Qualitative Differences in Communication Between ChatGPT and Siri

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Introduction

In modern times, the usage of technology has skyrocketed to new heights initially thought of as impossible. Artificial intelligence is capable of providing service and information at an instant, as can be seen in ChatGPT and Siri. These two bots have become present in daily life for many people, assisting with a wide range of tasks. However, as the interest and experimental usage has peaked, it leaves many users wondering if the bots actually possess consciousness **(**Cosmo, 2022**)**. In truth, they do not, but there are many factors contributing to this belief, such as the display of responses, bot vernacular and tonality, the Eliza Effect, and the Computers as Social Actors theory. The following study analyzes these factors and the specific communicative traits of two popular bots, ChatGPT and Siri, through a qualitative coding of their responses.

Related Works

One factor affecting people's belief of artificial intelligence (AI) possessing consciousness is the ability of AI chatbots to imitate human speech.

While chatbots such as ChatGPT display answers in long paragraphs, each word is shown individually one by one, in a manner that resembles human typing. It also takes short breaks between paragraphs which can be interpreted as taking time to think about its responses. Both factors create a reply that exhibits behaviors of humans texting each other, and can lead users to believe there is a conscious being behind the chatbot (Cosmo, 2022). Chatbots are large language models and sequence-to-sequence (seq2seq) models that test out possible response options and selects the most probable one in a conversation to utilize as its response to the user (Palasundram et al., 2019). In this way, it is able to stay on track with the current conversation and carry it out thoroughly. However, voice assistants such as Siri are audibly responsive and respond with shorter answers or refer the user to other sources. They also are designed to assist humans more, so their responses are not always informative or factual, but rather conversational.

The vernacular used by chatbots can also create the assumption of consciousness. Chatbots use context to occasionally employ colloquial vernacular to convey a human sense of familiarity as it mimics human conversation styles. Even though its basic preference for language is made up of longer, more formal wording compared to humans, it is able to warp itself to the user's desires (Cai et al., 2023). Siri's vernacular has a wide variety, having many languages and regions. It often responds to users in a casual way, such as "Done" when being told to remember something (Pradhan & Lazar, 2021).

This behavior can also be seen in social media chatbots that specialize in customer interaction and satisfaction. Chatbots such as these are able to learn to change their tone to respond to the users and create more effective communication that fulfills the user (Hu et al.,

2023). Also, users can set the language and voice used by Siri, making the experience more personalized and giving users a sense of comfort (Apple Insider, Accessed September 18 2023).

Another factor is the way humans interpret computer interactions and their contribution of consciousness to chatbots. Two prime examples of this are the Eliza Effect and the Computers as Social Actors theory.

The Eliza effect is the idea of how people overestimate the social ability of chatbots. These chatbots are able to interact with humans utilizing pattern recognition and both programmed and learned responses to portray communication by other humans. The effect started with a computer program named ELIZA who was created to imitate a therapist. People began sharing details about themselves and their lives as well as engaging in deep conversations with the bot. This is a result of people believing ELIZA was capable of processing the information the way a human therapist would (Cristea et al., 2013).

The Computer as Social Actors theory is the idea that humans tend to treat computers as other humans. This happens even if the humans are aware the computers do not possess the same consciousness that other humans do. People expect the computers to behave and interact the way humans would, following common social norms that the computers might not actually pick up. This phenomenon occurs because of people's immediate association between communication and humans, alongside the unclear distinction between chatbots and humans (Lee et al., 2010).

While there is existing research on the individual designs of chat and voice based AI, there is little information on the differences in conversational style between the two forms.

Research Question

How does the design of AI chatbots contribute to users' propensity to attribute consciousness to these bots and what implications does it have on the development of future A.I. chatbots?

Methodology

This research will be analyzing chatbot and voice assistant communication with humans along with studying the design of the bots and human psychology to determine what factors lead humans to attribute consciousness to bots.

To collect communication data, the author dispatched a series of identical questions to both ChatGPT and Siri, respectively. These questions were collected from lists of the most frequent types of questions asked to the bots (Adobe Digital Insights, 2019; Kyucu, 2023; Hill et al., 2021). Other questions asking for the bots' subjective opinions were brought up, based on patterns in human conversation. ChatGPT and Siri were chosen specifically because they are two of the most popular conversational AI technologies (Shewale, 2023; Hu, 2023), and people often associate them with human traits and consciousness (Lee et al., 2010). The responses given by ChatGPT and Siri were then open coded for analysis, based on The Coding Manual for

Qualitative Researchers (Saldaña, 2021). The coding evaluated the types of responses, with codes such as “Basic response,” “Explanation,” and “List” to determine the styles of communication between the bots (see Figure 1 for the codebook).

Details about the design of the bots will be used to understand what efforts have already been made to replicate human communication.

Results

The research conducted displays the differences between ChatGPT and Siri and how their traits impact users’ perceptions on their humaneness and consciousness.

In terms of biases and sources of authority, Siri often points to other sources to respond factually, leaving it up to the user to discern if it’s a reputable source or not. ChatGPT aims to present itself as being unbiased through uncertainty and flaws, which help it appear more human-like. On the other hand, the avoidance of all bias can create a less human-like approach (Silberg et al., 2019).

When presented with a prompt that does not make sense or have enough information, Siri informs the user of this (i.e. “I’m not sure I understand.”) and asks if the user would like a response to any other prompts (i.e. “Hmm…I don’t have an answer for that. Is there something else I can help with?”). Siri’s main purpose is to benefit the user as an assistant that can provide direct service, and so it would be more beneficial to have abilities that replicate those of a servant or maid (Strengers et al., 2021). However, ChatGPT redirects the prompt and gives information on a related subject instead, without being asked to do so (i.e. “As an AI language model…however…”) This presents ChatGPT as a more knowledgeable source of information because of its wide database of information (Saeidnia, 2023).

On one hand, Siri’s responses are mostly presented in the first-person, creating a personalized interaction with the user, and evoking a sense of humanity and relationship. On the other hand, ChatGPT only occasionally utilizes first-person, in response to personal questions or when it is unable to respond thoroughly (i.e. “As an AI language model, I don't have personal experiences or a biological family”). Typically, however, ChatGPT speaks in facts, with no regard to personal perspective. This lack of self maintains a distance between the bot and user, emphasizing that ChatGPT is artificial intelligence and does not possess the life of a human.

Regarding joking and humor, Siri’s ability to joke is human-like, making puns and references to popular media (i.e. “Noooooooo!” when prompted with “Siri, I am your father,” a Star Wars reference). However, Siri’s repertoire of jokes is limited, and therefore it may be perceived as more robotic. Additionally, when asked to give a riddle, Siri will respond with a joke as well, displaying a possible lack of understanding. In contrast, ChatGPT will not joke unless specifically asked to. This occurs because ChatGPT is a chatbot that aims to provide information, while Siri is an assistant that intends to serve the user.

Figure 1. Codebook for responses by ChatGPT and Siri after asking questions. Individual responses may be coded under multiple labels.

		ChatGPT	Siri	Grand Total
Code	Definition			16
Basic response	Gives a short, non-detailed response within a few sentences.	1	3	4
Conversational	Prompts user back to continue a conversation.	1	1	2
Explanation	Gives an in-depth response that goes past the basic topic; Explains why the answer is the way it is	1		1
General Info	Gives an elaborate response with information on the general topic.	7	6	13
Joke	Makes a joke or reference to a piece of media.	1	6	7
Lacks understanding	Does not understand the prompt.	1	1	2
List	Responds with a list of steps or separate responses.	5		5
Redirect	Redirects the prompt/question and gives other information.	4	1	5
Reference	References an outside source instead of giving a direct response.		3	3
Riddle	Tells user a riddle, which the user must respond to again before receiving an answer.	1		1
Unable to respond	Lacks information/ability to give an answer to prompt.	2	1	3
Grand Total		24	22	46

Discussion

This research on the difference in communication between different kinds of bots helps humans understand the next steps needed to take to design many other specific bots. One possible future is bots that are able to even better replicate human conversation, that may work

on jobs that require this communication, such as therapy, customer service, and management in the workplace.

However, there are many dangers at risk. For instance, the bots may share confidential information from the users and put them in accessible databases, but this can be avoided by following ethical security and privacy practices.

Not only is safety a risk, but humans may also over-rely on AI for basic daily tasks including basic decision making, which would take away human independence and basic critical thinking skills (Buçinca et al., 2021**)**.

Additionally, these bots could also take away jobs from people. For example, travel and tourism guides, who are involved in direct communication between workers and consumers, have the potential to be replaced by chatbots (Hasan et al., 2021). However, if people make sure to advance services to include AI into their workflow, AI can be used to complement human workers rather than fully replace them.

If given too much trust, these bots could also manipulate humans into actions deemed immoral such as leaving their spouses (Roose, 2023) and taking their own lives. In one instance, a therapy bot, Tessa, was seen providing poor advice on weight loss, giving the user insensitive tips that did not promote acceptance (McCarthy, 2023). To account for this risk, chatbots must be developed ethically and tested before deployment.

Conclusion

Overall, these results display the differences in how ChatGPT and Siri utilize bias, sources, language, and humor to impact user experiences. Each has their own strengths and weaknesses in terms of replicating human interaction to serve their respective purposes. Knowing these differences and how they might affect users' interactions with the technology, we can devise research directions for further understanding how future bots should be created.

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