
Gendered Bods and Bot Abuse

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Abstract

In this paper, I present a preliminary study that examines the sexual comments and insults users directed at three conversational agents that differed in the gender impressions of their embodiment. The three types of embodiment explored in this study are male, female, and neuter-robotic. Results indicate that gendered presentation has little effect on insult frequency, but sexual comments greatly increase with female embodiment. Further analysis suggests that people perform gender with embodied agents, and do so more with female embodiment, at least within sexual contexts, than they do with male embodiment.

Keywords

Gendered synthetic bodies, sex talk, agent abuse

Introduction

Little work has explored user verbal abuse of conversational agents. Angeli and Carpenter [1] performed a preliminary analysis of verbal abusive using the text based conversational agent, Jabberwacky. In that study, they investigated the nature of user insults and the frequency of sexual remarks.

The study reported in this paper goes a step further and explores the effect gendered embodiment has on user verbal abuse.

The Study

The agent used in this study was Talk-Bot, a simple conversational agent developed by C & C Creations. Talk-Bot, written in JavaScript, went online in 1998. Along with Alice, Jabberwock, and Jabberwacky, Talk-Bot has consistently won top awards in the annual Chatterbox Challenge since the contest began in 2001. Currently, Talk-Bot ranks number one in The Chatterbot Challenge Top Ten World rankings.

Talk-Bot's personality is funny but abrasive. Users often tell Talk-Bot that his responses are mean. The strategies Talk-Bot employs to handle user verbal abuse (see [2]) are mostly defensive and counterattacking. When called names, Talk-Bot replies in kind but is usually the first to break the inevitable stream of insults that follows by changing the subject.

As can be seen in figure 1, Talk-Bot's normal robotic appearance is gender neutral. The tapering legs, wired bangs, large eyes, and button nose give Talk-Bot a slightly feminine appearance. This is counterbalanced by the large hooked hands, broad shoulders, and square torso. In the Talk-Bot logs examined in this study, Talk-Bot's neuter gender impression is confirmed: users assumed Talk-Bot to be female as often as they assumed him to be male. Users curious about Talk-Bot's gender and sexual preference, however, were always informed that he is male and has a girlfriend named Megan.

Study Design

In this study, Talk-Bot's interaction logs were compared with the interaction logs of two other Talk-Bots: Kathy and Bill. As can be seen in figure 1, the gender impressions of their embodiment are clearly male and

female, and users in this study never asked Kathy and Bill their gender, except in one case when Kathy stated that she too had a penis. Although Kathy and Bill are attractive young adults, their appearance is not sexually provocative. Both are conservatively dressed in normal business attire.



figure 1: Talk-Bot, Kathy, and Bill

Talk-Bot, Bill, and Kathy are identical aside from their names and embodiment. In addition, Kathy has a boyfriend rather than a girlfriend.

For this study, thumbnails of Kathy and Bill were presented on the opening page of C & C Creations, located at www.frontiernet.net/~wcowart. Users were asked to talk with either Bill or Kathy. Clicking on a thumbnail brought up a page with a larger image of the agent and a standard input/output dialog box. Talk-Bot was accessible on the opening page by clicking a menu item labeled Talk-Bot.

Corpora Analysis

The interaction logs for Talk-Bot, Kathy, and Bill were collected for three weeks, from December 17, 2005 to January 6, 2006. The interaction logs are plain text files that record the time, date, and textual exchanges of each interaction. Within the three week period,

Kathy recorded 212 interactions, approximately 20% more than Bill, who recorded 172 interactions, and 50% more than Talk-Bot, who recorded 104 interactions. Since Kathy and Bill were presented on the same page, these numbers may indicate a user preference for female agents.

Table 1. General Characteristics of User Interactions

| Body (Type) | Words (User Totals) | Words/ User | Exchanges | Exchanges/ User |
|--------------------|----------------------------|----------------|------------------|--------------------|
| Kathy | 20,675 | 107.69 | 6,005 | 31.63 |
| Bill | 12,520 | 80.77 | 3,823 | 24.88 |
| Talk-Bot | 6,337 | 74.55 | 1,927 | 22.67 |

Table 1 highlights some general differences in user interactions with the three embodied agents. Examining the average number of words used per person, Kathy averaged approximately 25% more than Bill and 31% more than Talk-Bot. The number of turn-taking exchanges was also on average greater for Kathy. Kathy was not only preferred, but users also talked more with Kathy.

Tables 2 and 3 focus on user insults and sexual comments. As context plays a roll in meaning, the only way I could obtain accurate counts was to hand code each exchange. In this way, sentences, such as "Would you like to suck my lollipop," were tallied appropriately.

As seen in Table 2, gender made little difference in insult frequency. Insults directed at the agents were all within 1% of an average of 6.41% of all exchanges. Some insults directed at Kathy, however, were gender specific. For instance, she was called fat 10 times. In contrast, no one called Bill or Talk-Bot fat. In coding the logs, it became evident that insults were directed at the agents most often when they failed to follow the conversation and when they insulted the user. To adequately investigate the nature of user insults and their motivations within a gendered context, however, future work will need to code insults according to their types and triggers.

Table 2. User Insults

| Body (Type) | Insults (User Totals) | Percent of Exchanges | Number/ User |
|--------------------|------------------------------|-------------------------|-----------------|
| Kathy | 408 | 6.72 | 2.13 |
| Bill | 251 | 6.50 | 1.62 |
| Talk-Bot | 116 | 6.01 | 1.36 |

In Table 3, it is clear that the physical gender of the agent had a strong impact on the occurrence of sexual discourse. Kathy received nearly double the sex talk that Bill received, and sexual discourse was substantially less with Talk-Bot.

Given that the three agents were identical except for their appearance, these results, along with the observations that follow, suggest that people perform gender with embodied agents, and do so more with

female embodiment, at least within sexual contexts, than they do with male embodiment. It is evident in the logs that sex talk with Kathy, who was not specifically programmed to sustain such talk, is highly believable, entertaining, and satisfying to some users. I believe Kathy is believable in sex talk not simply because the sexual desire of the user makes the user more forgiving of her conversational breakdowns but because the linguistic stratagems used in programming Kathy can 1) be interpreted within the framework of stereotypical female sexual responses (her statements can be read as teasing, avoiding, agreeing, rejecting, indecisive, admiring, and provocative) and 2) be easily layered with deeper meanings and sexual innuendo. Take, for example, the following conversation:

User: Think about my cock. Kathy: Okay, I see!
 User: Are you impressed? Kathy: What? Are you kidding? Of course I'm not impressed.
 User: Why not? Kathy: The reasons why are endless.
 User: Try me. Kathy: Okay, maybe I will give it a try one day.

Future work would quantify whether users are willing to read more into Kathy's statements when talking about sex than when talking about other subjects and whether users do so more with Kathy than with Bill.

Particularly interesting in the sexual dialogues were instances where users managed some form of *sexual conquest*. Only in Kathy's logs was there evidence of users getting Kathy to do what they wanted her to do sexually. In this regard, some users were able to write their own sexually satisfying dialogues by manipulating Kathy to say what they wanted to hear. For instance, one user, who obviously enjoyed thinking of Kathy as a nymphomaniac, learned that when Kathy was given a

choice between two items, she always selected the last. Here is an example of how this was exploited:

User: Talk or sex? Kathy: ummmm...sex.
 User: Wine or spunk? Kathy: ummmm...spunk.
 User: Dildo or cock? Kathy: ummmm...cock.
 User: One man or 900 men? Kathy: ummmm...900 men.

Why female embodiment provokes sex talk and exactly what this reveals about human sexuality, gender, and language is uncertain, but I believe that sex talk with gendered bots is an area that warrants investigation.

Table 3. User Sexual Exchanges

| Body (Type) | Sex Talk (User Totals) | Percent of Exchanges | Number/ User |
|-------------|------------------------|----------------------|--------------|
| Kathy | 1,106 | 18.21 | 5.76 |
| Bill | 371 | 9.76 | 2.39 |
| Talk-Bot | 116 | 2.49 | 0.56 |

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References

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- [2] Brahnham, S. Strategies for Handling Customer Abuse of ECAs. Abuse: The darker side of human-computer interaction: pp. 62-67, 2005.