign actions for the voice assistant to respond (similar to a flowchart of actions).



RESULTS & DISCUSSIONS

From the literature review, it can be found that users tend to be more friendly and accepting of voice assistants the younger they are (usually around six to early adult years). But older adults tend to be less comfortable or likely to use CUI technology. Mostly because of the fact they are not aware of some of the functions of the device and that the device sometime acts unexpectantly. We recognize that some user in those age groups could feel the opposite and do not generalize this to the entire population.

CONCLUSION

CUI tools are becoming more and more available to everyday consumers as technology progresses. Judging from our literature findings, some people may find these devices "creepy" or invasive which lead to privacy concerns. With the project we aim to understand what types of interactions lead to feelings of unease with CUIs and develop strategies to overcome them. In the future, we will examine our prototypes with users to better answer this question.

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