



# The ‘tyranny of reproduction’: Could ectogenesis further women’s liberation?

“生殖暴政”：外生能促進婦女的解放嗎？

Kathryn MacKay

Sydney Health Ethics, University of Sydney,  
Sydney, Australia

#### Correspondence

Kathryn MacKay, The University of Sydney  
School of Public Health – Sydney Health  
Ethics, University of Sydney, Sydney, New  
South Wales 2006, Australia.

Email: kathryn.mackay@sydney.edu.au

#### Abstract

This paper imagines what the liberatory possibilities of (full) ectogenesis are, insofar as it separates woman from female reproductive function. Even before use with human infants, ectogenesis productively disrupts the biological paradigm underlying current gender categories and divisions of labour. I begin by presenting a theory of women’s oppression drawn from the radical feminisms of the 1960s, which sees oppression as deeply rooted in biology. On this view, oppressive social meanings are overlaid upon biology and body, as artefacts of culture and history. I then argue that ectogenesis should be pursued to replace two modes of assisted gestation that can be seen as outgrowths of oppressive assumptions about women’s function, ectogenesis should be pursued to replace two modes of assisted gestation. These are gestational surrogacy and uterine transplant, which arise partly from gendered, pronatalist, and geneticist norms. These practices are supported by assumptions about women’s identity and value. Pursuing technologies such as ectogenesis, which weaken the presumed link between biology and gender, is beneficial to (trans-inclusionary radical) feminist aims, as part of a broad project of challenging dominant power relations resting on and maintaining gender categories. By allowing the conceptual separation of female reproductive function from ‘woman’, ectogenesis raises questions about how we determine who counts in this gender identity, and also how we value those who claim the identity ‘woman’. I conclude that ectogenesis has the potential to challenge traditional patriarchal family structures, and thence all other male-dominated structures (of work, education, cultural production), allowing a reimaging of the family and society in more radical ways than we have yet achieved.

#### KEY WORDS

ectogenesis, gender, radical feminism, reproduction, women’s liberation

## 1 | INTRODUCTION

Women cannot be free until released from the tyranny of reproduction, wrote Shulamith Firestone in 1970.<sup>1</sup> For Firestone, following de

Beauvoir,<sup>2</sup> women’s oppression begins with bodies, and if one claims identity as ‘woman’, the legitimacy of one’s claim—and one’s value—stands or falls upon one’s female reproductive capacities. Ending women’s oppression means severing the tie between the identity category

<sup>1</sup>Firestone, S. (2015 [1970]). *The dialectic of sex*. London, U.K.: Verso Books, p. 213.

<sup>2</sup>De Beauvoir, S. (1997 [1949]). *The second sex*. Transl. Parshley, H. M., Ed. London, U.K.: Vintage Books.

'woman' and female biology. We have now stepped closer to having the means to sever this tie: to be able to conceive and gestate a foetus to maturity entirely outside of a female body. This technology is still very much in the early stages of development, but in 2017 a team of researchers made a significant leap in ectogenesis when they successfully gestated a lamb in an artificial uterine environment for four weeks.<sup>3</sup> In 2019, a second team successfully maintained foetal lambs in artificial womb environments, this time for five days.<sup>4</sup> So, what was once perhaps mere science fiction is now much closer to reality.

This paper begins from the idea that gender-based oppression is connected to female biological functioning. In the spirit of exploration and the radical feminisms of the 1960s, it examines the emancipatory potential presented by (full) ectogenesis. Given work considering whether there is a moral imperative to remove burdens of pregnancy from women, or whether pregnancy should be considered a temporarily disabling condition under the law, owing to its negative physical effects on women, one might be tempted to agree with Firestone and de Beauvoir that reproduction is tyrannical.<sup>5</sup> At the moment, it is required that at least one woman be involved in all procreative endeavours. If gestation is very hard on (at least some) women, interfering with their ability to pursue their work or engage in other activities of value, or more broadly impacting women's opportunities because of reproductive expectations, then it may be unreasonable to demand that women endure suffering and other negative effects of gestating infants, if we have an alternative.<sup>6</sup>

Yet, even if we allow that de Beauvoir's and Firestone's conceptions of the link between oppression and biology were overly strong, there is something compelling about the idea that the identity of 'woman' is connected to female reproductive capacity, and that this capacity can be, and frequently is, used as a tool for deciding who counts in the category 'woman' and what the value of such people is. Ectogenesis is disruptive to the biological foundation of women's oppression because it challenges the 'normal view' of gender categories.<sup>7</sup> In particular, it destabilizes how we conceptualize 'woman' as definiendum, and fundamentally removes grounds for a functionalist argument that sees female reproductive capacity as a key definiens. The removal of the functionalist argument for 'woman' could serve to undermine social pressures around 'motherhood', and lead to the need to reconceptualize 'parent' in a gender-indifferent way. Thus, this paper examines how

ectogenesis challenges the dominant conceptualization of child-bearing and the roles and expectations around it. Ectogenesis holds interesting liberatory potential vis-à-vis these roles and expectations, by separating 'mother' from female biological reproductive labour.<sup>8</sup>

In this paper, I follow other feminist writers in thinking that certain reproductive practices are harmful or reveal harmful attitudes toward women, and that these harms are founded upon the assumption that 'women' will perform female reproductive functions.<sup>9</sup> I argue that ectogenesis pushes against a definition of 'woman' or 'mother' that rests upon female biological function, and, in so doing, can reveal and weaken the gendered pronatalist assumptions that drive some people to use certain assisted gestational technologies (AGTs). Ectogenesis should be pursued to replace these AGTs, specifically gestational surrogacy and uterine transplant. While this is not primarily a paper focused on harms to women, there are various and well-documented harms that arise in the use of these AGTs.<sup>10</sup>

Furthermore, this paper takes the position that a foundational piece of women's oppression is the conceptual link to female reproductive function, and this link should be targeted for destruction. This paper joins a body of feminist literature that argues that ectogenesis holds the potential to radically challenge dominant notions of gender categories and family roles by allowing us to break the conceptual links between 'woman', 'mother' and female biology. This literature sees ectogenesis as one way to challenge dominant gender paradigms in ways consistent with a feminist view of a free and equal society.<sup>11</sup> Importantly, changes to these paradigms can be prompted by the possibility of ectogenesis even before human use of the technology is a reality.

This paper proceeds as follows. Section 2 establishes the conceptual connections between 'woman', 'mother' and female reproductive function, and outlines evidence for the oppressive social demands around motherhood. In Section 3, I argue that ectogenesis ought to be pursued as an alternative to currently used gestational assistance, while Section 4 briefly argues that ectogenesis should not (but more likely simply will not) replace unassisted pregnancies with technological intervention. However, it is still the case that ectogenesis should be pursued conceptually to help a feminist strategy for equality by

<sup>3</sup>Partridge, E. A., Davey, M. G., Hornick, M. A., McGovern, P. E., Mejaddam, A. Y., Vrcenak, J. D., ... Flake, A. W. (2017). An extra-uterine system to physiologically support the extreme premature lamb. *Nature Communications*, 8(15112). <https://doi.org/10.1038/ncomms15112>

<sup>4</sup>Usuda, H., Watanabe, S., Saito, M., Sato, S., Musk, G., Fee, E., ... Kemp, M. W. (2019). Successful use of an artificial placenta to support extremely preterm ovine fetuses at the border of viability. *American Journal of Obstetrics & Gynecology*, 221(1), 69.e1–69.e17. <https://doi.org/10.1016/j.ajog.2019.03.001>

<sup>5</sup>Shapiro, D. (2018). Should pregnancy be considered a (temporary) disability? *International Journal of Feminist Approaches to Bioethics*, 11(1), 91–105.

<sup>6</sup>Smajdor, A. (2007). The moral imperative for ectogenesis. *Cambridge Quarterly of Healthcare Ethics*, 16, 336–345.

<sup>7</sup>Hale, J. (1996). Are lesbians women? *Hypatia*, 11(2), 94–121; Kukla, R. (2008). Measuring mothering. *International Journal of Feminist Approaches to Bioethics*, 1(1), 67–90, pp. 72–73.

<sup>8</sup>My discussion about gender and reproductive arrangements is focused on Western cultures, and on Canadian, Australian, and British cultures, in particular. Although I suspect that the discussion of attitudes toward the category 'woman', mothers and reproduction within this paper could describe the social and gender dynamics within other socio-political contexts as well, I cannot claim this to be so.

<sup>9</sup>For example, Smajdor, op cit. note 6; Bennett, R. (2008). Is reproduction women's business? How should we regulate regarding stored embryos, posthumous pregnancy, ectogenesis and male pregnancy? *Studies in Ethics, Law, and Technology*, 2(3). <https://doi.org/10.2202/1941-6008.1037>; Takala, T. (2009). Human before sex? Ectogenesis as a way to equality. In F. Simonstein (Ed.) *Reprogen-ethics and the future of gender*. *International Library of Ethics, Law, and the New Medicine*, 43, 187–195; Singer, P., & Wells, D. (1984). *The reproduction revolution*. Oxford, U.K.: Oxford University Press.

<sup>10</sup>Whether there are harms to children from these AGTs, or any ARTs, including ectogenesis, is outside the scope of this paper.

<sup>11</sup>Jackson, E. (2008). Degendering reproduction? *Medical Law Review*, 16(Autumn), 346–368; Kendal, E. (2015). *Equal opportunity and the case for state sponsored ectogenesis*. Basingstoke, U.K.: Palgrave Macmillan.

challenging patriarchal familial norms, especially around genetic relatedness and the concept of the parent; this is argued in in Section 5.

## 2 | THE TYRANNY OF REPRODUCTION

Simone de Beauvoir first located gender-based oppression in women's biology, with the important caveat that biology does not do all the work required to create the oppressive structures. It does, however, form the foundation for certain oppressive practices and beliefs, for arguments about who is and is not a woman, and for the ongoing legitimacy myth of social institutions structuring people's activities and options, including the sexual division of labour. Nowhere is the sexual division of labour more apparent than in child-bearing and child-rearing in the heterosexual household. Thus, Firestone, following de Beauvoir, adopted the idea of the biological foundations of oppression and pressed it further: not until women are freed from the 'tyranny of reproduction', as she called it, and their 'biological destiny' as mothers, could they be free to achieve social formations liberated from patriarchal rule.<sup>12</sup>

A significant reason that women cannot be free until released from biology has to do with the long-standing conceptual link between female reproductive function, the identity category 'woman', and the social role 'mother.' While Beauvoir and Firestone consider biology to be foundational to women's oppression, the formation of the conceptual links that fence off the particular idea 'woman' are not simply one-directional. Alison Stone argues that biologically based oppression of women does not occur 'primarily because of women's biological capacity for child-bearing', but rather that it happens 'because of their social position as the presumed, and often actual, main [bearers of and] carers for children'.<sup>13</sup> The social positioning of the 'mother' role, however, is itself underwritten to an extent by female reproductive functioning. It is not accidental that females who are reproductively-able end up as the main bearers of and carers for children in the mother role. However, the link between the social role 'mother' and female reproductive functioning is not a mere fact of nature either; it is also deeply conceptual insofar as 'mother' has come to stand for female biological features as well as a host of assumptions around gendered behaviours, attitudes, characteristics, and socio-political status, especially within the family. This link is codified in social expectations and practices, and even in laws.

Despite whatever social advancements have been made in accepting shifting and various gender identities, there seems to be a lingering attitude that reproductive organs define 'girl' and 'boy', and by extension 'woman' and 'man'. As we see exemplified by the phenomena of performances of parenting during ultrasound screenings and gender-reveal parties, the 'natural attitude', to use Jacob Hale's words,

towards gender identity is that its (most) significant determining factor is biology, specifically marked by genitalia.<sup>14</sup> So, while the directionality of the definitional connections between 'mother', 'woman', and female reproductive function is complex, there is some evidence for the thought that female biology is foundational to the way 'woman' and 'mother' are defined, and these contingent conceptual links are mutually reinforcing. They are further used to decide who among us can be categorized as 'woman' or as 'mother', or sometimes as 'real mother'.<sup>15</sup> In deciding who counts in the category 'mother', at least some people begin by asking who is female, and who is genetically related; then, only secondly, who has done the work to fulfil a parenting role.<sup>16</sup>

The last revolution in reproductive ethics and social practices came about when women gained control of their reproductive capacities via birth control and access to legal abortions,<sup>17</sup> although we know that this is a shaky and uncertain victory. This revolution represented a partial decoupling of 'woman' from female reproductive functioning, by claiming that one could be a woman and not be subject to female biological destiny. This claim forced society to reckon with the fact that not all who claim the identity 'woman' will be or want to be mothers, in any sense. Yet, social attitudes have been slow to change. Tuija Takala demonstrates this when she quotes a young girl in Finland as saying that it would only be when she became a mother that she would be transformed into a woman.<sup>18</sup> de Beauvoir would not be surprised at this girl's attitude; indeed, de Beauvoir took this change from child to mother to be a central component of 'becoming' a woman.<sup>19</sup> Yet that is exactly what disturbs Takala—much has changed, but much has stayed the same.

The stubborn conceptual link between 'woman' and 'mother' has not yet shifted, and it is harmful to all those who claim the identity 'woman'. One harm has to do directly with pressure to become mothers in pronatalist societies. Carolyn McLeod and Julie Ponese argue that the link between these concepts is so powerful that women blame themselves if they experience infertility, even if the causes of infertility are unknown. They argue that 'women often morally blame themselves for infertility, even though they are rarely a morally relevant cause of the infertility, and... their self-blame is intimately tied to their oppression as women'.<sup>20</sup> This is because these women have internalized to some degree the notion that their role is to reproduce, and that

<sup>14</sup>Hale, op. cit. note 7, pp. 72–73.

<sup>15</sup>We might also think that the TERF argument, and those like it, which claim that anyone who has or ever has had a penis cannot be a woman is evidence that genitalia has special importance among certain groups in deciding a person's gender identity. It is thus not only for cis-women facing the demands of a pronatalist society, but even for those who transition to womanhood.

<sup>16</sup>de Beauvoir, op. cit. note 2; Hale, op. cit. note 7; Stoljar, N. (1995). Essence, identity, and the concept of woman. *Philosophical Topics*, 23(2), 261–293; Williams, C. (2016). Radical inclusion: Recounting the trans inclusive history of radical feminism. *Transgender Studies Quarterly*, 3(1–2), 254–258.

<sup>17</sup>Bennett, op. cit. note 9.

<sup>18</sup>Takala, op. cit. note 9.

<sup>19</sup>de Beauvoir, op. cit. note 2.

<sup>20</sup>McLeod, C., & Ponese, J. (2008). Infertility and moral luck: The politics of women blaming themselves for infertility. *International Journal of Feminist Approaches to Bioethics*, 1(1), 126–144, p. 127.

<sup>12</sup>Firestone, op. cit. note 1.

<sup>13</sup>Stone, A. (2019). *Being born: Birth and philosophy*. Oxford, U.K.: Oxford University Press, p. 19.

therefore they ought to be able to reproduce unassisted.<sup>21</sup> Not being able to reproduce becomes a personal moral failing and source of shame for not living up to the oppressive standards set for them.

A second harm is highlighted by women's blaming themselves for infertility: the setting of categorical boundaries of 'woman' using reproductive function as definiens. As mentioned above, following Hale, one of the ways that society decides who counts as a woman is via signs of female reproductive organs, and society finds women to be the sorts of beings whose job it is to do the female reproductive labour of carrying and birthing children.<sup>22</sup> If a person whom we expect to do these things does not do them, then this reveals the possibility of a category error: this person is either not a woman, or they are a bad woman. Someone might be determined to be 'not a woman' if it is revealed that they are intersex, or that they have transitioned between genders. One may feel that they are 'not a woman', even if they are cis-gendered, if they cannot fulfil this reproductive role. Alternatively, one could be determined to be a 'bad' woman, as in immoral, or as in 'bad-at-being'. McLeod and Ponese argue that women who blame themselves for infertility often feel the former, that they are morally bad, and I think they may also exhibit feelings along the lines of the latter. Taking a page from Aristotle, women who are infertile may take themselves (and others may take them) to be bad at being women, insofar as they are bad at doing the thing that counts them women in the first place.<sup>23</sup> Just as a knife that cannot cut is a bad knife, a woman who cannot bear children is a bad woman.

This thought has some grasp on the reality of some attitudes and behaviours towards women. McLeod and Ponese explain that, 'according to pro-natalist norms, childbearing is a woman's social role and if a woman does not bear children, then she does not "count" (i.e., have value) in society, or she counts less than other women'.<sup>24</sup> If a woman who internalizes that her biological destiny is to bear children, and expects to perform this function, finds that she cannot, this challenges certain foundations of her identity and sense of self-worth. She sees herself, and others see her, as failing at performing the activity that defines her as a woman and shapes her role within her family and social group: 'consider that with social roles come social responsibilities and that the relevant responsibility here is to bear children: for one's own sake, for that of one's spouse, for one's parents, for one's spouse's parents... [Women] will feel that they have let people down if they cannot get pregnant'.<sup>25</sup> There are some societies in which a woman's failure to reproduce would be grounds for abandonment or divorce; in my own, it is more frequently grounds for relationship discord, shame, low self-esteem, and the pursuit of invasive and costly practices of assisted reproduction.

<sup>21</sup>Ibid: 135.

<sup>22</sup>Hale, op. cit. note 7; Murphy, J. S. (1989). Is pregnancy necessary? Feminist concerns about ectogenesis. *Hypatia*, 4(3), 66–84.

<sup>23</sup>Aristotle. (2000). *Nicomachean ethics*. Crisp, R. (Ed.) Cambridge, U.K.: Cambridge University Press.

<sup>24</sup>McLeod & Ponese, op. cit. note 19, p. 135.

<sup>25</sup>Ibid.

I take these arguments as evidence that the situation of woman, and identity claims of being a woman, are still very much determined by biology, and specifically one's ability to fulfil female reproductive function. So, like Takala, Jackson, Smajdor and others, I perceive value in decoupling the concepts of 'woman' and 'mother' from biology.<sup>26</sup> This is where ectogenesis holds emancipatory potential. Despite some social progress, 'mother' is still linked to female reproductive function and gendered behavioural assumptions to a surprising degree, given the ways in which it has been challenged by developments in assisted reproductive technologies (ARTs) such as gamete donation, as well as surrogacy practices. Currently in the U.K., for example, a person's 'mother' is the female who births them, whether genetically related or otherwise.<sup>27</sup> So, the legal presumption is that the role 'mother' is taken by one with female reproductive capacity to gestate and deliver an infant. This definition is challenged by surrogacy, but ectogenesis troubles the entire framework.

### 3 | ECTOGENESIS AS AN ALTERNATIVE TO CURRENT ASSISTED GESTATION

We can find further evidence to support the argument that women's identity claims and value are still intimately linked with reproductive function in looking to the extent to which technology has developed to assist gestation. In addition to reproductive assistance such as IVF and associated technologies, women will seek—or act as—gestational surrogates in order to have children. Even more radically, women will pursue uterine transplant surgery to be able to do the gestational work themselves. I will give a (necessarily) brief explanation of these processes, in order to argue that ectogenesis should be pursued as an alternative to these AGTs.

The primary current alternative to gestating one's offspring oneself is to arrange for a gestational surrogate. This practice is morally and legally fraught, and there are important race, class and cultural issues involved that I cannot go into here.<sup>28</sup> On balance, it seems that gestational surrogacy is bad for women. Gestational surrogacy is bad for the women commissioning the gestational work, because such practices are the result of and contribute to the maintenance of pronatalist social pressures to produce genetically related offspring. Gestational surrogacy is also bad for the women supplying the gestational work. Many authors have convincingly argued that the women who provide surrogacy labour suffer violence of mental, physical and structural kinds.<sup>29</sup> Gestational contracts can be a woman's best option for work, because

<sup>26</sup>Jackson, op. cit. note 10; Smajdor, op. cit. note 6; Takala, op. cit. note 9.

<sup>27</sup>HM Government of the United Kingdom. (2018). *Legal rights when using surrogates and donors*. Retrieved from <https://www.gov.uk/legal-rights-when-using-surrogates-and-donors>

<sup>28</sup>Banerjee, A. (2014). Race and a transnational reproductive caste system: Indian transnational surrogacy. *Hypatia*, 29(1), 113–128; Pande, A. (2009). Not an 'angel', not a 'whore': Surrogates as 'dirty' workers in India. *Indian Journal of Gender Studies*, 16(2), 141–173; Marway, H. (2012). La gestation pour autrui commerciale: Droit et éthique. *Travail, Genre et Sociétés*, 28(2), 173–181.

<sup>29</sup>Banerjee, op. cit. note 27; Pande, op. cit. note 27; Lewis, S. (2019). *Full surrogacy now: Feminism against family*. London U.K.: Verso Books.

of deep structural injustice that makes her other options terrible. These contracts are (under current conditions) exploitative at best, but many have argued that this has to do with the situations in which women find themselves, rather than with the nature of the work itself. The option of working through surrogacy allows women to provide for themselves and their families, but also allows deep injustices to persist, because the women find other ways to survive.

Complicating this, however, is that paying women for gestational work is illegal in many countries (e.g. Canada, Australia), and creating paid international gestational surrogacy contracts is becoming more difficult.<sup>30</sup> Nations that had hitherto allowed paid surrogacy (e.g. India), and became destinations for reproductive tourism from those countries in which payment was illegal, have recently passing laws banning international or paid (or both) contracts, asserting these restrictions on grounds of 'protecting vulnerable women'.<sup>31</sup>

Recently, Sophie Lewis has argued that the best moral solution to gestational surrogacy contracts is 'communising' reproduction.<sup>32</sup> This would mean fully legalizing surrogacy, unionizing reproductive workers, and handing control of surrogate gestational labour to surrogate gestators themselves, Lewis argues. Among other things, this means full recognition of reproduction as labour, and organizing women who work in reproductive labour so that they can demand and exercise their rights as workers. Idealistic as it may sound, this is one in-principle viable solution to the moral and political problems raised by gestational surrogacy, and pregnancy generally. Another possible solution is ectogenesis.

Pregnancy is dangerous and difficult work.<sup>33</sup> If women want to take on pregnancy for their own procreative desires, they are and ought to be as permitted to do so as anyone is to take on any other dangerous and difficult work. However, women ought not to have to undertake gestational work for the fulfilment of other people's procreative desires. The labour involved in gestational surrogacy, as well as the dangers to the woman doing this work, the restrictions on the woman's freedom, and the mental and physical stresses cannot be justified if we have an alternative such as ectogenesis. Women undertake this work currently because it is an economically optimal option for them under unjust circumstances, and it also happens to be the best current gestational option available. As non-ideal as gestational surrogacy is, the only alternate option at the moment is uterine transplant, and it is far less ideal.

Uterine transplant (UTx) is a new and risky procedure designed to assist women to gestate offspring. At the time of writing, success rates are extremely low. The elective transplantation of a uterus is very risky, as with all organ transplantation, and requires the woman

receiving the organ to be on powerful immunosuppressants. If she gets pregnant (using IVF embryos), then the foetus will also be exposed to these drugs in utero, with as-yet unknown effects. Only two live births have resulted from UTx from deceased donors so far; 39 transplants have been performed from live donors, resulting in the births of 11 babies since 2013.<sup>34</sup> Although the transplanted uterus is connected to the woman's blood supply, it is not enervated, meaning that there is no internal sensory communication between mother and foetus, and no feelings of contractions.<sup>35</sup> Once the woman is 'finished' with the uterus, it must be removed immediately, as its presence exposes her to a very high risk of infection and disease. Although one of the reasons women want this transplantation is to 'experience' pregnancy, it is not clear what this means or whether the transplanted uterus can give them this. The methods of the procedure and success rates to date present it as a very uncertain and risky way to gestate offspring.

From a perspective informed by de Beauvoir and Firestone, the procedure of UTx is an unacceptable outgrowth of patriarchal pressure upon women to have specific experiences of motherhood (e.g. pregnancy). UTx is very risky, for both woman and foetus, and is patently unnecessary to being a parent.<sup>36</sup> It further reveals the extent to which the scientific community is dedicated to gendered myths around motherhood. Arguments supporting the pursuit of UTx are founded on the notion that gestating genetic offspring is a central life good for women, in turn resting on the idea that female reproductive function is central to one's identity as a woman and to a woman's value.<sup>37</sup> If we expose this idea as part of the patriarchal myth of 'woman' that it is (and I return to this below), the arguments for why UTx is a valuable pursuit come seriously into question. The agenda for women's liberation would call for ectogenesis to replace UTx at the earliest possible instance; the oppressive assumptions behind UTx and its additional practical risks are straightforwardly unjustifiable.

These arguments mean, I think, that we have a moral imperative to develop ectogenesis as a means to assisted gestation. As I will explain below, this does not mean forcibly replacing all gestational work with ectogenesis; it does, however, mean replacing AGTs in the forms of surrogacy and UTx. If ectogenesis did replace these AGTs, Lewis' argument about organizing reproductive workers should still hold insofar as women were involved in some stage of assisted procreation, such as egg donation. However, even these other forms of reproductive labour may be on-track for technological replacement.

<sup>30</sup>Kendal, op. cit. note 10.

<sup>31</sup>Ray, S. (2018, Dec 20). India bans commercial surrogacy to stop 'rent a womb' exploitation of vulnerable women. *The Telegraph*. Retrieved from <https://www.telegraph.co.uk/news/2018/12/20/india-bans-commercial-surrogacy-stop-rent-womb-exploitati/>

<sup>32</sup>Lewis, op. cit. note 28.

<sup>33</sup>Jackson, op. cit. note 10; Kendal, op. cit. note 10; Lewis, op. cit. note 28; Shapiro, op. cit. note 5.

<sup>34</sup>Cleveland Clinic. (2019). For the first time in North America, a woman gives birth after uterus transplant from a deceased donor. *HealthEssentials*, 9 July. Retrieved from <https://health.clevelandclinic.org/for-the-first-time-in-north-america-woman-gives-birth-after-uterus-transplant-from-deceased-donor/>; Wise, J. (2018). Baby is born after uterus transplantation from dead donor. *BMJ*, 363. <https://doi.org/10.1136/bmj.k5135>

<sup>35</sup>Catsanos, R., Rogers, W., & Lotz, M. (2013). The ethics of uterine transplantation. *Bioethics*, 27(2), 65–73, p. 72.

<sup>36</sup>Ibid.

<sup>37</sup>Ibid; Wilkinson, S., & Williams, N. (2016). Should uterus transplants be publicly funded? *Journal of Medical Ethics*, 42, 559–565.

## 4 | ECTOGENESIS AS AN ALTERNATIVE TO UNASSISTED PREGNANCY

Some, like Firestone, would argue that ectogenesis should replace all pregnancies. If it did, there would no longer be any room for infertile women to feel like 'bad' women—there would be no reproductive lines along which to distinguish 'good' women from 'bad' women in this sense. Firestone was aiming for the liberation of women and children, as well as of men, in a fully equal society outside of capitalism. However, Firestone's critics argued that rather than being a sign of liberation for women, this would represent a new form of exploitation or, worse, elimination. Ectogenesis could be a way of mandating motherhood, by creating infants in a lab and assigning them parents whether people wanted them or not. Alternatively, it could be a way to eliminate women altogether, allowing the patriarchy to remove females by taking over their one unique purpose.<sup>38</sup>

There are two reasons why I do not think we should strive to replace unassisted pregnancies with ectogenesis. First, pragmatics: this is impractical and improbable. Such a thing would entail a number of extreme scenarios, such as the removal from every woman's womb of any embryo spontaneously conceived for placement in an ectogenetic chamber; or further, the forced sterilization of all men and women to (try to) ensure that no spontaneous pregnancies happened. I find these dystopian extremes to be so unlikely as to be a distraction from important arguments. Although on the uptick in industrialized nations, infertility still affects a minority of couples attempting to have children (at 5–15%).<sup>39</sup> Unassisted pregnancy is more common by a long way and is much easier (and has better success rates) for those who are able to do it than any form of technological intervention. So, I find it implausible that, say, a government would seek to replace the reproductive labour of 85–95% of procreators with invasive and costly technology.

Furthermore, Murphy argues that worst-case scenarios like the 'elimination of women' argument are implausible because there are other ways, besides reproduction, that women provide labour to capitalist patriarchy, such as household care of men and of extended families, labour that requires affective effort such as nursing and social services, maintaining male egos, and fulfilling heterosexual male desires.<sup>40</sup> So, even having all pregnancies performed ectogenetically would not achieve gender equity in child-rearing, or eliminate the concept 'woman', without deeper change. Widespread ectogenesis might neutralize the 'bad'–'good' woman issue as far as gestation is concerned, but without deeper challenge to gendered divisions of labour this good–bad distinction would surely just get kicked over to another behaviour, such as breast-feeding, parental leave, or the quality of daycare that a child could be sent to—things we already

see dividing women, and which all rest on ideas of 'motherhood' that need disruption.

While I consider that replacing AGTs with ectogenesis would be a net benefit, some might object that this argument ends up supporting broad reproductive autonomy for fertile women while claiming that infertile women have moral barriers to the ways in which they can exercise theirs. This is broadly accurate, but with important caveats: one, there are moral barriers to the way that fertile people should exercise their reproductive autonomy; two, it is not the case that infertile people have unlimited claims upon others to pursue genetic parenthood. Gestationally infertile couples do not have legitimate moral claims against women to let them use their uteri—either as gestational surrogates or as uterus donors—in pursuit of (over-valued) genetic parenthood.

Fundamentally, the oppressive conceptual link between 'woman' and female reproductive capacity needs to be challenged. Doing so would hopefully result in a wider variety of options for fertile and infertile women regarding how and whether to have children. In the next section, I expand on the idea that the possibility of ectogenesis upsets the foundations of gender roles, and spur a rethinking of definitions of 'mother', as well as of an inclusive and gender-indifferent concept of 'parent'.

## 5 | CHALLENGING NORMS OF THE FAMILY

Ectogenesis should be utilized conceptually to advance the separation of female reproductive function from 'woman' and from 'mother'. As discussed above, female biological functioning appears to still be one of the barriers to women's equality. So, pursuing technologies that would weaken the presumed link between biology and 'woman' seems beneficial to (trans-inclusionary radical) feminist aims, as part of a broad project of challenging dominant power relations that begin within the family.

As I described above, female reproductive function is used to delineate who counts as woman, based on biological features and performances. If it is possible to remove female reproductive work from women's bodies, even theoretically, then this ground for delineation is undermined. Insofar as it is used as a definition for 'who counts', female reproductive function clearly privileges some women over others, both under the law and in moral and political imaginations. This privilege is revealed in numerous regulations and socio-political behaviours. This includes that *prima facie*, parenthood is defined genetically in some jurisdictions (such as the U.S.A.).<sup>41</sup> The hegemony of cis-gendered privilege, straight privilege, and geneticism<sup>42</sup> is reinforced in large and small social practices, including questions asked of children with same-sex or adoptive parents about who their 'real' mother or father is, and

<sup>38</sup>Murphy, op. cit. note 21; Glenn, E. N. (1992). From servitude to service work: Historical continuities in the racial division of paid reproductive labor. *Signs*, 18(1), 1–43.

<sup>39</sup>Munster, E. et al. (2018). Who is the gate keeper for treatment in a fertility clinic in Germany? Baseline results of a prospective cohort study (PinK study). *BMC Pregnancy and Childbirth*, 18, 62.

<sup>40</sup>Murphy, op. cit. note 21, p. 76.

<sup>41</sup>Jackson, op. cit. note 10.

<sup>42</sup>Lotz, M. (2016). Commentary on Nicola Williams and Stephen Wilkinson: 'Should uterus transplants be publicly funded?' *Journal of Medical Ethics*, 42(9), 570–571.

novel social rituals such as the gender-reveal party. However, in other societies (such as the U.K.) one's 'mother' is the person who birthed one.<sup>43</sup> So, for cases of gestational surrogacy, the contracting couple must legally adopt the child from the surrogate gestator.

Insofar as adoptive, kinship, and same-sex parents are already pushing against pronatalist and geneticist assumptions, ectogenesis will further put pressure on this view. Ectogenesis reveals the possibility that what has hitherto been a major component of female reproductive function—gestation—might not involve a woman at all. If an infant might not be 'carried', or 'birthed' by anyone as such, then carrying and birthing are undermined as relevant factors in being a woman or mother. This argument extends what Singer and Wells called the 'sexual equality' argument.<sup>44</sup> Their proposal, drawing on Firestone, was that ectogenesis held the potential to achieve equality between women and men, by rethinking the role 'mother', releasing women from the unequal status of primary bearer of and carer for children.

The potential that ectogenesis has to disrupt the traditional patriarchal family structure, and thence all of the other male-dominated structures (of work, education, cultural production, and so on) was, per Firestone, one of the main reasons for the reluctance of science to pursue this and other reproductive possibilities.<sup>45</sup> Indeed, Singer and Wells suggest that one may take the very framing of research on ectogenetic technologies as evidence for this reluctance on the part of scientists, insofar as these are pursued as therapeutic technologies for premature infants, and not 'as something in itself desirable because of the new options it would create for women'.<sup>46</sup>

Despite the workplace laws now in place in most of the Western world, female biological function still acts as a means to obstruct access to valuable goods for women. Because 'woman' is constructed upon the assumption of female reproductive labour, the goods obstructed to women include certain career options, professional progression, and equal pay. Where women lag behind in promotions or raises, being clustered in lower-paying and/or more junior roles (resulting in the 'gender pay gap'), expected or real career breaks for maternity leaves and various 'choices' that promote family interests over personal interests are given as partial explanations.<sup>47</sup> Ectogenesis would not remove the need for parental leaves from work, but as part of its disruptive potential regarding how we conceptualize reproduction and parenting it could challenge the

gendered element of child-rearing expectations that are pervasive in the workplace. Workplaces (and governments) would be in a position of having to justify their default assumption that a woman employee would be taking leave or doing most of the child-rearing work, rather than having an equal parenting split or her co-parent doing more, etc. In challenging assumptions thus, ectogenesis might expose the ways in which merit-based promotion criteria are linked to such things as uninterrupted work life, or a certain rate of production over time.<sup>48</sup>

**Ectogenesis is one technological possibility that serves to open the conceptual space for deeper understandings of 'parent'.** This conceptual space can be afforded by other ideas as well, as Lewis argues regarding full surrogacy, but ectogenesis seems to provide a unique opportunity. This is because of the proposition of removing pregnancy from the body entirely. If an infant is not of woman born, but 'deanted' from an artificial womb, then the primary caring role cannot be determined *de facto* by who gave birth to it. So, it encourages an understanding of 'mother' and 'father' as social roles, not as specifically gender- or biologically-determined identities.

**These roles are linked to certain caring functions and relations within a group of others, such as a family or community, variously constituted, and adopted by the ones who take them up. What the possibility of ectogenesis reveals is that the notions that fill the concepts 'mother' and 'father' are arbitrary, and contingently linked to biology.** If we imagine that female and male contributions to reproduction become similar, and no one does gestational work, then whatever loaded meanings are currently contained in 'mother' and 'father' must drain away. Rather, what remains is a notion of 'parent' that is indifferent to gender identity (and ideally to genetics). Regardless of gender or biology, the content of 'parent' should be essentially the same for anyone who takes this role.

This has implications for moral and social notions of caring responsibilities. Ectogenesis could be a route to achieving the removal of 'vibrant or lingering images of women as breeders' from society, where the primary value of women rests in reproducing and caring for offspring.<sup>49</sup> The shift in care economies would require negotiation, especially where, legally, 'mother' is defined in terms of biology, and where mothers hold a greater share of moral or legal responsibility. U.K. law states that 'all mothers and most fathers have legal rights and responsibilities as a parent'.<sup>50</sup> We must interrogate how it is the case that all mothers, but only most fathers, currently have legal rights and responsibilities, consider how these are connected to social roles and our moral judgments about parenthood, and seek to change the perspective from which care responsibilities are determined and shaped.

<sup>43</sup>HM Government, op. cit. note 26.

<sup>44</sup>Singer, P., & Wells, D. (1984). *The reproduction revolution*. Oxford, U.K.: Oxford University Press.

<sup>45</sup>Firestone, op. cit. note 1; Singer & Wells, op. cit. note 40.

<sup>46</sup>Singer & Wells, op. cit. note 40, p. 137.

<sup>47</sup>O'Brien, K. (2019, Mar 28). 'Why we still struggle with work-home conflict in women and men. *The Conversation*. Retrieved from <https://theconversation.com/why-we-still-struggle-with-work-home-conflict-in-women-and-men-112698>; Walker, O. (2019, Mar 30). Half of UK fund groups say gender pay gap is widening. *Financial Times*. Retrieved from <https://www.ft.com/content/4d1dd528-6288-3939-8f2b-b0e3bdb28bcf>. I do not have space to discuss the important intersections between the gendered division of labour and race; however, the reader is encouraged to see, among others, Banerjee, op. cit. note 27; Glenn, op. cit. note 35; Pande, op. cit. note 27.

<sup>48</sup>Young, I. M. (1990). *Justice and the politics of difference*. New Haven, CT: Princeton University Press.

<sup>49</sup>McLeod & Ponese, op. cit. note 19, p. 141.

<sup>50</sup>HM Government of the United Kingdom. (2018). *Parental rights and responsibilities*. Retrieved from <https://www.gov.uk/parental-rights-responsibilities>.

## 6 | CONCLUSIONS

While I have argued here that we have moral imperatives to achieve ectogenesis as an alternative to AGTs, the real potential of ectogenesis is the challenge to underlying oppressive assumptions connecting 'woman' to female reproductive functions. Ectogenesis encourages the complete rethinking of social roles hitherto based upon the gender-biology matrix. The moral and political possibilities raised by ectogenesis, well in advance of its functional realization, can be employed to trouble certain assumptions, values and expectations that maintain oppressive ideas and practices around gender, identity and the family. This paper has highlighted the ways in which certain ideas around reproductive function provide the boundaries of gender categories, delineating who counts as 'woman', and who is a mother. Such ideas have negative effects on people's lives, and serve to maintain the current power hegemonies.

The debates around ectogenesis provide an opportunity to rethink basic social institutions, such as the family, and policies that shape our working and personal lives. I propose that we can break the conceptual links between 'woman', 'mother' and female reproductive function and forge new ones that are less exclusionary and oppressive. To break the conceptual link between 'mother', 'woman', and female biological functioning would break a major mechanism of control over all of us who call ourselves women. The proposal of this paper is to employ the theoretical possibility of full ectogenesis to redefine gender categories and parenting roles of all kinds. We can do this by using the possibility of ectogenesis, long before any human infant can make use of ectogenetic technology.

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## CONFLICT OF INTEREST

The author declares no conflict of interest.

## ORCID

Kathryn MacKay  <https://orcid.org/0000-0001-9022-4558>

## AUTHOR BIOGRAPHY

**Kathryn MacKay** is a lecturer in bioethics at Sydney Health Ethics, University of Sydney, Australia. Her research focuses on issues of human flourishing at the intersection of feminist theory, ethics and political philosophy. She is particularly interested in questions related to power, health and wellbeing, identity and group relations, and agency. Kathryn is currently researching the role that mothers play in helping to achieve the aims of public health, and the nature of compassion as a virtue of public health practice and policies.

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