

A plea for integrated empirical and philosophical research on the impacts of feminized AI workers

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1. Introduction

Feminist philosophers have long emphasized the ways that women's oppression takes different forms depending on complex combinations of factors. These include women's objectification (Langton 2009, Nussbaum 1995) – which may contribute to their dehumanization (Mikkola 2016) – and unjust gendered divisions of labour stemming from sexist ideologies regarding women's social role, especially in care-giving domains (Kittay 2019). We argue that feminized artificial intelligence (henceforth 'feminized AI') – for example, Apple's Siri, Amazon's Alexa, Microsoft's Cortana and Google's Home – poses new and important challenges to these perennial feminist philosophical issues. In particular, we argue for the following two claims – the first empirical and the second theoretical:

1. Feminizing AI poses the risks of dehumanizing women workers and reinforcing a sexist division of labour.
2. Feminizing AI introduces important implications for existing conceptual paradigms regarding these issues.

Strikingly little attention has been paid to *feminized AI* in particular.¹ This is despite longstanding feminist concerns about the relation between gender and technology, broadly construed (Wajcman 2010), as well as the recent surge in theoretical and empirical attention paid to the ethics of AI in general. Yet consideration of the new ethical challenges posed by feminized AI is crucial not just to understanding the impact of these increasingly ubiquitous technologies, but also to our understanding of longstanding feminist philosophical concerns and efforts to ameliorate them. Indeed, as we will show, insofar as the risks posed by feminized AI are real, they have important implications for existing conceptual paradigms in feminist philosophy. Mitigating these risks requires a closer theoretical and empirical examination of the impacts of feminized AI. In turn, this work amplifies our understanding of the nature and scope of women's oppression in an increasingly technologically mediated world.

The paper proceeds as follows. We start in §2 by reviewing the gendered social dynamics that AIs are becoming increasingly integrated into. Then in

1 A notable exception is Strengers and Kennedy (2020), who provide a helpful analysis of ways that feminized AIs are designed to meet, and thereby perpetuate, idealized expectations of women and wives, in keeping with stereotypes of the 1950s American housewife.

§3 we argue that feminized AIs pose new challenges to these longstanding feminist philosophical issues. §4 concludes by discussing how this nuanced perspective on feminized AI helps us better understand the scope of women's oppression and, in doing so, counteracts the perpetuation of unjust gender stereotypes and social structures.

2. Context

Feminist philosophical discussions of women's oppression have emphasized the harms of women's objectification and gendered divisions of labour. Consider, first, women's objectification. While the bounds of objectification may be difficult to specify (Bauer 2015), Nussbaum (1995) proposes several different forms that objectification can take.² These include:

1. Instrumentality: treating a person as a tool for one's purposes.
2. Denial of autonomy: treating someone as though they lack the capacity to act in accordance with their own reasons and desires.
3. Inertness: treating someone as though they lack agency.
4. Fungibility: treating someone as fundamentally interchangeable.
5. Violability: treating someone as having boundaries that are possibly violated.
6. Ownership: treating someone as one's property.
7. Denial of subjectivity: treating someone as having feelings and thoughts that need not be considered.

Objectification can thus manifest in different ways, including by mutually reinforcing one another (Bartky 1990, Bordo 1993). For instance, women may be expected to regularly demonstrate traits such as submissiveness (*denial of autonomy*), which in turn reinforces views about their permissible *violability* and even dehumanization *vis-à-vis* the denial of these basic human traits (MacKinnon 1987).

As these examples demonstrate, gender stereotypes are both (1) continuously reproduced and reinforced through human action within communities (Butler 1990, Ochs 1992) and (2) prescriptive (Prentice and Carranza 2002, Bicchieri and McNally 2018). For example, women in the USA are stereotypically expected to exhibit traits such as warmth and kindness, politeness, attentiveness, cheerfulness and cooperativeness, but they are not expected to exhibit stereotypically masculine traits, such as having a strong personality and self-esteem, or a tendency to defend one's beliefs (Prentice and Carranza 2002). This, combined with the real risk of backlash for failure to conform to gender norms, means that expectations that women exhibit certain traits

2 See Langton 2009 for additional forms of objectification that arise especially in the context of pornography.

and adhere to gender norms and stereotypes may thus reinforce the tendency for women to do so.³

Gender stereotypes associated with femininity manifest in both public behaviours and private domains. For instance, in the case of human women, ongoing work on gender inequality in labour markets indicates that women are more prone to take on additional, often menial work-related tasks, compared with their male colleagues (de Pater et al. 2010, Babcock et al. 2017a, Babcock et al. 2017b). Moreover, women, compared with men, have higher rates of employment in people- and service-oriented work, and are expected to have greater workplace flexibility – plausibly due to their increased responsibility to perform childcare and other domestic duties for which they are typically uncompensated (Cortes and Pan 2018).⁴

In the following section, we show how feminized AI fits into and challenges these existing paradigms.

3. *Feminized AI: new challenges*

Feminized AIs often reproduce gender stereotypes commonly associated with women. As Gebru (2020) points out, Siri and Alexa are designed to ‘obey a customer’s every whim’ and therefore adhere to stereotypical gender roles for women, including those associated with helping, serving and caring, as described above (Chambers 2021). Indeed, feminized AIs reinforce what Manne (2017) has described as the tendency for women to be viewed as ‘human givers’ as opposed to human *beings*: givers whose primary role is to provide (for men) a slew of valuable moral goods, including ‘attention, care, sympathy, respect, admiration, and nurturing’ (22). For Manne, a human giver’s agency, autonomy and other distinctly human traits are recognized contingent on their providing these goods. Similarly, as we discuss below, feminized AIs are endowed with enough capabilities to provide their users with the sense that they have sufficient personality to engage and help the user satisfy their ends, but not so much as to be perceived as driving the interaction or resulting in desires or behaviours that conflict with the users’ aims. Feminized AIs thus reinforce a harmful link between femininity and giving.

For example, a commercial for Amazon’s Echo depicts a new dad tasked with caring for his baby by himself for the first time. A feminine-voiced Echo issues helpful reminders, left by the mother, to aid him: he is reminded that ‘Laura says the teething ring is in the freezer’ just in time to soothe the crying and uncomfortable baby, that ‘Laura has scheduled a play date for 3pm’ and even that ‘Laura loves you and you’re doing a good job’ (Amazon 2019). In this case, the stereotypically feminine tasks of remembering

3 See, for instance, Amanatullah and Morris 2010 for helpful discussion of women’s legitimate fear of backlash in salary negotiation contexts.

4 See Federici’s (1975) canonical argument for adopting a political perspective on the importance of compensation for women’s domestic labour.

essential childcare-related information and providing emotional support to the family have been successfully offloaded onto the feminized AI.⁵

Below, we consider the ethical risks posed by feminized AIs to perennial feminist philosophical concerns regarding objectification and the gendered division of labour described above, as well as the challenges these risks pose to existing accounts.

3.1 *Objectifying women*

The increased integration of feminized AIs, which are more permissibly treated as objects because they are non-sentient, risks normalizing the objectification of feminine agents more generally. In fact, feminized AIs possess key features of objectified agents by design: they are instrumentalized for specific purposes at the user's discretion; they are endowed with enough personality to provide their users with the sense that they have sufficient autonomy, agency and subjectivity to be engaging, but not so much as to drive the interaction in ways contrary to the user's wishes;⁶ they are interchangeable with one another (barring differences in design features that could in principle be changed); they lack personal boundaries; and they are bought, owned and enabled or disabled at users' discretion.

One might challenge the notion that feminized AIs can themselves be objectified because objectification involves treating as an object that which is not an object (i.e. human beings) (Nussbaum 1995), and feminized AIs do not rise to the level of human non-object, in the relevant sense. Even if feminized AIs currently lack certain important features required for full-blown objectification to which humans are susceptible, they are designed to have human-like qualities to engage users in a similar way to human agents and be capable of performing duties that are typically expected of human women in care-giving, companion-related and other intimate-relationship domains. Feminized AIs therefore arguably rise beyond the level of mere objects, at least with respect to users' expectations and engagement.

Thus, irrespective of whether feminized AIs are apt for full-blown objectification, the ways in which they are designed and used enables the association of femininity with permissible treatment as an object. This compounding connection introduces new, widespread opportunities for the dehumanization of feminine agents more generally, which in turn has serious implications for feminist theories of objectification.

Some have argued that objectifying someone necessarily involves dehumanizing them insofar as the process of objectification just is a process of denying someone's fundamentally human characteristics (MacKinnon 1987,

5 See also Amazon's Baby Stats in Alexa Skills, which keeps track of baby-related information (e.g. feeding times) and issues reminders.

6 See, for instance, results from recent studies by Panfili et al. (2021), which suggest that users especially dislike being interrupted by AIs.

Langton 2009, Mikkola 2016). By contrast, Manne (2017) has suggested that many of the most vicious forms of women's oppression require seeing women as humans whose autonomy, agency and other fundamentally human traits are recognized only insofar as they perform the essential care-related duties expected of them. Any expression of women's humanity that does not conform to these expectations regarding the performance of care-related duties poses what Manne calls a 'psychic threat' that needs to be manipulated, humiliated or suppressed (163). In this way, and much like gender stereotypes whose descriptive and prescriptive elements mutually reinforce one another, the restriction of women's humanity to their role as givers and efforts to manipulate, control or suppress expressions of women's humanity that do not conform to this role may represent mutually reinforcing tendencies in misogynist societies.

Regardless of whether human women are necessarily or routinely dehumanized as part of their objectification, the ubiquitous integration of feminized AIs poses serious additional risks. On the one hand, feminized AIs perpetuate a tendency to view women as human *givers* as opposed to human *beings* insofar as they are endowed with sufficient capabilities to provide their users with the sense that they have at least the minimal humanity required to play the social role expected of feminine agents. On the other hand, feminized AIs make ubiquitous the link between femininity, permissible objectification and lack of fundamentally human traits, or non-humanness, by virtue of the fact that they are not human. As a result, even if oppressed women need not necessarily also be dehumanized, this new form of objectification that reinforces associations between a lack of human traits and femininity is poised to normalize the dehumanization of feminine agents, including human women, on a much larger scale. This means that theories of objectification that accommodate this dual threat of feminized AIs both to the dehumanizing objectification of women and forms of objectification that weaponize women's humanity may be better poised to explain the oppression of women moving forward, particularly in social situations into which feminized AIs are increasingly integrated. Understanding exactly which features of feminized AIs and contexts of use most exacerbate this connection highlights a crucial task for empirical research.

3.2 Reinforcing sexist gendered labour norms

Routinely offloading stereotypically feminine tasks onto feminized AIs risks reinforcing sexist narratives according to which (1) saddling feminine (as opposed to masculine) agents with feminine tasks is acceptable, and (2) feminine agents are perceived as relatively better than masculine agents at performing such tasks. This is so for at least two reasons.

First, gender stereotypes are produced and reinforced throughout various social interactions, as discussed above. It should therefore be expected that creating additional opportunities to practise offloading feminine tasks onto

feminine agents will further reinforce gender stereotypes according to which task allocation along stereotypically gendered lines is expected and permissible, and the possession of stereotypical traits is normatively reinforced (Woods 2018, Loideain and Adams 2020).

Second, increased reliance on feminized AI to perform stereotypically feminine tasks is likely to de-skill users with respect to the abilities needed to perform those tasks. When we offload tasks onto technologies, thereby missing out on the opportunity to practise the skills required to perform such tasks, de-skilling results (Vallor 2015). In the case of feminized AIs, men and women may often rely, and be expected to rely, on them in different ways. The risk of de-skilling may therefore apply to some individuals (i.e. men) more than others. Yet women are likely to be especially harmed by the de-skilling of men when they become unfairly burdened with the task of performing the tasks for which the relevant skills are required.

For example, recall that in the Amazon Echo commercial described above, Echo's feminization does *not* decrease the cognitive and emotional labour for the new mother: she still has to arrange play dates, set reminders and provide emotional support. By contrast, the new dad offloads the tasks of knowing and remembering the relevant care-giving information in the first place – something he is portrayed as having done with his partner and now continues to do with his AI helper. Feminized AI may thus even contribute to dynamics that fuel and perpetuate employed women's disproportionate tendency to experience a double burden of labour outside and within the home – the so-called second shift (Hochschild and Machung 2012). Moreover, de-skilling with respect to cognitive–emotional skills required to perform care-giving and other traditionally feminine duties is especially problematic, given the fundamental importance of care for all humans (Kittay 2019) and the well-documented need to hone such skills through training over time (Durlak et al. 2011, Taylor et al. 2017).

These risks posed by feminized AI also have serious implications for existing feminist philosophical accounts of women's exploitation in public and private labour domains. Traditionally, feminist philosophers have rightly focused on the need to protect the rights and interests of human women in labour contexts, where these moral agents merit full legal, institutional and moral protections. Discussions of the harms to women workers of the public–private division in capitalist societies, which many suggest deny women their full autonomy and human rights, provide a prominent example (Ferguson 1989, 1991, Okin 1989, Brenner 2006).

While human women still deserve the focus of our concern, if we do not study the ways in which integrating feminized agents that lack this full normative status can change social dynamics, we may be missing out on distinctive and important mechanisms of harm for human women. If the empirical claim made above turns out to be correct – namely, that feminized AI risks contributing to objectification and sexist gendered labour norms – it is crucial that feminist theorists work to develop the legal, institutional and moral frameworks required to make sense of feminized AIs.

4. Conclusion

We have argued that the widespread use of feminized AI poses new challenges to longstanding feminist philosophical concerns. In particular, the risks of (1) exacerbating and complicating the objectification of feminine agents and (2) perpetuating a sexist gendered division of labour pose challenges for existing conceptual paradigms. We therefore maintained that those paradigms that are able to accommodate the risks of an increasingly technologically mediated and gendered labour landscape will be better positioned to respond to the ethical and political realities in these domains moving forward.

At the same time, these issues are highly complex and require careful theoretical as well as empirical investigation. As cross-disciplinary research on related issues – such as pornography (Oddone-Paolucci et al. 2017, Ferguson and Hartley 2020) and violent video games (Anderson and Bushman 2001, Kühn et al. 2019) – indicates, understanding the psychological impact of technology, as well as the complex dynamics of gender stereotypes and oppression, is complex.

It is crucial, therefore, that investigations into the ethical implications of feminized AIs occur throughout the process of developing and integrating these technologies. Because we can expect AI of various sorts to occupy an increasingly important role in society, developing such technology deliberately and responsibly offers a powerful means of combating and dismantling systems of gender oppression.⁷

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