TECHNOPHANY
A Journal for Philosophy and Technology

Technophany Vol.2 No.1

Somatophilic Reproductive Justice: On Technology, Feminist Biological Materialism, and Midwifery Thinking

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Abstract

One of the major strands of feminism concerned with reproduction, represented in this essay by Shulamith Firestone, is tied to a belief in technology as *the* means to achieve reproductive justice. As such, this strain of feminism has difficulty formulating a critique of institutionalized reproductive technologies that have the capacity to perpetuate systemic racializing and misogynous violence. The prioritization of technology as the primary way to achieve reproductive justice can also trouble the possibility of a conception of reproductive justice where care for the body takes central stage. This is not because technology is deemed mutually exclusive with care, but because it misrepresents reproductive injustice as a biological problem that we can fix, rather than as a cultural issue. In this essay, we offer a perspective on achieving reproductive justice from a different position based in another age-old materialist doctrine, but one that is largely neglected by feminism: that of midwifery. Midwifery has always both used technology and been critical of it, having first-hand experience with its consequences in birth and pregnancy. As such, it has developed both a body of thought on the "techne" (defined as art and skill) of dealing with reproduction, *and* it has developed a field of scholarship critiquing the misuse of technology. While midwifery is not wary of technology, it negotiates technology from a materialist position that prioritizes experiential, embodied, and tacit knowledge, as well as the physiological process of childbirth, which it aims to facilitate and enhance. Midwifery's epistemological standpoint can hence be characterized as a somatophillic techne that aims to think *with* the body, rather than fix it. There is, however, a certain tendency in midwifery which is developing towards an anti-technological essentialism. This essay aims to redirect this tendency to the more promising materialist doctrine that can be found in midwifery as well as Firestonian feminism, but develops this materialist stance through a specific "somatophillic techne" embedded in "relational midwifery thinking."

Keywords: Shulamith Firestone, Reproductive technology, Midwifery, Reproductive justice, Medicalisation of birth, Biological materialism, Biological determinism

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ISSN 2773-0875

Introduction

Within feminism, there is long standing debate over whether technology can help us achieve reproductive justice or whether it is more prone to perpetuate reproductive injustice. Shulamith Firestone, most notably, designed a technological revolutionary program to take charge of reproduction, giving rise to a techno-affirmative feminist tradition to free us from the dangers of pregnancy and childbearing.[1] But when we look beyond the tradition of white feminism and its positive understanding of technology as that which brought us techniques such as abortion and contraception, we see in the testimonies of feminists of colour a history of forced sterilizations and hysterectomies. It is therefore important to always remember that reproductive technology has also been used as a tool for colonial governments to maintain eugenic control over people's bodies.[2] Technology is, like most things, not inherently good or bad. Rather, it can be used in both liberatory as well as oppressive ways. Technological inventions have contributed to bodily self-determination, but they have also contributed to a lack of self-determination and the reproduction of injustice. The term "reproductive justice" was coined to address this very point: it was developed to fight against the unjust use of technology in the form of forced contraception, abortions, sterilization, and hysterectomies—all medical-technological instruments used for necropolitical suppression.[3] Therefore, reproductive justice is defined as 1) the right to have children; 2) the right not to have children; and 3) the right to raise children in safety, freedom, and dignity. And, as explicated by the women of colour reproductive justice collective, SisterSong, 4) the right for bodily self-determination.[4] As such, the reproductive justice movement can be understood as a specific reaction to reproductive technology, which makes the first two rights both possible *and* threatens them. Any feminism that understands grand-scale technology as the primary solution to reproductive justice, must question their position through the examination of these historical misuses.

Midwifery has always had a unique and unacknowledged position in the feminist debate on reproductive technology. Within late modernity, its specific knowledge regarding the relational and physiological support of pregnant people, has been marginalized globally. What did remain of midwifery practice and theory, became a very specific, situated, non-hegemonic standpoint; both appropriated by the

1 Shulamith Firestone, *The Dialectic of Sex: The Case for a Feminist Revolution* (New York: Verso, 2015 [1970]).

2 Francoise Vergès, *The Wombs of Women: Race, Capital, Feminism* (London: Duke University Press, 2020).

3 Loretta Ross and Rickie Sollinger, *Reproductive Justice: An Introduction* (Oakland: University of California Press, 2017).

4 See: www.SisterSong.net

obstetric institution and holding on to autonomous existence outside of it.[5] As such, midwifery has been able to develop a thorough critique of technology by centring the medicalization of birth against the grain of the more popular techno-affirmative feminist movement. In its critique, midwifery has mostly been specific and materialist, focusing on specific technologies and their effects. In its critique of the foetal monitor, for instance, it understands the instrument as forming a hermeneutic relationship with humans and the world. The monitor helps us to gain a new understanding of the foetal world, just as a telescope may provide a new understanding of the galaxy. But this new knowledge that allows us to see the foetus separate from the maternal body has had major cultural implications, not in the least for the pro-life movement.[6] Here, midwifery scholarship asks: "How does technology mediate the care for birthing people and their babies?" "What are the benefits and the risks?" And: "How does this specific technology reshape birth?" An individual technology, such as a particular foetal monitor, is the starting point for a materialist and critical standpoint. As such, it lays bare that reproductive technology has already fundamentally reshaped the process of pregnancy and labour, but works less well than we might think, and turns out to be more complex than a techno-affirmative stance might have us believe. When it comes to birth, the number needed to prevent one morbidity or mortality is often high, while the iatrogenic effects of those interventions are serious. For instance, even the Netherlands, as a culture famously resistant to over-medicalization, now has a 36% induction of labour rate, meaning that birth is brought on by medical means, rather than left to occur spontaneously.[7] This rate is higher in many other high-income countries, for instance; in Australia, the latest figures show that almost half of people giving birth for the first time had their labour induced (44%).[8] Over-medicalization also has a racist and colonial component, affecting the global South and marginalized people more. In South Africa, for instance, the caesarean section rate is 76% and in the USA, Black people are 21% more likely to have a caesarean section.[9] At the same time, marginalized people often suffer from under-medicalization, being denied the care they need.[10] Midwives witness daily the life-

5 Critical Midwifery Studies (CMS) Collective Writing Group, "A call for critical midwifery studies: Confronting systemic injustice in sexual, reproductive, maternal, and newborn care," *Birth* 49, (2022): 355–359.

6 Barbara Katz Rothman, *Recreating Motherhood* (New Jersey: Rutgers University Press, 1989); Trudy Dehue, *Ei, foetus, baby: Een nieuwe geschiedenis van de zwangerschap* (Amsterdam: Atlas Contact, 2023); Barbara Duden, *Disembodying women: Perspectives on pregnancy and the unborn* (Cambridge: Harvard University Press, 1993).

7 Hajo Wildschut, & Anna Van Seijmonsbergen-Schermers, "In blijde verwachting…hoezo? Over medicalisering en bevallingservaringen in de geboortezorg," *Cahiers Geschiedenis van de Geneeskunde en Gezondheidszorg* (2023, forthcoming).

8 Australian Institute of Health and Welfare, *National Core Maternity Indicators,* 2023. Retrieved from https://www.aihw.gov.au/reports/mothers-babies/national-core-maternity-indicators

9 Dána-Ain Davis, "Uneven reproduction: Gender, race, class, and birth outcomes," *Feminist Anthropology* 4, no 2, (2023): 152–170.

10 Suellen Miller et al., "Beyond too little, too late and too much, too soon: a pathway towards evi-

saving effects of well-used technology, which are also needed more often for marginalized people due to systemic racism. Thoroughly and materialistically recognizing the influence of technology in the birthing space, midwifery can be understood to have a unique potential to engage with the design of future technologies in a way that facilitates reproductive justice. We could understand midwifery and Firestonian feminism as both departing from a biological materialism, since both recognize the problems, inequalities, and the vulnerabilities that the reproductive body presents to half of the population. But while Firestonian feminism sees technology as the way to save us from this injustice, and hence locates the injustice fully in biology itself, midwifery is wary of technology contributing to further reproductive injustice. As such, midwifery locates reproductive injustice not in nature, but in the way we deal with nature—believing that the right relational care for reproductive bodies would be the best way to achieve reproductive justice, rather than a technological fix.

Apart from a situated critique of technology, midwifery has also developed a more reactionary movement, however, that has become at times essentialist through its dedication to natural birth, and consequently anti-medical, and anti-technological, and lately increasingly anti-trans, and anti-gender.[11] From an ideology that developed out of the radical hippie movement that revived midwifery in the US in the 1970s and remained restricted to the margins of midwifery for a long time, it is gaining support of midwives with the re-rise of radical feminism (including trans-exclusionary) in the UK, Australia, and the US. Radical feminism offers midwifery an ideological position that is, however problematically, able to bring together multiple axes of suppression under which midwifery suffers: the marginalization and expropriation of their profession with the rise of medical men; the naïve and experimental use of technology on women's bodies whose detrimental effects midwives experienced and continue to experience on a daily basis; and the continuation of not being taken seriously, neither in their critique of over-medicalization and obstetric violence, nor in their own knowledge about pregnancy and childbirth. Together with their continuous underfunding, the marginalization of the midwifery profession is causing untenable working conditions, as well as high burn-out rates. It is therefore not surprising that some are tempted to connect the suppression of women in childbirth and the women who help them, to the supposed "erasure" of women by so-called "gender ideology," the "rise" of trans people, and the "taking over" of the world by technology. Gender and technology become intimately connected in midwives' version of radical feminism, as gender transition is understood as a form of over-medicalization and thus as consistent with a patriarchal tendency to appropriate and medicalize women's bodies. These ideas seriously jeopardize midwives' loyalty to the ethical principle of reproductive justice, however,

dence-based, respectful maternity care worldwide," *The Lancet* 388 (2016): 2176–2192 https://doi.org/10.1016/S0140-6736(16)31472-6

11 Karleen Gribble et al., "Effective communication about pregnancy, birth, lactation, breastfeeding and newborn care: the importance of sexed language," *Frontiers in global women's health* (2022).

which is at this moment most acutely felt in a resistance to gender inclusive language in maternity care.[12] There is a risk that midwifery develops into a reactionary ideology that, caused by anger about its own marginalization, misunderstands another marginalized community as a threat, and simplifies a complex system of nature, culture, and technology as an ideological dichotomy between "nature" and "technology." This would be a major loss, since midwifery, at the same time, has at least as much to offer when it comes to the facilitation of reproductive justice, as well as responsible use of technology than most feminist movements, due to its age-old practice of mutual aid and radical care.

What we aim to do in this article, is bring together the revolutionary vision of Firestone—including its techno-affirmative and sex-abolitionist position—of reproductive freedom *for all*, with midwifery's unique vision of reproductive freedom as something to be achieved in a somatophillic relationality of care, i.e., a form of care that aims to work *with* nature rather than be "anti-nature" as xenofeminism has it. We believe this to be possible, since both Firestone, embedded in a feminist Marxist tradition, as well as midwifery, start from a materialist doctrine. Below, we will critique *and* delineate the potential of both Firestonian feminism and midwifery thought and practice when it comes to the usage of technology in reproduction. Afterwards, we will develop what we coin "midwifery thinking" wherein we embed a relationally and materially grounded, somatophilic usage of technology for reproductive justice in a specific midwifery way of *being-with* the lived realities of reproductive processes.

Technology and Reproductive Justice

There is a rich tradition in feminist theory that connects technology to the abolition of reproductive injustice. Arguably, this tradition is most fiercely represented by Shulamith Firestone during the second feminist wave, who believed that reproductive technology could save us from the unjust disposition that reproduction posed to bodies capable of pregnancy.[13] The xenofeminist slogan "if nature is unjust, change nature," is a contemporary configuration of the Firestonian idea that reproductive injustice is primarily located in nature, namely in the biology of the body.[14] Firestone was a Marxist feminist, and hence inspired by the revolutionary idea of communism. She complements Marx and Engels' historical materialism with a biological materialism, arguing that we are not only oppressed by capitalism, but by the biology of sexual reproduction as well—similar to Simone de Beauvoir's thought in *The Second*

12 Gribble et al., "Effective communication"; Kathryn Webb et al, "Trans and non-binary experiences of maternity services: cautioning against acting without evidence," *British Journal of Midwifery* 31, no.9 (2023): 512–518.

13 Firestone, *The Dialectic of Sex*.

14 Laboria Cuboniks, *The Xenofeminist Manifesto: A Politics for Alienation* (New York: Verso, 2018): 0.

Sex that it is the burden of reproduction that makes the female sex a captive of the reproduction of humankind, while the male sex consists of individuals who can transcend humankind.[15] In line with Enlightenment thought and the development of science, Firestone situates the injustice of which the female sex suffers, in its biology. Pregnancy and childbirth are classified as dangerous and barbaric processes that make people with uteruses incomparably more vulnerable than others, hence constituting two classes of people: those with and those without uteri. The only way to dismantle this inequality would be the abolition of "sex." Reproduction can then be handled through ectogenesis and there would no longer be people with uteri, hence freeing mankind of this biological class war. Through a move similar to traditional Marxism, reproduction is taken seriously by Firestone as an industrial enterprise, and as something we can and must take power over. Technology is consequently seen as revolutionary: it progressively provides more and more control over reproductive bodies to deal with the uterine injustice they are born with, to eventually rid themselves of it through technology.

The strong suit of Firestone's theory is that it pushes us not only to take over the means of production, but the means of reproduction as well. This follows from her biological materialist doctrine, which makes it possible to take the risks, vulnerabilities, and burdens that indeed come with fertility, seriously. Also, and almost unknowingly so, the abolition of sex can be understood as affirmative of transgender reproductive justice, striving indeed for reproductive justice for all. But her materialist doctrine developed into, and this is where it differs from Marxism, a rejection of the materialism it is grounded on, which is echoed in the "anti-nature" stance of contemporary xenofeminism. In Marxism, we see a total rejection of capitalism as an unjust system for sustaining human life, but there is not an outright rejection of economy or value as such, and neither do we find a rejection of nature.

In fact, the accomplishment of communism would be "man's return to nature." While Firestone rightfully critiques Marxism for its lack of understanding that nature does not mean the same for everyone, we can wonder if a rejection of it in the case of reproduction would indeed lead to reproductive justice. Especially because a rejection of nature is not so easy to achieve, and the steps along the way that aim to control reproduction more and more through technology, are not as successful as perhaps believed in the seventies. Nowadays, it is widely recognized that "over-medicalization" is a form of obstetric violence, hence reproductive injustice, which interrupts the hormonal physiology of birth that has—if all goes well—salutogenic effects. And reproductive technology also makes it possible to continue the logic of capitalism wherein people with a uterus are objectified and used as material resources for the reproduction of human life.[16]

15 Simone De Beauvoir, *The Second Sex*, trans. Constance Borde (New York: Vintage, 2011 [1949]).

16 Barbara Katz Rothman, *In Labor: Women and Power in the Birthplace* (New York: W.W. Norton & Company, 1991 [1982])

Contemporary feminists such as Donna Haraway, Sophie Lewis, and the xenofeminists take up different aspects of Firestone's thought in relation to reproductive justice. Haraway inherits Firestone's fascination for biology and technology, taking further her optimistic view of technology as that which will not only free us from the strain of reproduction, but can also bring humankind as a whole to another level; since we would be in control of reproduction and able to tweak it where it is unjust.[17] Haraway did not develop this within the communist framework of revolution but takes up the idea of technology within the framework of evolution, conceptualizing the symbiosis of technology and biology as "re-evolution".[18] As such, she dismantles the differentiation between nature and culture, speaking of "natureculture".[19] And there have indeed been some successful symbiosis of nature and culture when we look at reproductive justice. Contraception and abortion are medical technologies that have generally given back control over people's bodies, and hence given them access to reproductive freedom – indeed something that could rightfully be celebrated as a continuum between animal and machine and as an iteration of cyborg feminist reproductive justice. As such, the symbiosis of biology and technology can lead to a revolutionary change when it comes to nature's captivity of people with uteruses, by putting them in charge of sexual reproduction and simultaneously enhancing the health and freedom of the human condition as a whole.

But we must also remember—and the same counts for Firestone's problematic neo-Malthusian conception of the betterment of the human race through reproductive technology—that the development and implementation of contraception and abortion by the leading feminists of the times such as Marie Stopes in the UK, Margaret Sanger in the US, and Guadalupe Arizpe de la Vega in Mexico, went hand in hand with eugenic ideas defined by the classism and racism on who should and should not have children. Stopes' contraceptive cervical cups were called "pro-race" and "racial".[20] Sanger is infamous for her experimentation with the pill on people of colour who never gave their consent.[21] And De la Vega was determined to have lower class people birth fewer children to solve the population and poverty problem of Mexico, thereby affirming the stereotype of hyper-sexual Latina women in the process,

17 Donna Haraway, *The Companion Species Manifesto: Dogs, People, and Significant Otherness. Vol. 1* (Chicago: Prickly Paradigm Press, 2003).

18 Sarah Franklin, *Embodied Progress: A Cultural Account of Assisted Conception* (London: Routledge, 2022).

19 Haraway, *The Companion Species Manifesto.*

20 Nora Heidorn, *Touching Matters of Care* (Birth Rites Collection, 2022), www.Noraheidorn.com/Touching-Matters-of-Care

21 Dorothy Roberts, "Margaret Saner and the racial origins of the birth control movement," in Baum, *Racially Writing the Republic. Racists, Race Rebels, and Transformations of American Identity,* ed. Bruce Harris (Durham: Duke University Press, 2006).

while getting rich from the industrial labour of proletarian mothers working in her husband's textile factory.[22] Contraceptive techniques, such as abortion, sterilization, or hysterectomies, were performed on people of colour without their consent.[23]

As Ruha Benjamin points out, technology is not free of discrimination or inequality. Often, it tends to exacerbate the inequalities that are already engrained within society. For instance, algorithms used within the judiciary system that are supposed to be more objective than the judges, turn out to be just as racist as the judges, but are much more difficult to call out or address as they are covered within the quasi objectivity of technology.[24] Similarly, a pulse oximeter, used everywhere in medicine, from the emergency room (ER) to midwifery, cannot correctly read oxygen levels of dark-skinned people, generally over-estimating them, leading to health inequity and poorer outcomes reflective of systemic racism.[25] Since technology unseeingly reproduces a system of apartheid, Benjamin terms this kind of technology the "new Jim Crow"—asserting that although, in comparison to her grandmother, she can walk into the main entrance of the hospital since the "whites only" signs are no longer there, it is medical technology which still subjugates her to a segregated system.[26] Hence, while technology can certainly be used to achieve reproductive *justice*, we must acknowledge that the way in which technology is designed and used is also responsible for the production of reproductive injustice, particularly because technology is not "neutral" but is conceived, created and used in ways that uphold existing structures of power.[27] This underpins Benjamin's claim that reproductive justice has been, and still is, way beyond our reach despite huge technological advances.[28] Although cyborg reproduction facilitates reproductive justice in some ways, it remains very messy, complex, and unjust in other ways. We must therefore recognize that the fusion of natureculture can be used in eugenic ways or can unconsciously reproduce eugenic logics embedded in society. The first most important pillar of reproductive justice, "the right to have a child"—the Black feminist answer to white middle-class feminism's one-dimensional fight for legal technological abortifacients—is seriously threatened by contraceptive technology when it falls into the wrong hands. The contraceptive Depo-Provera has famously been used in various countries without

22 Lina-Maria Murillo, "Espanta Cigüeñas: Race and Abortion in the US-Mexico Borderlands," *Signs: Journal of Women in Culture and Society* 48, no 4 (2023): 795–823.

23 Ross & Sollinger, *Reproductive Justice*; Vergès, *The Wombs of Women*.

24 Ruha Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code* (Cambridge: Polity Press, 2019); Ruha Benjamin, *Viral Justice: How we Grow the World We Want* (Princeton: Princeton University Press, 2022).

25 Benjamin, *Race After Technology*.

26 Benjamin, *Viral Justice.*

27 Howard Waitzkin, *The Second Sickness: Contradictions of capitalist health care* (London: The Free Press, 1983).

28 Benjamin, *Viral Justice*.

consent, and Angela Davis devoted a whole chapter in her classic, *Women, Race, Class*, to the forced and pushed use of anti-reproductive technologies such as sterilization, contraception, and abortion.[29] Technology by itself cannot causally be understood to lead to reproductive justice, which is why Firestone herself also strongly emphasized that repro-tech within racial patriarchal capitalism would have dramatic consequences.[30]

Of contemporary feminists, Sophie Lewis stays most close to Firestone's revolutionary commitment. Relying on the premise that capitalism can only function through reproductive injustice—a reiteration of the critical insight of Marxist feminism that capitalism feeds on the free and naturalized labour of care and pregnancy—she envisions the road to reproductive justice as necessarily a revolutionary one. Not only because a post-capitalist world supports the organization of resources in a way that would facilitate reproductive justice, but, most importantly, following both Firestone and Silvia Federici, as a strategy for revolution: When we reappropriate the means of reproduction, and enforce reproductive justice, capitalism will necessarily fall. The question is then how to forge a gestational revolution, and one way to do that is through, what Lewis calls, "communist amniotechnics".[31] An example of this is her plea for "full surrogacy now" wherein we let go of the configuration of children within a capitalist property (and inheritance) configuration, and instead regard all children as people in and of themselves, no matter to whom they are born, keeping ectogenesis open as a reasonable option.[32] Similarly, but with more emphasis on technology as the main tool, xenofeminism regards technology, following Firestone, as the primary means to effectively facilitate reproductive justice. According to xenofeminism, we should affirm rather than reject, enlightenment's project of rationality, technology, and the body as a mechanic system. This means embracing the grand-scale possibilities it can offer us and embark on a global rational and determined project to technologically change the aspects of sexual reproduction that can be regarded as unjust.

But while these approaches are enticing, there is another problem with technology that is often disregarded. Apart from the danger of technology falling into the wrong hands, or being incorporated within a racial capitalist world, namely that many reproductive technologies are not very effective but do have iatrogenic consequences. Despite the invasive nature of the emotional changes that come with in vitro fertilization (IVF), it has a low success rate, as does intrauterine insemination (IUI).[33]

29 Angela Davis, *Women, Race, Class* (New York: Vintage, 1983).

30 Firestone, *The Dialectic of Sex.*

31 Sophie Lewis, *Full Surrogacy Now: Feminism Against Family* (New York: Verso, 2019).

32 Lewis, *Full Surrogacy Now.*

33 Emily Jackson. *Revisiting Reproductive Autonomy* (lecture at Cambridge University, ReproSoc, 2022); Franklin, *Embodied Progress.*

Technological ubiquity and normalization leave a major mark on the experience of our bodies and lives (for instance the years-long continuation of IVF cycles), and it creates expectations.[34] It is quite difficult to resist the pull of IVF when a child is desired, and having an abortion rather than using hormonal contraceptives, is increasingly seen as irresponsible behaviour.[35] With regards to childbirth, technology is responsible for such a strong interference with the natural process of birth, that it creates a different set of risks, and a different process of birth altogether.[36]

In 1968, maternity care was transformed by the advent of the cardiotocograph (CTG), a technology that enabled, for the first time, a continuous reading of the foetal heart rate and maternal uterine activity during labour and birth, known as electronic foetal monitoring (EFM). EFM is a technology globally used in childbirth, despite the facts there was no evidence to support its introduction, that it does not appear to lower rates of perinatal mortality, and that it is associated with increased caesarean section rates.[37] Because EFM effectively restricts both movement and other options for managing labour, such as water immersion, it has major consequences for the ontology of childbirth. We are grappling with a machine that is difficult to wear, difficult for midwives to use and a barrier to physiological processes in labour.[38] As a result, there is a lack of knowledge on the unmonitored physiology of childbirth, a lack of maternal authority and freedom in birth, and a lack of emotional care and support during childbirth, but most importantly, it separates the relationalities present in childbirth. Rather than focusing on the mother, the midwife now directs her attention to the heartbeat of the baby, establishing a relation between health care worker and child without the interference of the mother. This restructuring of relationality in birth, reduces the mother's ability to contribute her own knowledge on the baby's wellbeing, as well as her authority on the matter. As Barbara Katz Rothman points out, the separation of the pregnant subject between the mother as a container and the future child, has been ongoing since the beginning of modernity.[39] But before the rise of reproductive technology this separation could not be materially realized since the foetus could not be reached independently. It is through technology that the foetus can now be indeed lifted from the body of the pregnant person, making it no longer

34 Franklin, *Embodied Progress*.

35 Franklin, *Embodied Progress*.

36 Elizabeth Newnham et al., "Documenting risk: A comparison of policy and information pamphlets for using epidural or water in labour," *Women and Birth* 28, no 3 (2015): 221–227.

37 Zarko Alfirevic et al., "Continuous cardiotocography (CTG) as a form of electronic fetal monitoring (EFM) for fetal assessment during labour," *Cochrane Database of Systematic Reviews* Issue 2 (2017); Kirsten Small et al., "'My whole room went into chaos because of that thing in the corner:' Unintended consequences of a central fetal monitoring system," *Midwifery* 102, (2021): 103074.

38 Annemarie Lawrence et al., "Maternal positions and mobility during first stage labour," *Cochrane Database of Systematic Reviews* 10, (2013), DOI: 10.1002/14651858.CD003934.pub4.

39 Katz Rothman, *Recreating Motherhood*.

necessary to consult the experiences and knowledge of the mother to reach the child. This not only furthers the separation of mother and foetus, but it also furthers the separation between the labouring person and their community of care. Since the midwife can now have a direct relation to the child mediated by technology, the mother becomes increasingly less an active agent in birth to whom it is genuinely important to relate.

Katz Rothman has extensively theorized this consequence of the technologization of birth as the separation of the foetus from the maternal body.[40] In making the foetus visible through ultrasound, medicine was able to bypass the maternal body and expertise, and to emphasize the maternal body as a site of risk.[41] Following Katz Rothman, Peter Paul Verbeek studied the impact of the routine use of antenatal ultrasound, exploring the influence upon perspectives of the foetus as an entity separate to its mother.[42] Mediated by the ultrasound machine, the foetus becomes a potential "patient" even before it can survive outside the uterus: "[W]e can say that for the medical professional the mother becomes an *environment* and the infant a *patient* by virtue of the mediation of the medical ultrasound technology".[43] The foetus is no longer embodied with its mother as it may have been in the pre-ultrasound era,[44] but rather constitutes the notion of the maternal-foetal conflict, as it is only able to depict the child separate from its mother.[45] Antenatal ultrasound paves the way for the foetus to be regarded as an independent entity in very early pregnancy, which is also one of the most important tools in the stigmatization of abortion of anti-abortion activists. In combination with EFM, the notion constituted by ultrasound technology that the foetus is a separate entity, is reinforced again in the birth space. The well-being of the *foetus* is the focus of EFM monitoring, and the machine itself requires significant ongoing attention from the midwife for it to work effectively.[46] With centralized monitors, doctors and midwives do not need to be in the room of to the birthing person to read the EFM, facilitating the industrialization

40 Rothman, *Recreating Motherhood*.

41 Duden, *Disembodying Women*; Elizabeth Newnham et al., *Towards the Humanisation of Birth. A Study of Epidural Analgesia and Hospital Birth Culture* (London: Palgrave MacMillan, 2018).

42 Katz Rothman, *Recreating Motherhood*; Peter Paul Verbeek, "Obstetric Ultrasound and the Technological Mediation of Morality – A postphenomenological Analysis," *Human Studies* (2008): 11–26.

43 Rothman, *Recreating Motherhood*; Verbeek, "Obstetric Ultrasound and the Technological Mediation of Morality" Michael Van Manen, *The Birth of Ethics. Phenomenological Beginnings on Life's Beginnings* (London: Routledge, 2021): 29.

44 Duden, *Disembodying Women*.

45 Rodante van der Waal and Inge van Nistelrooij, "Reimagining relationality for reproductive care: Understanding obstetric violence as "separation," *Nursing Ethics* 29, no 5 (2021): 1186–1197; Katz Rothman, *Recreating Motherhood*; Van Manen, *The Birth of Ethics*.

46 Deborah Fox, et al., "Harnessing technology to enable all women mobility in labour and birth: feasibility of implementing beltless non-invasive fetal ECG applying the NASSS framework," *Pilot and Feasibility Studies* 7, no.1 (2021): 214–214, https://doi.org/10.1186/s40814-021-00953-6

and dehumanization of birth. Central EFM monitoring systems lead to surveillance of the EFM traces of all people in labour without being present in the room, further reducing the need for an embodied relationality. Hence, the advent of EFM has resulted in a deterioration in the way some health care professionals care for birthing people, by privileging supposed (since the machine does not work so well) foetal wellbeing over the mother's needs and the way in which her labour may progress without intervention.[47] EFM becomes itself an actor in the network of care, changing that network, and hence the nature of birth, fundamentally.[48] Therefore, it is important to take the responsibility to study each repro-technology and ask how it reconstitutes reproduction and if it is indeed for the better; if it indeed enhances the facilitation of reproductive justice.

The case of the misoprostol abortion pill, for instance, provides a very different reproductive reality. Due to its high level of effectiveness and safety, we can say that it changed reproduction in a revolutionary way when it comes to reproductive freedom and justice. The abortion pill is so safe in the first trimester that it needs no medical oversight and can be self-managed at home. Since its first use in underground activist networks in the 1980s in Latin America, it has changed the reality and the possibilities of abortion drastically, making dangerous back-alley abortions in the first trimester a thing of the past.[49] Pills can be mailed safely by post to places where abortion is criminalized, and people are no longer dependent on clinics, doctors, or national health care services to get an abortion. And misoprostol has even more promising qualities: one pill per week could be a form of contraception, thus blurring the line between contraception and abortion. The medication could potentially redefine, or abolish, the borders of the start of life, hence giving the authority on this matter back to pregnant people, on whom the signs of the start of life have always depended: Before the usage of ultrasounds, foetal life was determined on the basis of the experience of quickening and other external "signs" of pregnancy, which could only be felt by the mother, and a miscarriage before the quickening was not understood as the loss of a potential child, but simply as the return to one's normal cycles.[50] Ever since the use of the ultrasound and other technologies, such as blood testing for human chorionic gonadotropin, returning to one's cycle is already considered to be an abortion or miscarriage at five weeks gestation, rather than at 20 weeks, as it was in the past. The way that misoprostol reshapes the reality of reproduction by blurring the lines between being pregnant and not being pregnant, thereby giving freedom and authority on the matter back to people with the capacity for pregnancy, can thus be understood as revolutionary when it

47 Small et al., "My whole room went into chaos because of that thing in the corner."

48 Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2005).

49 Margaret MacDonald, "Misoprostol: The Social Life of a Life-saving Drug in Global Maternal Health," *Science, Technology, & Human Values* 46, no.2 (2021): 376–401.

50 Dehue, *Ei, Foetus, Baby*.

comes to the advancement of reproductive justice. Rather than resulting in a separation of relations, as in the case of EFM, the abortion pill facilitates as a reconstitution of the relations between the person and their capacity for pregnancy, as well as their community of care. The relation between the pregnant person and their capacity for pregnancy becomes more autonomous and self-determined, since a self-managed at home medical abortion generates the potential to organize this event freely with the least possible interference of medical authority. And it gives mutual aid and radical care networks a lot of possibility to reconstitute the relation between pregnant people and their community of care, not being dependent on doctors and medical institutions. During the care for the abortion itself, the pregnant person is not a passive body out of which the embryo must be retracted, but care consists out of support for the pregnant person who is actively labouring the abortion. Here, technology reshapes reproduction in such a way that it enhances self-determination, rather than passivity.

While Firestone was very aware of the problems of reproductive technology within patriarchal capitalism, the tradition of techno-affirmative feminist thought she gave rise to is less visibly conscious, framing technology sometimes as a solution in and of itself. And while technology indeed has the potential to be revolutionary when it comes to achieving reproductive justice, it remains of crucial importance to acknowledge and critique those technologies that reproduce, and often worsen, the status quo of reproductive injustice. We lose something with a too optimistic stance on technology, namely another possible path towards reproductive justice: that of a "somatophilic techne."

Midwifery and Reproductive Justice

Midwifery, a feminist profession that assists pregnant people relationally, also has a clear vision of reproduction and reproductive justice, albeit a less well-known one within feminist theory. Midwifery's vision of reproductive justice can be described as almost oppositional to Firestonian feminism. In order to achieve reproductive justice, midwifery has established a strong critique of technology which is believed to have all too often interfered with respectful and humane care, as well as justice in birth.[51] Midwives have called out the use of technology during childbirth since the 18th century, when in 1760 midwife Elizabeth Nihell complained that "the men use their instruments unnecessarily, resulting in maternal and neonatal infant morbidity and mortality, puerperal fever, and extraordinary birth injuries," classifying this practice as "meddlesome midwifery," the frontrunner of "interventionist obstetrics."[52]

51 Robbie Davis-Floyd, "The technological model of birth," *The Journal of American Folklore* 100, no. 398 (1989): 479–495; Katz Rothman, *Recreating Motherhood*.

52 Barbara Katz Rothman, *A Bun in the Oven: How the Food and the Birth Movement Resist Industrialization* (New York: NYU Press, 2016), 72.

At the same time, there has been a traditional exclusion of midwives when it comes to training in technological skills. Midwives were not allowed into medical schools and early "midwifery" manuals were often written by doctors, who designated level of technological skill according to profession. Today, midwives in most places, cannot use the instrument for vacuum assisted birth, or prescribe contraceptives and abortifacients, guarding these technologies exclusively for medical practitioners.[53] The intertwinement of the advancement of the obstetric institution and obstetric technology furthermore expropriated midwifery care, while appropriating midwifery knowledge from many communities, including Black and Indigenous ones. The combination of the exclusion of midwives from technology, while framing all technology as "progressive" has also been a major factor in the marginalization of midwifery, and the justification of this marginalization. Technology was key to the industrial revolution, where ancient, tribal, and Indigenous knowledges—including midwifery knowledge—were both appropriated and undermined as archaic or outdated, and industrializing processes were revered over embodied and seasonal or rhythmic practices.[54] As such, technology is used within the capitalist apparatus of power, with technological and profitable fixes seen as more cost-effective than other low-technological practices, such as midwifery.[55]

Midwives collected, and passed down their own skills and knowledge base, such as the practice of "being-with" women, knowledge of medicinal herbs and techniques for labour, and of support of emotionally safe labour. This is a fundamentally different practice of birth, and hence of reproduction, than the obstetric institution has provided, which is historically characterized by obstetric violence and obstetric racism.[56] Midwives have a wide range of what is considered normal, while obstetrics has charts that say that cervical dilation has to progress by one centimetre per hour. This is representative of the different way that midwives use technology: to assist and facilitate a physiological process in the best possible way, rather than intervene with it. As such, they also aim to "control" nature, and correct it, when necessary. Rather than a forceps, a midwife might use a rope hanging from the ceiling to support an upright birth position; rather than EFM, a midwife would sometimes listen intermittently to check the baby's heartbeat with a doptone or pinards stethoscope, and only increase this form of monitoring when there is reason to worry; rather than an epidural a midwife would try hot water, continuous support, and massage first, which has proven to reduce request for epidurals.[57]

53 Katz Rothman, *A Bun in the Oven*, 74.

54 Stephen Hill, *The Tragedy of Technology* (London, Pluto Press, 2018); Newnham et al., *Towards the Humanisation of Birth*.

55 Waitzkin, *The Second Sickness*; Newnham et al., *Towards the Humanisation of Birth*.

56 Jean Donnison. *Midwives and Medical Men: A history of the struggle for the control of childbirth* (London, Historical Publications, 1988); Jean Towler & Joan Bramall, *Midwives in History and Society* (London, Croon Helm, 1986).

57 Newnham et al., "Documenting Risk."

Midwives use the birthing ball to make space in the pelvis and help the foetus descend, the bathtub and movement for pain management, the birthing stool as a position in which to optimally push, and safety and dimmed lights for the increase of oxytocin or, if necessary, medication to increase contractions. All these technologies are focused on activating the birthing person, increasing their freedom of movement, intuition, knowledge, agency, and control; enhancing the relationality between pregnant people and their foetuses, and between pregnant people and their midwives. There is hence a difference between specific technologies that either assist or enhance a "natural" process or take over from nature. Synthetic oxytocin induction and epidural analgesia, for instance, prohibit the making of natural oxytocin which also has short- and long-term emotional consequences because synthetic oxytocin does not have the "side-effect" of the experience of love as natural oxytocin does.[58] Forceps pull the baby out, minimizing the role of the mother, while a birthing stool helps the mother to push. A bathtub increases endogenous natural oxytocin, rather than inhibiting it. This does not mean that in some cases forceps, vacuum-extraction or synthetic oxytocin are not beneficial or lifesaving, but these are technological tools that constitute different reproductive realities. Midwives have been developing and working with technology in various forms for hundreds of years in their use of craft knowledge, knowledge of how to support physiology, such as uprights positions for birth, and managing complications with medicinal herbs.[59] Later came use of artefacts of technology, such as the Pinard stethoscope, invented in 1895 to enable listening to the foetal heartbeat, which is still used by clinicians and taught to midwifery students worldwide. Intermittent auscultation, with either a Pinard or a hand-held battery operated doppler ultrasound device, has remained the recommended method of monitoring foetal well-being in labour for healthy women at term who have no clinical or iatrogenic risk factors,[60] and probably also for women who do have complex pregnancies.[61] The relation between technology and reproductive justice can in midwifery be understood as a reproductive justice enacted by a somatophillic technology—a techne that loves and supports the body, facilitating the laws of nature, enabling nature to flow in the safest and best possible way.

Katz Rothman understands midwifery as a counterculture, a movement of artisanal workers, of "artisans" of birth resisting industrialization, revaluing home-made, patient, handcrafted, personalized practice, just like the slow food movement. She understands the knowledge and practice of midwifery not as just being patient or doing nothing, but as a specific skill set, we could say, as a specific "techne"—as skills,

58 Buckley, Sarah, "Executive Summary of Hormonal Physiology of Childbearing: Evidence and Implications for Women, Babies, and Maternity Care," *Journal of Perinat Education* 24, no.3 (2015): 145–53.

59 Towler & Bramall, *Midwives in History and Society*; Donnison, *Midwives and Medical Men*.

60 Debrah Lewis & Soo Downe, "FIGO consensus guidelines on intrapartum fetal monitoring: Intermittent auscultation," *International Journal of Gynecology & Obstetrics* 131, no.1 (2015): 9–12.

61 Small et al., "My whole room went into chaos because of that thing in the corner."

craftmanship, art—of birth:

> Whether it is knowing when a woman should be up and walking and when it will tire her out, when a partner needs encouragement to support the woman and when she needs some space from that partner, grasping immediately just what angle will help a stuck baby turn, or understanding which positions for that woman and that baby at that moment in second stage will help ease a baby out and avoid surgery – *those* are the skills that make a midwife.[62]

These skills have been documented in various ways in midwifery literature, as "the art of doing 'nothing' well"[63] and more recently as "watchful attendance".[64] The somatophillic technology of midwifery encompasses the physiological, psychological, emotional, cultural and spiritual aspects of each pregnant person's needs. The reciprocal trust that is engendered in the context of this relation is critical to people's sense of emotional safety, and the neurohormonal processes of her labour and birth.[65] In contradiction to xenofeminism's "when nature is unjust, change nature," midwifery's main idea is to lay bare and get to know nature in such a way, that its best configuration can come to the fore. Midwifery's *forte* is hence to be with nature relationally and respectfully as a way of enacting reproductive justice, exactly because midwives know that interference with nature does not necessarily lead to justice but can be iatrogenic. One of its major critical insights is that interfering too much with the natural process of birth leads, at this moment in time, to more reproductive *injustice*—in the form of physical, emotional and psychological unsafety—rather than justice.

Midwifery and its Anti-technological Stance

The history of midwifery knowledge and practice is fraught with well-documented tensions between the dichotomy of physiology/midwifery and medicalization/obstetrics, "both constitutive and demonstrative of power dynamics".[66] While we believe midwifery's unrelenting critique of over-medicalization to be

62 Katz Rothman, *A Bun in the Oven*, 17

63 Holly Kennedy, "A Model Of Exemplary Midwifery Practice: Results Of A Delphi Study," *Journal of Midwifery & Women's Health* 45, no.1 (2000): 4–19.

64 Ank de Jonge, Hannah Dahlen & Soo Downe, "'Watchful attendance' during labour and birth," *Sexual & Reproductive Healthcare*, 28 (2021).

65 Ibone Olza et al., "Birth as a neuro-psycho-social event: An integrative model of maternal experiences and their relation to neurohormonal events during childbirth," *PLOS ONE* 15, no.7 (2020).

66 Candace Johnson, "The political "Nature" of pregnancy and childbirth," in *Coming to life* Sarah Lachance Adams & Caroline R. Lundquist (New York: Fordham University Press, 2012): 199; Heather Ca-

right, and to indeed forge a path to reproductive justice, it is of essential importance to recognize that there is also a reactionary tendency present within midwifery which radicalizes the midwifery perspective on reproduction as a somatophillic relation to nature into a separatist argument that is aligning with radical trans-exclusionary feminism. Just as technology can reproduce oppression, an ideology that prioritizes "nature"—whatever that may be—can turn transphobic and racist.

In making claims to "natural" birth—both as resistance and an identity for (mostly) well-off white women—women of colour in marginalized communities not only suffer the effects of not being able to access adequate or safe medical treatment, but they are also exoticized as people who birth "naturally," including the appropriation of Indigenous practices.[67] This is evidenced as well as a response to class—Grantly Dick Read noted his encounter with a young, working-class woman who he attended one night in labour, for whom childbirth did not hurt because she did not know it was supposed to.[68] Suggesting that, "the closer to nature" one's identity is constructed, the less of a peril "natural birth" is, denies that we have long been living in a natureculture continuum. On top of that, it denies the very well-known fact that pregnancy and birth are, for "normal physiological processes," potentially extremely painful, no matter where you come from, and dangerous, the latter especially for marginalized people who are, in contradiction to this theory, more often in need for medical technological assistance because of the effects of systemic racism, and least able to access them. In resisting the dominance of the medical discourse, as an identified mechanism of social control, we can identify a reactionary harkening back to nature and a tendency towards biological essentialism.

Radical feminism is an American school of thought that has a small body of theorists but that can count in recent years on a very broad popular following, not least within midwifery circles. It understands patriarchy confusingly as a mix of both biological determinism and social constructionism. According to radical feminists like Mary Daly, Janice Raymond, Kathleen Stock, Julie Bindel, and Sheila Jeffreys,[69]

hill, "Male appropriation and medicalization of childbirth: An historical analysis." *Journal of Advanced Nursing* 33, (2001): 334–342; Elizabeth Newnham, "Birth control: Power/knowledge in the politics of birth," *Health Sociology Review* 23, no.3 (2014): 254–268.

67 Johnson, "The political "Nature" of pregnancy and childbirth."

68 Grantly Dick Read, *Childbirth without Fear: The Practices and Principles of Natural Childbirth* (London: Pinter and Martin, 2013 [1947]), 5.

69 Mary Daly, *Gyn/Ecology. The Metaethics of Radical Feminism* (London: Women's Press, 1978); Janice Raymond, *The Transsexual Empire: The Making of the She-Male* (Boston: Beacon Press, 1979); Janice Raymond, *Doublethink: A Feminist Challenge to Transgenderism* (North Geelong: Spinifex Press, 2021); Kathleen Stock, "Entering the Parallel Universe of Transactivism." https://kathleenstock.substack.com/p/entering-the-parallel-universe-of (accessed 22-12-2022); Julie Bindel, *Feminism for Women. The Real Route to Liberation* (London: Constable, 2021); Sheila Jeffreys, *Unpacking Queer Politics: A Lesbian Feminist Perspective* (New York: Polity, 2003); Sheila Jeffreys, *Gender Hurts: A Feminist Analysis of the Politics of Transgenderism* (New York: Routledge, 2014).

female suppression can be traced back directly to male testosterone, male sex chromosomes and the penis—a biologically deterministic argument that roots the suppression of women in male biology. Furthermore, it asserts that this biological male dominance has led to a socially constructed idea of femininity—e.g., as big-breasted, blonde, blue-eyed, submissive, nurturing, weak, irrational woman—which does not align with how women actually, or naturally, are, but which discursively and oppressively shapes women. According to radical feminism, the task is therefore to liberate female biology from the dominance of male biology and its suppressive discourse of femininity. This strange mix between social constructionism and biological determinism makes it possible to affirm women on the one hand, while being severely femme-phobic on the other, especially when it comes to "changing" female nature in the form of make-up, tattoos, plastic surgery, etc., as well as when it comes to transitioning gender identity. It is understandable how this type of thought is a logical ally to midwifery's critique of reproductive technology, however. Since the aim is to liberate suppressed female biology from male dominance, the existence of both femininity and trans women as well as the medicalization of childbirth, are all regarded as things that bury true female biology. This view then becomes exacerbated, into a fear that "female biology" will be eradicated or erased. This fear subsequently develops into an irrational fear of technology and the medical establishment, or anyone working within it, and an anti-technological anti-medical stance, that can and does result in dangerous medical situations. This irrational fear is the basis by which trans women become constructed as the "other," keeping a fiction of a united community of biological females intact, revealing the philosophy of radical feminism as a theory based on a psychological fear of extinction, rather than a rational and sincere project to liberate us all from patriarchal suppression and gender-based violence in order to achieve reproductive justice.[70]

In midwifery, there is a similar tendency to follow the lines of radical feminism into a construction of medicalization and technology as the "dangerous other" to create, just like radical feminism, a female midwifery community. As a consequence, trans people are understood to be subjected to severe processes of medicalization, and hence as a danger to the biology of female birth, and "nature" gets constructed as something that cannot be unjust, hence alienating people who had a difficult, traumatic, or fatal birth experience. Apart from the fact that it is obviously a moral fallacy to believe that whatever nature does to birth is just, even if it goes terribly wrong, it is interesting that precisely where Firestonian feminism goes wrong due to the assertion that reproductive *injustice* lies in biology, here midwifery's somatophillic practice goes wrong due to the equation of nature and reproductive *justice*. The latter is

70 Patricia Elliot & Lawrence Lyons, "Transphobia as Symptom: Fear of the 'Unwoman,'" *Transgender Studies Quarterly* 1, no.3-4 (2017): 358–383; C. Heike Schotten, "TERFism, Zionism, and Right-Wing Annihilationism: Toward an Internationalist Genealogy of Extinction Phobia," *Trangender Studies Quarterly* 9, no.3 (2022): 334–364; Alyosxa Tudor, "Terfism is White Distraction: On BLM, Decolonising the Curriculum, Anti-Gender Attacks and Feminist Transphobia," *Engenderings* (2020).

also an obvious mistake, since, of course, the only reason we can even begin to achieve reproductive justice *via* nature, or bring nature to its full and safest potential, is because of the technological and scientific progress we have made with regards to hygiene, housing and overall health that has made nature or natureculture relatively safe. This anti-technology, anti-medicalization, anti-trans strand of midwifery is increasingly risking the unique potential of the somatophillic techne of midwifery to the ideology of radical feminism, propagating an irrational, dogmatic belief in nature, while defying the potential of midwifery's strong vision of reproductive justice to be achieved through a practice of thinking with the body, into a naïf religion of the "natural" body. This establishes a specific type of violence in childbirth, distinct from obstetric violence, wherein birth is made unsafe, or birth care exclusionary, on the basis of harmful ideology. Midwifery here adopts the violent exclusionary thought of radical feminism, in the sense that it is anti-trans (transition being also a form of medicalization and thus part of the conspiracy against female nature), and increasingly anti-abortion (also a form of medicalization), racist (because the essentialist biological woman has always been a white one) and, in the end, even anti cis woman, as it ends up affirming misogynist stereotypes wherein all women are intuitive child bearers and mothers. Influenced by radical feminism, this strain of midwifery is no longer a guardianship of physiology in the name of reproductive justice but radicalizes into being the guard of "nature" itself. As such, it separates the relations that are important to facilitate justice, just as a naïve belief in technology does. Rather than being loyal to the pregnant person, there is a loyalty to the "natural" process of birth, hence separating the relation between the pregnant person and their community of care, as well as between the pregnant person and their self-determination over their child or reproductive capacities. Radfem midwifery becomes the reactionary opposite of xenofeminism's slogan "when nature is unjust, change nature" into the conviction that nature *cannot* be unjust, and *should not* be changed.

Not any longer in line with the first two principles of reproductive justice, the right to have and not have a child, we then lose the unique potential of a specific midwifery configuration of reproductive justice and reproductive technology. Luckily, there are many queer and trans midwives, and many who are opposed to the ideology of radical feminism who make explicit the specific techne of midwifery and understand its strong suit as neither aligning nature with reproductive *justice* nor *injustice,* but work with nature to achieve reproductive justice in a true natureculture continuum. Bringing together the somatophillic techne of midwifery and aligning it with Firestone's ultimate aim of gestational autonomy and self-determination, we then arrive at a reconfiguration of reproduction that is neither anti-nature nor anti-technology, but that uses both nature and technology in a continuous practice of care that facilitates reproductive justice. We propose that a specific somatophillic techne, which we understand as "midwifery thinking" can do so.

Midwifery Thinking: A Somatophilic Techne for Reproductive Justice

Katz Rothman has theorized the "techne" of midwifery as artisanship and skills[71] and Newnham identified the need to define a specific "midwifery technology".[72] Here, drawing on the work of Sara Ruddick, we aim to further develop our understanding of techne of midwifery, not only as a different set of skills, but as a different way of thought, that is characterized as preservative love, nurturance, and the constitution of relations.

The practice of midwifery is directed to the concrete responsibilities that emerge there. Central is that the need of the labouring person comes first, and that responsibilities can only develop in relation to those needs, which is fundamentally different than a paternalistic sense of responsibility wherein health care workers decide for pregnant people what their needs are or should be. Midwives draw upon everything they know of nature, technology as well as the person(s) in front of them, in order to establish a relational midwifery practice in which they do nothing more *and* nothing less than thinking with the pregnant person. The specific techne of midwifery hence develops as a response to what the specific labouring body needs, and is inherently relational. Katz Rothman discusses this as:

> The midwife can understand all of the science and the evidence, and yet say that on this particular day, with this particular woman, her particular life story and her particular body, and this particular baby in the position it is, truly knowing and understanding all of what is going on, this is the moment for this particular bit of pressure.[73]

This entails that midwives are experts in Joan Tronto's elements of ethical care: attentiveness, responsibility, competence, responsiveness and trust/solidarity; being able to see and listen to signal the need, being able to take responsibility of answering to this need, doing the care work this entails, and again listening to the labouring person to see whether the care indeed responded to the need, within a setting that ensures continuity, solidarity, and trustworthiness.[74] It is within the relationality of this praxis that the possibility of a somatophillic techne arises, as this relationality of care itself consists of a loving dialogue; something that can only take place if one listens, responds, and again listens. A somatophillic techne can only consist of a way of thinking rooted in practice wherein skill,

71 Katz Rothman, *A Bun in the Oven*.

72 Newnham et al., *Towards the Humanisation of Birth*.

73 Katz Rothman, *A Bun in the Oven*.

74 Tronto, *Moral Boundaries*; Joan Tronto, *Caring Democracy. Markets, Equality, and Justice* (New York: NYU Press, 2013).

artisanship, knowledge, and technology is used.

Somatophillic techne in the case of reproduction as a "thinking in practice" can be developed by drawing upon Ruddick's idea of "maternal thinking".[75] For Ruddick, being a mother is not an essentialist notion, but a characteristic of maternal practice. "Practices are collective human activities distinguished by the aims that identify them and by the consequent demands made on practitioners committed to those aims".[76] Mothering therefore *is* meeting the aims of the practice of mothering. And since the aims of mothering are constitutive of that practice, anybody can perform this practice by serving those aims, which are threefold: "preservation, growth, and social acceptability".[77] The consequent demands made on the practitioners are preservative love, nurturance, and training for social acceptability.[78] If we follow Ruddick's logic and translate it to midwifery practice, we could consider midwifery practice as similarly distinguished by three aims, namely "preservation of people and their capacity for pregnancy," "(un)becoming 'motherandchild'," and "relations that support reproduction and reproductive freedom." [79] These aims can be understood as corresponding to the concept of reproductive justice, in which they all come together. Reproductive justice consists of the right to have a child, the right to not have a child, and the right to parent the children we have in safe and dignified environments. The first two come to the fore in the first two aims, preservation of people with the capacity for pregnancy and (un)becoming motherandchild, the third one in the last aim. The aims of midwifery practice are a grounding in practice of the overarching aim of reproductive justice. The consequent demands for praxis, made on the basis of these aims can be conceived of as "preservative love", "nurturance", and "constituting supportive relations."[80]

Like Ruddick's claim that all children need preservation, we can claim the same for pregnant and labouring people. Pregnancy is a developmental state that renders all involved vulnerable. Pregnancies require care if they want to be preserved; both pregnant persons and foetuses can be lost without the required care. At the same time, some pregnancies can be life-threatening and will need to be aborted, or they are simply unwanted. Contraception and abortion are also forms of care that preserve the

75 Katz Rothman, *Recreating Motherhood*.

76 Ruddick, *Maternal Thinking*, 13–14.

77 Ruddick, *Maternal Thinking*, 22.

78 Ruddick, *Maternal Thinking*, throughout parts I and II.

79 These aims are amended from Van Nistelrooij (2022), who first came up with the concept "midwifery thinking" and its corresponding aims and demands. The concept 'motherandchild' comes from Anne Enright *Making Babies* (2004). Inge van Nistelrooij, *Humanizing Birth from a Care Ethics Perspective*, Keynote lecture at the *Critical Midwifery Studies Summer School* (2022); Anne Enright, *Making Babies. Stumbling into Motherhood*. (New York: W.W. Norton & Company, 2004).

80 Inge van Nistelrooij, *Humanizing Birth from a Care Ethics Perspective*.

health and wellbeing of people with the capacity for pregnancy. Preservation, however, is not enough. Ruddick's addition of "love" here is essential. For Ruddick, "attention is at once an act of knowing and an act of love."[81] We have seen how mere preservation of health in obstetrics, abortion clinics and contraceptive practices, can take the form of paternalistic preservation of pregnant people, which includes non-consented interventions, and obstetric violence. Although this form of preservation results in a healthy mother and baby, they can be physically and psychologically traumatic. It is love, and hence somatophillic preservation, that turns preservation from merely sustaining biological safety to the flourishing of the potential embedded in the body and mind. Love, in the definition of bell hooks is an intention and a practice, not something that comes automatically or instinctively. It is a choice to let go of power and domination, and instead turn to affirmation of and care for the other, which is, according to hooks, the definition of love. Love is "the will to extend one's self for the purpose of nurturing one's own or another's spiritual growth".[82] Preservative love captures an essential element of midwifery practice and the thought that emerges from it; it is the extension of the midwife into a safe presence wherein someone can labour freely, while the midwife makes sure the labour is preserved well and can identify and act on complications, or it is the presence wherein someone can explore to keep a pregnancy or abort it, or think about and experiment with contraception and menstruation cycles.

Within the midwifery practice of preservative love, we can think of technology as something that facilitates natural processes during childbirth— preserving it in a loving way so that it can come to its full potential such as with the usage of contraceptive technology that lessens the burden of continuous pregnancies from the reproductive body, life-saving cesarean sections, abortion pills that evoke a natural miscarriage, or pain medication in childbirth that lets a labouring person rest so that it can gain strength to push when it is time.

Pregnancy and labour are also experiences of transformation which require the practical demand of nurturance. The foetus and baby need to be nurtured in order to "foster growth",[83] and a similar demand concerns the mothers: their "growth" (physically, emotionally, intellectually, and also as "multiplied vulnerability") requires care and nurturance as well, so that mothers are enabled to navigate the changes and challenges that their transformed life offers. Unlike maternal thinking, midwifery is not about fostering the growth of a child through the practical demand of nurturance, but nurturance is needed to foster the becoming of the plural entity of "motherandchild." Nurturing this plurality so that it can foster growth, is one of the key tasks of midwifery. Midwifery can also concern the nurturance of an *unbecoming* of the plural unit of motherandchild, in case of abortion, miscarriage, sterilization,

81 Ruddick, *Maternal Thinking*, 122.

82 bell hooks, *All about Love* (New York: Harper Collins, William Morrow, 2018 [1999]).

83 (Ruddick *Maternal Thinking*, 19–21, 82–102.

contraception, and stillbirth. Unbecoming motherandchild in whatever way, is a form of growth and transformation as well, for it realizes and directs attention to the plurality of the fertile body. Sometimes there is huge loss experienced in a wanted pregnancy after which one never feels the same individuality again, or the experience of infertility or wanted sterilization catalyses a transformation or affirmative acceptance consisting of existential change wherein one relates to the (im)possibility of motherandchild as an ontological condition in nurturing the (un)becoming of motherandchild. Midwifery uses technology that facilitates the transgressive becomings and unbecomes of birth, abortion, and miscarriage in a way that goes beyond mere preservation but can foster meaningful emotional growth. For instance, the sense of choice and control and emotional safety during birth, enables the endogenous production of key hormones that progress labour, including oxytocin and endorphins, and prevents the production of stress hormones such as adrenaline that can block endogenous oxytocin. The success of this neurohormonal process is a key influence upon whether the woman may experience a physiological vaginal birth, minimizing the need for medical intervention and increasing the likelihood of a positive birth experience.[84] We could use technology in such a way that it enables and affirms this neurohormonal process. For instance, by engaging with speculative reproductive futures[85]. We could imagine vibrating bulbs in labour baths to stimulate orgasmic birth, or holograms in the shape of a humming cocoon of soft red silk that can be formed around one upon the pressing of a button to facilitate privacy and a sense of safety in all settings, or a space with pain reducing vibrations and lights that one can step in and out of to be fully in control of one's own pain management.

And finally, mothers and babies need others to support them. Rather than Ruddick's third aim of social acceptability, and training children for it, a midwife's responsibility and aim are the other way around: namely to make the world and the direct community a socially safe place that accepts and affirms the autonomy, self-determination, and flourishing of pregnant people, people with the capacity for pregnancy, and mother and child. Through the care of midwives, new relations within the community can be constituted (for instance via group care or the attention for other family members) and the midwife is an advocate for the rights, care, and respectful treatment of people with the capacity for pregnancy. A birth seldomly leaves others (partners, friends, next of kin) unaffected; they also become a (grand)parent, sibling, aunt or uncle, and their relational network shifts. Room has to be made in others' lives as well, to care for and support the mother and child, to grow attached, to become related. They furthermore need materialistic and social support in the form of safe housing and environments wherein to care for their children, access to healthcare, healthy food, education, and childcare support.

84 Olza, "Birth as a neuro-psycho-social event."

85 See the website of Wondermash for more information about their project: https://www.wondermash.eu/projects/birth-futures

And the same goes for people who need an abortion or do not want to get pregnant; they also need access to a community wherein abortion pills and contraceptives are free and easily accessible, where they can get time off from work during their abortion or menstruation, and to be able to live stigma-free in societies wherein a broad range of discourses exist on the experiences and meanings of abortions and contraception so that they can engage in sense-making practices regarding their own fertility. Midwives' responsibility here is to safeguard continuity of care, of trustworthy systems, policies, institutions, so that one can rely on care to be there, and not to have to struggle for each care need to be met.

Changing the world and the community in such a way that it is safe for pregnant people, through constituting social relations and relational practices of care, is something that is also done through the creative somatophilic use of technology. For instance, the queer midwifery practice Refuge Midwifery provides IUI practices for queer families in their homes, and provides antibiotics in childbirth at home for GBS positive people.[86] Black owned independent midwifery practices are able to provide better maternal and neonatal outcomes than the obstetric institution through better low-tech risk-assessment and medical testing on the basis of knowledge and trust.[87] In the Netherlands, it might become possible to do a medical abortion at home with the support of a midwife, and there is now support for this in Australia, leading to proposed legislative changes. Midwives carry technology to the homes of clients so that they do not have to leave their house, like devices to treat high bilirubin levels, to give oxygen to new-borns, to take blood or swabs in the privacy of the person's bedroom. Independent midwives often use WhatsApp as a way to be easily accessible to clients for non-urgent questions, as well as other secure apps for deliberation with paediatricians and obstetricians, so that parents do not have to come to the hospital. Anecdotally, midwives may practice this frequently on request, examples being assisting with artificial insemination, checking for amniotic fluid in queries of released membranes, and conducting examinations (speculum, wound, infant) at home and by request of the mother.

The practice of preservative love of the capacity of pregnancy, the nurturance of either the becoming or unbecoming of mother and child, and of the affirmation or constitution of social relations and relational

86 See for instance the spculative project Birth Futures on the website of Refuge Midwifery: https://www.refugemidwifery.com

87 Jennie Joseph & Stephan Brown, *The JJ Way: Community-based Maternity Center. Final Evaluation Report* (Orlando: Visionay Vanguard Group, 2017); Keisha Goode & Arielle Bernardin, "Birthing #blackboyjoy: Black Midwives Caring for Black Mothers of Black Boys During Pregnancy and Childbirth" *Maternal Child Health Journal* 26, (2022); Leseliey Welch et al., "We Are Not Asking Permission to Save Our Own Lives: Black-Led Birth Centers to Address Health Inequities." *The Journal of Perinatal & Neonatal Nursing* 36, (2022); Suarez, Alicia, "Black midwifery in the United States: Past, Present and Future," *Sociology Compass* 14, (2020); Benjamin, *Viral Justice*.

practices in the world so that it is safe for pregnant people, are all both relational and grounded in nature, and it is within these material relations that specific needs of the specific person arise, are recognized, taken responsibility for, are evaluated, and that responsibility is taken in ensuring pregnant people's care needs are met within society. This requires thinking and interpretation, and it is here that a techne consisting of skills, artisanship, experience and evidence, medicine, and techniques, is used. As becomes clear in the three demands to practice above, all the aims that constitute reproductive justice cannot be met without technology. But when technology is always used in a specific practice of preservative love, nurturance, and broader relationality, a specific somatophillic techne develops, wherein a love for the body with the capacity for pregnancy guides technological intervention within a practice that has reproductive justice as a general intention. The rights to have and not have a child and to nurture children in safe environments, correspond to the practical aims and demands of midwifery thinking through preservative love, nurturance of the (un)becoming motherandchild, and the constitution of relational networks that support reproduction and reproductive freedom.

Firestones' feminist tradition of repro-tech and midwifery's somatophillic techne that is developed and used in midwifery thinking, can both be understood as rooted in a materialist doctrine. Where feminist repro-tech must be wary of not understanding reproductive biology as reproductive injustice, midwifery must be resistant to any pull towards treating biology and nature as justice in itself. Both these tendencies dismantle their materialist grounding and potential of situating critique, thought, and the usage of technology in specific material practices. We believe that feminist midwifery has something to offer the feminist movement when it comes to the question of the role of technology in the facilitation of reproductive justice, namely an articulation of a specifically situated thought in practice, wherein a somatophillic techne is developed. By situating midwifery's usage and critique of technology within the specific epistemic practice of midwifery thinking that centers the needs of the pregnant person and strives for reproductive justice, midwifery is brought back to its promising materialist foundation with the help of Firestone's revolutionary focus on reproductive liberation. Resisting the equation of nature with justice but instead centering the aims of preservation of people and their capacity for pregnancy, the (un)becoming of motherandchild, and the constitution of social relations that makes the world a safe space for people with the capacity for pregnancy, has a Firestonian potential to liberate us from the perils of reproduction with the help of somatphilic techne in such a way that the reproductive body can flourish, rather than loose the capacity for reproduction altogether.' It is our conviction that "midwifery thinking" wherein a "somatophillic techne" is used, can reground the use of technology in care for birth and reproduction in a materialist understanding that makes reproductive justice possible.

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