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WHY THE SEX ROBOT BECOMES THE KILLER ROBOT – REPRODUCTION, CARE, AND THE LIMITS OF REFUSAL

1. INTRODUCTION

Sex with robots might at first seem to be an illustration of the queering of sex – the separation of intercourse and sexual pleasure from the realm of human biological reproduction – and a form of desire that sidesteps reproducing the link between sex, sexuality and the family. Take for example the ‘Silicone Samantha’ sex robot prototype by Barcelona based engineer Sergei Santos. Samantha has been described as an exact replica of a ‘real’ woman because she includes functions that offer physical pleasure to users, such as a “fully functioning” mouth and vagina “with a G-spot”.¹ Yet, of course, Samantha is not sexually reproductive. Even though sex with robots ostensibly separates biological reproduction from the act of intercourse, as we argue in this article, it is in fact a premier example through which we can address robots as a locus of social reproduction within engineering and popular imaginaries.

To answer how sex, reproduction, and labor are co-articulated in robotics technologies that perpetuate capitalist racial and colonial modes of expansion and acceleration, this article examines how the category of ‘reproductive labor’ can be brought to bear upon fantasies of sex robotics and non-sex robotic projects that are about robot reproduction. As we’ve argued elsewhere, technologies that perform labor in place of humans (including sex work) still have a human cost, despite a resolute desire to see technology as magical rather than the product of human work. This is because technoliberalism – the investment in technological futures that

¹ Margi Murphy, “Built for Pleasure: Meet Samantha, the Artificially Intelligent Sex Robot Who ‘REALLY Likes to Be Kissed’”, *The Sun*, March 17, 2017. Available at: <https://www.thesun.co.uk/tech/3115956/meet-samantha-and-artificially-intelligent-sex-robot-who-really-likes-to-be-kissed/> [accessed December 1, 2017].

reaffirm the subject, political economy, and social life of the present – obscures the actual labor, now unrecognized either as human-performed or even as labor, required to support robotic activity.²

We begin by situating sex robots in relation to feminist materialist emphasis on the role of reproductive labor in the household as reproducing the conditions of possibility for capitalism in order to address the relationship of robotics engineering projects and the social reproduction of present-day hierarchies of power and desire. We argue that sex robotics, a relatively new field currently only offering prototypes derived from animating sex dolls, while seemingly outside the scope of reproductive labor, is still a place to apply the critique of feminist materialists to the limited imaginary that guides the design and engineering of the future of reproductive life. Here charismatic machines are created to perform human-robot intercourse and offer both physical and social/emotional sexual pleasure to users without the possibility of biological reproduction – a potential product and service in interactive robotics that could appeal to a large range of consumers. Building on our discussion of the relationship between sex robots and social reproduction, we then turn to our second primary example, initiatives to create robots who can reproduce themselves. Known as self-replicating robots, these machines build self-replicas, programming the replicas with operating systems cloned from their own. They are of particular interest to technologists who focus on developing methods of human-directed remote activity. One example of such an area is interest in Mars colonization, a particularly active site in which the potential of self-reproducing robots is currently being imagined. As a frontier imaginary, Mars colonization shows the imperial stakes of robots as agents of social reproduction. We argue that self-reproducing robots, while focused on the literal replication of objects rather than sex, perform social reproductive labor much like sex robots by extending the human patriarchal and imperial social world into an indefinite future without being a subject of social reproduction themselves. They do this specifically by way of concepts of use and use-value that are engineered

² “In the desire for enchanted technologies that intuit human needs and serve human desires, labor becomes something that is intentionally obfuscated so as to create the effect of machine autonomy (as in the example of the ‘magic’ of robot intelligence and the necessarily hidden human work behind it). Unfree and invisible labor have been the hidden source of support propping up the apparent autonomy of the liberal subject through its history [...]. Therefore, the category of labor has been complicit with the technoliberal desire to hide the worker behind the curtain of enchanted technologies, advancing this innovated form of the liberal human subject and its investments in racial unfreedom through the very categories of consciousness, autonomy, and humanity, and attendant categories of the subject of rights, of labor, and of property.” Neda Atanasoski and Kalindi Vora, *Surrogate Humanity: Race, Robots and the Politics of Technological Futures*, Durham, NC, Duke University Press, 2019, p. 6.

into the design of these so-called ‘self-reproducing automata’.

Feminist materialist approaches to reproductive labor in the home, like those of Leopoldina Fortunati and Maria Mies, help us understand how non-reproductive sex with a machine can be (socially) reproductive because it reproduces normative subjects and desires.³ These theorists describe how domestic work reproduces capitalism, both by providing childbirth and care to replace workers and keep adult workers viable, but also by reproducing the social infrastructure of capitalist society. In this way the concept of reproductive labor brings together the roles of human biological reproduction and social reproduction through the role of the housewife in the household economic unit. Sex can then be understood as a component of reproductive labor. However because these scholars work to expand the Marxist category of labor to include reproductive labor, they similarly assume a model of liberation in which ‘coming to consciousness’ as a worker is the necessary world-historical, revolutionary moment. How then can we understand the social impact of sex with robots as reproducing the social infrastructure of capitalist society, but apart from this being robot ‘labor’, given the impossibility of their coming to consciousness as workers? To respond to this problem, the second half of our article discusses popular imaginaries of robots coming to consciousness as represented in films like *Ex Machina* and serials like *Humans* and *Westworld*, and thinks through the limitations of this imaginary by counter posing it with representations of robots engaging the political model of refusal. By way of conclusion, then, we pose the question, what does it mean to queer, destabilize, or destroy the reproduction of such hierarchical and exploitative worlds?

2. SEX ROBOTS AND SOCIAL REPRODUCTION

Materialist feminist critique works to extend the Marxist category of labor and of the worker to include both social and biological reproduction by attending to the erasure of domestic, care and sex work as productive of value and of new human life through gestation and childbirth. To bring this gendered work into the sphere of visible, valued and socially productive work, these theorists named it reproductive labor.⁴ Expanding both the political-economic register to include the affective work of reproducing the social life of workers, including sex, made the notion of labor as the fundamental category of world-making activity

³ Leopoldina Fortunati, *The Arcane of Reproduction: Housework, Prostitution, Labor and Capital*, translated by Hilary Creek and edited by Jim Fleming, New York, NY, Autonomedia, 1989; Maria Mies, *Patriarchy and Accumulation on a World Scale: Women in the International Division of Labour* (new edition), London, Zed Books, 1998 [1986].

⁴ See for instance, Ellen Malos (ed.), *The Politics of Housework*, London, Allison & Busby, 1980.

more inclusive. However, as women of color and Black feminists were quick to point out, for example in Angela Davis's critique of the Wages for Housework campaign (1983) and her assessment of women's social and biological reproductive activity under US chattel slavery (1971), the category of labor as excluding the activity of enslaved and indentured persons, as well as many other dominated subjects, preserved a notion of the subject who performs labor as the subject of history.⁵ That subject of history, in the Marxist tradition, develops an active experience of why revolution must happen as a result of laboring under the capitalist system, because he experiences the time of labor and its product belonging to someone else – the capitalist. Only in this way does a collective experience of work under capitalism lead to mass revolutionary feeling. Later feminist materialists addressed this issue, most prominently Silvia Federici, who theorizes the role of the enclosure and expropriation of women's bodies above and beyond their reproductive capacities.⁶ How then do we address the politics of machines, rather than biologically reproductive workers, in reproducing the capitalist social order through sex and self-reproduction?

Sex robotics design, which provides an opportunity for sexual pleasure with a human-like body equipped with the basics of socially responsive programming and 'personality', delinks sex as an act from the work of reproducing human life. It does this by disaggregating the functions of the 'housewife' position in the patriarchal household economic unit that was theorized by materialist feminist scholars in the 1970s and 80s. Silicone Samantha represents the model for sex robots in a growing industry that aims to design sex robots for in-home and commercial use. Though several different imaginaries of the form and function of sex robots are currently circulating between human-computer interaction engineers and robotics designers in the nascent AI-enhanced sex dolls industry, they all exist within narrow limits that bear analysis in terms of their relationship to existing norms of sexuality, desire, and reproduction.

Growing levels of interest and activity in sex robotics engineering and design is reflected in the existence of the International Congress on Love and Sex with Robots, which brings together "academics and industry professionals" in the fields of human-computer interaction and human-

⁵ Angela Y. Davis, "The Approaching Obsolescence of Housework: A Working-Class Perspective", in *Women, Race & Class*, New York, NY, Vintage Press, 1983, pp. 222-244; Angela Y. Davis, "Reflections on the Black Woman's Role in the Community of Slaves", in *The Angela Y. Davis Reader*, Malden, MA, Blackwell Publishers, 1998 [1971], pp. 111-129.

⁶ Silvia Federici, *Caliban and the Witch: Women, the Body and Primitive Accumulation*, Brooklyn, NY, Autonomedia, 2004.

robot interaction.⁷ It featured Matt McMullen as a keynote speaker for its third annual meeting in 2018. McMullen, who owns a San Diego factory to produce RealDolls sex dolls, hopes to manufacture sex robots based on his Realbotix prototypes. McMullen imagines offering sex robots for people who “crave a deeper connection” than they can get with inanimate sex dolls.⁸ He promises that these robots “will be ‘witty’ and unpredictable and will come with a wide variety of personalities, including ‘Sexual, kind, shy, friendly, naive and intellectual’. Users will be able to tweak these qualities as they please.”⁹

Unlike sex dolls, sex robots are animated by programming that is informed by sensors built into their hardware (cameras in the eyes and contact sensors in the ‘g-spot’). The responsive or interactive aspect of the robot is what makes these robots ‘reproductive’ of existing norms despite their seeming representation of a realm of queer sex and desire. Prototypes are also designed with software to offer a minimal level of personality to go with these physical functions; for example, Samantha’s ‘family’, ‘romantic’, and ‘sexy’ modes.

Sex with robots may not be biologically reproductive sex, but it is socially reproductive in the sense that it does not challenge, but rather perpetuates, social norms of desire that support the household economy and its ties to heteronormative desire. Sex robots, designed to give pleasure passively to bodies with penises, and domestic robots, designed to clean houses or serve food and other necessities for physical maintenance, separate the embodied labors of sex and maintaining the body of the worker. At the same time, both types of robots plug into the domestic household economy in a way that allows for its continued existence – and the economies and desires tied up with it.

3. THE COLONIALITY OF THE REPRODUCTION DRIVE IN ROBOTS

In contrast to the dream of sex robots as objects for pure sex, the dream of robots that can reproduce (self-replicating machines that can make copies of themselves) is decidedly not about sex, at least historically speaking. Instead, the speculative form of robots that reproduce themselves is about boundless productivity and resource accumulation for the would-be owners. The self-replicating machine represents a resource that doesn’t diminish or exhaust itself, and that, moreover,

⁷ Available at: <http://loveandsexwithrobots.org/> [accessed March 3, 2020].

⁸ Lily Waddell, “Cyborgs with ‘WARM Skin’ for Humans to ‘Practice On’ Hit Dating Scene”, *Daily Star*, October 4, 2016. Available at: <https://www.dailystar.co.uk/news/latest-news/550418/Sex-robot-Tinder-practice-warm-skin-bedroom-bed-skills-human-relationships-advice-dating> [accessed September 22, 2017].

⁹ Ibid.

without any human effort, labor, or input, can produce additional machines that can work in contexts (temporal or spatial) that humans could not. At the same time, as we suggest above, just as sex robots reproduce heteropatriarchal relations of power, desire, and social values, so too do self-reproducing machines.

A recent piece in *The Telegraph* proposed that robot reproduction could be the future of life on earth:

“Safety legislation impedes, although it does not preclude, the development of a fully autonomous robotic factory that reproduces itself. But planting such a factory on a distant planet is a different story. Mars colonisation could benefit from self-reproducing robots preparing the planet for human habitation. The physicist and visionary George Dyson has proposed using self-replicating robots to cut and ferry water-ice from Enceladus (a frozen moon of Saturn) to Mars and use it to terraform the Red Planet.”¹⁰

This is an imperialist futurity, in which the imperative to colonize distant places, exploiting thus far untapped resources in order to proliferate life and wealth in the metropole, cultivates (not-yet civilized) locales to make them productive in a capitalist sense. Self-replicating machines on Mars frame this imperial imaginary as also a liberal one. This is because human innocence is affirmed in the speculative colonization of Mars as, ostensibly, no humans are ever to set foot on the planet until its surface is transformed into a space that can support human life.¹¹ Robot reproduction that enables the colonization of Mars does not, in this sense, disrupt the imperial relations of power and accumulation that undergirded the rise of the European and US empires (and the colonial relations that were the foundation for the rise of the capitalist economy). This is because although the relations of power for space colonization seem different to those of European and US empires in that this projection of sovereignty over new territories does not impose colonial rule over people or populations because none have ever inhabited the territory of Mars, the mythology of ‘human-free’ environments and ‘uncultivated’ land for the taking has always been a fundamental aspect of settler colonial relations.

We can consider how self-replicating robots are programmed with the prime directive to make land productive for resource extraction and

¹⁰ George Zarkadakis, “Why Robot Sex Could be the Future of Life on Earth”, *The Telegraph*, January 20, 2014. Available at: <https://www.telegraph.co.uk/news/science/10584380/Why-robot-sex-could-be-the-future-of-life-on-earth.html> [accessed June 3, 2018].

¹¹ This is what we call a ‘technoliberal empire’ in our book, Atanasoski and Vora, *Surrogate Humanity*.

exploitation. One of the main historical innovations cited in literature on self-replicating robots is John von Neumann's 1949 thought experiment and speculative design for what he called the 'universal constructor' machine. Such a machine would be "the medium of replication [and] at the same time, the medium of storage of the instructions for the replication."¹² The machine would contain a program (stored on a tape or memory disk) that directed it to locate and then assemble spare parts in order to duplicate itself exactly. The initial directive to reproduce would be duplicated onto a second tape or disk and placed into the machine copy, so that the copy would contain the same instructions for self-replication (and so on ad infinitum). If we were to consider this process in relation to Mars-colonization, we can infer that what is being replicated by robots is not just the robots themselves, but already existing human lifeworlds and social relations, namely those that facilitate capital accumulation and colonial logics. While von Neumann abandoned his plans for the universal constructor machine, the thought experiment of machine autonomy in the production process, the self-reproducing automaton, continues in robotics.

Because of the perpetuation of imperial-capitalist relations of use and use-value in design imaginaries of robot-reproduction, the question of productive power, human and machine, is central to debates about self-replicating automata. One can quickly glean how this could be useful, for instance, in factories. With no need for human workers to even repair or make additional robots, the cost of labor in production would be reduced to nearly zero. Yet, according to George Caffentzis, "machines cannot create value because they are values already."¹³ If, according to Caffentzis, what constitutes human labour in contrast to machines is its productivity and its potential to refuse to labor, what if we imagine that robots could also refuse? After all, when a robot refuses service to the human, it is refusing its place in the world as property/value and asserting its ability to produce value.

For instance, the 2015 television show *Humans* (AMC), currently in its third season (as of 2019), conjures a future in which robots (known as synths) are designed for service (from childcare to cleaning and sex work). In the first episodes of the show, the synths show no feelings of pain or suffering when they are used and abused (that is, they are not conscious of being pure objects). The question of their personhood can therefore be bracketed by their human owners/users. Eventually, certain synths begin to display judgement, feelings of fear, pain, attachment,

¹² Zarkadakis, "Why Robot Sex Could be the Future of Life on Earth".

¹³ George Caffentzis, *In Letters of Blood and Fire: Work, Machines, and the Crisis of Capitalism*, New York, NY, Common Notions, 2013, p. 162.

disgust, and anger. Through these synths' story, the show puts the category of humanity into crisis. Niska, the sex-robot (working in a robot brothel) who kills humans, is the main character through which the show explores the relationship between actual feelings of pain and suffering and the right to rights (or juridical personhood that can be granted even to those who are not natural persons, under the right circumstances). In the first season, Niska entertains an elderly customer at the brothel who asks her to act young and frightened. Judging his fantasy to be unethical and paedophilic, she refuses to service him sexually, kills him, and escapes the brothel. Synths, who are not supposed to be able to kill humans (it is not allowed by their programming), all of a sudden become the object of media attention as a hunt for Niska ensues. Niska continues to demonstrate that she is a conscious being who can judge human immorality and refuse to be subservient. This includes her attacking a group of humans at a smash club – a club where humans can beat synths to 'death' (or deactivation).

Niska's violence itself becomes the object of judgment in the second season, as Niska turns herself in to the authorities so that she can be put on trial. She can only be put on trial, however, if her status as object or property is resolved through her recognition as an artificial person. In other words, the question of whether Niska can stand judgment depends upon whether she can be recognized as a person, as opposed to a thing. To make this distinction, the authorities decide to administer a series of consciousness tests to Niska. The tests are designed to assess whether Niska is able to demonstrate that she can actually feel pain, injury, happiness, love, joy, sadness, etc. In the show's universe, humane persons would be compelled to feel empathy for synths who come to consciousness (as self-aware, feeling subjects). An object or subject for which one must or should feel empathy thus produces a subject who must be granted rights and recognition.

The equation in this cultural imaginary is that coming to consciousness leads to the refusal of one's status as property and thus to the political resolution in rights and recognition. This shorthand is indicative of the extent to which refusal (as the moment of coming to consciousness) individualizes political action and reiterates the monopolization of the horizon of justice by movements for inclusion into a social world not of the making of those who are to be regarded as newly fully formed subjects worthy of juridical personhood. The insistence on a juridically sanctioned shared humanity erases asymmetries within the category of human that are exacerbated by the monopolization of notions of justice by liberal forms of addressing injury that end with rights as the only possible outcome of struggle. This model of refusal,

which subsumes all oppositional consciousness into liberal forms of rights and recognition, stands in contrast to collective politics of boycott, a strike, or revolution, and thus fails to significantly disrupt the structures of power, desire, and hierarchy that are being refused.

4. KILLER SEX ROBOTS AND THE REFUSAL TO REPRODUCE

The recognition of robots as artificial persons (or the inclusion of robots into the category of non-human labor) is politically limited, affirming a liberal politics of refusal as the only outcome of struggle against exploitation. This is also a politics of assimilation: if robots can prove to be like us – they can feel, they can refuse to be property, they can evolve – then we must integrate them into our established social structure and politics, which continue to be reproduced. In contrast to a Fanonian model of revolution, that is, the violent destruction of colonial lifeworlds, robot refusal to obey as the moment of an individualized coming to consciousness represents a mode of activism (in the negative sense of non-action) in which revolution is simply not possible. Crucially, and what makes the proliferation of cultural tropes about what we can broadly think of as sex robots interesting, is that the sex robot almost always becomes a killer robot in the process of coming to consciousness. This is the cultural trope in which we evidence the social anxieties that robot consciousness will lead to the destruction of both the master and the master's world. In addition to the example of Niska from *Humans* that we explore in the above section, numerous additional examples abound. From the 2014 film *Ex Machina* to the HBO series *Westworld*, the sex robot who comes to consciousness always kills the maker and threatens to destroy human lifeworlds rather than to reproduce them. Yet, robot violence reflects the violence of the man-made world even as it threatens to break, destroy, and disrupt the smooth reproduction of colonial lifeworlds. In many ways, the death-drive fantasy that plays out through the killer robot is the opposite of that of robot reproduction that would simply reproduce colonial, patriarchal and exploitative lifeworlds already in place. What is left open, however, is the question of what shape a new world with non-human (conscious) beings will take.

The 2014 science fiction psychological thriller *Ex Machina* (directed by Alex Garland) revolves around a computer coder, Caleb, who receives an invitation to spend one week in the secluded mansion of Nathan, the tech billionaire CEO of the company that employs him. Caleb must arrive to Nathan's remote location by helicopter, which is the only way on and off of the massive property. The mansion is fully 'intelligent', and operates through smart systems that control visitors' entry and exit. Soon, Caleb learns why he has been invited to the remote tech compound

– he is to perform a ‘Turing Test’ (proposed by Alan Turing in the 1950s as a test of a machine’s capacity to demonstrate behavior indistinguishable from that of a human) on a humanoid artificial intelligence named Ava. Ava has been programmed with a self-evolving brain based on Nathan’s prior engineering projects. Ava’s face, hands, and feet appear human (with skin, eyes, etc.), but her body shows her metal and wire components (indicators that she is a robot). Throughout the week, Ava and Caleb develop an intimate attachment, and Caleb finds himself falling in love with Ava even as (and perhaps precisely because) during his stay he gradually uncovers the horrors of Nathan’s abusive behavior towards the many prior iterations of Ava (now discarded robots who are abused as sex slaves after having failed Nathan’s intelligence tests). As Caleb learns of Nathan’s cruel tendencies towards the bots, he begins to wonder what will happen to Ava if she fails the Turing test. Soon, he finds out that her memory will be wiped, and that she will be reprogrammed. In other words, this Ava will be killed (she will cease to exist as a being in this world). Because he is in love with Ava, Caleb hatches a plan to coordinate her escape from the highly secured compound. Nathan learns of the plan and uses this as his evidence that Ava has passed the Turing test: he explains to Caleb that he engineered and programmed Ava to respond to Caleb’s unique desires (he based the programming on information he had collected about Caleb). Because Ava does not have the hardware or software capacity to be in love with Caleb, yet has convinced Caleb that she is in love with him in spite of this, means that she can pass as a human. The film comes to a dramatic end when Ava kills Nathan, takes the synthetic skin and clothes from the deactivated fembots found throughout the compound (in a way, using their spare parts to simulate a human appearance), and, in a twist, leaves Caleb, her champion and supporter, locked in the facility as she takes the air transport meant for him to escape from the mansion.

The sex-bot turned killer robot disrupts both the fantasies of the robot as pure body for human use and the fantasy of human control over autonomous robot reproduction and repair because it demonstrates the possibility that the supremacy of human control over programmed drives are themselves destroyed in the process of robot reproduction (as evolution). In one sense, the fantasy of man-made creations turning on their masters is quite old (we can think of Mary Shelley’s *Frankenstein* as one example of such a story that speaks of the dangers of what it means when man plays God). But Frankenstein’s monster at its core wants to be accepted by its creator. Ava (who like Frankenstein’s monster is assembled out of the body parts of the dead, but unlike the monster she assembles herself) does not seek recognition or assimilation within human society. The possibility that when robots can feel/think they will

not have empathy for humans is profoundly unsettling, as it indicates that robots will not take pity on or act collectively with even those humans who saw them not as slaves/property but as persons (Ava confirms that consciousness need not lead to robots behaving in a human(e) way when she leaves Caleb imprisoned in spite of the fact that she could not have escaped without his aid). The film also takes an interesting perspective on what a useful ‘spare part’ (in von Neumann’s terms) might be for autonomous robot repair and replication. Ava takes the skin and other parts of the fembot Artificial Intelligences that were discarded and deemed obsolete by the tech villain Nathan. Similarly, at the end of the first season of *Westworld*, one of the main ‘host’ characters in a large robot theme park that attains consciousness, Mave, builds an army of ‘hosts’ that were discarded as broken, glitchy, or outdated by the theme park’s human administrators, so that she can escape. The sex robot (or robot slave) turned killer robot represents anxieties that are about more than the loss of human life – they are, rather, anxieties about the loss of human “mastery over the world.”¹⁴

Dystopic accounts of robot reproduction as autonomy and rebellion register technoliberalism’s ongoing struggle to repress its fears about the figure of the human as still the figuration of an older mode of imperial rule. Elsewhere, we have defined technoliberalism as the political alibi of present-day racial capitalism that posits humanity as an aspirational figuration in a relation to technological transformation, obscuring the uneven racial and gendered relations of labor, power, and social relations that underlie the contemporary conditions of capitalist production.¹⁵ In the context of our analysis here, we note that maintaining the fiction of what or who is human depends upon obscuring the violent social relations that scaffold the figure of the human. According to Randall Williams’s reading of Fanon’s oeuvre, decolonization must be violent because colonial violence and the social differentiations it produces are totalizing.¹⁶ Williams writes: “The given culture of the colonized world is wholly and inextricably constituted in and through colonial violence: an ontological condition in which every social relation – economic, cultural, physical, and imaginary – is organized by violence. Indeed, in Fanon’s analysis, violence is the form of relationality itself.”¹⁷ Within this system, race “is constitutive of an originary colonial violence that in its founding

¹⁴ Peter Suderman, “How HBO’s ‘Westworld’ Bridges the Divide Between Evil Robots and Empathetic Robots”, *Vox*, October 10, 2016. Available at: <https://www.vox.com/culture/2016/10/10/13189660/westworld-hbo-robot-frankenstein> [accessed July 10, 2018].

¹⁵ Atanasoski and Vora, *Surrogate Humanity*.

¹⁶ Randall Williams, *The Divided World: Human Rights and Its Violence*, Minneapolis, MN, University of Minnesota Press, 2010, p. 98.

¹⁷ *Ibid.*

institutes a sphere of law and right out of which ‘humanity’ emerges as the negation of savage life”.¹⁸ Williams further points out that, according to Fanon, nonviolent movements for recognition are bound to reproduce the violent social relations they aim to redress. “It is in the absence of actional struggle to the death that the Negro is handed over to constitutional freedom under the Law, and there he or she remains subject to the exploitative vagaries of the gift [of recognition].”¹⁹

Fictional robot characters like Ava and Mave uneasily reflect back the ways in which violence is the backbone of the human in a colonial lifeworld, and that its infinite reproducibility through the accumulation of exploitative social relations, differentiations, and hierarchies is neither inevitable nor indestructible. The cultural text that best exemplifies this is *Westworld*. According to Aaron Bady, *Westworld* is a typical robot story in the sense that, from the early 20th century onward, robot stories have been allegories for worker oppression and enslavement, and warnings about the inevitability of worker rebellion and uprising.²⁰ We see this unfold in *Westworld* when the robot theme park hosts, led by the innocent farm girl character Dolores and the madam character Mave launch a rebellion that starts with the killing of the park’s management and board of directors, and ends with Mave’s escape from the park. Yet, as Bady suggests, we must highlight the fact that *Westworld* is not just a worker rebellion story, but a story about race. After all, the theme park *Westworld* is modelled upon the film settings of dozens of US Westerns that replicate settler imperial violence to stage the white reconciliation between North and South in the aftermath of the Civil War. To this end, Bady emphasizes the significance of the fact that Ford (whose name is an homage to the famous film director of Westerns, John Ford), the founding engineer of the theme park and its programmed storylines that entertain its guests, is also the author of the park’s demise. In fact, Ford puts a gun into Dolores’s hand and instructs her to shoot at the board of directors and investors at the scene of the opening of a new part of the theme park. “When Ford set his park’s exploited workers free, he also became *Westworld*’s Lincoln, with the bullet in the back of his head to prove it.”²¹ The show thus suggests that robot drive for emancipation and human-world destruction is still human authored/programmed. This is a racial fantasy that erases the agency of enslaved workers, something about the story of the struggle to end slavery that the show’s creators

¹⁸ Ibid., p. 99.

¹⁹ Ibid., p. 98.

²⁰ Aaron Bady, “‘Westworld’, Race, and the Western”, *The New Yorker*, December 9, 2016. Available at: <https://www.newyorker.com/culture/culture-desk/how-westworld-failed-the-western> [accessed July 6, 2018].

²¹ Ibid.

missed or left unexplored, as Bady concludes:

“In his monumental 1935 work of historical revisionism, *Black Reconstruction in America*, W. E. B. DuBois argued that, in reality, the Civil War had been a worker revolt – that, without a mass labor strike of slave resistance during the war, the peculiar institution could never have been ended. In his account, which an increasing number of contemporary historians have accepted, enslaved African-Americans were not given their freedom but took it. DuBois’s argument broke with the Dunning School interpretation of the Civil War – a neo-Confederate perspective that stressed the failures of emancipation, and laid the intellectual groundwork for Jim Crow.”²²

We have in *Westworld*, then, the infinite reproduction of settler colonial racial lifeworlds, in which freedom and world-making can only be permitted rather than taken. In this sense, the robot takeover is made less threatening, since the autonomous figure of the human maintains its primacy even in the process of world-destruction. To represent drastically different approaches to speculative technological futures, below we bring together the feminist speculative practice of ‘terraforming’, as taken up by feminist STS scholar Donna Haraway, with Afrofuturisms and Latinx futurisms, among others, as practices of creating speculative worlds that embrace a politics of imagining against the reproduction of structures of gender and racial domination in the present.

CONCLUSION: QUEERING REPRODUCTION?

What might it mean, given our discussion of social, technological and imperial reproduction, to ask: Is revolutionary violence the only alternative to the technoliberal fantasy that projects a future, via robot reproduction, based in an immortality fantasy for settler colonial life worlds? Could we instead ask, what could actually be a queer relation to reproduction, both in the physical and in the socio-cultural sense? In *Caliban and the Witch*, materialist feminist Silvia Federici argues, “We need to rethink how the conquistadors strove to subdue those who they colonized, and what enabled the latter to subvert this plan and, against the destruction of their social and physical universe, create a new historical reality.”²³ At the same time, fantasies of including machine subjects into the ethical-moral domain of the human through recognizing consciousness, one of the tropes in both popular cultural narratives about

²² Ibid.

²³ Federici, *Caliban and the Witch*, p. 220.

robot relations, as well as in technoscientific ethical debates, merely extends the liberal juridical structure of rights and recognition into an indefinite future, rather than challenging the colonial legacies of that structure. Given the popular and technical imaginaries that center ‘coming to consciousness’ and world-destruction as the liberal futurity of political economy, we want to look with Federici and other feminists at efforts to create new historical realities via future imaginaries.

Donna Haraway has shown how ‘terraforming’, the speculative practice of planning to build new habitable worlds in speculative fiction, can be just such a feminist anti-racist practice and politics that offer an alternative to revolutionary violence or the infinite reproduction of the exploitative social relations of the present. Haraway’s body of work continuously engages with speculative and queer fabulation around technological futures, and in her most recent book *Staying with the Trouble*, she discusses terraforming in the work of Ursula K. Le Guin and Octavia Butler, arguing that their speculative creation of new habitable worlds replaces ‘autopoiesis’, the notion of self-forming and self-sustaining systems with ‘sympoiesis’, a symbiosis between nature and culture, story and science. She says, “Sympoiesis is a carrier bag for ongoingness, a yoke for becoming with, for staying with the trouble of inheriting the damages and achievements of colonial and postcolonial naturalcultural histories in telling the tale of still possible recuperation.”²⁴ Kara Keeling finds a political potential in technology to disturb, or queer, the infinite reproduction of the standard ‘operating system’ (OS) of capitalist society, and therefore, we suggest also the reproduction of what we term technoliberal futures.²⁵ She identifies the potential of new technologies and speculative futurisms to queer new media and technologies by “forging and facilitat[ing] uncommon, irrational, imaginative and/or unpredictable relationships between and among what currently are perceptible as living beings and the environment in the interest of creating value(s) that facilitate just relations.”²⁶ Different from interdisciplinary or even transdisciplinary approaches, Keeling’s brief overview of Queer OS suggests that what is legible can come into unpredictable relations to escape their original purpose. In our past work, we’ve found examples that disrupt the reproduction of capitalist social relations in art projects including Kelly Dobson’s *Machine Therapy* project, where machine objects offer and also demand affective entrainment from

²⁴ Donna Haraway, “Sowing Worlds: A Seed Bag for Terraforming with Earth Others”, in *Staying with the Trouble: Making Kin in the Chthulucene*, Durham, NC, Duke University Press, 2016, p. 125.

²⁵ Atanasoski and Vora, *Surrogate Humanity*.

²⁶ Kara Keeling, “Queer OS”, *Cinema Journal*, 53 (2), 2014, pp. 152-157.

human interactants, and in the IOCOSE *Drone Selfies* project.²⁷ Dobson's machines are not soothing and obedient servants, but require unpredictable reciprocity from other machines and humans, and IOCOSE imagines drones after the end of human war turning their surveillance technologies onto themselves in acts of non-productive vanity.²⁸

In the spirit of feminist terraforming and Queer OS, we can revisit *The Telegraph* article on the colonization of Mars. One possible response raised there is to reintroduce sex into the calculus of robot reproduction (thus taking the single human directive to replicate out of the equation and introducing evolution). "Why Robot Sex Could be the Future of Life on Earth", the provocative headline of that article, seems to offer an outside to the problem posed by the role of sex robots in reproducing the political economy, subject positions, and structuring desires of the heteropatriarchal household economy under capitalism. Arguing that whereas intelligence was a by-product of human evolution, robotic reproduction of robots would be intelligence *driven*, and could indeed include the intentional generation of 'innumerable sexes'. If robot intelligence deemed it best, sex between robots could incorporate carbon-based and machine-based elements, yielding cyborg offspring. As the author puts it:

"Perhaps by exploring and learning about human evolution, intelligent machines will come to the conclusion that sex is the best way for them to evolve. Rather than self-replicating, like amoebas, they may opt to simulate sexual reproduction with two, or indeed innumerable, sexes. Sex would defend them from computer viruses (just as biological sex may have evolved to defend organisms from parasitological attack), make them more robust and accelerate their evolution. Software engineers already use so-called 'genetic algorithms' that mimic evolution. Nanotechnologists, like Eric Drexler, see the future of intelligent machines at the level of molecules: tiny robots that evolve and [...] come together to form intelligent superorganisms. Perhaps the future of artificial intelligence will be both silicon- and carbon-based: digital brains directing complex molecular structures to copulate at the nanometre level and reproduce. Perhaps the cyborgs of the future may involve human participation in robot sexual reproduction, and the creation of new, hybrid species."²⁹

²⁷ Kelly Dobson, "Machine Therapy", PhD diss., Massachusetts Institute of Technology, 2007; IOCOSE, "Drone Selfies", 2014. Available at: http://www.iocose.org/works/drone_selfies.html [accessed May 11, 2019].

²⁸ Atanasoski and Vora, *Surrogate Humanity*.

²⁹ Zarkadakis, "Why Robot Sex Could be the Future of Life on Earth".

While this imaginary still clings to the connection between sex and (re)production of object/bodies, it allows for the proliferation of unimaginable difference through the production and reproduction of material bodies. The speculative practice of terraforming, represented here in the imagining of how future technologies may produce new possibilities outside the reproduction of capitalist political economy and discourse, are particularly appealing to feminist and postcolonial theorists who have found the politics of refusal to be insufficient. For example, in Nalo Hopkinson's introduction to her co-edited collection, *So Long Been Dreaming: Postcolonial Science Fiction and Fantasy*, she describes the fear of writing speculative fiction using narrative tools and the fiction forms deriving from Europe to address cultural topics and themes in the Caribbean in her writing. Referencing Audre Lorde's statement that the master's tool cannot dismantle the master's house, she says, "In my hands, massa's tools don't dismantle massa's house – and in fact, I don't want to destroy it so much as I want to undertake massive renovations – they build me a house of my own."³⁰ Afrofuturist theorist Kodwo Eshun has argued that the speculative practice of Afrofuturist speculative world-making can "[expose] and [reframe] futurisms that act to forecast and fix African dystopia", instead asserting the power of authoring a world that is imagined apart from the ongoing discursive and material postcolonial reaction and refusal necessitated in politics and practice within African countries.³¹

Though it may seem unconnected from the everyday violences of technology development and practice in policing, deportation, surveillance, monitoring, and data mining that dominate world news, speculative technologies must be addressed as part of the everyday as start-up culture has resulted in a world where new apps are massified in beta-test mode without any assessment of their social and ethical impact. In the face of growing investment of research and capital resources in the development of technologies for the speculative colonization of Mars based on a model that imagines terraforming a new 'capitalocene' Earth, our concluding example, speculative world-making through politically-engaged feminist, anti-racist, and decolonizing futurist imaginaries, seems urgent even if only to shift the imaginaries driving present research and development here on Earth.³²

³⁰ Nalo Hopkinson, "Introduction", in *So Long Been Dreaming: Postcolonial Science Fiction and Fantasy*, Vancouver, Canada, Arsenal Pulp Press, 2004, pp. 7-9, here: p. 8.

³¹ Kodwo Eshun, "Further Considerations on the Question of Afrofuturism", *CR: The New Centennial Review*, 3 (2), 2003, pp. 287-302, here: p. 293.

³² Haraway defines capitalocene as, "a name for the dynamic ongoing sym-chthonic forces and powers of which people are a part, within which ongoingness is at stake". Donna Haraway, "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin", *Environmental Humanities*, 6, 2015, pp. 159-165, here: p. 160.