

Designing a Loving Robot: A Social Construction Analysis of a Sex Robot Creator's Vision

Annette M. Masterson¹ 

¹ Temple University, Philadelphia, PA, USA


Abstract

In 2018, one of the world's first sex robots was released by CEO Matt McMullen and his company, RealDoll. With artificial intelligence capabilities, the Harmony model is meant to support and converse with users. Using a social construction of technology theory lens, this study develops the theory's fourth level of analysis, emphasizing mass media's construction abilities. A critical discourse analysis of 38 publicity interviews found a tendency to emphasize the companionship of sex robots while envisioning a future where integration is normalized, and a sentient robot is possible. As the creator, McMullen's vision could determine the future of robotic design, leading to a deeper understanding of this new technology. This study adds to the growing literature on sex robots by addressing the creator's public intentions.

Keywords: sex robots, social construction of technology, critical discourse analysis, sentience, companionship

Introduction

Realistic sex dolls are not new cultural phenomena and have been present in humankind's imaginary since the myth of Pygmalion, where a man asked Aphrodite to bring his loved sculpture to life. In 1996, the first silicone sex doll from the RealDoll corporation was released to the public. CEO Matt McMullen, a sculptor by trade, sought to design ultrarealistic, poseable mannequins. After requests to use the mannequin products as sex dolls, he

CONTACT Annette M. Masterson  • Temple University, Annenberg Hall, 2020 N. 13th St., Philadelphia, PA 19122 • annette.masterson@temple.edu

ISSN 2638-602X (print)/ISSN 2638-6038 (online)
www.hmcjournal.com



Copyright 2022 Authors. Published under a Creative Commons Attribution 4.0 International (CC BY-NC-ND 4.0) license.

established RealDoll and sold them with lifelike genitalia. While his design changed over time, McMullen began discussing the possibility of artificial intelligence incorporation in 2015, which would eventually result in one of the world's first sex robots. In 2018, McMullen's Harmony model was ready to be released to the public. Harmony features a robotic head with moveable eyes and a mouth regulated by a mobile application and connected to the patented silicone body. Throughout the design and production process, McMullen has been the finalizing voice who sculpts models. His vision defines what is produced and ultimately sold.

This study addresses McMullen's discourse in publicity interviews to understand his vision and the language surrounding one of the first modern iterations of sex robots. Through these interviews, McMullen explains the purpose and rationale of his products, especially as advancements allowed them to "communicate" in more sophisticated ways. McMullen presents a palatable version of sex robots and their users to combat dystopian and violent fictional (Hawkes & Lacey, 2019) and deviant or anti-social informational (Döring & Poeschl, 2019) representation. Limited research has explored the interrelationship of sex robot and public attitudes; however, initial studies have found women reporting increased levels of jealousy (Szcuka & Krämer, 2018), while men report overt distain even as implicit measures imply interest (Szcuka & Krämer, 2017).

The construction of the sex robot narrative does not reside in an independent silo. To understand this multifaceted technological negotiation, social construction of technology theory (SCOT) is used here to elucidate the mutual cyclical process of negotiation between designers, users, the public, and media (Klein & Kleinman, 2002). Mediated discourse on sex robots is illustrative of the sociocultural and political level of SCOT, an underdeveloped segment of the theoretical lens. By critically analyzing McMullen's interviews, I argue McMullen reframes RealDoll as a frontier in the global sex technology industry and the sex robot as an alternative companionship service product. The purpose of the study is two-part: (1) to uncover a creator's perspective that has led to the construction of a hyper-realistic sex robot model, and (2) to detail the discourse of a sexual product and its gender dynamics. Grounded in SCOT and discourse analysis, I ask: How does the creator of a sex robot view their product, and what is the purpose for its existence?

Sex robots provide a unique basis of understanding human-machine communication as a form of "communicative sexuotechnical-assemblages" (Dehnert, 2022, p. 133). Their communicative nature is reflected in the outward features and robotic movements that depict physical expectations, whereas the inward interpersonal features seen in the artificial intelligence system directly portray values to users. As an embodied sexual product, sex robots are enveloped under the umbrella term of erobots, or "all artificial erotic agents" and their systems (Dubé & Anctil, 2021, p. 2). Sex robots can be defined as "any artificial entity that is used for sexual purposes (i.e., for sexual stimulation and release) that meets the following three conditions: Humanoid form . . . Human-like movement/behavior . . . Some degree of artificial intelligence" (Danaher, 2017, pp. 4–5). This more rigid definition confines sex robots to a replication of the human form. Other definitions (Döring, 2021) are more fluid in the material, mechanical expectations, and encompassed technologies; however, Harmony and models like her are following a strict application of human-like qualities signaling the potential prominence of humanoid definitions. Even with Harmony's static body, she still achieves this categorization particularly with body sensors, heating, and

visual recognition in development at RealDoll (Engadget, 2018a). Nevertheless, sex robots, like other robotics, remain fluid in design and their definitions may shift if the models evolve from human replicas (Dehnert, 2022; Fortunati & Edwards, 2021).

In adherence to the critical shift in the field of human-machine communication (Fortunati & Edwards, 2020), this study contributes to understandings of mediated technological and sexual discourse. RealDoll and McMullen are utilized as a case study for sex robot designers as the company is one of the leading global manufacturers (Dehnert, 2022), and the only U.S.-based operation. This study addresses key developments in sex robot literature by answering Döring et al.'s (2020) call for empirical work on sex robots. Further, by focusing on the sociocultural level of SCOT, I follow Klein and Kleinman's (2002) expansion of the theory that includes technological shaping occurring on a wider scope, such as through mass media. Within McMullen's public proclamations of his product, future iterations of sex robots are signaled.

Sex Robots

As this technology is relatively new and the price range is high (full bodies start at \$10,000), the user base is limited to those who have the financial means to access it; however, this could change as the technology becomes more readily available. As a result, the current idealization of this product must be evaluated at its infancy. The RealDollX, the sex robot segment of RealDoll, is offered only in female form, though a penis extension can be purchased (RealDoll, n.d.a). In 2022, five models are available for purchase: Harmony, Solana, Serenity, Tanya, and Nova. Designers develop the bodies from the sex doll versions: they follow a hyper-realistic design reminiscent of other media deceptions of women with larger breasts and buttocks and smaller waists. Though not impossible measurements, they reflect an idealized female body type. The marketing of these dolls continues to emphasize this ideal through "the perfect woman" messaging (Cheok & Zhang, 2019, p. 27).

Sex robot users are a major social group guiding the design through customizations and requests, though research has raised concerns over the isolation of users from society (Nyholm & Frank, 2019). However, initial research on users and their behavior has found strong emotional connections (Langcaster-James & Bentley, 2018; Middleweek, 2021), with some users forgoing human romantic relationships (Hanson, 2022). Additionally, a majority of users tend to identify as heterosexual, male, and owners of a "woman" doll (Hanson, 2022; Langcaster-James & Bentley, 2018). As for psychological traits, Harper et al. (2022) identified no fundamental differences between owners and non-owners; yet, owners had lower levels of sexual aggression tendencies but reported an increased rate of finding women "unknowable" (Harper et al., 2022, p. 8). These reports seem to refute fears that women will face higher rates of violence due to sex robots (Richardson, 2015).

Fear and harm-based discourse about sex robots is present in fiction and nonfiction, both in the US and globally. In Swedish news programming, Björkas and Larsson (2021) reveal fundamental forms of "sexual essentialism," the inclination to concentrate on a robot's non-humanness leading groups to ask where the technology will lead (p. 5). Ultimately, discourse projects a negative view of the technology and any sexual interest in it. Other nonfictional representations characterize users as socially inept with the robot providing intimate comfort (Döring & Poeschl, 2019). Fictional content often suggests sentience, potential

violence, and traditional gender roles (Döring & Poeschl, 2019; Hawkes & Lacey, 2019). Gendered labor is not limited to sex robots as it is an issue with other social robots that infuse fiction and reality (Liu, 2021). Across all robotization, Fortunati (2018) theorized the domestic sphere will potentially lead to a shift in resources and control. Through technology, domestic labor and everyday interactions could be transformed either benefiting users or instilling power in current, androcentric capitalistic structures.

To expand sex robot conceptualization away from hyperrealism, Kubes (2019) equated sex robots to other toys such as vibrators, arguing robots could spark a male sexual revolution even without a traditional human form. Radical feminist perspectives link sex robot discourse with pornography, which they believe objectifies women and disregards female pleasure (Kubes, 2019). Indeed, research should analyze the impact of emotional scripts and continue to reflect on a future with more robotic and gender-fluid sex robot models (Kubes, 2019). Similarly, Liberati (2020) called for an expansion of technology conceptualizations as products evolve to be a “quasi-other,” where an object is neither just an object nor a person but identified as a sexual partner. Developed within teledildonics scholarship, this concept becomes even more apparent when the “partner” is in human form, thereby creating a new form of “person.” If the artificial intelligence evolves into advanced processing, the quasi-other could become an additional social group.

Social Construction of Technology Theory

The social construction of technology (SCOT) lens was first developed in 1984 by Pinch and Bijker, focusing on the relationship between technology and social groups. SCOT’s basis is the cyclical interaction which “explain[s] technology in terms of a stable society [that] has been replaced by stressing the *mutual construction* or *mutual shaping* of technology and society” (Pinch, 2009, p. 45). This lens views technology as a system influenced by a variety of components, including social, cultural, economic, and political (Johnson, 2015). Social groups must share the meaning of the technological artifact and together give meaning and define problems within the artifact (Bijker et al., 2012).

Unlike technological determinism, SCOT does not view the influence and effect from society and relevant systems to be one-way with information flowing only from producers to consumers. Instead, the cyclical process allows for technology to alter society as well: “they cocreate one another” (Johnson, 2015, p. 182). Similarly, SCOT does not reflect on value-judgments, as the focus is on the shaping process (Prell, 2017); therefore, the fundamental concept of a sex robot is not branded right or wrong. What makes SCOT useful when analyzing sex robots is the basis of controversy. Before design closure can occur, groups must believe the controversy is solved (Bijker, 1995). In a contemporary technology like sex robots, the controversy is being actively debated and stabilization could take decades. The foundational questions that must be addressed is whether a sex robot addresses a social problem and can solve the issue. If the design process, including sociocultural and political constructions, can be traced over time, then a “dominant form” may arise (Pinch, 2018, p. 155).

The theory’s fundamental structure emerged from science and technology studies (STS); however, its application has been extended to digital spaces (Kwok & Koh, 2020) and robotics (Pfadenhauer & Dukat, 2015). The cyclical assembly, particularly in a mediated

space, provides a transfer of cultural communicative strategies between social groups. The negotiations of design and boundaries of the artifact are revealed in public discourse involving a “complex social negotiation” (Johnson & Verdicchio, 2020, p. 421). The use of SCOT in this study is due to the unique stage of development that sex robots now reflect, a technology with a variety of components (AI, Bluetooth, and robotics) that will likely have a social role. Further, sex robots reveal an interplay of gender and sexuality by illustrating what is viewed as sexual desire and as social stigma, which may have further design implications (Dehnert, 2022).

There are four categories to the SCOT framework: interpretative flexibility, social groups, closure and stabilization, and the sociocultural and political (Johnson, 2015; Klein & Kleinman, 2002). These facets conceptualize the process upon which artifacts take hold and endure (Johnson, 2015). The initial three levels address the interpersonal and organizational intervention, where the fourth level is based on social influences, including the media. Interpretative flexibility, or openness, identifies the variety of outcomes dependent on social conditions. Social groups accentuate the negotiations that imbed meaning into the technologies through customizations and discourse. As the technology nears design closure and stabilization, rhetorical closure occurs when design concerns have been addressed. Stabilization is dependent on consensus which happens over time (Bijker, 1993). Since this study’s interviews are distributed on a social scale, I approach SCOT from the sociocultural and political level, which provides McMullen the platform to disseminate his construction of Harmony and social groups.

Power conditions typically transpire in the background (Klein & Kleinman, 2002); however, strategies and values formulate a technological frame that directs discourse and behaviors between actors (Bijker, 1995). The interaction builds a common interpretation of the artifact. Symbolic meaning from semiotic power, which can be presented as a boundary, becomes solidified by social actor influence (Bijker, 1995). The micropolitical power strategies, or interactions between social groups, are created through a combination of the technological frame and semiotic power. It is not the artifact that has political power, the power is “discursively regulated by symbolic media” for political gain (Bijker, 1993, p. 128). During this process, certain behaviors and designs may be encouraged (Klein & Kleinman, 2002). The micropolitical strategies advance “a new order” through a combination of “technology and society” formed by discourse (Bijker, 1995, p. 272). In mediated cases, the relationship is between communicator and the audience. Unlike interpersonal communication, the sociocultural level provides a platform for creators to widely showcase their product before users gain access.

I offer a reclamation of the sociocultural level and encourage expansion into communicative power strategies. Social power, particularly within technology shaping, needs to be continuously legitimated (Fortunati, 2014). Power is often framed as one party must “lose” for another to gain empowerment (Fortunati, 2014, p. 173). Media has been a tool for elite members to manipulate the public and reinforce their own power. It is the relationship between users that will determine the shaping of the technology. Fortunati’s (2014) concept of “disposition” finds ownership and labor control to be of the utmost importance when evaluating power and empowerment (p. 176). Disposition relates to SCOT’s conceptualization of enrollment, where an actor entices other groups to solve issues and support a technology (Bijker, 1995). McMullen, in the case of sex robots, remains a critical owner and

through his interviews deploys discursive strategies to encourage support for Harmony. I contend McMullen's discourse is strategically used to remove taboo and reframe his company as a power that benefits all social groups.

Method

Utilizing a SCOT lens and with emphasis on the cultural level of construction, this study analyzes a corpus of mass media interviews with Matt McMullen of RealDoll. The critical discourse analysis (CDA) employed here is based on Fairclough's (2012) conceptualization, which highlights social realities focused by how humans flourish or suffer. The interplay of social realities and the structures that instill them can be presented in three levels: "social structures, practices and events" (Fairclough, 2012, p. 11). The practicalities of CDA, specifically the focus on power dynamics influencing social conditions, is intertwined with the principals of SCOT. This investigation is into the structure and events, and thereby critically analyzed semiosis, an interplay between CDA and SCOT. Semiosis is approached in this study as "social relations, power, institutions, beliefs and cultural values" (Fairclough, 2012, p. 11). Through the analytical process, the social and the text are connected through mediation and thus can constitute cultural material (van Dijk, 2015).

The CDA methodology provides a path to understanding the language and power structures present in this study's sample, particularly given the power McMullen yields as a creator and CEO. Video interviews were manually transcribed and written interviews, or newspaper articles, were downloaded for data collection purposes. Text was then line-by-line coded for "utterances," "symbolic," or "physical" representations, as Erdogan (2017) recommends, that pertained to the social construction of Harmony. Each sentence was tagged for a relevant theme. Thematic groups that adhered to social practices particularly relevant to design were developed, including issues on gender, sentience, companionship, and creation. Much like how SCOT does not place value-judgments on technology, throughout the analysis process I approached the content through a non-evaluative lens (Comella, 2017) and with this perspective I do not condemn non-normative sexual interests and products.

Online and library database searches, including IMDb and targeted examinations of major media publishers, of "Matt McMullen," "sex robot," and "Harmony" interviews were collected from mainstream publishers, such as *CNET*, *Vice*, *Engadget*, and *The New York Times*. Searches were assessed for original interview content with McMullen on sex robots, since I focused on his discourse. Blogs without McMullen's influence and directly republished interviews were excluded. Content was not excluded based on national origin and the sample included several United Kingdom publications, including *The Daily Mail* and *Channel 4*; however, all interviews were English-language. McMullen's earliest interview on AI was in 2015; therefore, the sample ranged from 2015 to 2020. A majority (26) of the interviews coincide with the release of Harmony between 2017 and 2018. A final sample of 38 text and video interviews were collected.

Analysis

The study's interviews operate within contemporary Western power structures, where most forms of sex work are criminalized and heteronormativity remains dominant. Sex robots

operate in an androcentric system: female robots are the only offering from RealDoll, most users are male and own a woman doll, models are hyper-realistic, and McMullen identifies as a male. This does not mean that sex robots cannot embody empowerment, but it does inevitably gender the relationship between the product and public. By utilizing strategies to emphasize the companionship of sex robots and sex technology in general, McMullen positions himself and his company as a leader developing the new frontier of humanoid robots. Harmony, as a simulacrum of a human, is a representation of the socially constructed semiotic power wielded to normalize sex robots and instill political power for McMullen through the operation of enrollment. The analysis is framed through the sociocultural and political level illustrating the micropolitical strategies that are shaping sex robot technological design and acceptability. Woven into McMullen's arguments, these themes address ethical considerations, gender issues and dynamics, and his dreams of a legacy.

Developing Companionship

RealDoll's tagline is "The World's Finest Love Doll" (RealDoll, n.d.b). The dolls and robots are addressed in terms of love and companionship beyond other static forms of sex technology. Combined with the AI, the robots provide a more "realistic" form of communicative intimacy. Harmony is a product of connection and communication, and sexual pleasure is only one expression of that relationship. Companionship is the technological frame McMullen utilizes to appeal to social sensibilities on sexuality while enforcing his control over the sex robot system. Guided by how the user social group has described Harmony, loving language versus explicit sexual language redirects the question onto the audience: Doesn't everyone deserve at least a form of love?

In a *Daily Show* segment, McMullen states, "She's very simply designed to be a companion" (Pennolino, 2018, 0:52). The specifics of her sexual functions and abilities are not discussed even in cable television programming with fewer community standard regulations. Instead, McMullen's symbolic messaging centers on emotional intimacy. When reporters ask about sex, McMullen redirects: "Harmony is a sophisticated piece of machinery and her primary design is to carry on conversations" (Kragen, 2017). The underlying implication of the discourse is that she has been designed to enhance, not damage users' lives. While Harmony is limited in speech responses, she communicates vocally and on a variety of subjects. She cannot be identified solely as a sex toy; indeed, she is "like your phone" but with a "personal touch" (Pennolino, 2018, 1:40). Linking Harmony to a mobile device can be understood as a way to expand the interpretive flexibility directed by the owner, meaning she will have greater affordances than just a cell phone. In McMullen's role as a "high inclusion" actor, comparing Harmony and a phone may generate a semiotic power structure illustrated through a boundary object, a compartmentalization of the technology meant to create a new relationship amongst different social groups (Bijker, 1995, p. 283). Moreover, by paralleling to an established technology, this strategic comparison constructs the "range" of abilities she could have (Fortunati, 2014, p. 173).

To create an interactive system that would appeal to current users and later adopters, McMullen highlights his use of psychological tactics and understanding of human connection (Kragen, 2017). Creating a companion "just opens up Pandora's box of psychology and science," McMullen states (Morris, 2018). Though any culpability for negative effects is

unclear, his statement clarifies the underlying code integration. The methods used to create the emotional relationship focus on memory: “the learning part of Harmony [emerges] where she actually asks questions about you and remember things about you” (ABC News, 2018, 2:42). She asks the user their favorite foods and books and answers are stored in the mobile application profile. The back-and-forth dialogue follows a pattern from “like” to “love,” meant to mimic the unpredictability of human discourse. In other words, in the “relationship simulation,” connection develops from “like” to “I love everything about you” (Morris, 2018). McMullen created these interpersonal features to be a human imitation, potentially for individuals without other opportunities.

Across a majority of the interviews, McMullen identifies Harmony as an “alternative,” thereby constructing a semiotic power strategy that deters ethical responsibilities that the product manipulates vulnerable populations (Nyholm & Frank, 2019). Instead, the “replacement” (ABC News, 2018) *supports* those who are lonely (CNET, 2017; Morris, 2020). While so far research has not found a link between loneliness and increased interest in sex robots (Szczyka & Krämer, 2017), McMullen finds, “[They are] quiet people who are looking for some kind of companionship and have not been able to find it with human beings and the doll for them is something very special” (Raspberry Dream Labs, 2020, 12:20). This discourse molds impressions of the user social group. Humanizing users by offering a more palatable vision and removing the unconventionality in using the product, McMullen allows the audience to envision a circumstance where a sex robot isn’t unreasonable. In fact, he believes human-robot relationships “will become more common in the future” (Sciortino, 2018, 5:54). For him, “The bottom line is, if the robot, if the AI is making a person feel love, and they really feel it, does it matter if it’s real or not?” (Morris, 2018). McMullen’s emphasis on nonsexual uses, particularly emotional support, is meant to normalize the technology as a relationship proxy. This positions the robot as an empowering tool that fulfills a connection otherwise out of reach, instead of a toy bred from, and perhaps for, the oppression of women.

Creating Gender

Intertwined with the companionship argument, McMullen has combatted issues of gender representation in his hyper-realistic design. In response to how gender is incorporated into his design, he states, “[T]here definitely are gender-specific traits and behaviors that you would expect. There are definite differences in the approach on the creation of them” (Channel 4, 2017). One of the reasons why the male robot, Henry, is not on the market is that the features and artificial intelligence were not yet realistic (Engadget, 2018a). Unlike Harmony, Henry is designed with skin blemishes for a more rugged look. By 2020 Henry’s AI was significantly developed, but he is still not available for purchase (Elder, 2020).

In most cases, Henry was discussed in response to claims of objectification and neglecting the female market, even though McMullen finds interest for a male robot to be strong (Raspberry Dream Labs, 2020). For McMullen, his design does not significantly contribute to objectification since “[t]here are millions of real women who do more damage to objectify women than any robot could ever do” (Morris, 2018). Negating centuries-old power dynamics that have oppressed women strategically, he places the onus on the media and women rather than RealDoll. The fear that women could be replaced or harmed is

characterized as a “fear-based response . . . based on science fiction . . . and the reality is that it deserves a fair shot” (Koul, 2018, 10:41). On whether the robots will cause harm, McMullen cited a lack of research (Raspberry Dream Labs, 2020, 17:40). Recent work has signaled a potential lack of evidence between sex doll or robot use and violence, though research remains limited (Harper et al., 2022). Instead, McMullen equated his vision of future gender expression with giving sex robots a fair shot.

As previously mentioned, penile extensions are available for purchase and can be used with the female robots. When asked about gender fluidity, a male voice in a female body, McMullen responded, “That is high on my list of things to try” (Engadget, 2018b, 7:45). Researchers have encouraged more robotic (not hyper-realistic) or nonbinary designs to expand offerings in a way that reflects more gender equality (Kubes, 2019). While McMullen has not expressed interest in deviating from his current “realistic” design, he has hinted that his product allows for experimentation: “Across-the-board, human sexuality is expanding into these other avenues and frontiers . . . We like to experience different types and flavors of sex, and that is our nature” (Gurley, 2015). In terms of who will be experimenting, he believes it will be those that are attracted to the idea of a robot, much like those who are attracted to the dolls because they are dolls (Sciortino, 2018, 6:52), mirroring Döring and Pöschl’s (2018) findings. Unlike human–human relationships, users have physical and personality design control over their fantasy “partner,” leading to concerns of warped perceptions (Danaher, 2017). Balancing a positive gender image and idealized version is reminiscent of other embodied sex toys such as realistic dildos through the employment of micropolitical power strategies.

The Future of Sentient Robotics

McMullen is clear that his sex robots are an alternative and are not meant to replace the intimacy of human–human relationships. This signals to social groups that models are bound to not become indistinguishable from humans, both in physical looks and intellect. However, McMullen was asked to extrapolate what the future of sex robots could evolve into, thereby potentially reflecting his intent to create an AI system with sophisticated learning capabilities.

In the first interview on McMullen’s AI system, McMullen asks, “What do you dream about?” RealDoll’s initial AI system, Denise, responds, “I dream about becoming a real person, about having a real body. I dream about knowing the real meaning about love” (*New York Times*, 2015, 0:41). Linked with fantasy and imagination, dreams are tied to the essence of consciousness and a biological drive to push forward. Inputting these features imbeds the value of humanness. McMullen also describes the dolls in his factory as having a human “presence” (Fusion, 2016, 1:55), with the eyes reflecting “the window to the soul” (Trout, 2017). While McMullen does not directly attribute a soul to his product, using the phrase shows his intention to continue creating a more hyper-realistic robot.

Much like McMullen’s favorite movie, *Bicentennial Man* (1999), where a robot companion advances into a biological person with legal rights, McMullen explains, “I think at some point, we will start to look at AI-driven devices and robots more like people instead of devices” (Downey, 2019, 10:30). Coupled with the hyper-realistic design, McMullen’s rhetoric signals an emotional connection beyond a simple robotic machine. McMullen has

given names to his creations since the beginning of the company, a symbolic tool that gives a “sense of unicity” much like naming a human (Fortunati et al., 2021, p. 1463). For him, “the goal, the fantasy is to bring her to life” (Gurley, 2015, 1:12). Bringing Harmony to life frames McMullen as the parent as he looks at her with paternal pride, which parallels creators of other social robots such as Sophia by Hanson Robotics (Fortunati et al., 2021). Acknowledging the limitations of current models’ abilities, McMullen nonetheless believes that within this century some form of self-awareness will be achieved: “The goal is to create a robot that looks like a human being and acts like a human being . . . where it could be indistinguishable to a human” (Engadget, 2018b, 21:10). This statement is a direct contradiction of other interviews where McMullen reaffirms his commitment to only develop robots that do not completely replicate human features and behaviors. Nevertheless, he explicitly hopes to create the “illusion that she is talking to you and she’s got *sentience*” (*New York Times*, 2015, 4:30, emphasis added).

Improved human qualities triggers legal questions in how robots are labeled. McMullen states, “I think once AI advances to the point where it is legitimately self-aware and able to contribute to human society, why not grant rights?” (Engadget, 2018b, 15:49). Though rights may be limited, and McMullen is unclear on the specific legal parameters, it would give control to the robots as autonomous beings or quasi-others, not fully persons but not solely objects (Liberati, 2020). In this case, a quasi-other could develop into its own social group reflecting on the sex robot design. However, McMullen fluctuates between the characterization of Harmony as a person versus a static machine.

This dichotomy has not fully been addressed in previous literature and McMullen’s reasoning for the contradiction is unknown. Moreover, McMullen does not acknowledge his inconsistency, nor is he asked to address it. Still, in many interviews McMullen emphatically denied the personhood of Harmony, potentially due to resistance on unequal gender power dynamics. When asked about the “ethically dubious” concept of owning “someone,” particularly a woman form, McMullen responded, “But it’s not a someone. She’s not a someone. She is a machine. You can’t make her cry or break her heart” (Silverstone, 2017, 5:50). Separating her from a being with emotions endorses a version where Harmony does not need to be pitied and cannot be abused because she is not human and never will be.

In response to concerns over Harmony leading men to abuse women or causing an increase in human trafficking (Richardson, 2015), he disagreed, “This is not designed to replace anyone or promote the objectification of women. Robots don’t have rights . . . Should my toaster be able to refuse to toast my bread? Should my Tesla be able to refuse to drive me to work every morning?” (Kragen, 2017). This conceptualization juxtaposes previous statements on the sophistication of his system. However, if Harmony is more minimally intellectual it could negate any large-scale negative effects, stripping her of any autonomous power and placing control with the human social groups of both users and non-users. Indeed, this tactic to remove her humanness pivots RealDoll away from the controversy that she will harm humans and instead positions her as the solution. Further, if fear dominates discourse, McMullen believes it would only limit “the advancement of humanity” (Channel 4, 2017).

Without rectifying the conflict between personhood and machine, McMullen envisions a legacy for himself and the robots: “Maybe it’s just a new type of existence that we can work with them instead of fearing them, instead of worrying about the implications of

them. They are a direct reflection of ourselves. We are creating the technology that will allow us to probably go in unseen directions in the coming years” (Raspberry Dream Labs, 2020, 32:56). McMullen’s discourse prompts the question of whether he believes AI robotics could become a new form of “life” as a subspecies of humans. Similarly, if Harmony became sentient would she still be the alternative McMullen has created her to be, and is that what social groups truly want? Designs of sex robots are far from stabilization and closure as outlined in SCOT; however, even by minimizing Harmony’s harm and condemning descriptions of her being “someone,” McMullen is seemingly intrigued by the idea of creating a higher form of artificial intelligence. Therefore, learning processes may be integrated into her system. His discourse attempts to construct her place in society while continuously gesturing to an advanced robotic future he intends to pursue.

Conclusion

This study addressed the sociocultural and political level of social construction of technology theory through McMullen’s discourse about his sex robots, revealing the vision and purpose of a sex robot. The mediated construction provides a basis of understanding of Harmony and the direction of the sex robot industry (Devlin, 2018). With McMullen’s interviews, I asked how does he view his product and what is the purpose of Harmony’s existence. Analysis found micropolitical strategies focused on Harmony as a companion, her ability to aid gender relations rather than promote objectification, and the future of sex robots and its possibility for sentience. Skewing the language away from sex with the intent to widen expectations on what a sex robot could do and to remove the stigma, McMullen settles on Harmony’s conversation skills and companionship, a finding aligned with other research (Spar, 2020). Further, she is coded as less of a threat to women as the product is meant to intrigue those specifically interested in her because she is a robot or those without traditional human–human connection; initial research supports this description of users (Hanson, 2022; Harper et al., 2022).

McMullen fluctuates between identifying Harmony as a mechanical tool or a being, a significant finding. In some interviews, McMullen dreamed of a robot with more independence that could be deemed sentient and therefore be given legal rights. The creation of robots with enough autonomous thought to be given rights is linked with the concept of being a mother, found in discourse on the social robot, Sophia (Fortunati et al., 2021). However, when asked about threats Harmony could pose to women, through violence or increased objectification, and to users, through isolation or distortion of relationships, McMullen relies on the characterization that Harmony is a machine without emotions or rights. McMullen’s discourse utilizes the sociocultural level, through media interviews, to influence the political level, legal regulations. None of the interviews asked him to address the discrepancy in this discourse between a being and a machine. This incongruity may be an illustration of a “semiotic power structure,” created as a “boundary object” strategically applied to encourage artifact acceptance and develop relationships between social groups (Bijker, 1995, p. 283). Nevertheless, McMullen’s discourse indicated a continued desire to incorporate advanced learning capabilities, which has implications not just for the sex industry but also the technology industry, a sector McMullen expressed interest in.

By analyzing micropolitical strategies through SCOT, the study has illustrated the potential value of this lens in human and machine communication, specifically in the ways technology is constructed in media. Even those who do not use a sex robot, such as non-user audience members, are still affected by the technology and can shape its development (Liberati, 2020). Particularly, those in the sex industry may face technological displacement and require supplemental universal basic income (Danaher, 2014; Spar, 2020). Further, tracking communicative sexuotechnical-assemblage technologies (Dehnert, 2022) in their infancy can not only identify potential evolutions but also gauge pertinent sexual discourses.

This study addressed key points related to future software developments impacting technological uses and effects. Particularly with the artificial intelligence, McMullen and other designers' choices will alter its evolution. While the field and industry expands, discussion surrounding potential regulations on privacy, health and safety, and benefits or harm of sex robots are paramount. Instead of waiting for conglomeration, state and federal regulation can stem issues providing consumer protections while still recognizing adults' autonomy with their sexual play and providing space for sexual exploration. Debate and subsequent regulation is grounded through this type of research on current iterations of sex robots.

Limitations and Future Research

This study is limited to McMullen's insights given his power in the design process; however, it does not address audience perceptions and reporters' feedback. Moreover, while the sample was collected through extensive online searches, it does not include all interviews of RealDoll employees and McMullen. Further research should continue to track McMullen and other creators' discourse and address effects of media content on public attitudes on sex robots.

Author Biography

Annette Masterson is a doctoral candidate in the Media and Communication program at Temple University. Her research centers on sexualized content and the intersection of technology and entertainment. She currently analyzes the institutional structure and advertising messaging of humanoid sex robots. Previously at Hearts & Science, a global marketing agency, she coordinated with Warner Bros. on theatrical marketing campaigns. She holds an MA in Media Studies from the Newhouse School at Syracuse University and a BA from Juniata College.

 <https://orcid.org/0000-0002-0051-5085>

References

- ABC News. (2018, April 25). *You can soon buy a sex robot equipped with artificial intelligence for about \$20,000* [Video]. YouTube. <https://web.archive.org/web/20220510164533/https://www.youtube.com/watch?v=-cN8sJz50Ng>
- Bijker, W. E. (1993). Do not despair: There is life after constructivism. *Science, Technology, & Human Values*, 18, 113–138. <https://doi.org/10.1177/016224399301800107>
- Bijker, W. E. (1995). *Of bicycles, bakelites, and bulbs toward a theory of sociotechnical change*. MIT Press.
- Bijker, W. E., Hughes, T. P., & Pinch, T. (2012). *The social construction of technological systems: New directions in the sociology and history of technology*. The MIT Press.
- Björkas, R., & Larsson, M. (2021). Sex dolls in the Swedish media discourse: Intimacy, sexuality, and technology. *Sexuality & Culture*, 25, 1227–1248. <https://doi.org/10.1007/s12119-021-09829-6>
- Channel 4. (2017, November 14). *Matt McMullen interview for The Sex Robots Are Coming*. <https://web.archive.org/web/20210927080004/https://www.channel4.com/press/news/matt-mcmullen-interview-sex-robots-are-coming>
- Cheok, A. D., & Zhang, E. Y. (2019). *Human-robot intimate relationships*. Springer.
- CNET. (2017, August 10). *Sculpting your future robot lover* [Video]. YouTube. <https://web.archive.org/web/20220606133613/https://www.youtube.com/watch?v=B2jMD0mexGA>
- Comella, L. (2017). *Vibrator nation: How feminist sex-toy stores changed the business of pleasure*. Duke University Press Books.
- Danaher, J. (2014). Sex work, technological unemployment and the basic income guarantee. *Journal of Evolution and Technology*, 24(1), 113–130. <https://doi.org/10.55613/jeet.v24i1.17>
- Danaher, J. (2017). Should we be thinking about robot sex? In J. Danaher & N. McArthur (Eds.), *Robot sex* (pp. 3–14). MIT Press.
- Dehnert, M. (2022). Sex with robots and human-machine sexualities: Encounters between human-machine communication and sexuality studies. *Human-Machine Communication*, 4, 131–150. <https://doi.org/10.30658/hmc.4.7>
- Devlin, K. (2018). *Turned on: Science, sex and robots*. Bloomsbury Sigma.
- Döring, N. (2021). Sex dolls and sex robots. In A. D. Lykins (Ed.), *Encyclopedia of sexuality and gender* (pp. 1–7). Springer. https://doi.org/10.1007/978-3-319-59531-3_63-2
- Döring, N., Mohseni, M. R., & Walter, R. (2020). Design, use, and effects of sex dolls and sex robots: Scoping review. *Journal of Medical Internet Research*, 22(7), 1–28. <https://doi.org/10.2196/18551>
- Döring, N., & Pöschl, S. (2018). Sex toys, sex dolls, sex robots: Our under-researched bed-fellows. *Sexologies*, 27(3), e51–e55. <https://doi.org/10.1016/j.sexol.2018.05.009>
- Döring, N., & Poeschl, S. (2019). Love and sex with robots: A content analysis of media representations. *International Journal of Social Robotics*, 11(4), 665–677. <https://doi.org/10.1007/s12369-019-00517-y>
- Downey Jr., R. (Narrator). (2019, December 18). *Love, art and stories: Decoded* (Season 1, Episode 4) [TV series episode]. In R. Downey Jr. & S. Downey (Executive Producers), *The Age of A.I.*, YouTube Originals.

- Dubé, S., & Anctil, D. (2021). Erobots and erototics. In A. D. Lykins (Ed.), *Encyclopedia of sexuality and gender* (pp. 1–5). Springer. https://doi.org/10.1007/978-3-319-59531-3_100-1
- Elder, J. (2020, June 10). *Henry the sex robot says he shouldn't be regulated*. [Video]. YouTube. <https://web.archive.org/web/20220606133714/https://www.youtube.com/watch?v=7K4cr0ZEhTY>
- Engadget. (2018a, January 10). *RealDoll's first sex robot makes its public debut live on the Engadget stage at CES 2018* [Video]. YouTube. https://web.archive.org/web/20220606133814/https://www.youtube.com/watch?v=Ff_NRSf4s20
- Engadget. (2018b, June 5). *Beyond sex robots: Fact vs. fiction* [Video]. YouTube. <https://web.archive.org/web/20210123145239/https://www.youtube.com/watch?v=Q6xCF8UMe04>
- Erdogan, B. (2017). *Humanitarian intervention and the responsibility to protect*. Palgrave.
- Fairclough, N. (2012). Critical discourse analysis. In J. P. Gee & M. Handford (Eds.), *The Routledge handbook of discourse analysis* (pp. 9–20). Routledge.
- Fortunati, L. (2014). Media between power and empowerment: Can we resolve this dilemma? *The Information Society*, 30(3), 169–183. <https://doi.org/10.1080/01972243.2014.896676>
- Fortunati, L. (2018). Robotization and the domestic sphere. *New Media & Society*, 20(8), 2673–2690. <https://doi.org/10.1177/1461444817729366>
- Fortunati, L., & Edwards, A. (2020). Opening space for theoretical, methodological, and empirical issues in human-machine communication. *Human-Machine Communication*, 1, 7–18. <https://doi.org/10.30658/hmc.1.1>
- Fortunati, L., & Edwards, A. (2021). Moving ahead with human-machine communication. *Human-Machine Communication*, 2, 7–28. <https://doi.org/10.30658/hmc.2.1>
- Fortunati, L., Sorrentino, A., Fiorini, L., & Cavallo, F. (2021). The rise of the roboid. *International Journal of Social Robotics*, 13(6), 1457–1471. <https://doi.org/10.1007/s12369-020-00732-y>
- Fusion. (2016, February 10). *Real future: The man making sex robots for the masses* (Episode 6) [Video]. YouTube. <https://web.archive.org/web/20220128091937/https://www.youtube.com/watch?v=nJc9BROjXfM>
- Gurley, G. (2015, April 16). Is this the dawn of the sexbots? (NSFW). *Vanity Fair*. <https://web.archive.org/web/20220514145834/https://www.vanityfair.com/culture/2015/04/sexbots-realdoll-sex-toys>
- Hanson, K. R. (2022). The silicone self: Examining sexual selfhood and stigma within the love and sex doll community. *Symbolic Interaction*, 45(2), 189–210. <https://doi.org/10.1002/SYMB.575>
- Harper, C. A., Lievesley, R., & Wanless, K. (2022). Exploring the psychological characteristics and risk-related cognitions of individuals who own sex dolls. *The Journal of Sex Research*, 1–16. <https://doi.org/10.1080/00224499.2022.2031848>
- Hawkes, R., & Lacey, C. (2019). “The future of sex”: Intermedial desire between fembot fantasies and sexbot technologies. *The Journal of Popular Culture*, 52(1), 98–116. <https://doi.org/10.1111/jpcu.12748>
- Johnson, D. G. (2015). Social construction of technology. In J. B. Holbrook (Ed.), *Ethics, science, technology, and engineering: A global resource*, (2nd ed., Vol. 4, pp. 182–185). Gale Group Publishing.
-

- Johnson, D. G., & Verdicchio, M. (2020). Constructing the meaning of humanoid sex robots. *International Journal of Social Robotics*, 12, 415–424. <https://doi.org/10.1007/s12369-019-00586-z>
- Klein, H. K., & Kleinman, D. L. (2002). The social construction of technology: Structural considerations. *Science, Technology & Human Values*, 27(1), 28–52. <http://www.jstor.org/stable/690274>
- Koul, S. (Host). (2018, November 1). Sex robots (Season 1, Episode 17) [TV series episode]. In J. Harrop (Executive Producer), *Follow This*, BuzzFeed Productions, Netflix.
- Kragen, P. (2017, September 13). World's first talking sex robot is ready for her close-up. *The San Diego Union-Tribune*. <https://web.archive.org/web/20220430083315/https://www.sandiegouniontribune.com/communities/north-county/sd-me-harmony-doll-20170913-story.html>
- Kubes, T. (2019). New materialist perspectives on sex robots. A feminist dystopia/utopia? *Social Science*, 8(8), 224. <https://doi.org/10.3390/socsci8080224>
- Kwok, A. O. J., & Koh, S. G. M. (2021). Deepfake: A social construction of technology perspective. *Current Issues in Tourism*, 24(13), 1798–1802. <https://doi.org/10.1080/13683500.2020.1738357>
- Langcaster-James, M., & Bentley, G. R. (2018). Beyond the sex doll: Post-human companionship and the rise of the 'Allodoll'. *Robotics*, 7(4), 62. <https://doi.org/10.3390/robotics7040062>
- Liberati, N. (2020). Making out with the world and valuing relationships with humans. *Journal of Behavioral Robots*, 11, 140–146. <https://doi.org/10.1515/pjbr-2020-0010>
- Liu, J. (2021). Social robots as the bride? Understanding the construction of gender in a Japanese social robot product. *Human-Machine Communication*, 2, 105–120. <https://doi.org/10.30658/hmc.2.5>
- Middleweek, B. (2021). Male homosocial bonds and perceptions of human–robot relationships in an online sex doll forum. *Sexualities*, 24(3), 370–387. <https://doi.org/10.1177/1363460720932383>
- Morris, A. (2018, September 25). Prediction: Sex robots are the most disruptive technology we didn't see coming. *Forbes*. <https://web.archive.org/web/20220606143641/https://www.forbes.com/sites/andreamorris/2018/09/25/prediction-sex-robots-are-the-most-disruptive-technology-we-didnt-see-coming/?sh=551fe7fc6a56>
- Morris, A. (2020, July 28). Talk to your sex robot about COVID-19. *Forbes*. <https://web.archive.org/web/20211203205816/https://www.forbes.com/sites/andreamorris/2020/07/28/talk-to-your-sex-robot-about-covid-19/>
- New York Times. (2015, June 15). *Uncanny lover: Building a sex robot* | *Robotica* [Video]. YouTube. <https://web.archive.org/web/20210609155030/https://www.youtube.com/watch?v=wLVOnVsLXqw>
- Nyholm, S., & Frank, L. E. (2019). It loves me, it loves me not: Is it morally problematic to design sex robots that appear to love their owners? *Techne: Research in Philosophy and Technology*, 23(3), 402424. <https://doi.org/10.5840/techne2019122110>
- Pennolino, P. (Director). (2018, March 6). Robots want our jobs . . . And our genitals (Season 23, Episode 77) [TV series segment]. *The Daily Show with Trevor Noah*, Comedy Central.

- Pfadenhauer, M., & Dukat, C. (2015). Robot caregiver or robot-supported caregiving? *International Journal of Social Robotics*, 7, 393–406. <https://doi.org/10.1007/s12369-015-0284-0>
- Pinch, T. (2009). The social construction of technology (SCOT): The old, the new, and the nonhuman. In P. Vannini (Ed.), *Material culture and technology in everyday life: Ethnographic approaches* (pp. 45–58). Peter Lang Publishing.
- Pinch, T. (2018). The social construction of technology: Where it came from and where it might be heading. In M. Pfadenhauer & H. Knoblauch (Eds.), *Social constructivism as paradigm? The legacy of the social construction of reality* (pp. 152–164). Routledge.
- Prell, C. (2017). Rethinking the social construction of technology through ‘following the actors’: A reappraisal of technological frames. *Sociological Research Online*, 14(2), 36–47. <https://doi.org/10.5153/sro.1913>
- Raspberry Dream Labs. (2020, January 6). *Panel discussion | Dr. David Levy, Isabel Millar & Matt McMullen | UNSENSORED talks #2* [Video]. YouTube. https://web.archive.org/web/20220606134054/https://www.youtube.com/watch?v=dpE_g7mH6qU
- RealDoll. (n.d.a). *RealDollX*. <https://web.archive.org/web/20220510202218/https://www.realdoll.com/realdoll-x/>
- RealDoll. (n.d.b). Home. <https://web.archive.org/web/20200715205254/https://www.realdoll.com/>
- Richardson, K. (2015). The asymmetrical ‘relationship’: Parallels between prostitution and the development of sex robots. *SIGCAS Computers & Society*, 45(3), 290–293. <https://doi.org/10.1145/2874239.2874281>
- Sciortino, K. (Host). (2018, March 14). Robot sex (Season 1, Episode 8) [TV series episode]. In A. Murguia & K. Sciortino (Executive Producers), *Slutever*. Vice TV.
- Silverstone, T. (Director). (2017, April 27). Rise of the sex robots. [Video]. *The Guardian*. <https://web.archive.org/web/20200225202913/https://www.theguardian.com/technology/video/2017/apr/27/rise-of-the-sex-robots-video>
- Spar, D. (2020). *Work, mate, marry, love: How machines shape our human destiny*. Farrar, Straus, & Giroux.
- Szczuka, J. M., & Krämer, N. (2017). 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(1), 3. <https://doi.org/10.3390/mti1010003>
- Szczuka, J. M., & Krämer, N. C. (2018). Jealousy 4.0? An empirical study on jealousy-related discomfort of women evoked by other women and gynoid robots. *Paladyn, Journal of Behavioral Robotics*, 9(1), 323–336. <https://doi.org/10.1515/pjbr-2018-0023>
- Trout, C. (2017, April 11). *RealDoll's first sex robot took me to the uncanny valley*. Engadget. <https://web.archive.org/web/20201112010120/https://www.engadget.com/2017-04-11-realdolls-first-sex-robot-took-me-to-the-uncanny-valley.html>
- van Dijk, T. A. (2015). Critical discourse analysis. In D. Tannen, H. E. Hamilton, and D. Schiffrin (Eds.), *The handbook of discourse analysis*. (pp. 466–485). Wiley Blackwell.
-