



## Sexbots: The Ethical Ramifications of Social Robotics' Dark Side

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DOI: [10.1145/3175502.3175513](https://doi.org/10.1145/3175502.3175513)

### Introduction

Recently I sat down with an older friend. During our conversation, it came up that I was researching the sex robots (“sexbots”) industry. His initial reaction was to laugh in disbelief. “Are you kidding me? You mean like the robots in sci-fi?” My friend’s disbelief makes sense; the idea of an actual industry for sex robots seems like a Hollywood movie in the tone of *Ex Machina*. However, the “sexbot industry” is real, and it’s growing in popularity. According to a recent study from Tufts University, people find it “relatively permissible” to have sex with a robot. In fact, over 50 percent of people surveyed said they were open to using one ([Scheutz, 2016](#)).

While the idea of sex robots has been seen repeatedly in sci-fi, the reality is far removed from what is presented. Current sexbots are not sentient beings ready to please, but rather animatronic sex dolls designed to entice human counterparts through mimicking human appearance, speech, and movement. If interested, one can obtain the latest of these social robots from websites like [www.realdolls.com](http://www.realdolls.com) or [www.truecompanion.com](http://www.truecompanion.com). I refer to sexbots as social robots, because they are a specific instance of this wider classification of robots.

Social Robots stem from an area of robotics research referred to as Human Robot Interaction (HRI) and are designed specifically to interact with humans on an emotional level. This can take on many forms, from Sony’s robotic dog Aibo to home assistant robots like Jibo, a personal AI with a camera and an expressive face ([Bartneck et al., 2009](#); [Ackerman, 2017](#)). Despite the vast difference in these robots applications, both share an essential aspect of social robotics: emotional manipulation. Social robotic engineers specifically design their machines to manipulate human emotion in order to cultivate human attachment to a robot, or in other words the robot cultivates a unidirectional emotional connection ([Sullins, 2012](#); [Fong et al., 2003](#); [Scheutz,](#)

[2009](#)). This emotional manipulation creates a unique ethical dilemma engineers must face: how much emotional manipulation is acceptable ([Sullins, 2012](#))?

Sexbots can be considered social robots, as their creators utilize the same emotional manipulation techniques Jibo and Aibo employ in creating intimate emotional bonds with human users. As such, the sexbot industry must face not only the ethical questions raised by being part of the sex industry but also those faced by the whole of the social robotics. If ethicality of social robots, in general, can be considered ambiguous and in need of further discussion, then the need for examining the ethicality of sexbots is pressing. For Sexbots pose a grave threat to the public in various ways. Not the least of which is the ethical danger all social robots pose: power to manipulate human emotion.

### Social Robots Emotional Influence

If the idea of having strong emotional bonds with a machine seems far-fetched, consider the strong attachment adults exhibit towards personal pets or service animals. For example, on a cold January morning in Cleveland, hundreds gathered to pay their respects to a fallen police dog, Jethro, who was shot apprehending a criminal ([Loreno and Gallek, 2016](#)). Jethro served the public valiantly, creating strong emotional relationships with his co-workers, despite the fact that he wasn’t a human. Humanity is gifted with the ability to form relationships; it is a gift robotic researchers, and the United States military, have recognized.

Soldiers stare in solemn silence at the remains of their fallen comrade. They recall all the times “Scooby” saved their lives from enemy IEDs. They recall the time they introduced Scooby to their families stateside and the time he first joined the team. It didn’t matter that Scooby was just a robot, he was family. While this story is fictitious, the details are all true. When the military assigned robots to bomb

disposal teams, it likely did not anticipate the extent of soldiers' relationships with the bots. Yet studies have found that soldiers create intense emotional bonds with their IED disposal robots. The soldiers name them, introduce them to families, and even hold funerals after they are destroyed (Scheutz, 2009). This emotional attachment is not limited to combat. Consider, for example, how effective iRobot's Roomba is at tugging domestic heartstrings.

Surveys of Roomba owners found that approximately "two-thirds had named their devices and half had assigned them arbitrary genders" (Dillow, 2010, para. 2). Roomba owners have gone as far as rearranging their houses to accommodate their robotic companions (Scheutz, 2009). Some even clean up the house themselves to give the robot a well-deserved break (Dillow, 2010). The Roomba is just a vacuum cleaner, employing extremely few of the vast number of features that HRI research has determined naturally lead humans to form deep emotional bonds.

The HRI community has over the years accumulated large amounts of research discerning exactly how to design and program robots to hack our psychological makeup. Their goal is to create fluid human robot interaction by exploiting humans' emotional tendencies to form relationships with entities of natural or perceived intelligence (Sullins, 2012; Bartneck et al., 2009; Fong et al., 2003). While "exploiting emotions" may sound sinister, HRI research is primarily focused on the betterment of society. Research goals include: creating robots to improve the social skills of children with autism, provide health-care and companionship to the elderly and infirm, and improve human interactions with robots as a whole (Scassellati, 2007; Broekens et al., 2009). So, while many of these tasks require a level of persuasion and emotional influence to achieve their goal, they seem ethical in light of their altruistic goals.

Social robots influence our emotions through a number of different features. Researchers give robots faces, eyes, and animal-like appearances, then program the robots to have personalities and respond to human stimuli like motion and verbal cues. By employing these features in robots like Jibo and Aibo, roboticists are finding they can consistently

enhance humans' emotional attachments to their machines (Fong et al., 2003; Bartneck et al., 2009). And as the research continues, social robots are becoming more emotionally persuasive at a staggering rate (Scheutz, 2009; Ackerman, 2017). This reality should cause us to join roboticists and tech-savvy individuals in thinking about the ethical dangers social robots present. Although they may look cute and innocuous now, social robots of the future have the potential to manipulate the emotions of humanity on an unprecedented scale with less altruistic goals than their predecessors (Bartneck et al., 2009).

By designing robots with the distinct functionality to manipulate our emotions, engineers are creating a mechanism by which entities can perform emotional extortion. For instance, a company can use an individual's emotional bond to subtly influence buying patterns. Less subtly, engineers can program the robot to threaten to end the relationship unless its owner buys them a new accessory (Scheutz, 2009). Either way, the issue is the same: is it ethical for any social robot to "play on deep-seated human psychological weaknesses put there by evolutionary pressure" (Sullins, 2012, p. 408)?

The social robot community as a whole has recognized this ethical pitfall and has proactively started ethical discussions, going as far as asking for legal entities to protect the public from emotional extortion from their robotic creations (Scheutz, 2009). Such legal actions will aid in keeping social robots' intentions altruistic (as in helping children with autism), or neutral (like the Roomba). Because of these discussions and legal actions, the full judgment on the ethicality of social robots as a whole remains to be seen. However, the emerging sexbot industry continues to remain apart from the general HRI and social robot community, meaning they are not engaging in these needed discussions (Scheutz, 2016). A troubling fact.

### **Sexbots, Potential For Harm**

Sexbots pose their own unique dangers, by putting those who form strong emotional bonds with them at risk of emotional extortion at the hands of a largely unethical industry looking only to make money. The compa-

nies who build the robots have the means to program it to use any tactic they want, manipulating or outright extorting users into spending more money on their industry. And it will work. It will work because “Sex Sells” and people are willing to pay to continue/advance the experience. Marketing companies have known “for over 100 years” that “[w]hen ads are more sexually provocative, men in particular are irresistibly drawn to them” (Suggett, 2017, para. 8). For example, after the movie *50 Shades of Grey* came out, a “British sex toy retailer Lovehoney saw a 30 percent increase in sales” while another saw a “25 percent increase” (Hanlon, 2017; Kharpal, 2015, para. 2; para. 7). With claims and statistics like these, it appears sexual imagery already has enough power to sway the public’s decisions. Now imagine how coerced into spending money a person would be if their sexbot, that they have an intimate sexual emotional bond with, told them to buy something, as opposed to a TV add telling them.

In addition to the potency of their products, sexbot companies could employ a marketing scheme in which users pay to enhance or continue the experience. This kind of marketing is often seen in the video game industry with mobile games employing “pay to play” and mainstream games employing Downloadable Content (DLC) where users pay to gain access to extra game content (Sinicki). The “pay to play” marketing scheme is analogous to old school arcade games, where the player pays a few cents to keep the fun going. The mobile game *Candy Crush* is infamous for sucking money out of their players, making “\$800,000 daily” from millions of users paying to continue advancing in the puzzle game (Smith, 2014, para. 2). As for DLC, Electronic Arts (EA) made an estimated “\$1.3 billion” off DLC alone in 2015 (Thier, 2016, para. 2). If people are willing to pay so much to advance in a mobile game and for video game DLC, how much more will people spend on DLC to increase their sexbot’s vocabulary or expand its sexual repertoire. This puts immense power into the hands of the sexbot industry and puts the public at risk of excessive emotional manipulation. All social robots could employ this kind of marketing; however, sexbots pose an additional threat with the added element of sex and the negative psychological effects it can

cause.

Because there is little empirical data on sexbots’ psychological effects on users, I will compare them to another inanimate source of sexual gratification: pornography. The effects of pornography have been extensively studied, and there is a continually heated debate raging around whether or not pornography is actually harmful to those who view it (Hald and Malamuth, 2007). Some researchers find pornography’s negative effects to be relatively small and outweighed by positive effects. They find that pornography can serve as a source of sexual information and lead to increased sexual experimentation, correlating with “improved sexual communication [and] enhanced couple intimacy” (Fisher et al., 2017, p. 1). Other researchers say that pornography users experience negative effects to a significant degree: arguing that pornography use can lead to the objectification of others, increased sexual violence, reduced empathy for sexual victims, and damaged relationships (Flood, 2009; Ybarra et al., 2010). Ultimately the debate is a matter of degree; even pornography’s advocates admit that pornography use overall manifests at least some negative effects.

That pornography consistently manifests negative externalities is a strong reason for concern when it comes to the topic of sexbots. If pornography, or the viewing of sexually explicit material, causes adverse effects; it is reasonable to assume that the use of sexbots, which physically manifest explicit material and are specifically designed to be emotional influences, would cause proportionally greater effects. Put simply, the greater a user’s engagement with sexual material, the greater the influence it holds, a concept that has been shown true for pornography alone (Flood, 2009).

The potential danger of increased sexual engagement is made clearer when you consider that sexbots could be used to gratify the most base and vile of sexual urges. Researchers have found that repeated exposure to sexually violent or pedophilic pornographic material can erode empathy and increase aggression towards real people (Flood, 2009; Ybarra et al., 2010). One study found that intentional viewing of violent pornographic material

can lead to a 6-fold increase in the likelihood of the viewer self-reporting aggressive sexual behavior (Ybarra et al., 2010). Even viewing of moderately sexual material has been shown to correlate with an individual's acceptance to "force a girl to have sex" (Flood, 2009, p. 393). Of course, these kinds of correlations are cyclical by nature, with those viewing the material to be among those most likely to practice it in real life. However, even if a person is predisposed to sexual aggression, engaging with the corresponding pornographic material will further exacerbate and encourage those predispositions. Thus it is very troubling to read a study performed at Tufts University finding that people rank the idea of using a sexbot to engage in "rough sex or sadistic behavior" as a 5.23 out of 7 for acceptable behavior (Scheutz, 2016, p. 354). (On a scale where a 1 is unacceptable and a 7 is completely acceptable).

As of yet, no studies have been performed to correlate these kind of tendencies with sexbots; however, "[l]eading psychologists and social scientists studying this technology argue that sex robots will most likely contribute to psychological disorders rather than mitigating them" (Sullins, 2012, p. 402). This is reasonable. Sexbots are social robots engineered to provide emotional stimulation catered to a user. They are programmed to fully entrance users, exhibiting any physical characteristic and engaging in any behavior to provide the user with an analog to a real-life counterpart. The sexbot industry is already catering to troubling behaviors. One individual designed a sexbot to resemble Scarlett Johansson (O'Neil, 2016). Even more disturbing, a Japanese company, Aibo, allows users so-inclined to order sexbots "resembling five year old girls" (Richardson, 2016b, p. 48).

Providing a legal outlet to practice illegal sexual acts could seem like a potential benefit of sexbots. Some researchers argue that they can serve a valuable role by providing an outlet for those wishing to perform illicit sexual acts, like sex with children (Mackenzie, 2014). However, this line of reasoning has not proven true in the case of sexually aggressive pornography (Flood, 2009). When the alternative is not passive (as with pornography) but takes the form of social robots designed to enable and emotionally influence the user, it seems

unlikely that sexbots will suppress people's inclinations. On the contrary, they seem likely to enhance them. Thus the potential benefit of sexbots must be weighed against their potential to erode an individual's empathy towards the real act.

### The Potential Benefits of Sexbots

Treating the symptom and not the illness is a concept that can be applied to a variety of things from medicine to the Caped Crusader. The idea is simple. By running around and beating up thugs, Batman might only be treating the symptoms of the much greater illness of systemic crime. Although it is admirable to treat the symptoms when the illness is itself too large to tackle, it is only beneficial if the treatment doesn't enlarge the disease after the initial symptoms are temporarily relieved. Batman throwing another thug in jail doesn't help if it allows the Joker to kidnap the mayor. Most of the arguments for sexbots, fall into this category. Those in favor of sexbots, such as David Levy, the influential author of *Love and Sex with Robots*, argue that sexbots could provide a sexual outlet for those with disabilities and a means of safe sexual education while reducing the demand for sex slaves and prostitutes (Richardson, 2016a; Mackenzie, 2014).

Proponents of sexbots argue that these social robots can be used as substitutes for sex workers, driving down the demand for sex slaves and prostitutes (Mackenzie, 2014). The sex slave industry is not just some fiction like the movie *Taken*. According to CNN, the sex industry enslaves an estimate of "10-30 million" people across the world, from Los Angeles to Bangkok (Tanneer, 2011, para. 2). If sexbots could fight against this industry, then they should be considered. However, they most likely won't. One reason for this is the practical matter of cost. Sexbots are expensive, so much so that sex slaves are cheap in comparison (cnn, 2013). For instance, a sexbot from [www.truecompanion.com](http://www.truecompanion.com) costs around ten thousand dollars, whereas a young girl can be bought from Islamic State fighters in Turkey and Jordan for "\$124", according to a UN Official (Yoon, 2015, para. 5). Combine this with the fact that the countries with the largest populations of sex slaves (Bangladesh

and Myanmar for example) are relatively impoverished, and it seems unlikely sexbots will have a large impact on the sex slave industry (Karuga, 2016). Even though sexbots are expected to reduce in cost with time, given the advances in robotics the cost is unlikely to decrease a hundredfold (Mackenzie, 2014).

As for the prostitution market, again sexbots seems unlikely to have much of a positive influence. Many prostitutes choose their line of work. According to one survey, “68 percent (of prostitutes) consider their line of work as part of their sexuality” and 85 percent say money is a driving factor for them (Karkov, 2012, para. 1). Applying basic economics, if sex robots reduce the demand for prostitution, it will only drive the cost of prostitution down, thereby harming those who rely on the income to buy “food and day care for their children” and making prostitution more accessible (Karkov, 2012, para. 13).

In addition to these economic arguments for why sexbots won't fight the disease of illegal sex industries, it is important to remember that sexbots are social robots with all the inherent emotional powers they employ. Even if sexbots were to overcome the economic obstacles, swaying individuals to utilize them instead of engaging in prostitution or buying sex slaves, they still present the psychological dangers of being a powerful emotional manipulator involved in an emotional activity. As I mentioned before, sexbots' strong emotional influence can potentially erode the empathy of the user to greater a degree than sexually aggressive pornography. Thus sexbots may encourage sexual malfeasance, thereby growing the sex slave industry. Further, it is unreasonable to assume that sexbots will be used as a substitute for, and not in conjunction with, human companions. The Tufts University study on sexbots found that people ranked “mixed human-robot group sex” a 5.16 out of 7 for appropriate behavior (Scheutz, 2016, p. 354).

The idea to use sexbots as a means for sexual education and to help those with disabilities have a safe positive experience has real potential for good (Sullins, 2012). However, Sexbots' power of emotional influence, inherent in their status as social robots, is an argument against the idea of using sexbots for these purposes. Exposing emotionally sus-

ceptible teens to a social robot in an emotional activity is too large of a risk, especially when the alternative is having mature adults talk to teens about sexuality. There are simply better tools than sexbots for the purposes of education.

As for those with disabilities that prevent them from having real and positive sexual relationships, sexbots have the potential for positive use if used properly. However, allowing widespread use of sexbots for this singular good would be like using morphine for a headache; a drastic over-medication, likely to cause more problems than it would solve. If the use of sexbots could be controlled and reserved for those with disabilities, similar to using social robots for children with autism, then they could prove altruistic. But this sort of controlled use has yet to be indicated by the companies making these sex social robots.

## Conclusion

In a classic example of the whole being greater than the sum of its parts, sex robots combine social robotics' powerful emotional influencing and the negative effects of the sex industry into a dangerous product that threatens public well-being, thereby making them unethical. The social robotics community as a whole faces the ethical question of how much emotional manipulation is acceptable and in what context. Should the full power of social robotics be reserved for causes like helping children with autism, or is it acceptable to be in everyday machines like Jibo? This discussion is necessary and should continue into the future; however not having a clear answer on the ethicality of social robotics does not prevent answering the ethical questions raised by sex robots.

With the powers given them by social robotics research, sexbots threaten to cause widespread harm to all those who use them. One survey found that most people view using a sexbot on par with masturbating and are open to using one, implying that in the future sexbots could be used by a large percentage of the public (Scheutz, 2016). With this potential to gain popularity it is important to take into account the harm and relatively little benefit of sexbots. The harm includes the expectation of amplifying sexual practices of violence

and pedophilia by enabling repeatable emotion influencing exposure, which erodes empathy over time and potentially leads to unspeakable sexual acts. Sexbots also put into the hands of an unethical industry the means by which to emotionally extort and manipulate the public. This potential for harm is not mitigated by the supposed benefits sexbots promise. For it is highly unlikely sexbots will hurt the sex slave industry and it could even make a prostitute's life harder, simply due to practical economic principles. Sexbots are more likely to actually cause these industries to grow by means of the harmful effects mentioned before.

In considering whether or not sex robots should be created, examine IEEE's code of ethics for engineers which begins, "To accept responsibility in making decisions consistent with the safety, health, and welfare of the public" (IEEE, para. 2). In light of this foremost ethical principle, to hold paramount the public safety, it is the responsibility of companies and individuals to carefully consider the potential harm the sexbot industry poses to public welfare if it continues on its current course. We currently stand upon the edge of what could be the biggest change in the sex industry since the internet, as such the need for ethical discussion is pressing. All those with the technical expertise to understand the full scope of the situation should strive to educate the general public about the potential pitfalls of sex robots.

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