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Feminist Commons and Techno-Scientific Futures

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ABSTRACT | There have been sustained conversations within eco-feminism and feminist materialism about the way reproduction, ecologies, and everyday life for women is rendered visible and important within the commons. However, there has been a lack of engaged discussion on how techno-scientific spaces (re)imagined in feminist commons is another way to articulate futures that disassemble hierarchies and exploitative everyday existence. In this short provocation, I posit two ideas vis-à-vis science in feminist commons. First, that feminist attention to embodied medico-scientific inequalities has changed science and scientific knowledge, not just the spaces where science happens. Second, that the feminist scientific futures are spaces full of possibilities that can emerge from feminist 'situated knowledges.' This analysis emerges from the urgency to reclaim techno-science from partisan politics, neoliberal economics, and exploitative everyday practice. It also hopes to serve as a generative discussion about the value of a feminist commons for any commoning project.

Keywords: feminist commons; scientific futures; feminist engagements with science; feminist theory

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> *[…] taking responsibility for the social relations of science and technology means refusing an anti-science metaphysics, a demonology of technology, and so means embracing the skillful task of reconstructing the boundaries of daily life, in partial connection with others, in communication with all of our parts.*
>
> Donna Haraway (1991: 181)

Introduction

The tools provided by science studies scholars since the 1970s that allowed us to trouble the hierarchies of objective science have been co-opted by partisan political interests that now undermine scientific facts and knowledge by offering 'alternative facts.' The original project of science studies was intended to make scientific knowledge more inclusive by critiquing the subtle ways science worked to reinforce inherent biases – including racial, economic, and gendered biases that had implications for debates that shaped our techno-scientific futures. These interventions were a project to imagine techno-scientific futures that did not replicate problematic pasts, but rather created new spaces which dismantled hierarchies. That original project was closer to Haraway's goal of 'refusing an anti-science metaphysics,' which called for a move closer to scientific knowledge and facts to reconstruct the boundaries of possibilities in everyday life. However, the contemporary moment asks us to rethink the role of science studies as a site where we work to safeguard a techno-science and biomedicine that is grounded in feminist, queer, indigenous, and diverse traditions. Collectively, we should then work to reclaim science and facts as starting points for a common knowledge that continually pushes back against political-economic forces that demand enclosure and privitisation. This is an engagement with feminist understandings of the commons – or, as I like to call it, a feminist common(s) – that allows us to unpack the political-economy of the current anti-science moves with the aim to engage science for the collective good.

The particular anti-science, anti-fact, anti-knowledge future imagined by contemporary global exploitative economic interests is not one devoid of all techno-science, but rather rife with science, fact, and technologies that allow maintenance of power hierarchies and concentration of wealth in small quarters. These futures of selective scientific innovations are not where we live in green forests with abundant fish and fowl, but rather a space over-run by actors that work constantly to privatise the little collective resources we have left for our communities. This space of anti and selective techno-science is not a utopia, but rather a dystopia guarded by technological innovations dependent on science to provide currencies for control and domination. However, in order to disrupt that dystopic future, I propose the potential of a feminist commons for techno-science which articulates new spaces that ensure scientific innovations and scientific facts that work against the current stream of anti-science movements. The feminist commons for techno-science as a space is an intellectual engagement with previous works on sustainability and the commons as generative conversations from the 'south' (Mies and Thomsen 1999), and with the feminist politics of the commons (Federici 2011). It is a push-back against the narrative, put forward by Hardin in 'tragedy of the commons', that there are no technological solutions to

societal issues or that individual interests within the commons will overrun good intentions (Hardin 1968).

The feminist commons imagined for techno-science understands that science, technology, and medicine have, indeed, historically depended on an 'intellectual commons' (Jessop 2002). However, in recognising this history of science emerging from shared spaces, the project in the feminist commons would then aim to dismantle these scientific commons if they only serve to be harvested for private gains. Marja Ylönen, in an engagement with issues around techno-science under neoliberalism, describes

> […] the two faces of the relationship between science and capitalism in the neoliberal period: on the one hand, an economy largely characterized by mundane technologies and globalization, and on the other a scientific commons continually appropriated and harvested by capital and caught up in political economies of promise (Ylönen and Pellizzoni 2012: 28).

This pillaging of scientific commons by gendered, racial, and economic interests is something that requires sustained analysis and unpacking. However, to arrive at a complete dismantling of techno-science in its current neoliberal 'collaborations for profit' model, we must start by showing that feminists and feminist scholarship has changed the face of science and for the better. We also should be careful not to hastily arrive at a feminist commoning project that replicates problematic power hierarchies and works towards enclosures (i.e. exclusions). Rather, we need to continue to keep our feminist engagements open and inclusive and allow ourselves to be constantly *troubled.*

Feminist Science

One of the first claims that I make in support of a techno-science in feminist commons is that feminism and feminists have changed science without resorting to anti-fact rhetoric. This claim is made in response to a misguided denigration of feminist STS that arises in conservative quarters (within and outside science) that feminists have only critiqued and thus, perhaps, only changed the methods and spaces where science is done. The critique runs that the feminist and STS critiques are about the gendered politics of scientific spaces and thus we now have more women doing science. An example of this is Gross and Levitt's writing in *Higher Superstition: The Academic Left and Its quarrels with Science* (Gross and Levitt 1997), where they claim that there are no examples of feminists uncovering sexism in the substance of science as opposed to women being excluded from certain spaces of scientific inquiry. However, feminist STS scholars have pushed back against this critique. Londa Schiebinger, amongst many others, has written extensively against this. She writes:

> Feminists have tended to make a distinction between getting women into science and changing knowledge. Getting women in is generally considered the easier of the two tasks. However, both require tools of gender analysis. Both are institutional *and* intellectual problems (2000: 1174).

Drawing on her work, the following are two examples that illustrate where women have changed the substance of science, as opposed to just participating more, dare I say, 'leaning into' a patriarchal science. The first example she uses is from medicine. Even as late at the 1980s, clinical studies were conducted with no women in the trial. A notable example is the 1982 'Physicians Health Study of Aspirin and Cardiovascular Disease' performed on 22,071 male physicians and zero women. The design of this study suggests that the human body is a man's body and that a woman's body is a deviation from the norm (Rosser 1994). Within the US, the National Institute of Health funded Office of Research on Women's Health represents a change, but it is not enough. It is a start to a larger and longer conversation, but it is a move in the right direction. Scientific and medical studies still include women as part of the research, rather than extrapolating research on men's bodies as relevant even for women. The second example is from primatology, where it should be noted that in the 1960s there were no women with PhDs, but by 2000 their number had increased to 78 percent of all graduating PhDs. This change, as Schienbinger notes, is one of the first pillars of a change in science. Further, within the field of primatology, there has also been a sea-change in the *content* of science, as the focus shifts from male aggression and domination to a more holistic analysis that includes the significance of female bonding behaviors for understanding of baboon social structures (Fedigan 1994). This is the second pillar of the required change where, after more women are involved in science and its design, we see different questions being asked and new research focuses that are attuned to the needs of an egalitarian collective.

More recently, even as I write this article, new research is emerging on the selective processes undertaken by the egg to choose the sperm during fertilization. This research pushes back against the historically established Mendel's first law which assumed randomized selection at fertilization, instead positing that eggs are, in fact, active (and have agentive possibilities) in choosing the sperm for fertilization in some cases (Arnold 2017, Nadeau 2017). Not only does this new research dismantle historical projects that assumed a subservient nature of the egg in the fertilization process, but it will also perhaps change the way science reflects gendered 'cultural' values. Emily Martin outlines in her work how science created a romance between the sperm and the egg based on stereotypical gendered roles. She shows how, in scientific literature, language attributes 'charging ahead' to the sperm while the egg meekly awaits fertilization (impregnation) (Martin 1991). These are cultural biases that are reinforced in scientific discourse to explain nature, creating a vicious cycle of gendered, problematic scientific assumptions and outcomes. New research, emerging from a feminist engagement, thus can push back against these historically problematic projects. For techno-scientific and biomedical research to see science and scientific facts as gender neutral may still be in the future, but the constant work that feminist scholars have undertaken thus far is holding science to account – both in the spaces where this knowledge is created and in the nature of the knowledge itself.

In my own work, I have taken seriously the expectation that a feminist STS project is not about just a critique of medico-scientific spaces, but also of the scientific matter and knowledge therein. I have worked in and out of medical spaces and learned new medical and scientific knowledge as part of my social-science research. In my field sites I am constantly learning about allogenic and somatic stem cells, about optic pregnancies and hormonal contraceptives, about

matter and its materiality (Appleton and Bharadwaj 2017a and 2017b). This, for me, points to one of the great contributions anthropology and ethnographic engagement can make to a more just scientific future. Our work allows us to grapple with not only the political-economies of science, but also with scientific knowledge and materials. Anthropologists, by the very nature of our study, are interested in the micro-and-macro simultaneously and situating one within the other.

For a feminist scientific future, anthropology and ethnographic engagements are vital, and my own work which stands on the shoulders of 'feminist giants' has allowed me to see this. In my work on hormonal contraceptives, I show (drawing on a lot of scholarship on the topic) that the contraceptive pill and the ability to control contraceptive/reproductive life is indeed only a first feminist goal. This part is about ensuring women have access to and can participate in a bio-scientific innovation. The second part is then to critique the current contraceptives available to women (Sheoran 2015). While the male contraceptive options have been in a research phase for decades, as there are many concerns for the implications of such pills on men (Oudshoorn 2003), the female pill in its rudimentary form continues to be served up to women. The hormonal contraceptive, since its inception in the 1960s, is still the same biotechnology – producing a modification of hormonal levels in women's bodies. The pharmaceutical companies have changed the ways you can ingest it, insert it, patch it, jab it; however, it is the same biomedical technology being offered with better or different methods of delivery (Watkins 2011 and 2012).

As medical knowledge emerges about the dangers and long term health impacts of the hormonal contraceptive from blood clots to chronic depression (Grigg-Spall 2016, Ross and Kaiser 2017, Skovlund et al. 2016), the biosciences within pharmaceutical worlds will have to address ways to develop better drugs for women – they will not be able to ignore the evidence-supported science. This project of hormonal interventions on women's bodies (via the contraceptive pill) shows us how, historically, bioscience in this field operated within the singular goal of controlling reproductive lives. However, continuous push backs from feminists and feminist science highlight how the burden is disproportionally carried by women vis-à-vis health implications for reproductive freedom. These are 'cultural' assumptions of who bears what burdens in our society. In feminist commons, a techno-scientific future can be imagined where women's health and wellbeing are placed alongside their desire to have flexible reproductive lives, upending the naturalization of a problematic bioscientific intervention. The techno-scientific feminist commons is a site of *new* knowledge production, that dismantles and then reassembles science for everyone.

Situated Knowledges: The future is feminist and not just female. It should always be in the making, not made.

The second claim that I make in support of a techno-scientific feminist commons is that in the dismantling and reassembling within these spaces, feminism and feminist engagements as 'situated knowledges' (Haraway 1988) are essential for grounded engagements. Donna Haraway asked feminist science studies scholars to acknowledge (and perhaps respect) 'situated knowledges' and views from somewhere rather than nowhere. She wrote:

> Situated knowledges are about communities, not about isolated individuals. The only way to find a larger vision is to be somewhere in particular. The science question in feminism is about objectivity as positioned rationality. Its images are not the products of escape and transcendence of the limits (the view from above) but joining of partial views and halting voices into a collective subject position that promises a vision of the means of ongoing finite embodiment, of living within limits and contradictions – of views from somewhere. (1988: 590)

Thus, situated knowledges in techno-science ought to be collectives that highlight the social, political, and material conditions that enable particular knowledge, fact, science to come into being, but that, at the same time, are responsible for ensuring these projects acknowledge their own situatedness.

This second claim for techno-science in feminist commons is an answer to Donna Haraway's call for 'embracing the skillful task of reconstructing the boundaries of daily life' (1991: 181) by moving closer to a science that is for the commons and a commoning science for the everyday. This is a political project and, indeed, a view from somewhere, but this view aims to be an inclusionary one; the feminist commons do not serve exclusionary projects. It is a starting point for a generative engagement with the evolving everyday and its potentialities that become visible through sustained involvements and entanglements. The feminist commons for techno-science is one place to connect with science and scientific knowledges, but it is a space that is a starting point as opposed to an end point. It opens the doors for engagements with queer, indigenous, and marginalized communities as sites for learning and contributing to, rather than spaces to colonize for raw material for knowledge production. In offering to always be situated *and* partial, the knowledge that emerges from such scientific commons is feminist and not attached to femininity or the limited male/female binary opposition. To be situated in the feminist commons *is not to be stuck*, but rather have a grounding that allows from critical engagements with scientific knowledge and its production.

When thinking about commoning and, in particular, an ethnographic commons or an ethnographic engaging with the commons, we have to be cognizant of the work in feminist commons as an inclusionary project, as opposed to an exclusionary one. While I have written above of techno-scientific and biomedical spaces within feminist commons, I also am engaged with the larger project of feminist commons in general and their contribution to the project of commoning ethnography which emerges from an ethnographic commons. In anthropology we often turn to *Writing Culture* as a seminal text in articulating ethnographic engagements for a future generation of scholars (Clifford and Marcus 1986). However, feminist engagements with that scholarship show how it also epitomized the gendered project of knowledge production in anthropology and its inherent exclusionary project – there was one female anthropologist included in the entire edited volume. Subsequently, *Women Writing Culture* was released by feminist scholars in refutation of the exclusionary knowledge production project offered by Clifford and Marcus (Behar and Gordon 1995). It took almost ten years, and a very large number of upset anthropologists, to produce this book. This example of exclusionary politics, so close to our (anthropological) home, should serve as a cautionary tale for any commoning

projects that we undertake. A feminist commons, for techno-science and beyond, is foundational for any ethnographic commons or commoning projects.

While the writing above emerges from the urgency to reclaim techno-science from partisan politics, neoliberal economics, and exploitative everyday practice, it also hopes to serve as a generative discussion about the value of a feminist commons for any commoning project – ethnographic or otherwise. The example above of *Writing Culture* and *Women Writing Culture* serve as constant reminders of the dangers of excluding while moving ahead, but beyond that, they offer us a chance to see the value of non-enclosures. The fact that *Women Writing Culture* could follow *Writing Culture* should also allow us to see how knowledge – scientific and/or anthropological – should never seek to be settled, rather should be open to critique and learn from the everyday. Perhaps, *Women Writing Culture* will be followed by *'Others' Writing Culture!* At offer with the feminist commons, as a grounded starting point for techno-scientific engagements, is an opportunity – not just for scientific commoning practices or feminist commoning projects, but rather for all commoning projects that commit to a non-enclosure. The feminist commons for techno-science is grounded in perpetual change – be it to include more women in science, change the nature of scientific inquiry, or to just stay with the trouble till we can, collectively, dismantle!

In the spirit of situated knowledges, inclusionary projects, and the scientific potentials therein, I end with a short verse to talk speculatively of the feminist commons as an emancipatory space. This verse is an attempt to include another narrative device and a different mode of expression in standard academic writing and engagement. It is experimental, but in that acknowledgment itself lies the humility of a feminist commoning.

FC: Feminist Common(s)
I make the case for
and imagine techno-scientific Feminist Commons that are beyond
male/female binaries.
I make the case for and imagine feminist commons that are not white
They may be black and white
and brown and colorblind, perhaps all at the same time.
The feminist commons will not be riven with violent religio-nationalisms
and will eschew sectarian claims to a 'historical' knowledge.
They will be decolonised and will respect refusal.
Refusal that may bring us closer to truths and scientific knowledge
as opposed to walking away from them.
This future will not talk romantically of a past that was before capitalism
Because the 'past' 'pre-capitalist' space some harken for
was never great for many a marginalized people.
This Feminist Common will be utopia…but, only *always* in the making
not an always-already.
This feminist scientific utopia will be a starting point
…and not the ending.
It will be in the making, in the improving
never claiming with glorious fanfare to have arrived.

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