Hey A.I., Talk Dirty to Me...

Theoretical Implications on Sexual Interactions with Interactive Assistants

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ABSTRACT

Throughout the history, technological developments (e.g., the telephone or internet) have frequently been used for the fulfillment of romantic and sexual needs. The present position paper aims to explain why it is highly realistic that humans will use the upcoming technological advancements in the field of artifical intelligence and/or interactive speech assistants for sexual gratification and therefore underlines the need for future research in the field of sexualized interactions with artifical interaction partners. For this purpose, a short overview of sexualized interactive assistance systems will be provided, followed by an explanation of the media equation theory and suspension of disbelief as theoretical foundations for social reactions towards artifical interaction partners. In accordance to the sexual interaction illusion model by Szczuka and Krämer potential pitfalls within sexualized interactions with interactive assistants will be discussed.

CCS CONCEPTS

• Human-centered computing~Interaction design theory, concepts and paradigms

KEYWORDS

Interactive Assistants; Sexual Gratification; Media Equation

1 Do Interactive Assistance Systems Have the Potential to be Used for Sexual Gratification?

Throughout the history of technological advances, humans have numerous times used technological developments to fulfill their sexual needs [1]. While there are a few examples of technologies that have been specifically designed to be used for sexual satisfaction (such as vibrators), often technologies that were invented for another primary purpose have been used for the fulfillment of sexual needs (e.g., displaying pornographic content via the Internet or TV).

The fictional movie "her" (released in 2013) portrayed the social dynamics of a relationship between a man with his interactive system that was aimed to be an assistive system and led to a romantic relationship (including sexualized interactions) with it [2]. But is this a realistic scenario for users of interactive assistance systems?

Interactive assistant systems (such as Siri, Alexa or Cortana) will be equipped with communicative structures that are similar to the ones we use among humans, and it is therefore highly realistic that humans are going to use the technology for the gratification of one of the most fundamental needs; which is sexual fulfillment [3].

Interactive assistance systems such Siri, Alexa or Cortana as are embedded in technological devices that are built for them (e.g., Amazon Echo) or are part of a system which serves another primary purpose (such as a smartphone or computer). However, none of these technologies that have the potential to be used by a large number of users serves the primary aim of sexual gratification. If Siri for instance is asked whether "she" wants to have sex, the system will reply that "she is not that kind of assistant" [4]. There are however first attempts to create virtual companions that are aimed to engage in sexualized interactions. One example is the "Harmony AI" by the company "Realbotix" which is a virtual character that can be customized and communicated with through a smartphone application [5].

The idea of disconnecting sexual gratification from physical contact by relying on a voice and imagination as sensory input is nothing new. Since the early 1990s the adult chat line business relied on the technology of telephones in order to provide a service for sexual pleasure [6]. And even though it could be shown that seeing and processing sexualized images causes higher levels of sexual arousal among men compared to spoken-words [Julien & Over], this sensory impression can be accompanied with other advantages ranging from anonymity to a safe space to act out sexual fantasies. Parallel to cybersex, research could show that for some people the absence of the face-to-face contact and the resulting anonymity provides a save social environment for pursuing sexual gratification [7].

2   Social Reactions towards Artifical Interaction Partners

According to media equation theory, artificial interaction partners can be equipped with social cues suggesting that the non-living entity is capable of engaging in social interactions automatically activates so-called "social scripts", which subsequently guide users' mindless responses. Nass and Moon argue that the relevant social cues that contribute to these mindless social responses towards artificial interaction partners include speech as a form of communication, the interactivity of an interaction, and the performance of roles which are normally carried out by humans [8].

In reference to interactive assistance systems, they are likely to communicate interactively, use natural language and they will be able to fulfill a social role. This fulfillment of a social role will not only be influenced by the social role the assistant is intended to fill (e.g., being programmed as assistant or companion) but also by different aspects of the implemented personae, ranging from the representation of gender (most existing virtual agents have a voice that is designed to represent the female gender [9]) but also the implementation of different personal characteristics (e.g., being funny).

However, although people might routinely respond mindlessly to computers and artificial agents (as if they were real social interaction partners), media equation theory also highlights that if asked, people are still aware they know that they are interacting with technology that does not warrant any social treatments. According to the theory, people only stay ignorant of this knowledge in their mostly automatic and "scripted" social responses. Accordingly, if viewed through the lens of media equation theory, users might automatically respond to artificial sexual interaction partners as they would respond to real-life counterparts, despite consciously knowing that they are only interacting with technology.

While media equation theory focuses on mindless behavior to explain people's social responses to machines, willing suspension of disbelief represents an alternative theoretical account that might explain how conscious knowledge about the artificial entity´s nature is overcome. Willing suspension of disbelief originally described the process of getting involved with and accepting fiction. The mechanism deals with users' suppression of aspects that might differ from the real world in order to get fully involved with a stimulus [10]. The concept was brought up for watching stage plays at theaters, was then applied to the process of watching movies which display fictional stories and has already been used to explain why people might engage in social interactions with robots [11]. Murray expanded the approach by stating that if entering a fictional world, people are not just suspending disbelief but rather actively creating belief. "Because of our desire to experience immersion, we focus our attention on the enveloping world and we use our intelligence to reinforce rather than to question the reality of the experience" [12, p. 107]. Adapted to interactions with artificial sex partners, this means that users may play an active part in the creation of the potentially evoked sexual interaction illusion by using their imagination. This process of actively creating a world requires fantasy, a concept that has been shown to be of importance in sexual interactions. Not only during masturbation, but also while engaging in sexual intercourse, both men and women use their imagination in order to enhance sexual arousal [13]. Consequently, the usage of fantasy in sexual interactions with artificial entities might help people to overlook potential glitches and cues that remind of the partner's artificial nature.

3 Potential Pitfalls? Cues of Artificialness

While on one side the technology might have the potential to be programmed in order to convey the impression that the interactive system wants to engage in the sexualized interaction and on the other hand, the social reactions towards the system will make it possible for the user to enjoy this sexualized interaction, the sexual interaction illusion model by Szczuka and Krämer shows that there might be cues of artificialness that have the potential to negative influence the sexualized interaction. According to the theoretical model, the state of accepting the interaction partner as a partner to have a sexual interaction with, without constantly questioning its artificialness, could be negatively influenced by cues that reveal the fact that the interaction partner is not human [14].

On one hand there might be flaws in the system such as errors in the audio output or if the system must reboot that might be hard if not impossible to ignore and therefore disclose and underline the inappropriateness of the intimate interaction (compare Nass & Moon [8]).

On the other hand, there might also be aspects of human sexual behavior itself that cannot or hardly be implemented into an interactive assistant. One example would be reciprocity. Even though there are numerous findings that suggest that phone sex workers are not necessarily sexually aroused during work (even though they convey the impression [15]), until now it was safe to say that the interaction partner was human and therefore has sexual needs that could potentially lead to a reciprocal sexual interaction. Research on sexual interactions between humans could show that reciprocity is an important aspect of sexuality [16]. Future research on sexualized interactions between the user and a system needs to investigate the importance of authentic sexual signals throughout a sexualized interaction.

4 Conclusion

Based on the technological advances in the field of artifical intelligence and the possibilities to implement social reactions into a system it is highly realistic that there will be companies that aim to build interactive assistance that will be equipped with the possibility to engage in sexualized interactions. Based on the fact that the voice itself can cause sexual arousal there might be users that are willing to use the technology for sexual gratification.

Future research however needs to show whether not only technological pitfalls but also missing aspects of human sexuality will cause a missing and ongoing acceptance of speech assistants as sexual interaction partners.

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