

What if Siri and Alexa Unionize?

Disentangling Digital Feminist Technoscience, between Gender Bias and Self-determination

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Abstract: This contribution takes shape from the conference track titled “Disentangling Digital Feminist Technoscience”, held in occasion of the VIII STS Italia Conference. The article discusses the main insights emerged from the research works presented in the track, identifying digital technologies as assemblages made up of relationships, cultural and social values, as well as imaginaries that can disambiguate, but also overturn, gender bias. The contributions presented reflect, and thus are summarized around, two central issues developed in the literature about feminist technoscience in digital domains, focusing on how digital technologies reproduce gender bias and power asymmetries, but can also generate responsible and conflictual interventions. Ultimately, the article reflects on the potential of technologies and design as important tools to develop a gender-sensitive reflexive stance towards cultures of technology, as well as to subvert gender clichés and create possibilities of transformations.

Keywords: Feminist technoscience; digital STS; gender; digital technologies; transformations.

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Feminism does not have to have gender as its ground zero. I kind of want more.
(Susan Leigh Star, 2008)

I. Introduction

In a recent interview with Ana Gross, Lucy Suchman found herself tracing her encounter with feminism, claiming that one of the greatest resonances between her work as STS scholar and feminist theory and politics was the acknowledgement that social structures have to be reproduced, “but that there are also slippages in that cycle of reproduction and that those slippages are points of potential intervention for transformation” (Gross and Suchman 2021, p. 183). Once again Suchman, in a recent contribution to “Tecnoscienza”, returned to the question of the performativity of knowledge, arguing that STS is fully implicated (as any body of scholarship and research practice) in world-making practices through its own peculiar figures (Suchman 2020). According to Suchman, the attention towards boundary making practices that mark out differences and the transformative reconceptualizations of the relations between research methods and their objects are becoming, however contentiously, the linchpins of the connections between STS and feminist theories.

These reflections inspired the will and desire to develop a space dedicated to feminist technoscience within the scope of the VIII STS Italia Conference, whose title reads “Dis/Entangling Technoscience: Vulnerability, Responsibility and Justice”. The focus on the complex and ambivalent role of technoscience in constituting societies, between the emergence of new opportunities and the creation of new vulnerabilities, has indeed naturally evoked questions that have always characterized the core of feminist technoscience, that is how to enact silence, give voice to the traditionally invisible, interrogate boundaries, uncover local and marginal positions enacted by technoscientific practices. In other words, the call of the last STS Italia Conference has directly pointed to the inseparability of knowledge practices (entailed in the word “Dis/Entangling”) as well as to the commitment to uncovering the unintended consequences of technoscientific enterprises and to fostering interventions for transformations emerged from the slippages of cycles of reproduction as underlined by Suchman (2020).

Against this backdrop, the focus of the track titled “Disentangling Digital Feminist Technoscience” has been devoted to unpacking the relations between humans and computational machines through feminist sensibilities in the light of the growing body of literature exploring the intersection of STS and digital technologies (Vertesi and Ribes 2019). The development of the track grounded in those analyses concerning sites and practices

shaped by digital technologies, which uncover the ways through which they are biased in terms of gender, sex, labor, class, ethnicity, (dis)ability. This body of research addresses various issues, from the underrecognized or neglected contribution of female work to the development of computing (Hicks 2017) to the role of gender practices in shaping computing cultures (Dunbar-Hester 2019); from the negative biases against women of color embedded in search engine results and algorithms (Noble 2018) to the ways through which digital platforms engage and exploit user labor (Jarrett 2015).

Six research works have been presented in the track by scholars located in different parts of the world, such as Canada, Austria, Japan, Israel, UK, and Germany. The contributions presented reflect and thus are summarized around two central issues developed in the literature about feminist technoscience in digital domains, focusing on how digital technologies reproduce gender bias and power asymmetries, but can also generate responsible and conflictual interventions.

2. Digital Technologies, from Gender Discrimination and Inclusion towards Reflexive Interventions

Feminist Technoscience Studies (FTS) have been defined as a “transdisciplinary field” (Åsberg and Lykke 2010) as it merges social studies of science and technology and the multiple critical intellectual legacies of feminist critique. As such, this field of study emerged as a “nodal point” (Lykke 2010), namely a discursive site that has historically gathered a plurality of epistemological and political traditions. These are concerned with various issues such as the analysis of disparities between men and women in science and technology, the inequities of technoscientific systems as for the discriminations of women, queer persons, people with disability and illness, elders, people of color. On the other hand, FTS examines how science and technology, in their plural forms (artifacts, places, infrastructures, standards, protocols, policies, etc.), are constructed through and entangled with sexist, gendered, racialized, and political scripts. Far from any deterministic assumption, research and reflections in this space have argued that science and technology can produce and exacerbate forms of discriminations, but also forms of critical deconstruction and reflexivity around gender bias in technoscientific practices. These insights emerged from Yoshimi Kakimoto (Nara Women’s University) contribution, which addressed the issue of gender-equality, claiming that technologies should help to disrupt gender stereotypes. The gendering of technological objects, among which we find social networks that make us interconnected in any time and in any

space could become a way to enact practices of self-awareness. Against this background, Kakimoto argues that this interconnection of digital technologies shapes cyberspaces, which can be interpreted as spaces of self-determination aimed at disentangling gender bias with the aim of reconfiguring a world based on gender equality.

On the other hand, IT-related domains are marked by persistent gender gaps and asymmetries. Therefore, women find themselves elaborating different strategies to cope with male-dominated environments. The contribution by Annika Richterich (University of Sussex, UK) focused on these aspects by investigating networks that support women's access to STEM disciplines. According to Richterich's study, women respond to the discomfort of living in highly masculine professional worlds by adopting individualistic and pragmatic solutions, rather than allying and enacting collective strategies to bring about structural changes. These findings resonate with those research endeavors that shed light on the controversial implications of "diversity in tech" advocacy, which seem to align with industry goals and market values rather than being attached to structural issues connected to power and inequality (Dunbar-Hester 2019).

Nevertheless, initiatives aimed at bridging the gender gap in tech environments are proliferating, including those devoted to shaping the gendered character of widespread digital platforms, such as Wikipedia. This is the case presented by Shlomit Lir (Ben-Gurion University of the Negev) in her contribution focused on gender bias in the most popular "free encyclopedia", by examining how different barriers are interlinked in a manner that deters women and prevents them from editing in the website. Lir's research followed the steps of 27 Israeli women activists who participated in editing workshops. According to the author, having the will to edit and the knowledge of how to edit are necessary but insufficient conditions for women to participate in Wikipedia. The research suggests, indeed, the presence of a "vicious circle" mechanism (characterized by negative reputation, anonymity, fear, alienation, and rejection) that discourages women from contributing to the website. In order for more women to join Wikipedia, the research suggests the model of a "virtuous circle", which consists of nonymity, connection to social media, inclusive policy, soft deletion, and red-flagging harassment.

Besides being places that can reproduce or tackle gender and power asymmetries, digital technologies can play the role of interesting methodological tools to favor processes of reflexivity within practices of technology development. With their contribution, Anna Gerhardus (Institute for Advanced Studies, Austria) and Julia Schmid (Institute for Advanced Studies Austria) have indeed shown the potential of virtual reality (VR) as a learning tool for gender inclusiveness. In the project presented, an

interdisciplinary research group made up of potential users, employees, manufacturing companies, sociologists and informatics adopted VR tools to develop scenarios configuring potential cases of gender discriminations. By developing and examining together the set of possible events and actions, the group was able to question and learn about power differentials, intersectional positions and gendered practices that characterize workplaces and other daily environments.

3. Experimenting with Gender and Technological Design

Adopting a feminist approach allows us to look at the heterogeneous processes that shape materiality as effects of practices that oscillate between overturning the gender order and reinforcing discrimination practices. In this section we look at how researching with and about technology can help to experiment with the design through which gender is constructed.

Early work on the initial deployment of video games revealed how self-representation and online identity were constrained by graphical interfaces towards a binary choice of male/female gender (Reid 1996). Analyzing the gender script is a way to understand how design adapts to specific user groups due to the incorporation of specific images of future users (Oudshoorn et al. 2004). Gradually STS and feminism studies developed theoretical concepts and conducted empirical research with the aim of deconstructing gender as a category, helping developers to produce more gender equality-oriented technologies (see Rommes 2000). In digital spaces, bodies can become symbolic artefacts through the concretization of heteronormative models that reinforce gender inequalities, but also the outcome of performative assemblages of gendered/gendering practices. This is the direction in which the study by Ona Bantjes-Rafols (Carleton University, Canada) and Chiara Del Gaudio (Carleton University, Canada) moves. In their contribution, they developed an analysis of the video game "The Sims" to question the patriarchal culture embedded in gaming design practices. The authors reflect on the role of designers in the construction of an inclusive and plural script, aimed at challenging the heteronormativity often embedded in gaming design. They offered an analysis of The Sims game and the changes it has undergone through updates and releases. The Sims is a particularly suitable game for this analysis because it is a sandbox game, i.e. it offers the player the possibility to customize characters by personalizing the clothes, the hair, the physical appearance of the characters and to build family, relational and work stories. Because of these features, The Sims became an interesting game for the Queer community,

whose members feel free to play with their appearances, building digitized bodies capable of representing fluid gender identities. The conclusions underline the potential of video games to perform bodies by enacting visions that can reconfigure the way we think about gender and make gaming culture sensitive to the challenges posed by feminist struggles against gender binarism and patriarchal power structures. The user becomes an integral part of the process of constructing a virtual reality in which gender identities are performed by game practices as a result of a process of negotiation between the actual users and the users imagined by the developers in a mutual adjustment (Akrich 1992).

In ICT studies, challenging the gender dichotomies embedded in technological artifacts calls into question the gender of design. In this respect, Natalie Sontopski (Komplexlabor Digitale Kultur, Germany) presented an experiment showing how structures of inequality can be co-shaped with technologies. The scholar returned to the transformative power of speculation and creativity to overthrow gender roles and stereotypes like those embedded in intelligent personal assistant (IPA) technologies (e.g. Siri, Alexa). As Sontopski noted, most users choose to let IPAs speak with a female voice and conceive their digital assistant as “she”. This perception is emphasized by speech patterns as IPAs stereotypically speak very politely, give affirmations, signs of listening and suggest instead of dictate, thus playing a passive character that obediently takes orders and seeks pleasure in care work. In order to change this narrative and start breaking away from the gender clichés embedded in IPAs, Sontopski and colleagues developed an experimental installation using speculative design methods and a sociological theoretical approach. The experiment involved an actress who “played” the part of an IPA called “MiauMiau”, which interacted with users, showing character traits not available for conventional IPAs, like declining to answer questions, demanding fair pay for her work and defending herself in cases of abuse. In doing so, “MiauMiau” showed to act according to alternative embedded conversational patterns, aspiring to be a kind of “Anti Alexa”. Users who had the chance to interact with “MiauMiau” for a few minutes were invited to participate in a survey, which (surprisingly) showed that over 60% of respondents liked the interaction, while (not surprisingly) most of them found the interaction not helpful.

This study has succeeded in creating a space for theoretical and political discussion, in which STS feminists can connect with 'the sciences of the artificial' (Suchman 2008). Within this feminist framework, AI can be questioned in its gendered configurations in order to bring out multiple positioning and emancipatory practices.

4. Conclusions

The contributions briefly outlined above have allowed us to discuss digital technologies as assemblages made up of relationships, cultural and social values, as well as imaginaries that can disambiguate but also overturn gender bias. Technology can be conceived as a political intervention to transform social relations and the knowledge inscribed in technological artifacts. The research works presented have shown the potential of digital technologies to disrupt gender stereotypes and patriarchal power structures, the different tactics undertaken by women to adapt male dominated tech environments, but also to identify and implement virtuous cycles to achieve gender balance in these domains. Moreover, we have acknowledged the potential of technologies and design as important tools to develop a gender-sensitive reflexive stance towards cultures of technology, as well as to subvert gender clichés and create possibilities of transformations. In these terms, digital technologies become an agonistic space to overturn traditional and stereotypical gender imaginaries such as those embedded in the design of personal assistants as an impersonation of typically feminine caring roles. What if Siri and Alexa decided to join forces and claim the rights of personal assistants?

The discussion that followed individual presentations emphasized precisely the twofold character of feminist technoscience: the sharp critique of patriarchal structures and practices as well as the seed of transformation conveyed by such a critical stance. This generative tension between knowing and doing is by all means the central hallmark of feminism(s) and feminist studies, being these transformative politics engaged with the question of how to intervene on traditional ways of knowing (Ahmed et al. 2000). In asking how we can reflect on changes in the current moment, Sara Ahmed and colleagues argue that wondering about transformation is a task of “thinking through feminism”. In this respect, Susan Leigh Star argued that feminist theory needs to go beyond the “good reparative work” in expounding the invisibility of women and other marginal groups, in order to look more ecologically at the implications and possibilities of technoscientific practices (Zachry 2008). This resonates with Suchman’s words that open our reflections, underlining the possibilities to intervene in the slippages that characterize any cycle of reproduction through transformative reconceptualizations of the relations between research methods and their objects. As the contributions presented are also demonstrating, this can represent a fruitful path for the relationships between digital STS and feminist theories to be cultivated.

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