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Sex Dolls and Sex Robots



Nicola Döring
Ilmenau University of Technology, Ilmenau,
Germany

Synonyms

[AI \(artificial intelligence\) sex dolls](#); [Blowup dolls](#); [Dutch wives](#); [Erotbots](#); [Fuck dolls](#); [Inflatable dolls](#); [Love dolls](#); [Love robots](#); [Lovebots](#); [Robotic sex dolls](#); [Sexbots](#)

Definition

Sex dolls are defined as human-like, anatomically correct, anthropomorphic dolls created and used to generate or enhance sexual arousal and pleasure in both solo and partnered sex (Döring et al., 2020). Sex dolls have at least one penetrable orifice (mouth, vagina, or anus) and/or one body part that the user can insert (tongue or penis). Whereas sex toys are restricted to parts of the body (e.g., a dildo in the form of male human genitals; a masturbator in the form of female human genitals), the sex doll replicates the whole human body. Sex dolls come in different genders (female, male, or trans), races (e.g., white, Asian, or African), ages (adult, adolescent, or child), body types, and skin, hair, and eye colors. High-end sex doll manufacturers offer an ample range of selection and

customization options and also produce custom-made sex dolls. Therefore, abstract sex dolls with no resemblance to a specific real person need to be differentiated from portrait sex dolls designed in the likeness of a real person (e.g., a porn star, celebrity, or ex-partner). Sex dolls come in different materials (e.g., rubber, plush, silicone, and thermoplastic elastomer) and price ranges. Although the principal characteristic of sex dolls is their sexual function, they are not used exclusively for sexual purposes. They can also serve as artificial love partners, social companions, or photo models, which is why their owners often call them “love dolls” or simply “dolls.”

Sex robots are defined as human-like, full-body, anatomically correct, humanoid service robots of different materials, technologies, and price ranges that are designed and used to generate or enhance sexual arousal and pleasure in both solo and partnered sex (Döring et al., 2020). Sex robots look like sex dolls but are equipped with sensors, actuators, and artificial intelligence (AI). Sometimes, they are called “AI sex dolls” or “robotic sex dolls” to denote their superiority to their noninteractive, immobile precursors. Sex robots come with all the attributes and functionalities of sex dolls and, in addition, can display conversation skills, emotions, and pre-programmed personalities. Furthermore, they can perform partially autonomous behaviors such as sexual movement (e.g., hand movement for masturbation; hip movement for intercourse) or orgasm simulation. However, existing sex

robots currently have a very limited range of behaviors.

Introduction

In 2050, it will be perfectly normal for women and men alike to experience love and sex with robots. This bold prediction from roboticist David Levy (2007) started a debate which is still underway, more than a decade on, about the ethics, design, use, and effects of sex robots and sex dolls, their low-tech precursors. Futurologist Ian Pearson (2015) went further, predicting that by the same date, women and men will have more sex with robots than with their conspecifics. The attraction of sex robots lies in the fact that their appearance, as well as their sexual and social behavior, can be perfectly adapted to the wishes of the user. Hence, thanks to sex robots, complete satisfaction is possible for all people, without exception, at any time. That, at least, is the positive-utopian (eutopian) vision of sex robots.

Kathleen Richardson (2016a, 2016b, 2016c) vehemently contradicted this vision. Instead, she drew a dystopian picture of a brutalized future society in which men live out their selfish needs and lust for power through the availability, purchase, and use of female and child sex robots and are thereby encouraged to treat real women and children as sexual objects. A further increase in sexual violence against women and children would be the result. Consequently, in 2015 Richardson started her campaign against sex robots, which received a great deal of media attention (<https://campaignagainstsexrobots.org>). She is currently working on a monograph entitled *Sex Robots: The End of Love* (Richardson, in preparation).

The fact that David Levy (2007, 2017), as a male representative of the engineering sciences and robot industry, praises sex robots almost rapturously, while Kathleen Richardson (2016a, 2016b, 2016c), as a female representative of the humanities and feminism, condemns them outright offers a clear picture but one which is also clichéd and downplays the complexities of the issue. Taking sides prematurely contributes little

to understanding current and future conditions, for these are psychologically and sexologically more complex (Döring & Pöschl, 2018; Döring et al., 2020). In the past, we have too often worked our way through a polarized pro and contra discourse on technical innovations, countering dystopias with eutopias, until it turned out that, in practice, the real changes were both much less dramatic and more ambivalent than rescue fantasies or doomsday scenarios would suggest. Sex dolls and sex robots as material whole-body sexual artifacts will most probably end neither loneliness and sexual frustration nor love, tenderness, and sexual passion.

Research Questions

In order to better understand the use and cultural significance of sex dolls and sex robots, the following research questions in particular must be answered empirically:

1. Producers, production, and marketing: Which types of sex dolls and sex robots are produced and marketed, how, and by whom?
2. Users and usage patterns: Which population groups use which sex dolls and sex robots for solo and partnered sex, and in what way?
3. Positive and negative effects: What positive and/or negative effects do sex dolls and sex robots have on individuals, couples, and society at large?

Under the current state of research and theory, these questions can only be answered in part.

State of Research and Development

High-end, true-to-life sex dolls have been on the market for more than 20 years. The leading US manufacturer Abyss Creations, creator of “RealDoll,” the best-known sex doll brand, was founded in 1997. Hence, thousands of experienced sex doll owners exist worldwide and have built their own distinct doll owner communities with online forums and offline meet-ups. Sex doll

owners' authentic voices and stories are covered in numerous press interviews and TV documentaries. The sex doll owner community has its own activists (e.g., "Davecat") who are eager and willing to speak up and present their perspective as members of a sexual minority to the broader public (Knafo & Lo Bosco, 2017). Furthermore, several clinical and empirical studies have investigated sex doll owners' experiences through online forum analyses, interviews, surveys, and clinical case studies (Döring et al., 2020).

The sex robot market is much younger and smaller. Abyss Creations launched its first sex robot, "Harmony," in 2018, followed by "Solana" and "Henry." The sex robots "Samantha," from Spanish manufacturer Synthea Amatus, and "Emma," from British-Chinese manufacturer AI Tech UK, have likewise been on sale since 2018. All these sex robots are sex dolls enhanced with very limited AI and interactive features (Devlin, 2018). Several dozen, if not more, pioneer users of sex robots must exist worldwide. However, to date they have remained relatively invisible to the broader public and researchers. Therefore, the majority of sex robot studies are not based on the authentic accounts of experienced sex robot users but, rather, provide philosophical and ethical conceptualizations, interpretations of sex robot representations in art and media, demands for the legal regulation of the sex robot market, or ideas for future sex robot design (Döring et al., 2020). No sexological research lab has to date been known to have acquired sex robots and run experimental studies to actually observe usage patterns and measure effects in terms of sexual arousal, sexual functioning, sexual scripts, sexual satisfaction, sexual attitudes, or intentions for future use.

Theoretical Conceptualizations

In comparison to sex toys and their wide use, cultural normalization, and feminist endorsement (Döring, 2021), sex dolls and sex robots are expensive niche products. Sensationalized as either highly beneficial or highly destructive,

they have often met with considerable skepticism, if not downright opposition, from feminists.

What sets sex dolls and sex robots apart from sex toys is their representation of the whole human body. Hence, sex dolls and sex robots symbolically act as the synthetic human partners of their users. Some theoretical conceptualizations assume that producing, selling, and using artificial humans (mostly artificial women) for sexual purposes teach male users to objectify and sexually abuse real women. After all, female sex dolls and sex robots are built to perfectly conform to male users' beauty standards and sexual requirements, and neither consent nor reciprocity is necessary for users to interact with them sexually. Some authors stress that female sex dolls and sex robots are inherently sexist objects representing "objectified women," "prostituted women," or "female sex slaves" (e.g., Richardson, 2016a, 2016b, 2016c).

Other theoretical conceptualizations acknowledge that the sexual use of human-like media artifacts in textual, audiovisual, VR, and AR pornography is widespread anyway. They question the idea that interaction with material sexual artifacts will have substantially more dramatic effects than interaction with mediated sexual artifacts (Döring et al., 2020).

Furthermore, theories point to the complexities of the parasocial relationships which people tend to build with media personas (Hartmann, 2016), which can then be applied to material personas. Sexual attraction in these cases does not necessarily elicit dominance and aggression but may well go hand in hand with sympathy, affection, love, and care. The literature reports that falling in love with a media persona (e.g., an attractive member of a boy group) or a sex doll can help younger and older people to deal with developmental tasks and challenges in their love and sex lives. Experiencing lust and love with a human-like artifact can provide a safe space for helpful and healing experiences that ultimately foster better interpersonal relationships.

Just as empirical research on sex dolls and sex robots is still in its infancy, theory formation remains underdeveloped. "Erobotics" has been suggested as a new transdisciplinary field of

research and theory building on human-machine erotic interaction and co-evolution (Dubé & Anctil, 2020).

Producers, Production, and Marketing of Sex Dolls and Sex Robots

High-end sex dolls and sex robots are expensive and exclusive consumer products that cost up to several thousand US dollars. They are produced by a limited number of manufacturers. While many sex toy companies are women-led and women-oriented, the leading sex doll and sex robot companies are led by men and cater predominantly to male consumers. Product lines and marketing campaigns present female sex dolls and sex robots of supernatural beauty and eternal youth. Critics question the sexist and sometimes racist connotations of the prevalent sex doll and sex robot designs. While some feminist researchers and activists reject sex dolls and sex robots entirely as dehumanizing objects, other feminist and queer researchers and activists call for more inclusive sex doll and sex robot design that acknowledges non-heterosexual and queer desires and diverse beauty ideals (Döring et al., 2020).

Calls have also been made by activists and therapists to explore the possibilities of implementing playful, creative, educational, or even therapeutic elements in sex robot design. Instead of affirming traditional gender roles and sexual scripts, sex robots could encourage individuals and couples to explore alternative sexual behaviors. Sex robots could support insecure, inexperienced, and shy people to gain sexual confidence. Moreover, just as sex toys are successfully used in clinical contexts to treat anorgasmia, premature ejaculation, or erectile dysfunction (Döring, 2021), sex robots equipped with appropriate hardware and software could have a place in clinical settings (Eichenberg et al., 2019). Considering how the pornography industry has changed over the last decades, with more feminist, queer, and women-led producers entering the market and addressing female and queer audiences, change in the sex doll and sex robot industry seems possible.

Journalists have started to explore what sex robots for women could look like (Summers, 2016). Researchers in the field of engineering are systematically exploring innovative robotic technologies for human-robot love and sex (“Lovotics”; Cheok et al., 2017).

Sex robots marketed today should not be confused with *concepts of future advanced sex robots* that are envisioned as having sentience, consciousness, free will, morality, and possibly even the legal status of citizens. There are also visions of future multifunctional assistance robots for domestic use that will do housework and errands, look after children, provide elderly care services, and offer sexual services. These imagined advanced sex robots or multifunctional robots with sexual functions appear in science fiction (e.g., the Swedish television series *Real Humans* or the US movie *Ex Machina*) and in recent philosophical and legal sex robot debates (Döring et al., 2020) but are far away from the current state of technological development.

Users and Usage Patterns of Sex Dolls and Sex Robots

Empirical studies on sex robot owners are lacking. However, several surveys show that significant percentages of men and women report interest in trying out a sex robot and express positive attitudes toward different sex robot uses, for example, for people with disabilities (Scheutz & Arnold, 2016, 2017).

Studies available on sex doll owners reveal that they are predominantly males of higher socioeconomic status (Langcaster-James & Bentley, 2018). Some sex doll owners are married or have a partner and use sex dolls for solo sex when their partner is absent or not available for sex, as well as for partnered sex together with their partner (i.e., experiencing a “threesome” with the doll). Other doll owners are single. Some live with one doll, while others have several. They regard their dolls as sex partners but also as social companions (Ciambone et al., 2017). Doll owners report cherishing their dolls because they give their life purpose and peace. Eating dinner with

the doll, watching TV together, chatting, cuddling, and falling asleep side by side are common rituals among single doll owners. A significant part of living with a female doll is also caring for her: bathing, powdering, dressing the doll, providing her with makeup, a hairstyle, and clothes – all these duties are described as satisfying activities. Researchers have pointed out that many activities reported by sex doll owners reflect affective, even feminized, tendencies rather than aggressive ones (Burr-Miller & Aoki, 2013). At least one subgroup of doll owners, then, consists not of sexist aggressors but instead of vulnerable, lonely men seeking peace and love through their cohabitation with the doll. More research is necessary to clearly identify different types of doll owners, as well as their motivations and usage patterns. Female doll owners, in particular, are under-researched.

Research is also lacking around different usage contexts. The majority of sex dolls and robots are used by their owners in the privacy of their own homes. Apart from domestic use, commercial use is also prevalent: some sex doll rental services have opened, and in several traditional brothels, customers can now book a sex worker together with a sex doll. There is considerable speculation in both public and academic discourses as to whether sex robots and sex dolls can replace sex workers and if this would be a good or a bad thing (Döring et al., 2020; Levy, 2012; Yeoman & Mars, 2012). Empirical data on sex workers' perspectives on the issue are missing, though, for example, whether they see the artifacts as unwanted competition or a welcome extension of their service.

Positive and Negative Effects of Sex Dolls and Sex Robots

In his seminal book *Love and Sex with Robots*, David Levy (2007) pointed out several positive effects of sex dolls and sex robots. Such artifacts can be beneficial for people who cannot find sexual and romantic partners either long term (e.g., because of very old age, severe disabilities, or the demographic lack of women in places such as in

rural China) or short term (e.g., because of temporary separation from their partners, recent separation, or widowhood). For disabled and older people in particular, sex care robots can have important inclusive and empowering potential (Fosch-Villaronga & Poulsen, 2020). Sex robots can also be helpful for people who have rare or dangerous sexual preferences which they can safely live out with the robot. For couples, a sex robot can provide opportunities for joint use in the sense of safe sexual exploration (e.g., of a “three-some”) as well as individual use (e.g., when the partner is not available for sex), which is considered safer than infidelity. So far, the prevalence and size of those and further positive effects have not been demonstrated empirically. Studies have only drawn on sex doll owners' accounts of sexual pleasure as well as the satisfying emotional intimacy and parasocial relationship quality of ownership. Furthermore, clinical case studies have shown that living with a doll can help men to overcome relationship trauma, rebuild confidence and hope, and open up to real women again (Knafo, 2015).

Manifold predictions have, likewise, been made of the negative effects of sex doll and sex robot use (Sharkey et al., 2017). Critics warn that dolls and robots are ultimately inhumane surrogates for interpersonal intimacy, sexual interactions, and romantic relationships. Turning to pseudo-intimacy with dolls and robots will impoverish human life, increasing loneliness and alienation. Men using female dolls and robots for sexual purposes will affirm and foster hierarchical, exploitive, and violent gender relations (Richardson, 2016a, 2016b, 2016c). Women and girls will be more frequently treated as sex objects and victimized by sexual violence, as well as suffering from even stricter beauty norms and competition with eternally youthful, supernaturally beautiful, and ever-obedient sex robots. Acting out deviant sexual preferences with robots (e.g., sadistic or pedophilic tendencies) is considered by critics not a safe outlet but a dangerous training ground leading to an increase in sexual violence. For this reason, some authors demand bans and boycotts of “rape robots” or “child sex robots” (e.g., Brown & Shelling, 2019; Danaher, 2017). The

integration of domestic or commercial sex robot use into heterosexual couple relationships is also regarded as problematic, because women could experience it as betrayal and suffer from jealousy. Moreover, shared use of sex dolls or robots can lead to sexually transmitted infections (Kleist & Moi, 1993).

So far, empirical data on respective negative outcomes are rare. Anecdotal evidence from social media discussions points to a link between misogynist views and a preference for female sex dolls or robots: the comment sections of YouTube videos on sex dolls and robots are often full of accounts from members of the MGTOW (Men Going Their Own Way) movement. This movement propagates the ideology that women emotionally, sexually, and financially exploit men, who are therefore better off without them. MGTOW members publicly celebrate female sex dolls and sex robots because they regard them as outperforming real women (more beautiful, less expensive, never complain, never have a headache, etc.) and claim they will ultimately make women obsolete or, at least, take away their sexual power over men. Of course, it remains unclear how many men will truly replace their female partner with a doll or robot. One could also argue that misogynistic men voluntarily turning to artificial companions might not be a negative outcome.

Ultimately, sex dolls and sex robots are expected to have both positive and negative effects, albeit in different combinations across different user groups, which requires further empirical exploration.

Conclusion

Sex dolls and sex robots as full-body, human-like material artifacts for sexual use have created highly polarized and gendered debates in both the public and academic domains. While sex toys are normalized and widely endorsed as liberating for women, sex dolls and sex robots – predominantly marketed in female forms to male users – are often portrayed as sexist objects fostering the objectification, if not the sexual

victimization, of real women. Most likely, this polarized debate will gain in nuance as soon as more empirical data become available showing different usage patterns in diverse populations including female, feminist, and queer users, as well as diverse design approaches (Devlin, 2018). It remains unclear whether sex robots will truly become a popular trending technology with advanced sexual features or remain an overhyped, niche sex technology with limited appeal. Regardless of the market success of current and future sex robots, we can learn from the heated public and academic debates around the opportunities and challenges of high-tech sex devices and their implications for sexual health and gender relations. Hence, not only the sex dolls and sex robots themselves but also the public and academic discourses around them are interesting research objects.

Cross-References

- ▶ [AR \(Augmented Reality\) Pornography](#)
- ▶ [Pornography Industry](#)
- ▶ [Sex and the Internet](#)
- ▶ [Sex Toys](#)
- ▶ [Sex Work and Prostitution](#)
- ▶ [VR \(Virtual Reality\) Pornography](#)

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