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Is Sex With Robots Rape?

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2017 OXFORD UEHIRO PRIZE IN PRACTICAL ETHICS

WINNER: GRADUATE CATEGORY

ABSTRACT

It is widely accepted that valid consent is a necessary condition for permissible sexual activity. Since non-human animals, children, and individuals who are severely cognitively disabled, heavily intoxicated or unconscious, lack the cognitive capacity to give valid consent, this condition explains why it is impermissible to have sex with them. However, contrary to common intuitions, the same condition seems to render it impermissible to have sex with robots, for they too are incapable of consenting to sex due to insufficient cognitive capacitation. This paper explores whether the intuition that non-consensual sex with robots is permissible can be vindicated, whilst preserving valid consent as a general requirement for permissible sexual activity. I develop and evaluate four possible ways to argue that there is a morally significant difference between robots on the one hand, and insufficiently cognitively capacitated humans and non-human animals on the other hand, to substantiate and justify the intuition that it is permissible to have non-consensual sex with the former but not with the latter.

0. INTRODUCTION

In ethical discourse, valid consent is usually taken to be a necessary condition for permissible sexual activity (Archard 2007; Cahill 2001; Cowling et al. 2017; Soble et al. 2002). Since non-human animals, children, and individuals who are severely cognitively disabled, heavily intoxicated or unconscious, lack the cognitive capacity to give valid consent, this condition renders it impermissible to have sex with them. However, the claim that valid consent is necessary for permissible sexual activity seems to imply that it is also impermissible to have sex with robots, for they too are incapable of consenting because they lack the requisite cognitive capacities.

I suspect that many people find this apparent implication counterintuitive, even though they would endorse the view that valid consent is a necessary condition for permissible sex. Hence, many people seem to hold conflicting intuitions about the permissibility of non-consensual sex between cases in which the non-consenting subject is a robot and cases in which they are a human or non-human animal. To show that these intuitions are in fact consistent, so that neither has to be abandoned, it must be demonstrated that there is a morally significant difference between the two types of cases, which explains why valid consent is a necessary condition for permissible sexual activity if the non-consenting subject is a human or non-human animal but not when they are a robot. Solving this puzzle challenges us to refine our conception of the relation between consent and the permissibility of sexual activity, and to reflect on the ethics of robot-human interaction.

This essay proceeds in the following way. In Section 1, I elaborate on the current and anticipated design of sex robots, as well as the sex robot industry, and provide a brief overview of the ethical debate on sex robots. In section 2, I clarify the notion of valid consent, and expand on its application in sexual ethics. In section 3, I explore and reject three possible ways to argue that there is a moral difference between robots on the one hand, and humans and non-human animals on the other hand, which renders it impermissible to have non-consensual sex with the latter but not with the former. In section 4, I argue that this moral difference is grounded in a discrepancy in moral status. Section 5 concludes.

1. SEX ROBOTS

1.1 *Design, Demand, and Development*

Sex robots ('sexbots') currently make up the only category of robots capable of having sex. Sexbots are robots designed for the purpose of providing sex for humans. They are programmed to engage in sexual activity, as their governing software necessitates them to perform acts aimed at the sexual gratification of their users (Levy 2009; Sparrow 2017). The sexbots currently available for sale look and behave moderately like humans, insofar as they have silicone skin and are realistically shaped, and are equipped with a rudimentary AI system that enables them to interact with their users through speech and affective communication (Levy 2009; Sharkey et al. 2017; Sparrow 2017). The sexbot companies that are currently best known are TrueCompanion, which has launched multiple editions of the female sexbot Roxxxxy, and RealDoll, which sells customizable models of both male and female sexbots.¹

A number of surveys indicates that the market for sexbots has potential for significant expansion in the future. Szczuka and Krämer, for example, found that 40,3 percent of the 229 heterosexual males who participated in their study could imagine buying a sexbot within the next five years (2017). Likewise, Scheutz and Arnold conducted a small-scale survey, indicating that two thirds of the male participants were open to the idea of using sexbots in the near future (2016).² Furthermore, Li, Ju and Reeves found that participants in their study were subject to increased physical arousal when they touched the 'erotic zones' of a sexbot, which suggests that there generally is no physiological barrier to sexual relationships between humans and robots (2016).

Moreover, experts believe that it lies within the scope of near future technological possibilities to create sexbots that are far more sophisticated than those currently available. These sexbots will be autonomous and interactive, with flesh-like skin, affective computing, highly developed sensory perception, refined language skills, the capacity to learn, and multiple preprogrammed personalities. They will adapt to the

1. See www.truecompanion.com and www.realdoll.com (both accessed 28 June 2017). Other sexbot companies that are currently competing on the market are Android Love Dolls and Sex Bot Company.

2. In stark contrast to the male participants, Scheutz and Arnold found that two thirds of the female participants declared themselves to be *opposed* to the idea of having sex with a sexbot. I can not elaborate on this gender difference here. However, see Scheutz and Arnold (2016) for possible explanations of this result.

sexual preferences of their user and base their sexual performance on an extensive amount of data, which will enable them to provide sexual gratification for their users (Levy 2009; Richardson 2015; 2016; Sharkey et al. 2017; Sparrow 2017).

These sexbots of the near future will also display sentient behaviour, such as the experience of sexual pleasure when internal sensors are triggered, without actually having qualitative experiences. Moreover, their programming will cause them to demonstrate complex emotional behaviour, which will allow for the formation of intimate sexual and emotional relationships with their users. It is this characteristic that differentiates sexbots from sextoys. The creation of such sophisticated humanoid sexbots can be expected to increase the number of individuals that is open to the idea of having sex with a robot (Levy 2009; Richardson 2015; 2016; Sharkey et al. 2017; Sparrow 2017).³

In this essay, I will be concerned solely with near future sexbots. Hence, my conclusions might no longer hold if sexbots become increasingly advanced in the more distant future.

1.2 Ethical Considerations

David Levy has argued that there are strong reasons in favour of creating sophisticated sexbots (2009). To begin with, he suggests that sexbots could replace human sex workers, which has the potential to curtail persisting harmful practices in the sex industry, such as sex slavery and sexual abuse. Furthermore, he maintains that the availability of sexbots could offer a solution for individuals who experience difficulty finding sexual partners, and provide intimate companionship for those who feel lonely or isolated.⁴ Moreover, it might be possible for sexbots to function as satisfactory alternatives for individuals with sexual desires that are likely to cause harm

3. This anticipation is also supported by the results from a 2016 survey conducted by Nesta. See Nesta FutureFest Survey, April 27, 2016, <http://www.comresglobal.com/polls/nesta-futurefest-survey-2/> (accessed 23-07-2017).

4. For objections to this claim, see Giutu (2012) and Sullins (2012).

to humans if brought into practice, such as the desire to have sex with children or to engage in violent or degrading sex without another agent's consent.⁵

There are also legitimate worries about possible negative effects of the development of the sexbot industry. Kathleen Richardson, who launched a Campaign Against Sex Robots in 2015, has stressed that the sexbot industry is mostly driven by heterosexual men who desire to buy robots that look realistically like women, but appear and behave in ways that exhibit harmful pornographic stereotypes of female attractiveness, personality and sexuality (2015; 2016). According to Richardson, this fact causes the design, sale and use of sexbots to express and reinforce persistent sexist and misogynist stereotypes about females, which she expects to have harmful consequences for women (2015; 2016; see also Scheutz and Arnold 2016; Szczuka and Krämer 2017).⁶

Even if the design, sale and use of sexbots will have no such effect on women, it might be wrong for individuals to interact with sexbots in ways that would be harmful if the recipients had been actual women. Robert Sparrow has argued that behaviour that has no extrinsic harmful effects can be morally objectionable in virtue of *representing* harmful behaviour (2017). Indeed, he maintains that because sexbots are intended to represent women, sexist and misogynistic behaviour towards sexbots is morally objectionable in virtue of representing such behaviour towards women (Sparrow 2017). Another way in which sexist or misogynist behaviour towards sexbots can be considered morally objectionable without having harmful effects on others concerns moral character. According to John Danaher, for instance, such behaviour is expressive of the defective moral character of the sexbot user, and is to be condemned on that basis (2017; see also Sparrow 2017).

There are thus good reasons to be cautious of the design, sale and use of sexbots, although these reasons are far from definite. However, since the subject of this essay is the permissibility of non-consensual sexual relationships with robots, I will set these issues aside for the remainder of this essay. Nonetheless, it should be kept in

5. This claim is highly disputed both within and outside of the academic community. This is in part because there is insufficient empirical evidence to support or oppose the claim that the desire to have potentially harmful sex with actual people diminishes when substitutes, such as sexbots, sex-dolls and virtual pornography, are used. It is unlikely that such evidence will become available soon, since research on the topic is suffering from a lack of funding and a scarcity of willing participants, largely due to the ethical complexities involved in such research, and the moral contentiousness of the research subject. Nonetheless, for an overview of some of the arguments for and against the use of sexbots as substitute subjects for potentially harmful sexual practices, see Rutkin (2016).

6. See www.campaignagainstsexrobots.org/ (accessed 28 June 2017). For objections to Richardson's campaign against sexbots, see Devlin (2015).

mind that although it might not be impermissible to have sex with robots for the reason that it is non-consensual, it might be impermissible for other reasons.

2. VALID SEXUAL CONSENT

2.1 *When Is Consent Valid?*

There is a general consensus in ethical discourse that valid consent is a necessary condition for permissible sexual activity (see for instance Archard 2007; Cahill 2001; Cowling et al. 2017; Soble et al. 2002). There are many ongoing debates that concern the concept of valid consent or its applications to moral and legal disputes. Since this essay concentrates on clear cases of sexual non-consent, I will not engage extensively with these issues here, and this section will involve only a brief discussion of the notion of valid consent and its relevance to sexual ethics.

Most philosophers engaged in the debate on valid consent identify three independent necessary conditions that are together sufficient for consent to be valid (Kleinig 2010; Mappes 2002; Miller and Wertheimer 2010; Wertheimer 2003). The first condition demands that an agent's consent is informed, which requires them to have knowledge of the relevant facts about the act they are consenting to, and to comprehend what they are consenting to on the basis of these facts. Secondly, consent must be given voluntarily, in which case there is no undue influence, such as coercion, from another agent, which is causally linked to the act of consenting. Thirdly, the consenting agent must be decisionally-capacitated, which requires them to have a grasp of the value and consequences of the act, on the basis of which they assess the risks, harms and benefits involved in this act.

Once an agent who intends to consent to a certain act meets these conditions, they must express their consent to make it recognizable to others. This requires something more than a mental state or attitude of consent enjoyed by the consenting agent, since this would pave the way for mistaken postulations of consent. What is required for others to justifiably believe that an agent has consented is that this agent has *performed* their consent. They can do so either verbally or non-verbally. A non-verbal performance of consent can occur with the performance of certain actions that do not involve language, such as nodding or initiating a certain activity. An act of consent can be performed verbally either in writing, for instance in signing a contract, or in speech, in uttering "yes" or its equivalent (Kleinig 2010; Mappes 2002; Miller and

Wertheimer 2010; Wertheimer 2003).⁷ However, the criteria for the successful performance of consent are extremely complex, varying with the relationships between the agents involved and the act to which an agent is consenting, and involving many other complicating factors on which there is ongoing academic disagreement.

2.2 *Sexual Non-consent*

There are at least two categories of sexual non-consent. The first category concerns cases in which the agents involved in sexual activity are capable of expressing valid consent, but one or more has withheld their consent. These are paradigmatic cases of rape. The focus of this essay, however, is on a second category, which involves cases in which at least one agent's consent to sex is lacking because they are, either temporarily or permanently, cognitively incapacitated to give valid consent at all. Agents who lack or are incapable of exercising the cognitive capacities to meet the conditions for valid consent include non-human animals, children, and individuals who are severely cognitively disabled, unconscious or heavily intoxicated (henceforth, 'cognitively incapacitated humans and non-human animals'). The capacities these agents lack or fail to exercise may be, amongst other things, the capacity for rational deliberation, moral understanding, future-orientedness, or conscious experience.

The group of agents whose involvement in sexual activity is non-consensual because they are cognitively incapacitated to give valid consent includes sexbots as well. As became clear in the previous section, sexbots also lack the cognitive capacities necessary for valid consent, such as the capacities for moral understanding and conscious experience. Since valid consent is a necessary condition for permissible sexual activity, it seems to follow from this that the valid consent condition does not only rule out permissible sex with humans and non-human animals, but also with sexbots.

This implication will strike many as counterintuitive. One initial response could be that the implication can be avoided simply by programming sexbots to perform actions that indicate consent, or even refusal of consent. For example, they could be

7. One helpful way to conceive of verbal performative consent is to understand it in terms of J. L. Austin's speech act theory (Austin 1973). A speech act is an utterance that has not only semantic meaning ('locution') or causal effects ('perlocution'), but is itself an act, performed by the agent in uttering a certain phrase ('illocution'). Thus, on this understanding, an agent can perform the act of consenting in uttering certain words. For such an interpretation of performative consent, see for example Marta (1996) and Cowart (2004).

coded to utter phrases that under the right conditions would express sexual consent, or to sometimes struggle as an indication of withheld consent. However, such a response fails. Sexbots lack the cognitive capacities to satisfy the conditions for valid consent even when they are programmed to perform actions that would under the right circumstances constitute acts of consent. Performances of consent can be genuine acts of consent only if the cognitive conditions for valid consent have been met in the first place. Since sexbots are cognitively incapacitated to meet these conditions, their performances are failed acts of consent, devoid of any normative force.

Merely programming sexbots in a way that causes them to display a void performance of consent or non-consent is thus unsuccessful in showing that the valid consent condition does not render sexual relationships between humans and sexbots impermissible. Rather, if the conclusion that sex with robots is impermissible because it is non-consensual is to be avoided, without denying that valid consent is necessary for permissible sex with humans or animals, it must be demonstrated that there is a morally significant difference explaining why consent is a necessary condition for permissible sex if it involves humans or animals, but not if it involves robots. In the next section, I will discuss and reject three possible ways to do this.

3. NON-CONSENSUAL SEX: ROBOTS VERSUS HUMANS/ANIMALS

3.1 Artificiality

One way to argue that there is such a morally significant difference is to stress that valid consent is required only from members of the human species, in virtue of their humanity. Yet to ascribe such moral weight to the humanity of the parties involved is not only in itself questionable, on suspicion of unfounded speciesism, but also implies that all sexual activity with non-human animals is morally permissible. To avoid this implication, the argument can be modified so that the perceived moral difference between non-consensual sex with humans and non-human animals on the one hand, and non-consensual sex with robots on the other hand, is explained by the fact that the former are organic and the latter artificial. However, if the distinction between organic and artificial were morally relevant in this way, the incorporation of artificial body parts into a human body would diminish the moral weight of

this human being's interests. This would mean that the more artificial body parts a human being has in their body, the less their consent matters. This is clearly absurd.

Finally, if the appeal to the distinction between organic and artificial bodies is supposed to indicate a moral difference between living and lifeless entities, life as such is deemed morally relevant for consent. Such a view would be highly implausible, given that the demand for consent does not apply, nor should it, to *all* living entities, in virtue of being alive. However, if the claim is weakened as to assert that lifeless entities are essentially devoid of value, whereas *some but not all* living entities are valuable in a way that generates a moral incentive to seek their consent, the morally significant difference is no longer that between living and lifeless entities.

3.2 *Harmlessness*

Another possible line of argument could be that the morally significant difference between non-consensual sex with a human or non-human animal and non-consensual sex with a robot is that it harms the former but not the latter. I will understand the notion of harm in the comparative sense, since this understanding is most likely to capture the complex way in which non-consensual sex can cause harm to non-consenting subjects, and is widely employed in ethical discourse. On the comparative understanding of harm, an act X harms an agent S if S is worse off as a consequence of X. In other words, X harms S if S would have been better off if X had not been performed.

Non-consensual sex can cause harm to non-consenting subjects in many ways; physically, and particularly psychologically. For example, non-consensual sex is likely to involve the experience of pain in cases in which sex is forced on an individual who has refused to give consent, although this is not true for every instance of non-consensual sex. Another way in which non-consensual sex is often harmful to the individual whose consent is lacking is in objectifying her as a mere means to sexual gratification, rather than as an end in themselves (Archard 2007; Baber 2002; Mappes 2002).

There is, of course, much more to say about the way in which non-consensual sex is harmful to those who undergo it. Nonetheless, it is already clear at this point that involvement in non-consensual sexual relationships does not cause harm to sexbots, since sexbots lack the capacity to experience pain and, as objects, are not harmfully objectified. More generally, it seems that it is impossible for sexbots to be

harmful at all. For things can go better or worse for entities only if they have qualitative experiences and enjoy some degree of consciousness. Since sexbots are non-sentient entities that lack the capacity for conscious experience, they cannot be harmed.

Still, however, it does not follow from the mere fact that an act of non-consensual sex is harmless that it is permissible. To see this, consider the following case:

Case I

A is a child who is unconscious at T_1 . B has non-consensual sex with A at T_1 , which B considers to be an act of love. There are no third parties involved or present who could report about the act, and there will be no other evidence of the sexual act, such as bodily traces. A will therefore never know that B had non-consensual sex with them at T_1 .

In this case, A will experience neither physical nor psychological effects of B's act of non-consensual sex with them at T_1 . Moreover, the act of non-consensual sex does not harmfully objectify A as a mere means to sexual gratification, since B considers it to be an act of love by which they value A as an end in themselves. Consequently, there is no reason to suppose that A is made worse off by this act. If A is not made worse off by the sexual act, the act does not harm them. Still, B's act of non-consensual sex with A at T_1 is seriously wrong. This shows that the mere fact that an act of non-consensual sex is harmless is insufficient to render it permissible.

3.3 *Cognitive Deficiency*

One could also argue that non-consensual sex with robots is permissible but non-consensual sex with humans or non-human animals is not, for the reason that, compared to humans and non-human animals, robots are too far down the scale of cognitive capacitation. In other words, the cognitive gap between robots on the one hand, and humans and non-human animals on the other hand, is large enough to cause a discrepancy in the permissibility of non-consensual sex. The explanation of this discrepancy would then be grounded in the fact that humans and non-human animals are cognitively more developed than robots, and hence approach the threshold for valid consent more closely than robots.

However, although cognitive capacities may come in degrees, valid consent is

binary rather than scalar: one has either given valid consent, or one has not, depending on whether or not the conditions for valid consent have been satisfied. To illustrate this with respect to valid sexual consent, consider the following case:

Case II

A has sex with B and C has sex with D. Both B and D are severely cognitively disabled and incapable of giving valid consent to these sexual acts. B is more heavily cognitively disabled than D, because B has more developed cognitive capacities than D.

In this case, both sexual acts are non-consensual, since both B and D are cognitively capacitated to a degree that is insufficient to ground valid consent. However, on the account under consideration, the comparative permissibility of these acts would be affected by the fact that B finds themselves higher up the scale of cognitive capacitation than does D, since B more closely approaches the threshold for valid consent. This is an implausible view, since both acts of non-consensual sex seem equally wrong. This case thus illustrates that valid consent is binary, and that the degree to which an individual is cognitively capacitated does not matter for the permissibility of sexual activity when this degree is insufficient to ground valid consent. Hence, there is no significant moral difference with respect to the permissibility of non-consensual sex between having the requisite capacities for valid consent to a certain insufficient degree and lacking these capacities completely.

4. MORAL STATUS

Still, one could argue that the morally significant difference between robots on the one hand, and cognitively incapacitated non-human animals and humans on the other hand, is that the latter possess the requisite cognitive capacities to an insufficient degree, whereas the former are *devoid* of these capacities altogether. In the case of robots, the cognitive capacities necessary for valid consent are not just rudimentary, distorted, or underdeveloped, as is true of cognitively incapacitated humans and non-human animals, but absent in the past, present and future. However, such an account does not function as an explanation of the discrepancy in the permissibility of non-consensual sex between cases in which the non-consenting subject is a

robot and cases in which this subject is a human or non-human animal. The mere fact that robots are not on the scale of cognitive capacitation for consent at all, whereas humans and non-human animals are on this scale on a level too far down to meet the conditions for valid consent, does not single out a fact that is in itself morally significant.

Nonetheless, this fact does become morally significant if it is taken to be indicative of moral status. On certain established accounts of moral status, sentience is both a necessary and sufficient condition for moral status (Kagan 2016; McMahan 2002; Singer 1993). Sentience is usually defined as the capacity to have qualitative experiences, most importantly of pleasure and pain. Some philosophers argue that sapience is an additional ground for moral status (Kagan 2016; McMahan 2002). The notion of sapience refers to an entity's capacity to enjoy a degree of psychological continuity, which originates from certain sophisticated cognitive phenomena, such as self-awareness, future-orientedness and moral understanding (Kagan 2016; McMahan 2002).

Since sexbots lack qualitative experiences, self-awareness, future-orientedness, and moral understanding, amongst other things, they are both non-sentient and non-sapient. Sexbots are therefore devoid of moral status. To say that sexbots lack moral status is to say that they do not matter morally for their own sake. If sexbots do not matter morally for their own sake, they are not the kind of entities that humans require consent from in order to do things to them, such as having sex with them. Because humans do not require consent from sexbots, as entities that lack moral status, sexual relationships between humans and sexbots are not impermissible in virtue of being non-consensual.

By contrast, insufficiently cognitively capacitated humans and non-human animals do have moral status, since they are sentient and, to varying degrees, also sapient. Because they have moral status, they are entities we require consent from in order to do things to them, such as to engage in permissible sexual activity with them. Hence, when insufficiently cognitively capacitated humans and non-human animals are, as a matter of fact, incapable of consenting, others must refrain from having sex with them.

The morally significant difference between non-consensual sex with humans and non-human animals on the one hand, and robots on the other hand, thus seems to be that we require consent from entities that have moral status, such as humans and non-human animals, but not from entities that lack moral status. Since robots

are devoid of moral status, humans do not require consent from sexbots in order to have permissible sex with them. This explains why valid consent is a necessary condition for permissible sex in the case of humans and non-human animals, but not in the case of robots.

5. CONCLUSION

My aim in this essay has been to provide a plausible argument to show that there is a morally significant difference between non-consensual sex with robots and non-consensual sex with humans and non-human animals, which substantiates and justifies the intuition that the latter is impermissible but the former is not. I argued that the relevant moral difference is that robots are devoid of moral status, whereas humans and non-human animals are not.

Admittedly, this solution holds only insofar as sexbots are non-sentient and non-sapient. The conclusion of this paper is therefore conditional on scientific and technological developments in computer science, artificial intelligence and robotics, which determine the level of cognitive sophistication enjoyed by robots. Indeed, would sexbots acquire some degree of sentience or sapience in the more distant future, and start to matter morally for their own sake, their design, sale and use for the purpose of providing sex for humans might become seriously wrong.

Finally, it is worth emphasizing that even if it is not impermissible to have sex with near future sexbots for the reason that it is non-consensual, it might well be impermissible for other reasons. As indicated in section 2, there are legitimate worries about harmful effects that sexual relationships with sexbots might have on others, particularly on women, as well as the intrinsic moral wrongness of certain behaviour that the availability of sexbots might facilitate. However, more philosophical reflection is needed to settle these issues, and to establish under what conditions, if at all, it would be permissible for humans to have sex with sexbots.

REFERENCES

- Archard, D. "The Wrong of Rape". *The Philosophical Quarterly* 57, no. 228 (2007): 374-393.
- Austin, J. L. *How to Do Things with Words*. New York: OUP, 1973.

- Baber, H. E. "How Bad is Rape?" *The Philosophy of Sex: Contemporary Readings*. Edited by A. Soble. Lanham/Oxford: Rowman & Littlefield, 2002.
- Cahill, A.J. *Rethinking Rape*. Ithaca/London: Cornell University Press, 2001.
- Cowart, M. "Understanding Acts of Consent: Using Speech Act Theory to Help Solve Moral Dilemma's and Legal Disputes". *Law and Philosophy* 23, no. 5 (2004): 495-525.
- Cowling, M. et al. *Making Sense of Sexual Consent*. Routledge, 2017.
- Danaher, J. "Robotic Rape and Robotic Child Abuse: Should they be Criminalized?". *Criminal Law and Philosophy* 11, no. 1 (2017): 71-95.
- Devlin, K. "In Defence of Sex Machines: Why Trying to Ban Sex Robots is Wrong". September 17, 2015. <https://theconversation.com/in-defence-of-sex-machines-why-trying-to-ban-sex-robots-is-wrong-47641> [Accessed 20 July 2017].
- Giutu, S. "Sex Robots and the Robotization of Consent". We Robot Conference, April 21-22, 2012. Retrieved from http://robots.law.miami.edu/wp-content/uploads/2012/01/Giutu-Robotization_of_Consent.pdf.
- Levy, D. *Love + Sex with Robots*. London: Duckworth, 2009.
- Li, J., Ju, W. and Reeves, B. "Touching a Mechanical Body: Tactile Contact with Intimate Parts of a Humanoid Robot is Physiologically Arousing" (2016). Retrieved from http://www.wendyju.com/publications/li_mechanical.pdf.
- Kagan, S. "What's Wrong with Speciesism?" *Journal of Applied Philosophy* 33, no. 1 (2016): 1-21.
- Kleinig, J. "The Nature of Consent". *The Ethics of Consent*. Edited by F.G. Miller and A. Wertheimer. New York: OUP, 2010.
- Mappes, T. "Sexual Morality and the Concept of Using Another Person". *The Philosophy of Sex: Contemporary Readings*. Edited by A. Soble. Lanham/Oxford: Rowman & Littlefield, 2002.
- Marta, J. "A Linguistic Model of Informed Consent". *The Journal of Medicine and Philosophy* 21, no. 1 (1996): 41-60.
- McMahan, J. *The Ethics of Killing: Problems at the Margins of Life*. Oxford: OUP, 2002.
- Miller, F.G., Wertheimer, A. et al. *The Ethics of Consent: Theory and Practice*. Edited by F.G. Miller and A. Wertheimer. New York: OUP, 2010.
- Nesta FutureFest Survey. April 27, 2016. Retrieved from <http://www.comresglobal.com/polls/nesta-futurefest-survey-2/> [Accessed 23 July 2017].
- Richardson, K. "The Asymmetrical 'Relationship': Parallels Between Prostitutions and the Development of Sex Robots". *Computers and Society* 45, no. 3 (2015): 290-293.
- "Sex Robot Matters: Slavery, the Prostituted, and the Rights of Machines". *IEEE Technology and Society Magazine* 35, no. 2 (2016): 46-53.

Rutkin, A. "Could sex robots and virtual reality treat paedophilia?". *New Scientist*, 2 August 2016. <https://www.newscientist.com/article/2099607-could-sex-robots-and-virtual-reality-treat-paedophilia/> [Accessed 20 July 2017].

Soble, A. et al. *The Philosophy of Sex: Contemporary Readings*. Edited by A. Soble. Lanham/Oxford: Rowman & Littlefield, 2002.

Scheutz, M. and Arnold, T. "Are We Ready for Sex Robots?". *The Eleventh ACM/IEEE International Conference On Human Robot Interaction* (2016): 351-358. Retrieved from <https://hrilab.tufts.edu/publications/scheutzarnoldi6hri.pdf>.

Sharkey, N. et al. *Our Sexual Future with Robots: A Foundation for Responsible Robotics Consultation Report*. May 2017. http://responsiblerobotics.org/wp-content/uploads/2017/07/FRR-Consultation-Report-Our-Sexual-Future-with-robots_Final.pdf.

Singer, P. *Practical Ethics*. Cambridge: CUP, 1993.

Sparrow, R. "Robots, Rape and Representation". *International Journal of Robotics* (online first, 2017).

Sullins, J. "Robots, Love, and Sex Machines: The Ethics of Building a Love Machine". *IEEE Transactions of On Affective Computing* 3, no. 4 (2012): 398-409.

Szczuka, J. and Krämer, N. "Not Only the Lonely – How Men Explicitly and Implicitly Evaluate the Attractiveness of Sex Robots in Comparison to the Attractiveness of Women, and Personal Characteristics Influencing this Evaluation". *Multimodal Technologies and Interaction* 1, no. 3 (2017): 1-18.

Wertheimer, A. *Consent to Sexual Relations*. Cambridge: CUP, 2003.