

Fluid Sex Robots: Looking to the 2LGBTQIA+ Community to Shape the Future of Sex Robots

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Abstract—As sex robots continue to be developed by industry, portrayed by media, and studied by researchers, it is common to conceptualize robots from a cisgender and heterosexual (cishet), or feminist perspective. We advocate for an increased shift toward the 2LGBTQIA+ community for inspiration and a path forward for more inclusive, successful, and socially responsible sex robots. In addition to the intrinsic value of being inclusive, looking to the 2LGBTQIA+ community can help us to break away from traditional ideas of gender and sexuality, to unlock the full potential of this technology to be flexible and offer new possibilities. Further, we reflect on the importance of considering how the designs of sex robots, as politically charged technological artifacts, can contribute to reinforcing ideas about heteronormativity; instead, sex robots have the potential to positively contribute to breaking down traditional barriers surrounding gender and sex. We envision a future of sex robots that reach their full potential as fluid, individualized companions that enable people to comfortably engage their interests and identity.

Keywords—sex robots, companion robots, human-robot interaction, 2LGBTQIA+

I. INTRODUCTION

Virtual and physical companion robots continue to be researched and developed to support people’s personal needs, including general wellness and loneliness [1], [2], social connection¹, and sexual needs². These needs are intertwined, and companion robots can be expected to serve multiple needs simultaneously – this idea has been well explored in the community (e.g., in the book “Love and Sex with Robots” [3]). It is not sufficient to consider sex robots simply as collections of body parts (e.g., face, body, a penis, vagina, etc.), but instead as socially embedded technologies that relate to ideas around gender, sexuality, and what is or is not appropriate. Thus, while robots continue to be sold as sex robots, we can expect them to serve other companionship needs as well. As novel technologies, it is not yet clear how people will ascribe gender and sexuality to sex robots, for example, whether it even makes sense to say a robot is male or female. Instead, we should aim to deconstruct sex robots more holistically, accepting that they may be pangender and pansexual, simultaneously anywhere on the gender and sexual and romantic orientation spectrums.

The 2LGBTQIA+ community recognizes that gender and sexuality are more complex, more fluid, and more dynamic than limited traditional ideas of the binary male and female. As such, we posit that the human-robot interaction community can and should learn from the 2LGBTQIA+ community on how to conceptualize and develop sex robots. In the remainder of this paper, we present an exploration of ideas connecting the 2LGBTQIA+ community with sex robots, highlighting the unique experience of the community in relation to technology (and thus what this may mean for gender in robots), and how sex robots can influence social ideas and behaviours about sex and gender.

It is important to address terminology: we have elected to use 2LGBTQIA+ as an inclusive acronym to refer to the non-cishet (cisgender heterosexual) community. We recognize the challenge of selecting a label given the long and complicated history of language used to describe the community, which is still evolving in the present day. Despite the existence of resources that discuss language use (e.g., [4]), there is yet no universally agreed upon standard. There are other common variants of the acronym we use (e.g., LGBT, etc.), as well as less common terms such as SAGA (Sexuality and Gender Alliance/Acceptance/Acknowledgement) and GSRM (Gender, Sexual, and Romantic Minorities). Each of these terms have their own nuances and set of pros and cons. We selected 2LGBTQIA+ as a broadly inclusive and frequently used convention that explicitly includes many identities. However, we acknowledge in using the plus sign that there exist additional identities not explicitly included (e.g., pansexual), as well as additional culturally rooted vocabulary (e.g., Hijra). Further, there are people who do not use a specific label but still identify as part of the community.

Although the field of Human-Robot Interaction (HRI) has engaged the study of sex robots and companion robots in general, we advocate for the continued and increased inclusion of the points of view from groups that have been historically overlooked or excluded, including the Two-Spirit, Lesbian, Gay, Bisexual, Transgender, Queer/Questioning, Intersex, Asexual/Agender/Aromantic (2LGBTQIA+) community.

¹ Gatebox, commercial product. <https://www.gatebox.ai/en/>. Accessed 2021.

² RealDoll, commercial product. <https://www.realdoll.com/>. Accessed 2021.

II. LOOKING TO THE 2LGBTQIA+ COMMUNITY

While there is clear intrinsic value in being inclusive of minorities, there is increasing evidence that the 2LGBTQIA+ community is much larger than once thought, with more people identifying with the community as acceptance grows. For example, Generation Z (people born from 1997-2012) has been dubbed the “Gayest Generation.” A 2020 poll [5] found that about 1 in 6 American Gen. Z adults identified as something other than cis het. This percentage decreases with each older generation, with only 2% or fewer of Americans born before 1965 reported belonging to this group. Similarly, only 66% [6] of Britain Gen. Z report that they are only exclusively heterosexual. Thus, increased inclusion of the 2LGBTQIA+ community is required for avoiding narrow perspectives that limit our understanding of how a growing segment of people may adopt and engage with love and sex robots.

A Diversity of Experience with Technology

The 2LGBTQIA+ community has, by definition, experience with breaking traditional cis het boundaries and constraints, and thus are more open to diverse ideas surrounding sex, gender, and relationships. While this does not imply agreement within the group or necessarily more liberal sexuality, it can be said that the community in general is more used to being presented with and discussing new ideas of sex, gender, and relationships based on their history, in comparison to more traditional cis het people. For example, specifically for sex, non-cis het people have reported to be more likely to engage in partnered sexual activities such as oral and anal sex than cis het individuals [7]. Thus, we can reasonably expect a more diverse engagement by the 2LGBTQIA+ community with their use of sex robots.

By extension, research has illustrated how the 2LGBTQIA+ community has engaged with technology differently than cis het people. For example, in one study [7] sex toy users were more likely to report as non cis het, indicating that the 2LGBTQIA+ community may further be more experienced with integrating technology into their sex lives. Similarly, the LGBTQ+³ community is more likely to experiment with gender and sexuality in video games [8] by doing things such as playing a chosen avatar or character whose gender is different to their gender identity or expression outside the game. The motivations for this vary, with reasons being given to include wanting to perform romantic mechanics of the game with another gender, wanting to use the different clothing options available for their in-game gender, and just for fun. This kind of behaviour has been documented in people of all identities.

The drive to adopt a different gender identity or expression in video games may be because the options available in most games are often too restricting to match the person’s sense of identity [9]. For example, in games that allow players to marry (such as in the Harvest Moon franchise), it is uncommon to allow the player’s character to romance or “marry” someone of the same gender. Moreover, many popular games often present the player with the choice to choose one of two binary genders. For instance, in most Pokémon titles the game asks the player at the start of the game “Are you a boy or a girl?” However, there

has been a recent surge in video games to be more inclusive. The farming simulator Stardew Valley allows players to “marry” any gender among the characters including the option to platonically “marry” the non-binary character Krobus. The Sims, a life simulation game, has updated in their fourth title the ability to customize a character’s sex and gender further with options to questions like “Can this [person] use the toilet standing?” and “This [person] will be able to: Become pregnant, Get others pregnant, Neither.” The takeaway from all this, is that, when designing technology, we cannot expect people to interact with things in the ways that we designed and intended. Even when video games specifically code restrictions based on gender into their platform, people will still find a way around it to achieve a desired goal, just like how historically people have gone against the rules and boundaries surrounding notions of gender.

Additionally, it has been found that LGBT+ people have a greater online presence exploring their identity. One survey found that 1 in 5 people “come out” online, and that for Gen Z, that number rose to 75% [10]. An additional survey [11] of LGBT youth also found that 14% of people first disclosed their identity to someone online and 29% said they were out more online than in person. Moreover, LGBT youth were five times as likely as non-LGBT youth to have searched for information online on sexuality or sexual attraction (62% vs. 12%). LGBT youth were also more likely to have searched for health and medical information compared to non-LGBT youth (81% vs. 46%).

Thus, considering all these factors, the unique experience of the community may lead to an additional perspective and rate of acceptance to sex robots in their own lives or to other members of society. Sherry Turkle presents the theory that increased exposure to technology leads to more familiarity and bonding with technology [12]. As demonstrated, the community has a plethora of experience in this area from their experimentation with gender in video games, use of sex toys, and curated online presence. As such, this may lead to the community having a wider tolerance and acceptance of sex robots and additionally engaging with this technology in a more dynamic and flexible way. Similarly, since the community has a historically non-traditional approach to sex, they may have an easier time exploring a positive narrative when it comes to sex robots.

III. STEREOTYPES IN ROBOT DESIGN

The social robot design sphere often leverages human stereotypes in the robot design, for example, through the shape and colour of the robot body, the robot’s voice and mannerisms, or the dialogue that is chosen and made available. There is a growing effort within the robotics community to investigate whether people discriminate against and respond to robots based on gender, ethnicity, and racial stereotypes as well as how to mitigate such responses [13], [14], [15]. Further, we may expect that the context of use (e.g., service industry) may promote certain gendered perceptions [16].

While we can expect people to naturally ascribe gender to robots [16] (even those not designed to elicit the response), there

³ Note that to preserve the accuracy of the data used from other sources, we used their choice of terminology when making reference.

is not as much about sexuality and heteronormativity that has yet been explored. Consider the example of the Disney movie WALL-E, where the fictional characters WALL-E and EVE are two robots that are portrayed as having a romance. Despite using subtle cues, WALL-E is clearly the ‘male’ and EVE is the ‘female’ in this dynamic [17], a clear binary traditional result that audiences readily adopt. It is important to reflect on the artistic design decisions here, where even though the characters were robots and not people (different robot models, too!), they were designed with clear binary genders in a male-female romance. This is an example where technology design decisions can reinforce heteronormativity.

Thus, even though many mainstream social robots are designed as animals or related abstractions (e.g., Sony AIBO, or the Paro therapy robot), which appears to leave less room for sexualization, we can still expect people to readily assign them a romantic and/or sexual orientation. Further, we posit that the community should engage with this discussion to better understand how sex and gender relate to their designs. More directly, as sex robots continue to become more mainstream and their designs iterated upon, it raises many questions about how robot gender and sexuality will be programmed and designed, if at all, and how humans will react to that aspect of humanoid robots based on their experience and knowledge of human stereotypes.

IV. ROBOTS AS MORE THAN ARTIFACTS

As sex robots continue to develop, we must ask ourselves if their design will reaffirm heteronormative discourses and gender and sexuality stereotypes. Science and Technology Studies or Socio-Technical Studies (STS) affirms that technology is not merely material objects and artifacts. While that is a component, social practices, social relationships and social institutions are required to design, produce, distribute, and use this technology [18]. It is a mistake to assume that technology is neutral. Technology is in fact infused with values, whether intentional or not, and becomes functional in social systems through the social meaning and practices surrounding it. Thus, adoption of a particular technology means an adoption of a particular social order or values. It has been well documented over the years that artifacts of technology can enforce social biases and agendas [19], [20]. Therefore, whether we would like them to or not, robots, like other technological artifacts, will influence our social systems. This applies especially to sex robots because of their ability to form social relationships and be deployed within existing social systems [21].

Sherry Turkle in “The Second Self” [12] says that we should not be asking the question of what robots will look like in the future, but what will we be like? What kind of people are we becoming? But perhaps a better question to ask would be what will we want robots to be like in the future? Just like technology influences society, society can also influence technology. If we want to achieve technology infused with certain values, such as sex robots that promote healthy engagement with one’s sexuality, we must be at the forefront of discussions, guideline creation, and design to offer our feedback and ensure sex robots are designed and employed with an inclusive perspective.

V. THE FLUIDITY OF ROBOTS

On their own, sex robots raise many practical and philosophical questions about sexuality and gender. A sex robot can be implemented with features such as detachable and changeable genital parts, different choices of clothing, a changing pitched voice, and different dialogue and physical social interactions and behaviours. If a sex robot can change virtually in an instant traditional markers of gender that humans use, are all robots thus genderfluid, pangender, or perhaps agender? As it is inherently ingrained within us due to our current culture and environment, depending on where a robot’s traditional gender markers lie, we will classify and perceive robots as either ‘male’ or ‘female’ or perhaps non-binary. But where is it that we as humans draw the line between where a robot lies on the gender spectrum? This answer will likely be different for every person, but what’s important is that the appearance and social interaction of robots will surely blur the lines of gender further in human society and cause some people to take a moment of introspection on the matter.

Furthermore, with robots’ ability to change programs and many design aspects as needed, it also applies new questions to the logic of homophobia and transphobia. For instance, if a robot uses a deep voice, has a traditionally male name and male clothing, and has a penis attached and then ‘reboots’ itself to have a higher pitched voice, answer to a traditionally female name, changes its clothes to be more traditionally feminine, and detaches its penis for a vagina would the robot now be perceived or accepted as female? Would people who possess transphobia be more willing whether subconsciously or not to use different pronouns for a robot than for a transgender person? As an additional example, what if a son invites his mother over for dinner and presents his ‘male’ robot partner to her. Would she be more put off by the fact that her son is in a relationship with a robot or in a relationship with another ‘male’? Would she be less likely to be homophobic since this is a robot and they ‘don’t have a gender’? The advent of sex and companion robots creates a new realm of possibility for studying sociological and psychological elements of gender and sexuality.

While more study is required, we believe that sex robots can be used as a social force for good, and they provide an opportunity for the community to positively shape humanity’s culture and ideas surrounding sexuality and gender. For example, picture a (plausible) world where every social humanoid robot is designed and mass produced using a cookie cutter model. A designer determines a safe, typical male (or female) presentation, which gets deployed to millions of homes. This robot’s design, and how it acts and engages in sex acts, now reaffirms the designer’s possibly heteronormative stance. Alternatively, imagine instead that this robot was designed to span gendered representations, for example, wearing a pink skirt and bow, having a voice deep in pitch, and introducing themselves as Henry. Such a robot with non-traditional gender design, being widely distributed, has the potential to work toward normalizing non-binary gender representation instead of entrenching heteronormativity. If people become more used to non-traditional roles of gender or have a moment of introspection by seeing how gender is presented in robots, these ideas and

normalization may translate over to our social ideas and relationships with humans as well.

VI. EXPLORING IDENTITY WITH ROBOTS

A range of diverse sex robots can present a new way to safely experiment with one's sexuality. Much like people have experimented in video games and in online communities [8], [9], [12], sex robots offer a new technological path to explore the boundaries of sexual identity for themselves. Moreover, by their nature, sex robots offer a certain set of boundaries to aid in such exploration that were not possible before their invention. Sex robots lay somewhere in the middle of exploring identity in virtual worlds and exploring identity by engaging physically with other people. Having sex with a robot can be done in the privacy of one's own home, thus preserving the anonymity people can curate in virtual environments. But unlike virtual platforms, a robot can provide a stronger sense of exploration since the many physical aspects of sexual and romantic touch can be performed. However, unlike a human person, a robot can be programmed to not have and express its emotions as being hurt if the person wants to discontinue their actions in the short or long-term. This would likely make it feel easier and safer for a person to engage with a robot in the first place as well as express their discomfort if it comes up to avoid further negative emotions. Finally, the ability to customize and fluidly change many aspects of a sex robot's design would allow someone the opportunity to immediately engage in sexual activity with what kind of person they found attractive and comfortable with. For example, picture a scenario where a man who is currently questioning his sexual orientation wants to try engaging in sexual activity with another man but is uncomfortable with the idea of anal sex, the position of intercourse traditionally associated between two men. He could instead theoretically, choose a robot with a traditionally masculine name, gender expression, and body type but who had a vagina for their sex organ. This would then allow the man to explore his sexual orientation within the boundaries that he is currently comfortable with.

VII. CONCLUSION

In this paper we explored the possible perspectives of the 2LGBTQIA+ community on ideas of gender and sexuality under the guise of sex robots. We reiterate that a wider more inclusive and socially responsible approach to sex robots continue to be advocated for and researched. This is particularly important when taking into consideration that sex robots present such a strong potential for social change. Instead of reinforcing heteronormativity and other harmful human stereotypes regarding gender, the fluidity of robots should be used as an opportunity to question and shed new light on ideas of sex and gender. This especially includes the ability to perform romantic and sexual social interactions with sex robots to explore one's own identity.

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