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PERSPECTIVE

The "Use" of Sex Robots: A Bioethical Issue

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Abstract

The manufacture of humanoid robots with embedded artificial intelligence and for sexual purposes has generated some debates within bioethics, in which diverse competing views have been presented. Themes such as sexuality and its deviations, the objectification of women, the relational problems of contemporary life, loneliness, and even the reproductive future of the species constitute the arguments which have emerged in relation to this subject. Based on these themes, this article presents the current state of the use of female sex robots, the bioethical problems that arise, and how bioethics could serve as a medium for both thinking about and resolving some of these challenges.

Keywords Robots · Artificial intelligence · Objectification · Gender · Sexuality · Sex robots

Introduction

Robotics is defined as the application of computerized electronic control systems to mechanical devices and is designed to replace the human being in the execution of certain tasks (Siqueira et al. 2016). In combination with artificial intelligence (AI), its development has made these control systems intelligent enough to learn through experience and exchange information with other systems. While the

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intentions of developers, at first glance, appear to be good, the challenges that AI-enhanced robots potentially pose are ethically questionable. They also point to the urgent need to discuss the ethical values that should guide human-machine interaction.

The growing utility of robots has been a well-defined theme in the media and entertainment industry for some decades. In 1988, Norman White, a biologist from Harvard University, and Laura Kikauka, a Canadian artist, presented the Electronic Artwork called "Them Fucking Robots." While this was not exactly a *parody* of the humanization of machines, it recognized the possibility of a robotic future, where "artifacts" could breed, that is, reproduce by themselves (Dixon 2007). In the same period, *Cherry 2000* (Jarnatt 1988), an American production, introduced a post-apocalyptic scenario set in 2017. It involved a society dominated by hyper sexuality and an excessively bureaucratic government. Now that we have passed 2017—the time of the future imagined by the film—the dream of the robot as an autonomous entity endowed with movement and communication capacities identical to humans (similar to the one proposed in the film *Eva*), and as a companion and sexual partner, is only partially realized (Kike 2011).

While conceptions of futuristic humanoid robots are on a long list of science fiction works, whether in literature or in the cinema, advertisements for female sex robots have began to appear in this decade. They capitalize on the *novelty* of an erotic product: "She is the automaton of your dreams" (Hornyak 2010). So far, public interest has been minimal since the silicone doll only competes with the inflatable doll and with other erotic toys which are inevitably stored in the dark closet of fetishes and sexual fantasies. However, the pretense of a "true companion", as the manufacturer suggests, is becoming more plausible. For instance, the "sex toy" industry has taken advantage of advances in the material sciences to produce tissue resembling the texture of human skin. In addition, the use of AI brings new contours to the problem, especially when considering the recent "celebrity" status attained by robots that have gained citizenship, like Sophia (Stone 2017). Robots with AI, in general, have become incredibly life-like. Still, they may supplant humans in terms of memory capacity and processing speed. However, technology has not come from outside of society but is a product of human decisions and actions (Thackara 2005). Like all other "human products," there may be failures, and when they occur, we need to know what kind of harms they may cause.

The emergence of female sex robots makes us think about the future of humankind, our body, sexuality, reproduction, and ultimately, about our relationships with each other, and what makes us human. Thinking about the purpose of these technological developments may help us better understand the ethical implications of their use. And to think about ethical implications is also to think how those technological developments are changing our lives and the values that are embedded. In 2015, Kathleen Richardson, a professor and researcher in ethics and robotics at De Montfort University in Leicester, started a campaign (Campaign against Sex Robots n.d.) with the purpose of setting limits to the development of this technology. For her, the debate needs to move beyond the field of engineering and computing, where ethical issues are addressed in an incipient way. Richardson claims that sex robots are toxic to human relationships and warns that we should be aware that even well-meaning technologies may ultimately cause harm to others.

We have searched through numerous databases for academic articles on this topic, but the results were few in number. Only in the second half of 2017 have new publications appeared, resuming debates that were beginning to fall by the wayside. The aim of this paper is, accordingly, to revive this discussion and to identify some of the key ethical conflicts relating to the development and use of AI-enhanced female robots for sexual gratification.

Sex Robots: "State of Art"

> A problem with the public perception of sex robots is that the public is currently not well informed about the actuality of robots in general. Sex robots are new and only a few people have encountered them directly. (Sharkey, van Wynsberghe, Robins 2017)

Machines as an extrapolation of the sexual objectification of women has been a running theme in the media. From *Metropolis* (Lang 1927) to *Her* (Jonze 2013), women and robots are blended together as an ethereal entity, manifested through voice and language. Sex robots—whether they are in the movies or those that are being manufactured—cater mainly to male fantasies. They surprise within a controlled sphere: they are sensual (as in *Metropolis*); exotic and vulnerable (as in *Blade Runner*); perfect, dependent, and submissive (as in *Cherry*). These female sex machines are objects of desire, since they are developed to mirror the needs of modern men. Submissiveness is also revealed in current sex robots, which may be insulted or attacked without the possibility of having committed a crime. It is just a product; an object packed in the fetish of consumption, as much as it can be the latest model of an automobile or smartphone. A pragmatic response to the question regarding its pursuit may just be: "why not?"

Such compositions become clearer when articulated in Design Studies, a field which seeks to investigate the emotional relationships people establish with brands and products. From the 1990s, the concept of "Emotional Design" emerged, presented by authors such as Donald Norman, Professor of Cognitive Science at the University of California and Computer Science at Northwestern University. Norman argues that human relations with objects go through three levels of emotional processing in the brain: the visceral, the behavioral, and the reflexive (Norman 2008). Thus, while the theoretical framework for understanding such phenomena has, for many years, been restricted to the complex understanding of culture, language, representation, and biopolitics, scientific research in neuroscience has been attempting to identify patterns surrounding the relationships we establish with objects and its manifestations arising from the development of new technologies.

Complex perceptions such as metaphors (Maiocch and Pillan 2013) are the basis of a user's relationship to their product, and what a product does is communicate visions, intentions, proposals, and ideals. Another tool for understanding the lasting effect of products is the experience the product brings about

(Damazio 2013), the nostalgia it evokes, and the aggregation of the experience in retrospect. It is understood, therefore, "that objects represent something that goes far beyond their functions" (Oh 2013) and that the fetishistic character, adds a series of values that are attributed to the objects. Different perspectives are also involved: those of the creators, the users, and the community.

The expression "To love a product" is an acceptable expression of affection in a society in which individual affirmation and social status are recognized *through* consumption (Russo and Hekkert 2008). However, new demands and realities are also changing the desires and perceptions about consumption, so that conscious consumption movements inspire people to "love" products as an expression of their ethical values. Therefore, an innovative technology on the market is usually imbued with a series of futuristic passions, fantasies, desires, and associations. Having access to innovative technology is a form of privilege. If a product solves or alleviates the problem of solitude, it breaks down the boundaries between dream and reality through the sense of community that is embedded in it, whether imagined or real. Such elements as AI add an additional layer of fascination to the sex robot. One can be a friend of an application such as Replika (Pardes 2017; O'Connor 2017), simply because it can start a conversation and may say things that a person wishes to hear. Some go further and begin relationships with virtual characters, like *Love Plus* from the *Nintendo* game (Dickson 2014). Like the researcher in psychoanalysis and human-computer interaction, Sherry Turkle says that we are lonely but fearful of intimacy (Turkle 2011). An AI-enhanced robot presents such a compromise of having a friend and a girlfriend in a single entity and embodied in a sex doll. Sex robots have the added advantage of presenting a customized look (of a favorite model or actress, for example), the desired breasts size and body type. And finally, they are a "sex toy," in which its intimate parts not only look identical to those of a woman, but also seek to imitate their movements, positions, and practices that are typical of sexual acts. So, while some research in Design Studies seeks to assess what the subjective elements, as well as aesthetic and sensory attributes, are capable of in making a product memorable, we can bet that such robots are already "born" with every possibility of becoming a sales success. The reason is that the subjective elements between us and our artifacts are about the memories they access, the senses they stimulate, and how the values that are embedded in them relate to us. In that sense, we could guess that such a product can become popular and may eventually be present in homes around the world, just like the television and computer, if they get more affordable. Fear, loneliness, impatience, anger, delusion, and deception, among other human feelings, are readily exploitable for profit. On this point, Turkle (2011) observes that, "as sociable robots propose themselves as substitutes for people, new networked devices offer us machine-mediated relationships with each other, another kind of substitution. We romance the robot and become inseparable from our smartphones." In this sense, "we remake ourselves and our relationships with each other through our new intimacy with machines."(Turkle 2011)

But *what*, technically speaking, is a sexual robot and what values are *already* being incorporated into its manufacture? They are composite parts of a mechanical body that seek to reproduce the human body, such as mechanical vaginas that

perform contractions and delicate hands made of silicone that are complete with nails. They may be supported by AI to create certain profiles of women. For instance, "frigid" and "wild" are binary options marketed by manufacturers. It should be noted that the sexual use of robots is a recent phenomenon, resulting from the union of the erotic toy industry with the developments of robotics and AI. These last two fields have been investing in research to better understand human physiology, with the aim of creating replicas that can be well understood in narratives like *Robocop 2* (Kershner 1990) or *I, Robot* (Proyas 2004). In both cases, it is assumed that the technology for androids (or robots developed to look and act like humans) and hybrid cyborgs (which are characterized as organisms endowed with organic parts and biomechanical parts) will facilitate new scientific discoveries. However, sex robots exploit the female figure—eventually male, and perhaps even children—for unilateral physical pleasure. The buyer of the object, a "humanized" sex toy, possesses these bodies to do what they want, with no need of consent (Gutiu 2012). After all, robots are intended to be analogous to humans through this mechanization. The word was formed from the success of Karel Capek's *Rossum Universal Robots* in 1921 (Čapek 1920); the word robot in its original Czech means "forced labor" or "servitude." Thus, robots and sex robots are drawn from human fantasy, fictions with visionary elements that come to life. On the other hand, the ethical debate on robots, and more recently sex robots, is still incipient.

The author of the book *Love and Sex with Robots* (Levy 2009) argues that sex robots are a safe and harmless substitute for a man who would otherwise seek a prostitute. So when Levy states: "What's the problem? It's just a machine!", Kathleen Richardson recalls that the narrative constituting robots as "things" is similar to that used in the production of virtual reality videos, where sexual abuse and racial violence may be promoted. These concerns have provoked discussion in the community, with some focus on robotics (Richardson 2015), that is, even if those videos are meant to be just entertainment, we should be concerned about their influence on human values, behavior, and health. Some psychological and behavioral studies show that violent games lead to an increase in violent behavior (Joselli 2014). On the other hand, there are proponents who argue that these video games, even if inclusive of simulations of violence, can contribute to cognitive development, such as improving one's responses to harm, attacks, or threats. However, the extent to which the portrayal of violence is acceptable will vary among different societies and could undermine the capacity for empathy in children and adolescents (Wonderly 2008).

Thus, from the first doll presented to the market with the purpose of being used as a sex robot in 2010 (Hornyak 2010) to the most recent models with embedded AI, such as *Harmony*, for instance, it is unclear as to the number of types of robot there are, given the number of manufacturers involved (Windlen 2017). In 2016, sex dolls mimicking five-year-olds have been produced and marketed for at least a decade by a Japanese company (Osborne 2016), while more recently an Englishman was arrested for ordering a child sex doll from Hong Kong (Dearden 2017). The company *Real Doll* has reportedly sold 400 to 500 sex robots per year (Graham 2017). Considering that companies located in Europe, the USA, China, and Japan operate in this market, it is estimated that

such robots have been sold in the thousands, and they are present in "brothels" for public use (Devlin and Lake 2018).

Ethical Considerations

> Whether we like it or not, we humans are destined to become obsolete (Neilson 2011)

The first question we could raise concerns gender and the objectification of the other. Kate Devlin, a researcher of AI and HCI from the University of London, says that the robot, being a machine, has no gender; thus, the suggestion that a unisex robot with the possibility of genitalia exchange could be a possible way forward (Sharkey et al. 2017). Robert Sparrow also suggests that if the robot does not represent the female figure, the objectification of the woman's body is annulled (Sparrow 2017). However, one can still question the fact that since the genitals and body structures have *human* form, the ethical and social issues entailed by the intersection of the human body and sexuality cannot be entirely avoided.

While sex robots may appear to be choice promoting, it is not purposive in that it does not enable the building of meaningful relationships. Physically, robots are still some distance away from being humanlike, even if enhanced with advanced AI (Danaher 2017). Thus, human-like robots in science fiction films like *Her* are still fantasy, since it has not been possible to make robots emotionally responsive. Under the title of "innovation driven by male masturbatory fantasy is not a revolution" (Moore 2017), the journalist Suzanne Moore, like Donna Haraway (1991), reminds us that the goal is not to be anti-technology, since the creation of hybrids and cyborgs allows us to rethink the identities and moral values assigned to them. In this sense, the author Vilém Flusser invites us to reflect on the production of objects, as a way of subjectively communicating the concepts that are embedded in them (Flusser 2002). To him, these objects can be obstructive or non-obstructive; the obstructive object represents a belief system that imposes itself, thus becoming "obstructive" to realities that do not conform to these beliefs. In contrast, non-obstructive objects promote open communication through inter-subjective dialogs. Obviously, the perception of obstruction and non-obstruction will change according to the observer's point of view. What is important to understand in the concept is that often innovative technologies or designs take different paths from what were originally designed for. This could be because they were not thought to be possible, or because they were foreseeable.

This happened with the Barbie doll, which for the creator Ruth Handler was a way for girls to express themselves as a woman (Stern 2017). However, the doll reinforced body ideals and inspired girls and women to fit into an "ideal" by removing a part of the rib to have a thinner waist, for instance. Among many Barbie accessories in the 60s, there was a small book that provided advice on not eating for the sake of being thin. Lord (2004) observes that this could have encouraged anorexia. Also, a value implicit in this toy is that in order to be

deemed successful, a woman should be sexually liberated, educated, and attractive to men. A Barbie doctor was produced in the 60s when there were very few women in the medical profession. This was also the case for other professions, such as for astronaut. The doll has since been presented in 180 different professions (Stern 2017). Ethical concerns about the objectification of women could similarly apply to sex robots.

Regarding the possible "therapeutic uses" of sex robots, Kate Darling, an MIT researcher, says: "We have no idea what direction this goes in and we can't research it" (Rutkin 2016). She points out that to use funding for this kind of research is too risky because it is unclear how many subjects can be recruited and who will be willing to collaborate. In addition, there are also ethical issues with limiting a possible investigation into whether a child sex robot can be an effective treatment for pedophilia. But what is at the center of this discussion is not the therapeutic use of such robots, but whether they should exist. For instance, we need to ask ourselves how a child will feel knowing that there are sex robots in the form of a child for abuse.

Can sex robots impact people's health? Yes, if they can influence the relationship between them and their human users. If objectification of women is nothing new, "robot dolls" could worsen misogyny. Violence against women remains "a global health problem of epidemic proportion" and said to be thriving in the petri dish of social media (Chemaly and Chemaly 2014). Paradoxically, those sex robots also expose the fact that many women—cisgenic or transgender—seek to adapt to "reality" by accepting their objectification as an instrument of pleasure and as a natural condition. Perhaps like aesthetic treatment, sex robots could make women feel inadequate and feed, in both women *and* men, a constant sense of existential dissatisfaction.

What, then, would be the "moral status" of robots? This is perhaps the central issue and has been little discussed. When Gilbert Simondon (Simondon 1964, 2008) proposed for citizenship to be conferred on technical objects, he could not have possibly imagined that Saudi Arabia would be the first to do so. This development is not free of ethical issue. A Saudi woman questions why Robot Sophia has citizenship, whereas her daughter, who has a foreign father, cannot be a citizen of her country (Kanso 2017). Simondon's proposal is based on distinctions and discriminations attributable to technical objects, in the same way that morality sustains distinctions between humans. Thus, from this perspective, we may have another kind of understanding of technology, and its effects, if we consider that the result of its creation is also constituted by the memory of its genesis. The problem becomes even more complex if we are to understand human-machine interaction in terms of a hybrid dialectic (Verbeek 2015). Verbeek argues—like many researchers interested in the human-computer interaction—that technology affects and is affected by the relationships that are established with it. In this way, the paradigm that questions the strict separation between culture and nature calls for a deeper evaluation. The recent news (Nichols 2017) that a robot had been "raped" at an Electronic Art Show in Austria requires us to think hard about the moral and legal status that should be given to the robots. Such deliberations could open up novel ways of understanding how relationship between humans and robots could be framed.

Conclusions

> We allow ourselves to be comforted by unrequited love, for there is no robot that can ever love us back. (Turkle 2011)

The ethical debate about the uses and impacts of new technologies has become urgent and necessary in different contexts of contemporary life, including the sexual uses of robots. However, the task appears to be complex because technology exposes—in moral terms—beliefs that are naturalized, as well as unresolved conflicts over these beliefs. The modern subject is trained to analyze the phenomena separately, what is also an anthropocentric symptom. He has only himself—his desires and beliefs—as the center of judgments and decisions. However flexible and critical a view of psychology can be, about these phenomena, there is always a risk of looking at the case of sex robots through the distorted lenses of anthropocentrism. Would thinking about solving human afflictions and needs, through technology, justify the possible harm to the robots and the humans themselves?

It is possible to argue that the subject, in cases of extreme solitude—whether by feelings of inadequacy, physical and/or psychic problems—could see in sexual robots a palliative solution, a companion, even a relationship that brings him satisfactory experiences and emotional comfort. It should be noted that in this, as in most cases, the access to such "artifacts" are restricted to those who can afford them. Paradoxically, one of the "harms" pointed out about the manufacture of sex robots is the accentuation of isolation and loneliness, and since the growing connectivity of digital culture is already a phenomenon identified with those characteristics, we ask ourselves if the conviviality with robots would not further reinforce such tendencies of isolation that has been growing with technological revolutions. As Borenstein and Arkin (2016) observe:

> The loss of contact with fellow humans and perhaps the withdrawal from normal everyday relationships is also a possibility. For example, a user who has a companion robot may be reluctant to go to events (e.g., a wedding) where the typical social convention is to attend as a couple.

On the other hand, it cannot be denied that the way these robots are produced, marketed, and presented to the public, ultimately depreciates the image of women. Such considerations do not concern manifestations of a blind moralism or a radical and partial feminism; it must be recognized, in fact, that those sex robots have become another tool for objectifying women. One may ask if there are plenty of tools of this kind reinforcing such objectification. Does it then make any difference to build another one? We must ask, therefore, if we have met the goals of our project. In ethical terms, what would best guide our study of sex robots? Religious piety? A Machiavellian morality? The Ethics of Kantian Humanism? And, when one opts for the principles exposed in the latter, how does it sustain itself by disregarding the social context and the plots of power? Most importantly, how do we go about considering a phenomenon with such great nuances and innumerable contradictions?

Perhaps, ethical reflections on technology may be understood in light of relations of power (Foucault 1978). But even so, it is possible that a creative-intelligent machine, made in the image and likeness of women and men, will bring about a series of responsibilities that, for the moment, are not extendible, even in the sphere of culture, to humans of flesh and blood. Utopia or not, time will tell.

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Compliance with Ethical Standards

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