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Gestation Beyond Mother/Machine: Legal
Frameworks for Artificial Wombs, Abortion, and
Care

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PhD Thesis

Birkbeck, University of London

I confirm that the work prepared in this thesis is my own

ABSTRACT

This thesis is a critical legal, feminist intervention in the discourse on artificial wombs and abortion. In 2016, embryologists grew human embryos in culture up to 13 days, ending the experiment to respect the contemporary legal limit of 14 days. In 2017, researchers gestated lamb fetuses from the equivalent of 23 weeks in a human through to term in the “biobag”, a highly advanced incubator replete with artificial amniotic fluid. The renewed discourse on ectogenesis (external gestation) following these developments has focused on how the technology might impact abortion rights. Bioethical and legal scholars have hypothesized since the 1970s that ectogenesis could allow unwanted fetuses to be extracted and reimplanted in an artificial womb instead of being terminated, thus protecting the pregnant person’s bodily autonomy while simultaneously protecting fetal life. Consequently, these scholars argue that ectogenesis will challenge contemporary legal justifications for abortion. I make two key interventions in this literature. Firstly, I address the hegemony of US-centric perspectives in which American abortion jurisprudence is frequently drawn on to conclude that artificial wombs universally challenge abortion rights. I apply a comparative analysis of challenges that scholars have alleged ectogenesis will pose for abortion law against existing regulations in three jurisdictions: the United States, the United Kingdom where the Abortion Act 1967 applies, and Canada. In so doing, I aim to understand whether this technology will threaten, bolster, or have no significant impact on abortion protections in context. Secondly, I strategically engage a feminist ethics of care (adapted with reference to reproductive justice and relational legal theory) to assess frameworks that have been proposed for regulating abortion and ectogenesis. I show that debates over these frameworks frequently fail to consider the relational entanglements that may be constituted through ectogenesis, abortion, and human gestation. I insist that any framework for regulating artificial wombs must attend to these relationships and centralize care for the pregnant person.

TABLE OF CONTENTS

1. Matrix, Biobag, Artificial Womb	6
<i>The history of artificial womb research</i>	9
<i>Social Science literature on ectogenesis</i>	20
<i>Key debates</i>	23
2. A Comparative, Relational Feminist Assessment of How Ectogenesis Will Impact Abortion Regulation	32
<i>The need for a comparative analysis</i>	34
<i>The need for a feminist care analysis</i>	47
3. Comparing Challenges to the Status Quo of Abortion Law	59
<i>A challenge to abortion rights based in arguments for bodily autonomy</i>	65
<i>A challenge to abortion rights based on shifting viability</i>	81
4. Assessing Frameworks that Retain the Status Quo For Attention to Relationality and Care	96
<i>Redefining bodily autonomy</i>	99
<i>Redefining fetal viability</i>	112
5. “Degendering Gestation” and Worsening Stratified Reproduction: A Comparison of Broader Challenges in Access to Reproductive Care	122
<i>Ectogenesis and gendered responsibility for a gestating fetus</i>	122
<i>Artificial Wombs and Stratified Reproduction</i>	143
6. Regulating Abortion After Ectogenesis Through Property Rights, Genetic Parenthood, or Full Decriminalization	161
<i>Regulation through property rights or rights to avoid genetic parenthood</i>	163
<i>Full decriminalization and improving access</i>	174
Conclusion: Flower Baby, Capsula Mundi	188
Bibliography	192

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DEDICATION

This thesis is for Jessica Barry, Emily Duncan, Meghan Hubley, Rebecca Falvey, Kristin Slaney, Gina Thornhill, and Lesley Smith. The largest body of knowledge I've acquired comes but from being fifteen, eating chips on the floor with you and talking all night. What I know about relationships and how individuals are entangled with other people I know from the way we all remember the same events but differently, from how far the thread that holds us together can stretch without breaking. I believe that people can tell stories that will change the future because I know it from sitting in someone's backyard on a long summer night with the candles going, whispering into the dark.

1. MATRIX, BIOBAG, ARTIFICIAL WOMB

A lamb fetus, pink-fleshed and self-evidently too small to survive on its own, is surrounded by liquid and floating in a transparent bag. At the equivalent of approximately twenty-three weeks human gestation, the lamb is just past the halfway mark of the forty weeks that make a full-term pregnancy. Metal rods hold the bag in place, and thick plastic tubes connected together like oversized veins pump nutrient-enriched liquids to be circulated in movements triggered by the fetus's own heartbeat (Partridge et al 2017, 3). A month later, the lamb is fully developed. Replete with fluffy white wool, it has grown big enough to be extracted from beneath the plastic surface against which its body now presses.

Though it may sound like science fiction, this is the biobag: a highly advanced incubator developed in 2017 that replicates the womb and is being prepared for trial with human fetuses. The liquid within is a synthetic replication of the amniotic fluid that surrounds growing babies. The vein-like cords that deliver this fluid imitate the placenta, which eliminates toxins and ensures that a fetus receives the sustenance it requires to flourish. The bag itself can be expanded or compressed to more closely take the physical shape of a given uterus. A completely closed system, the biobag “is translucent, sonolucent, and flexible to permit monitoring, scanning, and manipulation of the fetus as necessary” (3), containing a built-in scale to monitor the fetus without removing it. It should come as no surprise that this technology has prompted a new wave of speculation in both popular media and academic literature that the first artificial womb has arrived.

An “artificial womb” is a device that mimics the uterus and allows for “extracorporeal gestation” (Abecassis 2016, 6) to occur. A related term commonly used in social science literature is “ectogenesis,” a word generally understood to have been coined in 1923 by geneticist and author JBS Haldane to refer to the process of facilitating gestation in its entirety outside of the body. In the social sciences and humanities literature on ectogenesis, which spans from Haldane's time through to the present-day, there is consensus that there are two scientific fields in which research may lead to the development of an artificial womb. At one end of gestation is work by embryologists and stem cell biologists that allows for the growth of human embryos in culture (“in vitro”). Growing embryos in vitro is considered by many to constitute “partial ectogenesis” (Cannold 2006, 47, see also Alghrani 2007, Gefland 2006, Tong 2006, Aristarkhova 2012, Coleman 2004). At the other end of development is research

like the work that led to the biobag, namely, projects on life support for neonates conducted by neonatologists, obstetricians, and medical engineers. It is agreed in the social science literature that it is from these two directions—embryos growing in culture, and technologies to sustain preterm infants—that total ectogenesis is likely to occur, and that partially ectogenic technologies, such as the incubator and the potential to grow an embryo in culture, already exist (Kendal 2015, Smajdor 2007 and 2012, Simonstein 2009, Alghrani 2008, Murphy 2006, Aristarkhova 2012, Bard 2006, Welin 2004, Coleman 2004, Gefland and Shook 2006, Murphy 2012, Ho 2006, Sander-Staudt 2006, Rosen 2003).

The years between 2016 and 2019 have been significant for research that might one day lead to ectogenesis. The biobag was developed in 2017 at the Center for Fetal Research at Children’s Hospital in Philadelphia, and was replicated in a collaboration between the Women and Infants Fetal Research Foundation at the University of Western Australia and Tohoku University in Japan. Each of these research groups were successful in creating an incubator (first called the biobag) in which to gestate lamb fetuses from “the biological equivalent of the 22-24 week gestation premature human infant” (Partridge et al. 2017, 2) through to term. The current limit of “fetal viability” (the point at which a fetus has a chance of survival outside the womb) sits at around 22-24 weeks of gestation. In spite of this, survival before around 28 weeks frequently continues to be accompanied by lung disease, organ damage, and further health issues. The biobag then, is not intended to “extend the current limits of viability” (Partridge et al. 2017, 11) but “to offer the potential for improved outcomes for those infants who are already being routinely resuscitated and cared for in neonatal intensive care units” (11). As of 2019, the team is still working with the US Federal Drug Association to prepare for a clinical trial with human fetuses, beginning likely within one or two years. The Australian-Japanese team, led by Usuda, published their work in October 2017. With slight differences in experimental design, Usuda et al’s research follows the same principles as the biobag in attempting to treat “extremely preterm infants [. . .] as fetuses, rather than as small babies” (Usuda et al. 2017, 2). Their iteration of the technology, called “ex vivo uterine environment (EVE) therapy” (ibid), allowed five of six tested fetal lambs to survive and grow normally outside of the womb. In October 2019, a team led by Guid Oei at the Eindhoven University of Technology received funding to develop a prototype artificial womb building on the biobag research, set to be ready for human trials in five years time (Davis 2019).

At the other end of gestation, research groups at Rockefeller and Cambridge universities respectively built on methods that had previously been used with mice to develop a culture that would allow human embryos to grow in vitro beyond the implantation stage. Releasing their publications in May 2016, the “two groups reported that they had sustained human embryos in vitro for 12-13 days” (Hyun et al. 2017, 169). As Hyun et al note, their discovery is significant for two reasons, first because “until now, no one had reported culturing human embryos in vitro beyond nine days, and rarely have they been sustained for more than seven” (169), and secondly, because the experiments showed that a human embryo could “self-organize” without the input of the mother. Up until this point, it was assumed that after seven days “the human embryo must implant into the uterus of the mother to survive” (Shabazi et al. 2016, 1). In both instances, research was halted at fourteen days in order to respect contemporary legal limits for embryo growth in vitro in both the United States and United Kingdom. I will provide further background on these legal limits in what follows, but I would note for now that both groups suggested that the embryos would be able to continue to develop for some time further in culture had the experiments continued. As Zernicka-Goetz, lead researcher at the Cambridge group, noted in an interview with *Nature*, however, “at some point, the embryo [. . .] depends upon the developing placenta for a supply of nutrients and for gas exchange” (quoted in Hurlbut 2017) and at this point, scientists would need to create something that could “substitu[te] for the placenta or develop[...] an artificial placenta in which the embryo can grow” (ibid.). Zernicka-Goetz describes this as a significant challenge, but does not dismiss it as impossible.

This thesis falls within a growing body of literature that accepts the premise that ectogenesis will one day be possible. When I set out to begin this research, I learned that what is perhaps most compelling about writing on the artificial womb is the way in which this speculative body of literature is punctuated with visions of the future that replicate some of the most limiting configurations of the past. The example of this that was the most striking to me was the recurring claim in the legal and bioethical literature that by allowing fetuses to be removed from a pregnant person’s body to continue to grow in an artificial womb, this technology will one day “solve” abortion. Despite a partial desire to write about any aspect of reproductive care *other* than abortion, I found myself so intrigued and outraged by these arguments that this thesis has come to be an intervention in this literature. In chapter two, I will introduce the two features of my intervention. First, I conduct a comparative analysis of how artificial womb technology

might challenge (or have no impact on) abortion regulation in Canada, the United Kingdom, and the United States, and second, I employ a feminist ethics of care to normatively assess possible frameworks for ectogenesis and abortion.

Before I come to laying out my argument, though, I want to offer a kind of history of how I arrived here, by laying out a review of the scientific, bioethical, legal, and feminist literature on artificial womb technology. Though the recent research developments I have described above have prompted a new wave of speculation that an artificial womb will soon be available, work on both growing embryos in culture and on incubators began over one hundred years ago. Claims that the artificial womb is imminent, and analyses of its possible societal impact have followed each major breakthrough in these areas. I will explore the debates that dominate the social science discourse on ectogenesis, but first, I want to contextualize these discussions by tracing some of this scientific history.

THE INCUBATOR AS ARTIFICIAL WOMB

Neonatologist William A. Silverman, the former head of neonatal-intensive care at Columbia-Presbyterian Medical Center, traces the origin of the incubator to 1878, when French obstetrician Stephane Tarnier “visited an exhibition, [...] and came across a warming chamber for the rearing of poultry [...] He asked the zookeeper to build a similar box, sufficiently ventilated and large enough to hold one or two premature infants” (1979, np). This device, introduced into the Paris Maternity hospital in 1880, was innovative as a “closed system” for the preservation of the small baby. While there were many attempts at incubation that precede Tarnier’s work, the novelty of Tarnier’s invention lies in his success at turning medical attention to the premature infant as a life worth saving (Baker 2000, 323). At the time, Tarnier “conclude[d] that he was on the verge of pushing back the medical definition of viability to its legal definition of six months (or 180 days) of gestation” (Baker 2000, 41). This marks the initial instance of the medical community considering the possibility that part of human gestation might occur outside of the mother’s womb, and inside of a machine.

With the present day introduction of the biobag, there has been a notable discord between understandings of the technology that situate it as a bridge between parent and prematurely born baby (Romanis 2018, Partridge et al 2017), and those that situate it as a replacement for the human womb (Blackshaw and Rodger 2018, Mathison and Davis 2017). This same difference of opinions was evident in the 1880s. Baker notes that on

one side of the debate, “Just as physicians aspired to improve upon breast milk with artificial formula, they developed the incubator as an improvement upon the womb” (1996, 71), and on the other side physicians felt that “the idea of the incubator as artificial womb implied a potential challenge to the mother” (73) which was not a desirable outcome. Pierre Budin, Tarnier’s student who later took over his project at Paris Maternity Hospital, fell firmly in the second camp, “emphasiz[ing] breastfeeding more than the incubator” (2000, 323) as a means of caring for preterms, and introducing glass incubators to allow mothers to view their babies easily in hopes that this would encourage bonding.

The other approach to the incubator was as a stand-alone machine. Aristarkhova notes of this camp that “incubators were rationalized by some doctors and scientists as ‘artificial wombs’ that were safer than a ‘real’ uterus” (2012, 91). Alexandre Lion’s incubator typified this approach. Baker writes, “Though this type of design hampered observation, its defenders proposed a different advantage: it created a protective environment analogous to the womb” (1996, 71). Baker traces Lion’s work as the emergence of the “metaphor of the artificial womb” within medical literature.

Likely fueled by the debates over the purpose of the incubator in the medical community, public interest in the possibility of growing babies from nothing also began in this era. Lion and fellow pediatrician Martin Couney popularized their research by touring the World’s Fairs with incubators bearing live premature babies. Baker notes that “The high point of Lion’s career was his opening of the Kinderbrutenstalt (“child hatchery”), an elaborate incubator baby show that became the surprise sensation of the Berlin Exposition of 1896” (2000, 324). One contemporary magazine, *The Graphic*, referred to the incubator as “An Artificial Foster-Mother,” and rumors that the technology was an artificial womb abounded.

As Natalia Durbach writes, after “Making their British debut at the Victorian Era Exhibition at Earl’s Court in the summer of 1897” (2009, 23), incubator baby shows became a burgeoning fad. According to Durbach, “an article in a popular periodical explicitly described the baby incubator as a ‘hot-house,’ suggesting that infants could be cultivated like orchids” (24). She cites as well “An 1896 comic song [which] played on [...] nationalistic fears of depopulation with its lyric ‘I hope to breed a nation by the means of incubation’” (24). She writes that the incubators “were ventilated by holes, which one reporter described as ‘orifices,’ thus furthering the suggestion that the incubator was in fact a stand-in for the maternal body that had ceased to perform its

reproductive duties” (24). In both medical literature on “incubator babies” and in the popular writing which extrapolated on this, Durbach notes that the “rhetoric suggested that the final trimester of fetal development could now successfully take place outside the womb itself” (25). These early speculative treatments of ongoing medical studies are exemplary of the interplay between scientific developments and wild rumors in the popular press that characterize the history of ectogenetic research up to the present day. Each innovation in incubation technology has been met with enthusiastic declarations that the artificial womb has truly arrived. It is useful to note the origin of such claims in the 1880s as a caveat that though long-anticipated, the science of ectogenesis has yet to match the fantasy.

Around the turn of the century, backlash against the incubator emerged amidst doubts over whether the technology actually worked (Durbach 2009, Baker 2000). Incubators primarily remained the project of individuals like Couney (who went on to exhibit premature babies at Coney Island) and did not return to popular use until after World War II (Baker 2000). I will skip forward in this history to discuss explicit research on the artificial uterus in the 1950s, but I want to note first a few key moments that occurred in the interim period.

In *Babies in Bottles*, Susan Merrill Squier analyzes a debate over the artificial womb in the 1920s to try to contextualize renewed interest in the technology in the 1980s. She refers to what is often cited (Rosen 2003, Karp 1976, Aristarkhova 2012, Murphy 2006, Kendal 2015) as the origin of the term “ectogenesis”: geneticist JBS Haldane’s speech to the Heretics society at Cambridge, given in 1923 and later published in the *Today and Tomorrow* series. In “Daedalus; or, Science and the Future”, Haldane writes from the perspective of a “rather stupid” undergraduate student in the 1960s giving an overview of the most significant scientific developments to date. He includes ectogenesis, reciting that “it was in 1951 that Dupont and Schwarz produced the first ectogenetic child” (1923, 14). He goes on to describe the introduction of ectogenesis as the primary mode of producing children, proclaiming, “ectogenesis is now universal, and in this country less than 3 percent of children are now born of women” (ibid.).

As Squier discusses, Haldane was a scientist (studying genetics, physiology, and evolutionary biology), and though “Daedalus” was a work of science fiction, Haldane grounded his claims in research that had been conducted up to 1924 on animal embryos. Squier notes the contemporary impact of Haldane’s speech, writing that “In the

following six years, five more essays were published specifically responding to Haldane's essay: both to its central image of ectogenesis and to the principles on which it was based" (1994, 66).

Eden Paul, a doctor, wrote favorably in *Chronos, or the Future of the Family* of Haldane's predictions, asserting that ectogenesis could produce a beneficial dissolution of the family and the achievement of more balanced gender relations (Squier 1994). By contrast, J.D. Bernal, a crystallographer and molecular biologist, argued in *The World, the Flesh, and the Devil*, that ectogenesis was close at hand. He proposed that artificial wombs would be part of a movement toward making the perfect man, from gestating a fetus in a machine to ultimately producing a "cyberman" consisting of a brain in a beaker (ibid.). In *Halycon, Or the Future of Monogamy* (1929), the nurse and novelist Vera Brittain engages ectogenesis in an explicitly feminist project. Contrasting many of the more ominous (Ludovici 1924) and eugenics-focused (Haire 1927, Bernal 1929) visions of artificial wombs presented by other authors of the era, Brittain attends to what the technology might mean for women. While considering the potentially liberatory effects of ectogenesis for women's sexuality (for if machines were responsible for gestation, sex need no longer be so linked to reproduction), she ultimately proposes that women would reject the technology, finding that it produced a negative impact on the significant relationship between mother and child.

Three years later, in 1932, Aldous Huxley's controversial novel *Brave New World* was published, which, as I will discuss, drew on actual work being done in embryology in particular. In Huxley's vision, embryos were cultivated in test tubes and eventually transferred to artificial wombs. Sarah Franklin notes that the authors who engaged in the artificial womb debate of the 1920s, including Haldane, Huxley, Brittain, Bernal, and Wells, were all acquainted. Franklin writes, "these stories produced by a highly scientifically literate group of friends and kin (many of whom were closely biologically related as well as related through the study of biology) typically wove together elements from the history of embryology with science fiction, even sometimes very accurately predicting the future" (2013, 245). The bleak specter of ectogenesis as it is imagined in *Brave New World* in particular has long haunted research on artificial wombs and embryo growth.

EARLY RESEARCH ON ARTIFICIAL UTERI AND PLACENTAS

From 1960 through to 1969, multiple papers were released detailing unsuccessful attempts to create artificial uteri and/or artificial placentas in which to gestate premature lamb and goat fetuses (Callaghan et al. 1963, Goodlin 1963, Lawn and McCance 1962, Nixon et al 1963, Alexander et al 1964, Chamberlain 1968).

It was not until many years later that Yoshinori Kuwabara, the former Chairman of the department of Obstetrics and Gynecology at Juntendo University in Tokyo, came close to success in developing an artificial womb to address fetal prematurity. Later led by Nobuya Unno, the group published multiple papers on the “Development of an Artificial Placenta” beginning in 1984 and through to the early 2000s. Kuwabara et al extracted premature goat fetuses via c-section and incubated them in containers “containing artificial amniotic fluid warmed to 39.5 C” (Unno 2000, 64), with an “extracorporeal circuit” (64). In 1997, they reported “that a 17-week-old goat fetus, removed from its mother’s uterus, had survived for three weeks in an artificial womb” (Rosen 2003, 68). Though these goats survived until euthanized, they experienced serious complications due to drugs given to them to prevent movement while inside the artificial uterus (Coleman 2004, 12), something which had also caused issues in previous versions of the experiment.

While some researchers in this field have been very careful to avoid discussion of the social implications of artificial wombs (see especially Partridge 2017) Unno explicitly referenced Huxley’s vision of artificial wombs in a “child hatchery,” and commented that this would be “the true artificial uterus” (62). Unno notes that while he believes this outcome to be scientifically improbable, Huxley did manage to anticipate many of the challenges encountered by researchers working on artificial uteri and placentas. Further studies on artificial uteruses and placentas followed and occurred concurrently with Unno et al’s work (Sakata et al 1998, Pak and Song et al 2002).

Thomas Shaffer, a neonatal physiologist in Philadelphia, began experiments in the 1980s that differed from Kuwabara and Unno’s approach but shared the same end goal of allowing a premature fetus to develop outside the body. Shaffer sought to establish a strategy of “liquid ventilation” (Knight 2002, 106), to help address the issue of failing neonatal lungs. His experiment involved “fill[ing] the lungs of 18-week old lamb fetuses” (ibid.) with a fluid mimicking the environment in utero and intended to allow the lungs to expand and oxygen to circulate normally. Shaffer trialed the method with premature human fetuses at 23 weeks in 1989, but they did not survive after the

ventilation was removed. In 1996, a trial with “thirteen infants born after 24-34 weeks with severe breathing difficulties” (ibid.) resulted in the survival of seven seemingly healthy infants. However, Shaffer was unable to secure funding for further trials. As with both Unno and Kuwabara, Shaffer was firm that he “wouldn’t want to push back the gestational age limit” (quoted in Klass 1996), but instead wanted to improve the health of premature babies at the existing viability line. The next significant advancement in research on incubation technology was the 2017 introduction of the biobag, bringing us to the present day moment of anticipating approval for human trials.

EARLY RESEARCH ON HUMAN EMBRYOS

In many ways, the research timeline of work on human embryos mimics that of incubation research, with significant progress beginning in the late 1800s. “In vitro fertilization” refers to the fertilization of a mammalian egg with mammalian sperm in a culture cultivated in a laboratory. As Evie Kendal writes, while incubators “met with minimal opposition [. . .] IVF research has always been subject to rigorous ethical debate” (2015, 28). Immediately following the 1978 birth of Louise Brown, the first baby born through in vitro fertilisation, philosopher Stephen Toulmin summarized the ethical objections that had been made against embryo research to date. In so doing, he situated the debates over IVF in the context of the mythology of the artificial womb, writing that “the phrase ‘test tube babies’ had the power to make people’s flesh creep long before Aldous Huxley’s *Brave New World*; the medieval alchemist, for one, was often suspected of using his alembic to gestate an artificial homunculus” (1978, 9). Toulmin here refers to Paracelsus, who “provided the recipe for creating a homunculus, an artificial man with no soul, in an artificial womb” (Gefland 2006, 3) in the sixteenth century. This alchemical image of the man grown in a test tube, along with Haldane and Huxley’s respective ideas of ectogenesis, undergirded public response to the embryological progress of the 1970s.

Cell biologist and embryologist J.D. Biggers places the first attempts at embryo growth and transfer in the 1890s with Walter Heape, who made claims that he had “successfully transferred mammalian (rabbit) embryos from one mother to another” (2012, 119). Robert Edwards, one of the scientists responsible for the first IVF birth in the UK, notes that “progress was very slow over many years” (1976, 368) as a result of the lack of availability of oocytes and embryos. Biggers attributes the “first successful attempt to culture mammalian embryos in vitro” (119) to Albert Brachet in 1913.

Biggers writes that there were several attempts at further work culturing embryos in vitro in the 1910s, but suggests that “Little attention, if any, was paid to the manipulation of mammalian development in vitro during the next 18 years other than science fiction accounts of ectogenesis” (119).

Edwards cites Pincus and Enzmann’s work at Cambridge in the 1930s as the point at which embryo research began in earnest. As Biggers describes, the interaction between scientific and fictive accounts of “ectogenesis” was significant during this period. Biggers notes in particular the link between Pincus’s research on embryos in the 1930s, and Huxley’s *Brave New World*, writing that “A few years later the notion of ectogenesis became widely disseminated” (2012, 119) through the novel, and that the techniques Huxley described were “remarkably realistic” (119). Biggers describes as well the ways that an extreme negative media reaction to Pincus’s research was fueled by images of the artificial womb imagined by Huxley, as in a 1936 *New York Times* article in which Pincus’s work was described as opening the door to *Brave New World* coming true.

Biggers notes that embryology research continued throughout the 1940s, 50s, and 60s, and affirms (along with Edwards) that “the first unequivocal achievement of IVF was done in the rabbit by Chang” (122) in 1959. In 1968, Biggers’s own work with Whitten establishing a medium in which to culture mammalian embryos allowed for a standard protocol for embryo growth. As Biggers notes, broader discussion of ectogenesis also continued at this time. In 1958, when Biggers and McClaren successfully transferred mouse blastocysts into foster mothers, Biggers writes that a *Daily Telegraph* article immediately followed, titled “Brave New Mice.” Where Pincus had refused to engage with concerns over his research, Biggers and McClaren sent a popular science article to *Discovery Magazine*, in which they wrote,

it is inevitable that the thoughts of anyone who has worked on the subjects outlined in this article should turn to Aldous Huxley’s fantasy ‘*Brave New World*’, where he describes completely artificial fertilization and development of human embryos. Fortunately we are far removed from this frightening prospect (cited in Biggers 2012, 122).

From the 1960s through to the 1970s, embryologists continued to study embryos and oocytes in mice and rabbits, and multiple attempts were made at in vitro fertilization.

IN VITRO FERTILIZATION AND “TEST TUBE BABIES”

In 1969, Edwards and Steptoe announced in *Nature* the successful “fertilization in vitro of matured human oocytes” (Biggers 2012, 123). In 1978 Louise Brown, the first “test tube baby” was born following the application of their method. In response to Edwards and Steptoe’s work, significant concerns were raised around the ethics of in vitro fertilization internationally. In the United Kingdom, Steptoe and Edwards were continually rejected for funding by the Medical Research Council. In the United States, hearings began to be held on the ethics of individual scientists’ requests to work on IVF, and in India, Subhas Mukerji, SK Battacharya, and Sunit Mukherjee, who successfully performed IVF concurrently with Edwards and Steptoe in the UK, were unable to publish a paper reporting their findings or to speak on their research at conferences due to government pressure (124). As Biggers notes, references to *Brave New World*, and “test tube” babies continued throughout this period and shaped the concerns of ethicists and policymakers.

Ultimately governments in multiple countries commissioned reports on the ethics of embryo research. In the United States in 1979, the Ethics Advisory Board was assembled by the Department of Health, Education, and Welfare to consider the status of the embryo. In the United Kingdom in 1982, a committee led by Dame Mary Warnock began assessing whether IVF and embryo research were ethically permissible, and if they were, how they should be regulated. Looking back in 2016, Warnock noted that it was understood at the time that “scientists on the whole want to be left in peace to get on with their research and leave policy-making to others” (Hurlbut 2017), but that “a live embryo in the laboratory was a completely new object which had never existed before, and its moral status had to be discussed and clarified” (ibid). In Canada, the Royal Commission on New Reproductive Technologies was assembled in 1989 for the same purpose. Ultimately, over the course of committee hearings with the public, religious representatives, embryologists, geneticists, and academics, each committee arrived at allowing IVF and embryo research, but setting a limit for the period that scientists could keep a human embryo alive outside the womb in culture (in vitro) to 14 days.

Warnock, who led the UK report, and LeRoy Walters, a bioethicist working for the Ethics Advisory Board in the United States, independently proposed the 14-day limit, which has now been adopted as law in twelve countries including Canada and the United Kingdom (Hyun et al 2017), and as rigid scientific guideline in five countries

including the United States (ibid.). Both committees agreed that IVF and embryo research should be permissible to some extent due to its capacity to help alleviate suffering caused by infertility. Both committees also agreed that some limit must be set. In brief, somewhere around 14 days, scientists note the arrival of the “primitive streak” in the embryo. This is the point at which cells begin to organize themselves into the outline of what will be the structure of the fetus, “marking the beginning of an embryo’s head-to-tail axis” (Hyun et al. 2017, 170). As the period in which the “embryo’s biological individuation is assured” (170), when it can no longer “split in two or fuse together” (ibid) the committees found that this was an appropriate marker of when the embryo became a significant entity. In interviews in 2016, Warnock and Walters respectively note that 14 days is somewhat arbitrary, in that the primitive streak’s arrival is not exact, but is understood to occur around this time. Warnock notes, however, that, “law requires the possibility of certainty” (unpublished data 2016), and while the limit could have been set at 13 or 15 days just as easily, it was felt 14 days would be easier to remember. As Coleman notes, Warnock acknowledges that fears over ectogenesis played a partial role in the “recommendation that the growing of a human embryo in vitro beyond fourteen days should be a criminal offence” (ibid.), ensuring a strong incentive against trying to grow babies outside the womb. This recommendation was passed into law with the Human Fertilisation and Embryology Bill in 1990.

In Canada, the recommendations from the Royal Commission report, published in 1993, explicitly suggest forbidding “‘experimentation which may lead to ectogenesis’” (360). As Frieda Simonstein writes, there is a potential contradiction here in that “the Canadian report on artificial reproduction regulations [. . .] simultaneously presses for better results in IVF cycles” (2009, 360), which Simonstein suggests might incidentally contribute to ectogenesis. The Canadian report also includes a suggestion that the 14-day limit might be reconsidered if compelling reasons should arise (Bayliss 2017).

Even following the adoption of the 14 day limit into legislation in some countries (including Canada and the United Kingdom) and a strict scientific guideline in others (including the United States), scientists throughout the 1980s, 1990s, and 2000s rarely succeeded in culturing embryos beyond seven days. This was less due to the guidelines than to challenges in creating a structure that would allow the embryo to survive beyond when it would normally implant in the mother (around seven days).

The first attempts at growing embryos in artificial scaffolding have been placed in Italy and New York in the early 1980s. In 1988, Italian doctor Carlo Bulletti and his research team published a paper in *Fertility and Sterility* called “Early Human Pregnancy in Vitro Utilizing an Artificially Perfused Uterus.” In it, they detailed their research into an artificial uterus in which to grow human embryos. They are explicit about their intentions, writing, “the present study was undertaken to obtain the first early human pregnancy in vitro because future complete ectogenesis should not be ruled out” (1988, 991). Using donated uteri and leftover embryos from IVF patients, the researchers built upon previous work and injected embryos “into human perfused uteri” (993). Though the embryos did not survive beyond seven days, the researchers explain that the experiment both “demonstrates the possibility of obtaining human pregnancy at early stage in vitro” (994), and also showed that “human uterine perfused tissues” (994) could be kept functional for long enough to “carry out specific observation on embryo implantation” (994). Though, as noted above, the group is explicit in stating that ectogenesis could be an outcome of their research, their primary intention is studying the implantation period, as this “is the most important limiting factor for the pregnancy rate in the IVF programs” (991).

Fertility and Sterility is an international medical journal, and an editor’s note was included with Bulletti et al’s paper to clarify that it was “the first report of an early human pregnancy attained in an in vitro model” (995) and warn against “serious ethical and legal concerns” (995) that would prevent the experiment from being replicated in the United States and which should subject it to further debate. Following the publication of the article, “ultimately the experimental program conducted in Italy was stopped because of the ethical issue raised and the strong and vociferous opposition from the political community” (Bulletti et al. 2011, 124).

In New York, Hung-Ching Liu, an embryologist at Cornell University, also experienced significant opposition to her research. Beginning in 2001, Liu successfully “formed a matrix for [...] harvested endometrial cells to grow upon” (Carlston 2008, 36). Once these cells had formed a uterine shape, Liu was able to grow mouse embryos up to seventeen days. In 2003, she successfully grew a mouse embryo “almost to full term” (36) before its death. Liu was able to replicate her experiment with human embryos, and eventually successfully reached 10 days (Carlston 36), though this work was unpublished and therefore remains contentious.

While Liu did not explicitly use the term “artificial womb,” when interviewed at the Congress of the American Society of Reproductive Medicine in 2001 (Simonstein 2009, 362), she was asked “Is it [...] science fiction to say maybe in the far future you could have a real breathing embryo and have a child in the laboratory?” (quoted in Rosen 2003, 70), to which she responded “That’s my final goal [...] I call it an artificial uterus. I want to see whether I can develop an actual external device with this endometrium cell” (70). She went further to note that “we could possibly have an artificial uterus so then you could grow a baby to term” (quoted in Carlston 2008, 70). Liu’s explicit discussion of her work prompted significant media response at the time (Knight 2002, Carlston 2008, Newson 2005, Reynolds 2005, McKie 2002), with one reporter calling her “the nation’s premier womb-maker” (McKie). Speaking to a reporter in 2005, she explained “The medical ethicists were against it. Pro-life people were against it, and pro-choice people too—both sides. This came as a surprise to me.” (quoted in Don 2015, np). I will unpack precisely what it is about artificial womb research that causes strong reactions from both anti-abortion and pro-choice groups later in this chapter. Liu moved on to other areas of investigation, and discussion of “artificial wombs” in the media died down for a period.

In 2011, Bulletti et al published a retrospective on their work, also referencing Liu, and discussed the ramifications and potential uses of creating an artificial womb. They discuss “the mastery of in vitro fertilization and improvements in the survival of premature infants” (124), that have occurred since their original publication, and suggest that these developments mean “new opportunities for ectogenesis” (ibid). In the present day, they write, “more advanced technologies are available and make possible the notion that an artificial uterus could support fetal development, at least for part of the pregnancy. Once perfected, however, an artificial womb would allow for the possibility to continue or initiate fetal development outside of the mother’s body” (125). They suggest that the backlash such work would be likely to receive must be weighed against its possible benefits, such as the possibility that “an artificial uterus could assist women with damaged or diseased uteri by allowing them to conceive and carry infants” (ibid), and could be an incubator for neonates born before 24 weeks.

CONCLUSION

Claims in the popular press, in fiction, and in the social sciences that ectogenesis is upon us have followed nearly every advancement in neonatal technology and in vitro

embryo growth. Some neonatologists and embryologists in the modern period, post 1950s (Bulletti et al. 2011, Unno et al. 2000, Edwards 1976, Biggers 2012) have acknowledged the uses and possibility of ectogenesis and recognized the ways their own research might contribute. Others (Partridge et al. 2017, Usuda et al. 2017, Shabazi et al. 2016, Deglincerti et al. 2016) have explicitly rejected such claims, dismissed ectogenesis as implausible or in the very far future, and asserted that their contributions are in the interest of sustaining premature babies and exploring early miscarriage respectively. Scientists in both of these fields have tended to take seriously both the scientific and the legal limitations that hinder progress toward a full artificial womb, and to carefully caveat discussions of this technology with reference to those limits. By contrast, as of researchers reaching the 14-day limit in 2016 and the biobag breakthrough in 2017, scholars in the social sciences have turned a renewed critical lens to the subject of ectogenesis, nearly always beginning with a belief in its imminent plausibility.

1.2 THE SOCIAL SCIENCE LITERATURE ON ECTOGENESIS

Much of this literature can be said to be interdisciplinary, and it is therefore difficult to clearly place it within disciplinary constraints. I am primarily interested here in providing an overview of the key debates about ectogenesis in the social science literature broadly speaking. But I do want to highlight three particular lenses with which scholars tend to approach considerations of ectogenesis. Namely, much of the scholarship can be said to foreground a “bioethical”, “feminist”, or “legal” way of analyzing the technology. Each of these approaches begin with a different set of concerns and questions for inquiry, and thus tends to yield varied perspectives as to the impact of artificial wombs. While bioethical, feminist, and legal methodologies overlap, I identify here some of the qualities that characterize each of these perspectives in order to critically consider how each calls attention to different possibilities for and concerns about ectogenesis, and in order to articulate where I place my own work.

A BIOETHICAL APPROACH TO ECTOGENESIS

Bioethics as a field brings together scholars with backgrounds bridging law, medicine, and numerous topics in the humanities. Scholars that approach ectogenesis using a bioethical lens tend to focus on broad questions about the moral and ethical impact of the technology. Many of these scholars are particularly preoccupied with how artificial

wombs may impact the moral status of the fetus. Some argue, as I will discuss further shortly, that the technology could mean social recognition of the fetus as a person (Singer and Wells 2006, Welin 2004, Kaczor 2006, Reiber 2010, and Pence 2006, Coleman 2004, James 1987). Others hold that even where we may conclude that a fetus is not a person, ectogenesis will force a renewed debate over what kind of entity we consider it to be (James 1987, Adinolfi 2004, Gefland 2006, Raskin and Mazor 2006). While some bioethical scholars (Singer and Wells 2006, Coleman 2004, Adinolfi 2004, Smajdor 2007/2012, Simonstein and Mashiach-Eizenberg 2006) propose that the technology could improve equality between men and women, few engage with critically assessing how these outcomes could be ensured given contemporary social barriers. The role of sexuality and gender identity, race, class, and ability on existing experiences of reproductive technologies and on the potential impact of or desire for ectogenesis is seldom mentioned. Similarly, the ways that existing laws and medical policies might shape or be shaped by the introduction of ectogenesis are secondary to philosophical reflections on whether the technology could be considered a social good.

LEGAL APPROACHES TO ECTOGENESIS

The legal literature, by contrast, is primarily interested in applied questions of how ectogenetic technology might challenge existing law. Where a bioethicist might weigh a series of possible ethical merits and concerns raised by ectogenesis (as Singer and Wells 2006, Pence 2006, Kaczor 2005, Reiber 2010, Gefland 2006, and others do), legal scholars, giving consideration to the realities of contemporary legislation and legal practice, tend to ground these issues in what the law actually prevents or makes possible (Randall and Randall 2008, Alghrani 2007/2008, Schultz 2010, Steiger 2010, among others). Legal scholars consider the impact of ectogenesis on law governing parenthood (Randall and Randall 2008, Jackson 2008, Hendricks 2011, Abecassis 2016), surrogacy (Abecassis 2016, Hendricks 2011, Lupton 1997), and, with reference to the moral status of the fetus, abortion rights (Steiger 2010, Abecassis 2016, Schultz 2010, Favole 1979, Abel 1974, Goldstein 1978).

While the bioethical literature sometimes neglects to consider contemporary practices to a fault, the legal literature can remain mired in assessing what the law currently dictates rather than considering what could or should be. With the exception of a few legal scholars (Jackson 2008, Tribe 1990, Hendricks 2011), legal analysis is mostly directed at considering how minor adjustments could be made to existing law in

order to appropriately govern the use of ectogenesis. This is in contrast to a more critical approach to law, which might, for instance, find that existing legal frameworks are insufficient.

FEMINIST APPROACHES TO ECTOGENESIS

The feminist literature on ectogenesis spans disciplinary boundaries. While there are varied methodologies and priorities that characterize feminist approaches to ectogenesis, this literature broadly endeavors to centralize the impact(s) of this technology on women. Discussions of the feminist literature on the artificial womb tend to use broad brushes (Kendal 2015, Singer and Wells 2006, Tong 2006) to surmise that there are two distinct camps of feminist writing on the technology, those who argue that it will be fundamentally oppressive to women, and those who argue that it will be liberating. There is significantly greater nuance within these arguments than is often acknowledged. Some feminist scholars do assert that ectogenesis could be emancipatory in its potential to redress the unequal distribution of reproductive labor and relieve the social impact of pregnancy on women (Kendal 2015, Firestone 1970, Smajdor 2007). Equally, some argue that it is an inevitably dangerous cooptation of women's bodies (Corea 1985, Rowland 1987, Brittain 1929). However, a far greater number of feminist scholars highlight that ectogenesis could free women from certain kinds of inequality, but remain undecided as to whether the technology would actually be liberating or would instead reinforce existing social problems and discriminations (Woolfrey 2006, Murphy 2006, Oakley 1984, Kamm 1992, Sander-Staudt 2006, Tong 2006, Adams 1993).

There is a strong sense from a number of feminist scholars that what would establish whether or not the technology is negative or beneficial for women rests on who controls it and who has a voice in its design and application (Oakley 1984, Firestone 1970, Murphy 2006, Woolfrey 2006, Sander-Staudt 2006, Squier 1994). For these scholars, the most dangerous aspect of ectogenesis is not the technology in and of itself but the fact that in existing society, women may have little say or involvement in the development of the technology, resulting in it being used in ways that reinforce gender, race, and class disparities.

Several feminist scholars who write about the technology perform the same problematic flattening of differences between women that is evident in the broader bioethical and legal literature (Corea 1985, Kamm 1992, Tong 2006, Kendal 2015).

Some authors acknowledge that ectogenesis might have different outcomes for women based on their class, race, abilities, age, and sexualities (Rowland 1987, Murphy 2006, Adams 1993, Woolfrey 2006, Sander-Staudt 2006, Aristarkhova 2012, Limon 2016), but these considerations are only rarely made imperative in assessing the technology (Limon 2016, Sander-Staudt 2006). With very few exceptions (Takala 2009, Lewis 2019), the feminist literature on artificial wombs takes a binary, essentializing approach to gender and womanhood.

In this thesis, I characterize my approach to thinking about the artificial womb as critical legal and relational feminist scholarship. I am less interested in the broad questions about whether ectogenesis is a social good posed by bioethicists, and more interested in questions about how existing law might be adapted in response to this technology. I am also deeply interested in what artificial wombs could mean for gendered bodies. Breaking somewhat from the tradition of legal scholarship on this subject thus far, however, I am committed to a critical approach to law, that asks not only what the law as written demands, but ponders the social contexts and constructs that have shaped those demands, and remains open to how they might change. Breaking from the feminist tradition on this subject, I am also committed to a non-essentializing approach to gender, to considering the multiplicities of sex and gender, and to recognizing the differences between women across race, class, ability, and sexual identity, among other characteristics. I will expand on how these approaches shape both the subject and the methodology of my thesis in chapter two. But I will first turn to an overview of the key debates over artificial wombs that commonly arise across disciplinary bounds in order to trace how I arrived at formulating my own argument.

1.3 KEY DEBATES IN THE LITERATURE

ETHICS OF ECTOGENETIC EXPERIMENTATION

Given that it is presumed that ectogenesis will emerge from the meeting of research on in vitro fertilisation and on incubation, it should be unsurprising that many of the ethical concerns raised around ectogenesis echo or extend earlier arguments about IVF and incubator research. One such example are the debates over whether and under what conditions the experimentation on pregnant people, embryos, and fetuses that will inevitably be required to develop ectogenesis could be justified.

Legal scholars Alghrani and Brazier, considering these issues from a legal perspective, note that in the past, experimental work done toward saving premature babies did not help the babies initially experimented on. Had this work not been done, however, “babies born at what is now seen as a pretty safe time, 28-30 weeks, might not survive today” (2011, 9). The authors suggest that since the initial danger to fetuses would be high, “doctors and ethics committees [may] prefer to embark on research using fetuses when a decision has been taken to abort” (10). Bioethicists Raskin and Mazor (2006), Kaczor (2005), and Reiber (2010) also argue that careful consideration will need to be given to where embryos and fetuses for experimentation in ectogenesis will come from. Kaczor and Reiber, writing from a Catholic perspective, raise concerns over the “human dignity of the embryo” (2010 518) in ectogenesis, but both conclude that since artificial wombs could ultimately used to gestate embryos that might otherwise be destroyed, this research could be morally justified.

Adinolfi, a scientist who takes a bioethical approach to ectogenesis, exemplifies points also raised by several other bioethical scholars (Rosen 2003, Coleman 2004, Gefland 2006) when he considers that “the absence of [. . .] biological maternal ‘contact’ could severely affect the mental and physical development of the fetus” (571). While not dismissing the possibility that ectogenic research could still be justified, he worries that there may be certain aspects of ectogenetic gestation that will not be immediately obvious but could result in negative outcomes for babies born through these means.

Bioethicists Simonstein and Mashiach-Eizenberg’s 2006 study, is one of very few that have focused on public responses to whether research on ectogenesis might be justified. Interviewing 216 adults in Israel, they found that just 10.2 % of respondents thought that an artificial womb should be developed, compared with 76.8 % who disagreed (90). In general, their respondents were more receptive to ectogenesis being developed to address issues such as allowing gestation for women without wombs, and more likely to have a negative response to its development simply as an additional reproductive option or as a way to avoid the unequal burden of reproduction on women (90).

Singer and Wells triggered debate over whether ectogenetic research was an acceptable use of research funds by writing in the 1980s, “We, as a society, do not appear to have the same compelling interest in saving a child from sexual abuse or poverty as we do in ensuring the survival of a 23 week old fetus born prematurely”

(131). This question of whether “there are more severe problems perhaps more deserving of our time and attention” (ibid) is roundly debated by scholars to follow. Some (Kendal 2015, Smajdor 2008/2012) explicitly argue that funding for an artificial womb is pressing due to the risks inherent in pregnancy and childbirth. For these scholars, investing resources to this project would be justified if it meant that “women [were] no longer unjustly obliged to be the sole risk takers in reproductive enterprises” (Smajdor, 337). Others follow Singer and Wells’s suggestion that it might be unjust or ill-advised for such technology to receive priority, when resources might be better spent on existing infants in particular (Murphy 2012, Raskin and Mazor 2006, James 1987). Notably, these contentions are a continuation of a longstanding debate in literature on in vitro fertilization. As Charis Thompson writes, the question of whether “basic child and maternal health services for poor or minority women and children should be a greater funding priority than techniques of assisted reproduction” (2005, 62) was heartily debated with the introduction of IVF, particularly within feminist scholarship in the 1980s. Ectogenesis no less than now, is frequently considered as the logical extreme of investments in assisted reproductive technologies.

ARTIFICIAL WOMBS TO REDRESS INFERTILITY?

One of the primary justifications that has been proposed for funding ectogenesis is as a treatment for infertility (Singer and Wells 2006, Takala 2009, Smajdor 2007, Kendal 2015). Rather than putting women through often physically demanding and costly fertility treatments, a number of scholars suggest that ectogenesis could become a means of removing this struggle to reproduce from the body. Some bioethical scholars, including James (1987), have contested this suggestion, arguing that such extreme measures to support the desire to have a genetic child are unethical. James holds that “the prudent course of action right now would be to promote the adoption of living minority children, children with special needs, and children from overpopulated and poverty-stricken areas of the world (95). Here, again, are continuations of arguments made against research into in vitro fertilization.

Philosopher Julien S. Murphy (1989, republished 2006) offers a feminist take on James’s argument against ectogenesis. While sharing his concerns about privileging biological parenthood, she asserts “it is unfair for a feminist who has chosen pregnancy or who merely admits to valuing pregnancy, to find an infertile woman’s desire to reproduce indicative of patriarchal socialization” (41). A more ethical feminist approach

to infertility, she argues, would mean insisting on feminist involvement in steering the priorities of research on technologies for treating infertility, including ectogenesis. Kendal (2015) too holds that “promoting ectogenesis research could serve to enhance equality between fertile and infertile women in striving to achieve the same goal of biological motherhood” (52).

By contrast, philosopher Woolfrey cautions that “ectogenesis, as a future segment of the reproductive technologies industry, is bound to increase the desperation of infertile women, encourage the views that [. . .] women are deficient unless they are mothers” (2006, 134). Tong (2006), while acknowledging these concerns, argues that society has come to recognize infertility as a significant concern for those who face it, and that it is unlikely that we could be justified in blocking the development of a technology that might ease this suffering.

ECTOGENESIS TO REPLACE SURROGACY

In 1984, Singer and Wells argued that “the medical case for ectogenesis [. . .] would consist of the medical case for surrogate motherhood coupled with the claim that ectogenesis should be chosen in preference to surrogacy” (11). They argue that since it is already accepted (if discouraged) in many societies that a surrogate may be engaged where a person is unable to carry a pregnancy in their own body, research into ectogenesis could be justified as a means of avoiding the significant moral and legal issues presented by the practice of surrogacy.¹ Several scholars remain wary of the use of ectogenesis to this end (James 1987, Corea 1985, Hendricks 2011). Legal scholar Abecassis (2016) makes no moral judgement as to whether ectogenesis in lieu of surrogacy would be advisable, but considers whether from a legal perspective, this model of surrogacy would be more effective. While the fact of the gestator in this case being a machine rather than a human would mean that there may be less cause for dispute between parents, she notes that legal and medical institutions might still intervene in ways that undermined the parental claims of the commissioning parents.

In the feminist literature, a number of scholars are wary of the idea that ectogenesis could be used in place of human surrogacy. Hendricks, a feminist legal

¹ For a thorough engagement with some of the ethical and legal questions surrounding surrogacy, as well as its justifications, see Smietana, Marcin, and Charis Thompson, eds. Symposium: Making Families-Transnational Surrogacy, Queer Kinship, and Reproductive Justice. Special Issue, *Reproductive Biomedicine and Society Online*, 7 (November 2018).

scholar, emphasizes that this is “consistent with trends in the surrogacy industry towards increasingly explicit commodification of pregnancy and control of gestational mothers” (2011, 438). She notes that investing in ectogenesis as “better surrogacy,” does the work of emphasizing gestation as “an essentially fungible service, rather than a form of parenthood” (438). Rowland (1987) and Corea (1985) for their part seem to assume that mothers whose birth children are adopted and women who engage in surrogacy are unilaterally tormented by these acts, and that primary parenting rights should be firmly engrained in an essentialised, gestating female body. More recently, human geographer Sophie Lewis (2019) has intervened to propose following Firestone (1970), that under the right social circumstances, ectogenesis as surrogacy could offer an emancipatory opportunity for communizing care labor, an idea I will discuss further with reference to Firestone in the next section.

ARTIFICIAL WOMBS AS SAFER FOR FETUSES

While Corea’s insistence that the end goal of research on ectogenesis is to eliminate women can be described as extreme at best, it is true that a long lineage of predominantly male bioethical scholars have extolled the artificial womb as potentially “safer” than a human uterus (Singer and Wells 2006, Gefland 2006, Pence 2006, Coleman 2004, Adinolfi 2004, Welin 2004, Kaczor 2006).

Pence writes “by raising the fetus in a uniform, stable, drug-free and controllable environment, the fetus is spared from risks associated with the mother using drugs (2006, 82). Gefland, too, argues that “ectogenesis would in all likelihood protect the fetus from second-hand smoke, alcohol, and an unhealthy diet” (102). Unlike Pence and others who make these claims (Lupton 1997, Singer and Wells 2006, Coleman 2004, Kendal 2015) however, Gefland does briefly acknowledge the dangers of this discourse leading to enforced use of artificial wombs under the banner of reducing risk to fetuses. Feminist legal scholar Jackson also acknowledges that “an artificial uterine environment would not be at risk of contracting rubella, it would not smoke, drink, or take drugs, and it would not be at risk of assault” (2008, 360). But like Gefland, she cautions that “advocating ectogenesis on the ground that it would be safer for fetuses would be likely to have negative consequences for women, since it carries with it the implication that the maternal body is a source of danger for the developing fetus [and] implies that women are not to be trusted with the serious job of gestating future generations” (361). Other feminist scholars (Aristarkhova 2012, Hendricks 2011, Rosen 2003, Oakley

1984) also express concerns that framing artificial wombs as safer for fetuses than human pregnancy “resonate(s) with a prevailing cultural view of pregnant women as threats to their fetuses” (Hendricks 2011, 411).

ARTIFICIAL WOMBS AS BETTER FOR PREGNANT WOMEN

A mirror-image to the argument that ectogenesis could be safer for human fetuses is the claim (most often arising in the feminist literature) that it could be safer for women. This particular argument is frequently traced back to Shulamith Firestone. Often misconstrued as a reproductive technology enthusiast (Singer and Wells 2006, Coleman 2004, Kendal 2015), technology is in fact just one point of discussion in Firestone’s revolutionary manifesto, *The Dialectic of Sex*. More broadly, Firestone’s work is an attack on oppressive institutions and an assertion that a socialist revolution and the destruction of capitalism is necessary for women to achieve equality. After a revolution, however, Firestone imagines that ectogenesis might be mobilized in service of “the freeing of women from the tyranny of their reproductive biology by every means available, and the diffusion of childbearing and childrearing role to the society as a whole, men as well as women” (1970, 206).

For Firestone, “pregnancy is barbaric” (1970, 198) constituting “the temporary deformation of the body of the individual for the sake of the species” (198). This particular line of thought speaks also to Firestone’s class and race position in America. As several scholars have thoroughly documented (Roberts 1999, Ross 2017) the claim that women in general throughout history have been pressured to reproduce fails to take account of the impact of differences in race, class, ability, and sexuality. As Ross notes, in the very era in which Firestone wrote that American society is pronatalist to the degree that it is “dangerous” for women to choose not to have children, measures were being taken to try to prevent disabled women and women of color in particular from reproducing. While the pressure to reproduce and pressure to not reproduce are connected oppressive practices, they speak to different experiences, and I will argue that these nuances are vital to thinking through the implications of ectogenesis.

Murphy, along with a number of other feminist scholars writing on ectogenesis, hypothesizes that while artificial wombs could relieve the physical and social impact of pregnancy on women, it may ultimately be significant social restructuring and not technological innovation that solve this problem (Oakley 1984, Kamm 1992, Sander-Staudt 2006). By contrast, Smajdor (2007, 2012) and Kendal (2015) argue that artificial

wombs are in themselves a step toward producing a better world for women. Smajdor holds that “the fact that men do not have to go through pregnancy to have a genetically related child, whereas women do, is a natural inequality” (2012, 90).

Aristarkhova (2012), alongside Hendricks (2011) also argues that a feminist approach to ectogenesis must certainly consider the different ways that women might be impacted by the technology, but writes, “it is important, however, not to oversimplify the diversity and heterogeneity of situations into a simple binary between ‘unnecessary waste of money on ectogenesis by rich, white, and privileged’ families and ‘poor minorities and countries with no basic health care and so no need for ectogenesis’” (113). Ultimately, as other feminist authors preceding her have affirmed, she finds that what is important is ensuring that women are involved in the development of the artificial womb and in discussions about its uses. On this point I am in agreement with the lineage of feminist literature on ectogenesis. In this thesis, I try to hold on to the tensions that emerge in these debates, arguing always that we must understand existing inequities and the differences they may produce in relation to reproductive technologies broadly and artificial wombs in particular.

ARTIFICIAL WOMBS TO “SOLVE” ABORTION

When I set out to review the literature on ectogenesis, I did not anticipate that so much of it would focus on exploring the claim that artificial wombs would mean the end of abortion. Nor did I expect that I would come to formulate my own thesis as a response to these claims. In chapter two, I will unpack how I arrived at this decision, and establish where my work fits within this discourse. But for the moment, I want to give a brief overview of the history of writing on ectogenesis and abortion. In an earlier part of this chapter, I noted that the biobag was significant primarily in its potential to improve rates of survival and healthy growth in babies born at the cusp of “fetal viability.” In medicine, viability is the point at which, weighing factors including gestational age and weight, medical professionals would judge a fetus to have a chance of survival. Currently, this point sits at around 22-24 weeks gestation (Partridge et al 2017). Viability, however, has also been translated into law in some jurisdictions where abortion is legal as the point at which the procedure can be heavily restricted or banned entirely. As I will discuss further throughout this thesis, the possibility that ectogenesis could continually lower and perhaps eventually negate this point of viability has been deeply compelling to scholars interested in artificial wombs and abortion.

The idea that ectogenesis will “solve” the political impasse of the abortion debate is most often associated with bioethicists Singer and Wells, who write in a 1984 essay (republished in 2006) that

If we could keep a fetus alive outside the body, abortions could be done using techniques that would not harm the fetuses, and the fetuses, or newborn babies as they would then be, could be adopted—if there were enough willing couples (2006, 12).

They state that most people who support abortion access defend it on the grounds that forcing a woman to go through an unwanted pregnancy is a violation of her bodily autonomy. This position, they argue, defends a right to end a pregnancy, not a right to kill the fetus, and “if [a woman’s] desire to be rid of the fetus can be fully satisfied without threatening the life of the fetus” (12), artificial wombs should be an appealing alternative to both anti-abortion and pro-choice advocates. This claim has provoked some of the most heated engagement with the artificial womb across the bioethical, feminist, and legal literature.

There is an overwhelming sense from most legal scholars that the artificial womb will inevitably force a reconsideration of existing abortion law (Abel 1974, Favole 1979, Goldstein 1978, Tribe 1990, Lupton 1997, Son 2005, Bard 2006, Randall and Randall 2008, Alghrani 2007/2008, Brassington 2009, Schultz 2010, Steiger 2010, Cohen 2017). A number of authors arrive at the conclusion that ectogenesis will render abortion illegal (Abel 1974, Favole 1979, Goldstein 1978, Cohen 2017, Blahuta 2017, Abecassis 2016, Randall and Randall 2008, Blackshaw and Rodger 2018, Mathison and Davis 2017, Colgrove 2019). Other authors in favor of protecting abortion rights argue that abortion regulations must be revised in order to ensure that the procedure is protected against the potential threat posed by ectogenesis (see Lupton 1997, Son 2005, Alghrani 2007/2008, Abecassis 2016, Jackson 2008, Bard 2006, Son 2005, Schultz 2010, Steiger 2010, Blahuta 2017).

Perhaps unsurprisingly, the feminist literature on ectogenesis has roundly condemned the idea that the technology could be a suitable alternative to abortion or that this is a useful point to focus on when assessing the merits of ectogenetic research (Langford 2017, Overall 2015, Cannold 1995, Hendricks 2011, Jackson 2008, Abecassis 2016). In chapter two, I will unpack these arguments further as I establish the origins of my own intervention.

CONCLUSION

My intention in this chapter has been to show that ectogenesis has a long history as a scientific object, and that this history has always been closely followed by engagement in the media and in the social science literature that proclaims the arrival of the artificial womb. As Franklin (2013) reminds us, the story of ectogenesis is a story of the interplay of fantasy and scientific practice, sometimes intertwining and sometimes dramatically veering apart. To that end, there are many threads of the stories told about artificial wombs that I might have chosen to unpick. But it was the clash between the intentions of neonatal researchers (to create a life support system for anticipated and desired prematurely born babies), the uses imagined by bioethicists (an artificial womb to replace abortion), and the political moment in which we find ourselves (a wave of populism, a fight for reproductive freedom) that riveted me. In chapter two, I will explain where my work sits in the literature on ectogenesis and abortion, and how I hope to interrogate the legal fantasies that have been woven about artificial wombs and reproductive rights.

2. A COMPARATIVE, RELATIONAL FEMINIST ASSESSMENT OF HOW ECTOGENESIS WILL IMPACT ABORTION REGULATION

In the chapters to come, I make two contributions to the literature on ectogenesis and abortion. Firstly, I conduct a comparative analysis of the potential challenges ectogenesis poses for abortion law in the United States, Canada, and United Kingdom where the Abortion Act 1967 is in effect. Secondly, I engage a feminist ethics of care to normatively assess the legal frameworks scholars have proposed to address these challenges. Given that the potential impact of ectogenesis on abortion rights is well-trodden terrain, a reader may ask why I have chosen this subject. The impact of artificial womb technology on laws governing both surrogacy and parenthood, for instance, are each fascinating areas about which there is much more to be written. The ethical and legal questions raised by incremental steps in research on partially ectogenic technology (see Romanis 2018) also pose a host of questions ripe for consideration. These are all subjects that interest me, and that I will touch on as I explore the overlapping territory of questions the technology raises with regard to abortion.

Placing abortion and ectogenesis at the core of my analysis allows me to synthesize numerous questions about this technology in relation to broader aspects of reproductive life. In this I am informed by a reproductive justice approach (Lewis 2018, Ross and Solinger 2017, West 2017, Mamo 2018). Reproductive justice as an activist movement began in response to the focus of mainstream reproductive rights campaigning on abortion in isolation from other issues in reproductive health and life. Focusing only on a right to end a pregnancy was a strategic practice for reproductive rights organizers. Yet as one of the founders of reproductive justice, Loretta Ross has emphasized, campaigns that understand abortion rights in conjunction with “the right to have a child; [. . .] the right to parent the children we have, [. . .] to control our birthing options [. . .]” and “the necessary enabling conditions to realize these rights” (2007, 4), may serve to secure more robust resources for reproductive health. In practice, applying a reproductive justice perspective to abortion law in particular means taking this holistic view of reproductive experiences into account, not simply focusing on a limited right to end a pregnancy.

The siloing of reproductive experiences to the detriment of tracing the ways in which these experiences are importantly interlinked is also evident in the literature on ectogenesis. Abortion is implicated but not directly discussed in some arguments that scholars make about the emancipatory potential of ectogenesis. A number of scholars

articulate the possible ways in which artificial wombs could allow the work of gestation to be shared (Firestone 1970, Bennett 2008, Smajdor 2012) and how the technology might allow women to elect to end a pregnancy for health, social, or other reasons (Murphy 1989, Kendal 2015). Where these scholars explore these ideas, they frequently do so without attending to what I regard as the pressing question of where abortion sits in relation to these claims. While the possibility that the work of gestation could be shared through use of an artificial womb has emancipatory potential, it also raises questions about who, in this process of shared gestation, has a right to terminate the ectogenic pregnancy. Access to both abortion and to reproductive care more generally remains significantly unequal both across and within jurisdictions, and across race, class, ability, and sexual identity-based lines. I am concerned then, with who would be granted elective use of the technology, and how this might impact the abortion rights of others. Would elective use of ectogenesis in these circumstances be considered an abortion, since it would involve terminating a pregnancy even without the death of the fetus? If some women were able to choose to electively use the technology as an alternative to pregnancy due to health concerns, could other women with high risk pregnancies be coerced into using it too? In this thesis then, I not only consider issues immediately related to how the letter of existing abortion law could be impacted by this technology (chapters three and four). I also place this question in a broader context, looking too at the impact on existing inequalities in access to reproductive care as well as the possible impact on sharing or degendering gestation (chapters five and six). By placing consideration of abortion and ectogenesis within this broader spectrum of reproductive health concerns, I take the emancipatory potential of this technology seriously, but only in conjunction with sufficient consideration to the vital question of protecting against forced pregnancy. To put this another way, I wish to trace the possibilities for reproductive freedom that the artificial womb may hold, but I argue that we can only find these possibilities by beginning our analysis with recognition of the contemporary realities of social (in)justice.

This brings me to the second impetus for turning my core focus to ectogenesis and abortion, which is a sense of political imperative. Abortion access remains contentious and inconsistent across a number of jurisdictions. While thousands celebrated in 2018 as the Republic of Ireland voted to repeal the criminalization of abortion, the same fight in Argentina was met with a refusal to lift severe restrictions to abortion access. In this political climate, as reports of the development of biobag

technology prompted a new flurry of interest in artificial wombs, I found myself attending several conferences and reading papers in which bioethicists argued that artificial wombs could “solve” abortion (Blackshaw and Rodger 2018, Mathison and Davis 2017, Colgrove 2019, Kaczor 2018). This recurring thought experiment, which decentralizes women’s health to frame abortion rights as a moral “problem” to be solved rather than as an essential medical service, ultimately solidified my focus on abortion and confirmed my feeling that a feminist intervention was essential.

When I returned to the literature to formulate my response, I identified what I found to be two significant gaps in analysis in the work produced so far on ectogenesis and abortion. Firstly, in spite of political, religious and legal particularities of American approaches to abortion, I encountered an echo-chamber in the literature in which the United States was frequently presented as a primary case study for thinking about how artificial wombs could challenge abortion rights. Secondly, I found a significant lack of attention to the necessity of care for the emotional, physical, and social health of the pregnant person, and to the relationships constituted by and through ectogenesis, abortion, and human gestation. Taken together, each of these observations reflected a need for a more grounded, contextualized consideration of the impact of this technology. In this chapter, I give a thorough explanation as to why I find the focus on the American context and the lack of consideration of relationships of care to be problematic, and how I propose to make a contribution that begins to remedy each of these issues.

2.2 THE NEED FOR A COMPARATIVE ANALYSIS OF THE POSSIBLE CHALLENGES ECTOGENESIS MAY POSE FOR ABORTION LAW

Much of the scholarship on abortion and ectogenesis is written from an American perspective. This large body of literature includes both works in which authors directly discuss how American abortion jurisprudence might be impacted by ectogenesis (Abel 1974, Favole 1979, Goldstein 1978, Tribe 1990, Son 2005, Sander-Staudt 2006, Randall and Randall 2008, Steiger 2010, Schultz 2010, Hendricks 2011, Cohen 2017), and articles in which American scholars speculate on the impact of ectogenesis on philosophical arguments about abortion broadly speaking (Sander-Staudt 2006, Woolfrey 2006, Gefland 2006, Bard 2006, Kaczor 2005, Reiber 2008, Blackshaw and Rodger 2018, Mathison and Davis 2017, Colgrove 2019). Something of an echo chamber is growing in which general conclusions about problems the technology could

present for abortion law are frequently drawn from American jurisprudence, and represented as universally applicable (Favole 1979, Goldstein 1978, Tribe 1990, Kaczor 2005, Reiber 2008, Sander-Staudt 2006, Schultz 2010, Hendricks 2011). Bearing in mind the significant ways in which the American abortion context differs from Canada and the United Kingdom, I find it crucial to consider whether the claim that artificial wombs “foretell [. . .] serious challenges to the law of abortion” (Bard 2006 149), which recurs in much of the literature, in fact holds true across each of these jurisdictions.

The dominance of writing from an American perspective is also evident in the feminist literature on ectogenesis (Firestone 1970, Corea 1985, Murphy 1989, Squier 1994, Kamm 1992, Adams 1993, Woolfrey 2006, Sander-Staudt 2006, Tong 2006). As in the broader discourse, the dangers and possibilities of artificial wombs that are explored by feminist scholars writing from an American context are often presented as universal, while in fact being shaped by political realities rooted in the United States. When Corea, Squier, Kamm, and Adams expressed significant concerns about patriarchal control of womens’ bodies being inherent in this technology, they wrote (without acknowledging their positionality) from the context of a privatized American healthcare system. When Woolfrey pondered in 2006 how “society [would need to] change in order for technological advances of this kind to have the effect [. . .]—of freeing women from being undervalued and of being constricted because of gender by various interrelated barriers in our society?” (2006, 134), “society” and its existing “interrelated barriers” (134), though again generalized, referred specifically to an American context. To reframe her question, we might instead ask “in what kinds of existing societies [if any] might technologies of this kind have the effect of ‘freeing women from being undervalued’”?

Of the common law jurisdictions in which abortion is legally permitted, the United States retains some of the most stringent restrictions to access² on a state-by-state basis. A vocal and well-funded anti-abortion lobby remains visible in mainstream politics, with many political leaders and public figures including the most recent Supreme Court appointee, Brett Kavanaugh, openly advocating for further restrictions

² I discuss many of these restrictions throughout this work. For an in-depth analysis of issues around access to reproductive care in the United States, see: Ross, Loretta, and Rickie Solinger. 2017. *Reproductive Justice: An Introduction*. California: University of California Press.

to abortion access (Reilly 2019). More recently, at the 2019 State of the Union address, President Trump spoke in favor of implementing federal law against late term abortions (Matthews 2019). As of 2018, numerous states have begun the process of passing legislation which would criminalize abortion after the first trimester of pregnancy (North 2019). Finally, the United States's privatized healthcare system and longstanding ban on the use of federal funds for abortion means financial obstacles to securing the procedure are particularly pronounced. Discourses around abortion from an American context are shaped by each of these factors. The preeminence of work on ectogenesis and abortion derived out of the particular context of the United States limits the possible breadth of discussion and debate on this topic, and fails to reveal the ways in which abortion law and attitudes toward the procedure, the woman's body, and toward fetuses, act as fictive cultural constructs rather than universal realities.

Yet, while consideration of ectogenesis and abortion is dominated by American scholarship, it is not exclusively American scholars that have produced important analysis on this subject. Scholarship on ectogenesis more broadly spans multiple countries, including the United Kingdom and Canada. Alghrani has written extensively in explicit consideration of what the technology may mean for UK legislators (2007, 2008, 2011 with Margaret Brazier, 2018). Alghrani and Brazier themselves note a relative dearth of scholarship on ectogenesis and UK law, which I hope to help address. Alghrani's thorough research provides me with an incisive place to begin analyzing the possible impact of ectogenesis on abortion in the UK context against its possible impact in American and Canadian contexts. In a 2008 article, Jackson also gave a balanced feminist assessment of some of the key issues that could arise around ectogenesis in abortion law generally and in the UK specifically, and indicated particular areas requiring further engagement which I take up throughout this thesis.

While generating arguments rich for discussion and debate, some of the additional scholarship on ectogenesis and abortion written from within a UK context (Brassington 2009, Bennett 2008) also demonstrates the importance of accounting for context when considering the impact of this technology on reproductive rights and access. Bioethicist Brassington writes about the possibility that ectogenesis could produce greater equality in parenting in the United Kingdom by granting male and female progenitors equal say over the ectogenic fetus. Yet in order to support his claim, Brassington uses the example of an attempt to pass a law in Ohio which would force women to seek spousal approval before being granted an abortion. Brassington provides

the caveat that at present, laws such as the Ohio statute are problematic invasions on women's bodily autonomy. Yet he ultimately insists that if the requirement for abortion approval from the male progenitor were applied to ectogenesis, it would "simply reflect the view that an abortion without authorisation would be impermissible, for the same reason that it would be impermissible for one of the partners in a business to close it without the authorisation of the other" (2009, 199).

Claims such as this demonstrate the limitations of an approach to considering ectogenesis and abortion that does not take account of legal, political, and cultural context. Brassington's suggestion that ectogenesis could allow for equality in decisions made with regard to the fetus requires thorough consideration (which I will give it in chapter five). But contemporary American laws designed with the intent of limiting women's autonomy by permitting a male progenitor to veto abortion pose a limited, unimaginative parallel. They are a problematically decontextualized place to look for a blueprint for a future framework in which ectogenesis allows male progenitors to take greater responsibility in reproductive decisions. In her article on ectogenesis and reproductive choice, bioethicist Bennett makes a similar argument for equality between progenitors by using the example of contemporary American cases of brain death in pregnancy. Bennett argues that as in ectogenesis, a brain dead woman's bodily autonomy is not at issue, and a male progenitor should be granted decision-making powers. Giving reference to American case law, Bennett offers that "there seems to be good reason in the case of braindead pregnancy to question the supremacy of women's interests and choices in this particular situation" (2008 7). Reflecting the pattern inherent in much of the American scholarship on ectogenesis, Bennett represents her conclusion as universally generalizable. But concluding that greater reproductive decision-making might be provided to male progenitors holds a different valence in a UK context in which strong precedent currently protects pregnant people from unwanted medical procedures, even after death. In an American context, "pregnancy exclusion" statutes implemented by openly anti-abortion legislators exist across a number of states and invalidate any advanced directives where a woman is pregnant, in many cases even where the fetus has no chance of survival (Greene and Wolfe 2012). The crux of the argument that Bennett makes, that reproductive decision-making in ectogenesis need not be gendered, is worth exploring for the potential it opens for women to share or transfer reproductive labour. This is again a possibility that I will assess in chapter five. It is in overlooking the disparate legal protections in place for

protecting women's bodily autonomy between the United States and United Kingdom that Bennett's argument falls short. In drawing on American cases involving brain dead pregnant women to make her claims, she fails to identify the explicit anti-abortion ideology which has driven these disputes. These cases have been vociferously opposed by pro-choice American campaigners for the possible precedent they produce to dismantle existing abortion rights. Bennett's use of these cases as an example of how ectogenesis could support parental equality in reproductive decisions undercuts her potentially emancipatory vision by neglecting the importance of context. Both Brassington and Bennett bypass the ways that the examples they borrow from the United States strip women of agency. In so doing, they render women as objects akin to the artificial womb, rather than positioning them (like male progenitors in the scenarios posed here) as agents in relation to the technology.

There is little literature which explicitly takes up ectogenesis and Canadian abortion jurisprudence. Overall, who has written two articles on ectogenesis and abortion (1987 and 2015) writes as a Canadian scholar and draws on Canadian definitions of the beginning of human life to support her work, but focuses on philosophical arguments about abortion broadly, as opposed to discussion specific to abortion in Canadian law. Blahuta (2017) does write of ectogenesis in Canadian law, and while he gives an in-depth discussion of possible issues around maternal liability in tort, he only briefly mentions abortion to make the claim that current justifications for abortion would be moot, and to suggest that "if the artificial womb became a commonplace medical option, abortion would arguably become murder" (2017, np). While in some jurisdictions this claim may hold true, it is a curious point to make in the context of Canada, in which there is extremely strong precedent against treating the fetus as a legal person (Kaposy and Downie 2008), and in which I will argue that contemporary justifications for abortion may well still hold with the introduction of ectogenesis.

Abecassis's article on ectogenesis and laws regulating reproductive technologies is unique as the only applied comparative legal analysis of the impact of ectogenesis that I have encountered. Abecassis's work is refreshing for her acknowledgement of the ideologies that shape American legal responses to ectogenic technology. Comparing the United States and France, Abecassis sets out to trace the differences in how the technology might be received in a jurisdiction in which reproductive technology is heavily regulated (France) and one in which it is relatively

unregulated (the United States). Her comparison of “the status of the ectogenetic embryo, the concept of parenthood, and access to ectogenetic technology” (2016 5) between these jurisdictions reveals interesting contrasts. Yet in spite of differences in legal regulation, these two jurisdictions, as Abecassis notes, are broadly similar in that each is shaped by particularly conservative attitudes toward reproduction. As a result, while comparison works here to draw out contrasting challenges posed under a heavily regulated framework versus a loosely regulated one, it does not work to illustrate the ways in which the possibilities opened or foreclosed by ectogenesis are shaped by culturally ingrained social fictions. It is this second outcome of comparison that I am most interested in here.

As Bradley argues, one particular use of comparison can be to explore why nations, “not least those with common legal traditions—vary in their response to social change” (2003 145). I am interested in engaging comparison to reveal the socio-cultural constructs that produce abortion as a legal concern in Canada, the United Kingdom, and the United States, and to identify the disparate tools used to create abortion law in these jurisdictions. In so doing, I hope to unpack how variations in the strategies applied to address abortion as a legal concern subsequently produce significant differences in the impact that artificial wombs may have on abortion regulation. My intent in conducting a thorough comparative analysis is ultimately to establish that contextual specificity is essential to identifying gaps in the existing law in anticipation of this technology.

Why the United States, Canada, and the United Kingdom?

While comparative literature often draws together analyses of civil and common law systems, I have chosen three common law jurisdictions that share broad commonalities³. As Creutzfeldt, Kubal, and Pirie note, a necessary precondition of a comparative analysis “is the assumption of sufficient similarity in order to make the identification of difference meaningful” (2006, 379). The United States, Canada, and the United Kingdom are each majority English-speaking jurisdictions (though importantly, French is legislated in Canada as a dual official language). Abortion jurisprudence in each of these nations is rooted in the criminalization of procuring a miscarriage in English common law, and in each nation, campaigns for the legalization of abortion began in

³ The province of Quebec is governed by civil law. Where this impacts my discussion of abortion and ectogenesis in Canada, I will note this. However, abortion law in Quebec, as in all Canadian provinces, is in the first instance regulated at the federal level.

earnest in the 1960s (see Sheldon 1997, Kaposy and Downie 2008, and West 2009). The United States, Canada, and The United Kingdom are broadly similar in that in each jurisdiction at the highest level, law permits abortion prior to viability, medical professionals (physicians in particular) are assigned as appropriate gatekeepers to determining access, and abortions must occur in approved premises. In each jurisdiction, the law makes clear that the state has an interest in the life of the fetus, though when this becomes legally relevant and the degree to which it impacts the rights of the pregnant person varies. In each of these nations, however, different religious, social, cultural, and legal factors led to disparate regulation of abortion. In the United States and Canada, abortion rights are protected at a federal level through case law precedent, where in the United Kingdom, these rights are protected through legislation. I will provide background on the contemporary laws and regulations of abortion in each of these jurisdictions in significant detail at the beginning of chapter three. Here, however, I want to briefly discuss my interest in these particular jurisdictions for comparison, given that in spite of their prescient similarities, it would have been equally possible for me elect to consider other nations.

As a monolingual English speaker, I am limited in part by language. However, there are other Anglophone common law jurisdictions I could select. A number of key texts on ectogenesis are written from the context of Australia. These include Peter Singer and Deane Wells' 1988 writing on the ethics of artificial wombs, Leslie Cannold's interview-based work on whether women were likely to see ectogenesis as a suitable alternative to abortion, and Stephen Coleman and Evie Kendal's full-length monographs on the technology. The comparison of possible challenges constituted to abortion law by ectogenesis in Australia and the United States, drawing on these texts as well as American work, might be especially generative.

My choice to consider Canada, the United Kingdom and the United States is ultimately motivated by my position in relation to each of these locations. This thesis is a feminist engagement with the politics of abortion and artificial wombs, and these are the three nations in which both my work as a feminist academic and my personal life are entangled. I am a citizen of both the United States and Canada and have lived in each of these countries. I have also lived in the United Kingdom. In Canada, where I grew up and attended undergraduate studies, I learned about the limited reproductive health services in my home province of Nova Scotia through the experiences of myself and my friends, and as a student in Montreal, witnessing a demonstrably more thorough and

accessible reproductive care network I came to understand that these services were not consistent across the country. In the United States, I had the privileged experience of living in New York City and having access to health insurance. Through my work with a legal advocacy organization fighting for reproductive justice for pregnant people in the Southern states in particular, I came to understand that many aspects of the American judicial and medical system, beyond restrictive abortion laws, made being pregnant in many parts of the United States precarious terrain. I visited abortion clinics and met clinic escorts and practitioners who confronted abuse and violence in the course of their everyday work, I sat in on phone calls with lawyers fighting against the criminalization of pregnant women who had used drugs, and I read and tracked countless cases across the nation which demonstrated efforts to use the law to enforce fetal personhood. In the United Kingdom, I have had limited exposure to reproductive health services as patient or activist, but it is here that my academic engagement with abortion has been the most grounded, and I have come to understand the context through talks, papers, and conferences addressing the Abortion Act 1967 and the repeal movement in Northern Ireland. These experiences ultimately foreground my choice to focus on Canada, the United States, and the United Kingdom.⁴

Beyond my personal positionality in relation to these three jurisdictions, and the similarities in their legal systems which mean that they have enough in common to make comparison significant, the differences between these jurisdictions also make this comparison generative. As Drew Halfmann argues in his comparison of abortion regulation within these same jurisdictions, the liberalizing of abortion access in Canada, Britain, and the United States in the 1960s and 70s also saw divergences in approaches to abortion at the level of law, medicine, and politics. A significant difference exists between the jurisdictions in the way in which funding for these services was established. As Halfmann notes, “In Canada, abortion services were located in public or nonprofit hospitals, and paid for by the state; in the United States, the vast majority of abortions were provided in single-purpose clinics divorced from mainstream medicine where women paid for their own abortions; and in Britain, approximately half of abortions were provided in the Canadian style and half in the American style” (2011, 2).

⁴ It is important that I make note of two key points here. Firstly, as I will address further, while the repeal movement in Northern Ireland helped spur the urgency of this project, the changing legal landscape on the ground was beyond the scope of what I could cover here. Secondly, as I will note throughout this work, there are significant variations in particular in the United States between how abortion is accessed and regulated in different states, as well as within Canada across provinces.

This particular distinction, as I will trace further in the chapters to come, has produced variation in the accessibility of abortion across these jurisdictions. In the United Kingdom under the Abortion Act 1967, abortion remains a criminal offence with exceptions, and is subject to precise regulatory requirements. In comparison, abortion in Canada is decriminalized. This might lead one to conclude that access to abortion would be more difficult to obtain in the UK than Canada, and that medical and political attitudes toward the procedure would be more conservative. Yet, in the UK, abortion is broadly accessible under the NHS, while in Canada, uneven distribution of providers and differing policies at the provincial level mean that access to abortion in practice remains uneven across the nation (Johnstone and Macfarlane 2015). As Halfmann argues, efforts to roll back abortion rights built momentum across all three jurisdictions in the 1960s and 70s, but where in Canada and Britain “Prime Ministers, members of parliament (MPs), and political candidates ran away from the abortion issue” (2011, 3), the pro-life movement proved tenacious in the United States, with the consequence of rollbacks to the availability and quality of abortion services.

The longstanding and clearly articulated regulatory framework for abortion in England, Scotland, and Wales means that while antiabortion sentiment remains in some quarters, abortion is broadly treated as a settled political issue (BMA 2017). In Canada, a vocal antiabortion lobby retains strong ties to some provincial governments, as in Prince Edward Island, where abortion was effectively inaccessible up until the 2010s (Johnstone and MacFarlane 2015). In the United States, abortion remains a key issue in political campaigning, with politicians at the highest level of government courting support from religious conservatives by working to limit abortion access (see West 2017).

2.3 THE LIMITATIONS OF A COMPARATIVE APPROACH

In a review of critiques of comparative legal literature, Leckey establishes that there is much dispute over how “comparison” actually functions. He notes a general sense of frustration reflected in debates between scholars as to which forms of comparison are valid and which are not (2017 7). Leckey discusses two of the key limitations continuously flagged by critics. Firstly, he notes critical concern that comparison sometimes dissolves into a project of hierarchizing different jurisdictions while purporting political neutrality. Secondly, he describes anxieties expressed over the tendency of comparative legal scholars to “transplant” legal concepts from one

jurisdiction to another without acknowledging that these concepts may be particular to a given context. Below, I briefly address each of these limitations in relation to my own work.

Hierarchy and Political Neutrality in Comparison

Leckey considers that in critiques of comparative literature, “scholars [have . . .] denounced the political or ethical posture of comparative law [pointing] to its lack of reflexivity and denied its ostensible objectivity or neutrality” (2017, 8). Gunther Frankenberg, whom Leckey notes as a key critic of this aspect of comparative work, argues that comparative legal scholars “operate with and from a particular perspective and, therefore, not only describe but constitute whatever they see or read by translating and inscribing it into the normative Western matrix” (2014, 223). I appreciate Frankenberg’s criticism, and in particular, his point that “legal comparison [. . .] qualifies as an expression of cultural experience” (2014, 229) and that critical comparative legal scholars must “meet[] what is unknown and strange on its own terms” (2014, 231). In response to Frankenberg, Brenda Cossman argues that one way to confront the “unstated norm of ‘us/here’ against which others- ‘them/there’ are to be measured” (1997, 529), is in applying a feminist politics of positionality. As Cossman writes, “a politics of location or positionality insists on the historical, geographic, and cultural specificity of political definition and the production of knowledge” (529). I have acknowledged my positionality in relation to each of the jurisdictions I analyse in this thesis as a way of indicating that I am unlikely to have an entirely unbiased perspective. I have chosen these nations precisely because I am politically invested in how their abortion regulations may be impacted by artificial wombs. And while I argue my choice of jurisdictions is bolstered by their being nations that I “know” and hold political stakes in through lived experience, a valid criticism of this choice would be that it fails to consider perhaps the more important and significant differences between these nations and developing ones. Cossman writes that “turning the gaze back upon itself can help make explicit the seemingly inescapable risk of ethnocentrism in the comparative project, while at the same time, deploying the comparison to challenge that ethnocentrism” (1997, 537), but as she notes, a pitfall of doing this work is “in turning the gaze back upon itself, we (the us/here comparativists located in the West) simply end up back where we started-focusing on ourselves” (357). I acknowledge the danger of this, both in terms of the nations I have chosen to focus on, and in terms of how I

assess each. What I wish to highlight throughout this thesis is that there can be no “universal” when it comes to considering the impact of the artificial womb: this will vary across nations, and within nations across communities. Significant consideration should be given to the vast disparities in access to abortion globally, and to how technologies such as ectogenesis may interact with these disparities. This is not the focus of this particular thesis, but it is a question that should be taken up in future work.

The Problem of “Transplanting” Legal Concepts In Comparative Work

The second key criticism that Leckey notes continuously arises in the literature on comparative law addresses the tendency toward unreflexive “legal transplant.” In brief, “transplant” in this instance refers to the attempt to take a legal construct that appears to work well within one context and propose that it should be applied in another context that may be fundamentally different, and in which the concept may not be workable. In his own consideration of the problems of “transplanting” ideas in comparative legal studies, Leckey notes that in fact, this criticism of legal scholarship may be short-sighted given that in common law the judiciary engages in “transplant” work all the time, on variety of subjects, by referencing foreign decisions and ideas. Leckey notes that there is significant variation in how legal scholars transplant legal ideas from one context to another, and that there are ways of doing so that apply sufficient nuance and awareness of the limitations of such a project.

I agree with Leckey here and would argue that being attentive to the fact that legal concepts cannot be straightforwardly transplanted from one context to another is of key importance to thorough comparison. The danger of decontextualized attempts to transplant legal ideas is in fact demonstrated in the work of both Bennett and Brassington on ectogenesis and abortion, which I have discussed earlier in this chapter. Creutzfeldt, Kubal and Pirie write that “socio-legal scholars regularly undertake forms of comparison in different ways, often without being explicit about their methods and purposes” (2006 286). Neither Bennett nor Brassington presents their work as comparative, yet each attempts to transplant ideas drawn from American jurisprudence without acknowledging the anti-abortion political, social, and religious project out of which these laws arise. In so doing, each neglects to answer important questions about the political and legal limitations of transplanting such concepts to the very different context of the United Kingdom. There are any number of questions that might work to make comparison explicit in these texts. What is it, precisely, about UK law and policy

that would ensure that reproductive rights would be protected even if shared parental rights in ectogenesis were introduced? What challenges might arise? Why is it useful to draw on a model of shared legal responsibility for a fetus that emerges from anti-abortion discourse? Can we use frameworks intended to oppress in one context to imagine greater equality in another? Given the political climate of England, Scotland, and Wales, in which a vocal majority support abortion rights, would a model arising from an anti-abortion project in the US be accepted?

In my own analysis, I will ultimately draw preliminary conclusions that weigh some frameworks as “better” models, and as a result, I too may run the risk of operating on an assumption that a framework which may effectively work in one context could successfully be transferred to another. I do not, however, expect to be able to offer a straightforward conclusion or to propose strategies that would work universally in any given legal context, but instead, to show how particular challenges may arise within particular jurisdictions, and how particular frameworks within a given jurisdiction may work best to mitigate these challenges. I appreciate that a model framework for ectogenesis and abortion that works in the context of Canada may not work “as is” in the context of the United States, but I do not regard this as a strong reason not to use a comparative praxis to try to consider whether there are some frameworks which might best uphold a feminist ethics of care. Here I follow Gillian Hadfield, who writes “it may be true that there is an ‘untranslatable abyss’ between the law of one place and the law of another [. . .] but this does not mean that we have no business seeking to understand why law here produces this effect and law there produces that effect” (2009, 224). In a number of areas of my work, I am engaging in speculative practice: I am assessing a technology that is not yet fully developed, considering existing abortion laws with reference to reforms that are attentive to a feminist ethic of care, and engaging legal fantasies of a relational future. This thesis is intended to allow for speculative thinking, even where there may be significant barriers to putting any of my recommendations in place. I argue that it is better to proceed in this way, with the caveat that context is vital, then to conclude that “we have no business” (224) pointing to best practice frameworks.

Bridging Comparison and Care Ethics

Before turning to the second aspect of my intervention in the literature, I want to briefly address how I see the comparative aspect of my research and my use of a feminist ethic of care working together. Applying a care lens means recognizing the multiple

relational factors on an individual, social, and institutional level that may shape experience and result in individuals or communities having different expectations, needs, and desires within a given context. As I will discuss further in what follows, a key aspect of a feminist ethics of care is that “justice in [the context of care] becomes understood as respect for people in their own terms” (Gilligan 37). Similarly, Creutzfeldt, Kubal, and Pirie argue that critical comparative work emphasizes that the legal and cultural concepts produced within a given nation must be “understood on their own terms” (2006, 386). In each instance, establishing a robust picture of how ectogenesis could problematize abortion law and how we might mitigate against these challenges requires attention to specificity and to the relational entanglements that arise in context. Rather than taking a “one size fits all” approach to thinking about this technology, I am arguing here for first assessing the potential problems that ectogenesis may produce for abortion law within each jurisdiction “on its own terms.” Drawing on this analysis, it then becomes possible to produce a grounded consideration of legal frameworks that might address these challenges, against a feminist ethics of care. As a final point here, I want to acknowledge that both a feminist ethics of care, and the reproductive justice framework that informs my use of care ethics, are movements that first emerged from the context of the United States. Of my choice to engage this scholarship, I would note first that I do not regard drawing on frameworks initially borne out of an American context to be analogous with the dominance of US scholarship on ectogenesis that I am problematizing here. The pattern I am tracing in this literature involves scholarship tending toward either using examples specific to a US context to conclude that what is true for the impact of ectogenesis there will be true everywhere, or drawing the conclusion that the impact of the technology will be the same everywhere, without giving reference to extremely varied social, legal, and political circumstances on the ground. Conversely, feminist ethics of care and reproductive justice are both frameworks that emphasize particular strategies for thinking and organizing, but both, as I will discuss further in what follows, are explicitly constructed to be attentive to and subsequently adapted to context. Having noted this, I have also consciously sought to establish a balance in perspectives by seeking out literature on feminist care ethics, reproductive justice, and relational legal feminism that emerges from the United Kingdom and Canada in particular.

2.4 THE NEED FOR A FEMINIST CARE ANALYSIS OF PROPOSED LEGAL FRAMEWORKS FOR ECTOGENESIS AND ABORTION

Carol Gilligan's 1982 book *In a Different Voice* is often cited as the origin of "feminist care ethics." Gilligan argued that ethical theory had been derived from the experiences and perspectives of men and could not account for women's moral reasoning. Basing her conclusions on a series of interviews, she hypothesized that while men tended to be motivated by justice in moral reasoning, women tended more toward an ethic of care. Gilligan proposed that a care approach to moral reasoning should be acknowledged as different but equally legitimate, writing, "psychologists and philosophers, aligning the self and morality with separation and autonomy—the ability to be self-governing—have associated care with self-sacrifice, or with feelings—a view at odds with the current position that care represents a way of knowing and a coherent moral perspective" (41). Where justice-oriented thinking was structured around individual choice, Gilligan argued, ethical practice motivated by care emerged from "the assumption that the self and others are interdependent" (36).

Thinking about ectogenesis and abortion through the lens of a feminist care ethics can demonstrate that far from constituting the ultimate manifestation of autonomous subjectivity, ectogenesis is likely to impact (and/or produce) multiple relationships. Critics (see Tronto 1995, Lewis 2018), have long noted the ways in which a feminist care framework risks romanticizing gendered self-sacrifice, and the related way in which it can problematically and reductively essentialize "male" and "female" moral ontologies. As Audrey Thompson argues, a mainstream ethics of care has also centered a white, middle class woman as a default, and has neglected in many instances to address structural inequality. Later in this chapter, I will discuss how I intend to address these limitations by amending them with reference to feminist relational legal theory and reproductive justice scholarship.⁵ Before doing so, however, I want to justify

⁵The reproductive justice movement is a grassroots initiative led by women of color in the United States. The SisterSong Women of Color Reproductive Justice Collective defines reproductive justice as "the complete physical, mental, spiritual, political, social, and economic well-being of women and girls, based on the full achievement and protection of women's human rights" (Ross 2007, 4). Reproductive justice organizers identified that for Black and Indigenous women and women of color who have been subjected to historical and contemporary sterilization abuses and white supremacist violence, "it is important to fight equally for (1) the right to have a child; (2) the right not to have a child; and (3) the right to parent the children we have, as well as to control our birthing options[. . . and the] necessary enabling conditions to realize these rights" (4). Reproductive justice, then, applies an intersectional approach to fighting for reproductive care, and arguing that abortion, access to prenatal support, the treatment of women in prisons, environmental harms, the separation of immigrant families, and the access of queer and trans people to reproductive healthcare are not isolated issues but exist on a continuum of inextricably linked

the uses of a feminist ethic of care here by addressing the ways in which relationality has been excised from discussions of artificial wombs and abortion.

The most pointed example of the excision of care from discourses on ectogenesis is in the recurring claim that the technology will end the need for abortion by allowing the fetus to be transferred into an artificial womb instead of being terminated (Abel 1974, Favole 1979, Goldstein 1978, Singer and Wells 1984, Welin 2004, Kaczor 2008, Reiber 2010, Brassington 2009, Schultz 2010, Stieger 2010, Colgrave 2019, Blackshaw and Rodger 2018, Mathison and Davis 2017). These arguments negate the relational entanglements that emerge from and around gestation. No provision is made for who (or what) will ultimately be responsible for the dependency of the fetus and the resulting infant decanted to an artificial womb. Care for the pregnant person is also overlooked, as the abortion decision is divorced from personal, socio-cultural, and institutional influences, and reduced to a straightforward matter of simply not wishing to be pregnant.

In a related suggestion that prospective fathers might take responsibility for an ectogenic fetus that was not wanted by a pregnant person, the importance of relationships is again often ignored. Kaczor 2008, Reiber 2010, Brassington 2009, Räsänen 2017, and Welin 2004 each argue that a woman who did not wish to continue her pregnancy could transfer gestational responsibility to another progenitor by having the fetus extracted to an artificial womb. Yet none of these scholars address the risk of this alternative producing a continued connection between the pregnant person and another progenitor with whom they may not wish to be in relation, or between this person and the fetus. These authors also neglect or consider only as an afterthought the question of who will care for the ectogenic fetus (and how this care may be funded) in instances in which both progenitors ultimately reject responsibility. Some scholars do discuss the distribution of responsibility for an ectogenic fetus unwanted by both progenitors following its “birth” (Alghrani 2007/2008, James 1987, Coleman 2004, Overall 2015), but each concludes that this scenario would be problematic primarily because it would result in a surplus of ectogenic babies for adoption. This is certainly an

reproductive concerns. I do not contend that this thesis constitutes reproductive justice scholarship, but instead that my work is informed by reproductive justice practice. I am therefore indebted to the activism and intellectual labor of the activists and scholars of color who founded this movement. See: Ross, Roberts, Derklas, Peoples, and Bridgewater Toure 2017.

important legal and ethical consideration. I argue, however, that equally pressing issues to address here are the question of the fetus's dependency on care while (and not simply after) it is gestating, and the inevitable and complex relationships produced between the fetus and caretakers, and between and amongst these caretakers as this ectogenic gestation occurs.

While not always directly discussing abortion and ectogenesis (exceptions to this are Overall 2015, Cannold 1995, Langford 2017), many feminist scholars emphasize the significance of relational considerations with regard to pregnancy and artificial wombs. On the whole, these scholars critique the tendency in the dominant discourse on artificial wombs to imagine the ectogenic fetus as an autonomous entity, and draw attention to the reality that "regardless of where or by whom the foetus is gestated, it remains dependent upon someone" (Langford 2008, 267). In suggesting that ectogenesis could relieve women of taking sole responsibility for gestation, Firestone (1970), Smajdor (2008), and Woolfrey (2006) are attentive to the relational labor of care that is required in pregnancy. Rosen (2003), Kamm (1992), Oakley (1984), and Squier (1994), among several others, also acknowledge care and relationality by suggesting that there may be something significant about human gestation, immeasurable in scientific research, which occurs through the connection between pregnant woman and fetus. Overall (2015), Cannold (2006), and Langford (2008), each of whom directly focus on abortion and ectogenesis, specifically cite relationships and the perceptions of pregnant women toward their fetuses as crucial to understanding why ectogenesis as a replacement to abortion would be undesirable to many people and can be understood as explicitly anti-feminist.

Focusing on the excision of nurses from writing on the history of incubators, womens' studies scholar Irina Aristarkhova insists on the importance of reinstituting care labor in discourses on the artificial womb. Aristarkhova writes "the mother-machine will need so many 'empirical' nurses (wet nurses, animals for providing milk and tissue for various surgeries, immediate family members or institutional substitutes, just to name a few) that calling it an 'artificial womb,' a matrix-incubator, will remain an example of ectogenetic desire that is indeed divorced from the real conditions that make ectogenesis possible" (2012, 119). Aristarkhova's directive to think about incubators and ectogenesis in relation with nurses helped to shape my interest in the relational entanglements that law might intercede, produce, or shape with regard to this

technology. While each of the scholars I have noted above inform my perspective by addressing (to varying extents) the work of gestating and the importance of relationships, they do not explicitly apply a feminist care ethics.

Yet it is crucial to note that there are two scholars who have in fact identified the potential uses of a specific engagement with care ethics to assess artificial wombs. In their respective chapters in Gefland and Shook's 2006 edited collection, bioethicists Gefland and Sander-Staudt each draw on care ethics to consider the implications of ectogenic technology. While they share my interest in relationality, there are a number of aspects of their respective definitions and applications of "care" that I find limiting, and that have provided a contrast against which I have developed my own understanding of what might constitute a feminist legal framework of care.

Gefland and I hold the same perspective to the extent that he argues that "the ethics of care might be useful to policy makers considering legislation regulating the use of ectogenesis [. . .] and provide guidance to the issue of abortion" (2006, 90). However, Gefland's interpretation of "care" is not derived from the feminist relational ethics developed by Gilligan and others. Gefland instead adapts a "hypothetical agent-based virtue ethics" in which he places the hypothetical intent of legislators at the center of his analysis, arguing "we can say that a law is just if and only if it is the type of law that might be passed by hypothetical caring legislators" (95). While I too argue that care must be a central consideration in analysis of ectogenesis, "care" to me does not refer to a potential quality which must be embodied by lawmakers. Indeed, I would caution that as Thompson notes in much of the literature on feminist care ethics, an unnuanced assumption that what constitutes "caring" action can be understood as universal simply replicates the "universal terms" (Thompson 1998, 526) that the ethic purports to critique. As Thompson argues, this assumption comes from within an unspoken place of white, middle class subjectivity in failing to recognize that for black and Indigenous people and people of color, alleged "caring" on the part of state actors has often been used for "politically oppressive functions" (527). I regard "care" not as a quality of action that can be said to be universally applicable, but as an (imperfect) practice with which to centralize a particular set of concerns: namely, the health of the pregnant person, and consideration of relationships between fetus, progenitors, machine, and others. In centralizing these concerns, I do not seek to proscribe universal rules for what a given person needs in a given situation, but quite the opposite, to orient toward creating structures that are adaptable rather than prescriptive, that enable multiple

understandings of care to be imagined and enacted. Rather than attempting to assess or proscribe caring intent on the part of legislators as Gefland suggests, I propose that a care ethics be used strategically to assess the efficacy of a given framework according to whether it sufficiently acknowledges and addresses these concerns.

I am also in agreement with Gefland that thinking about care need not be limited to gender-essentialist narratives that “assert that the paradigmatic relationship is that between a mother and a child” (95). As I will unpack below, I attempt to de-essentialize care through a focus on gestation as something that accounts for a multiplicity of genders. In contrast, Gefland addresses this point by arguing that his own engagement with care centralizes “both” parents in a traditional nuclear family form, writing, “I suggest that we use caring parents in a nuclear family as the paradigm and attempt to determine how they might act in a given situation” (95). This approach presumes that care in a nuclear family is exemplary, a presumption that I argue should be challenged. Limiting care to the nuclear family undermines the emancipatory possibilities of ectogenesis proffered by some feminist scholars by retaining the restrictive familial ideals they had hoped the technology might help redress (Firestone 1979). Further, it denies the ways in which in some instances, it is precisely the constraints of the nuclear family that cause the most harm.

Gefland further strips feminist praxis from his own use of care ethics by focusing only on care for the fetus. He writes, “whether a legislator should permit insurance companies to financially coerce women to use ectogenesis would depend, to some extent, on how ectogenesis would affect the health and well-being of the future child” (2006 103). Here, we are in fundamental disagreement. I argue that a feminist approach to this technology insists that “financially coer[cing] women to use ectogenesis” (103), or coercing them by any other means, is straightforwardly unacceptable regardless of the impact on the future child. While a feminist ethic of care invites us to consider the fetus in relation to the pregnant person, this does not entail an imperative to “determine the moral status of a fetus” (103) in order to establish whether the pregnant person has a right to terminate it. In excising care for the pregnant person and the relationships produced through ectogenesis from his consideration, Gefland performs the same problematic erasure of relationships (and of the pregnant person’s agency) that I note in the broader literature on ectogenesis.

By contrast to Gefland, Sander-Staudt specifically draws on a feminist ethics of care. Yet while we share a project of reinstituting considerations of care labor, Sander-

Staudt's understanding of feminist care ethics exhibits a key potential limitation of this framework that I hope to avoid, namely, a gender-essentializing analysis of ectogenesis and pregnancy. Sander-Staudt argues that "a feminist ethics of care reveals some potential dangers associated with the development of the artificial womb" (2006, 109). Her application of this framework primarily to expose the "dangers" of artificial wombs speaks to the roots of a feminist care ethic in a reification of the mother-child relationship (Noddings 1995, Ruddick 1989). In Sander-Staudt's interpretation, a feminist care lens could only ever expose automated alternatives to gestation as a threat to this relationship, and therefore, as a threat to women. Sander-Staudt writes that an ethics of care is "likely to reject AWT because it seems yet another step towards not just mechanizing, but demeaning nature, birth, and women's relations to them" (2006, 117). I follow Sander-Staudt's call to be attentive to the relationship between the pregnant person and the fetus, and to how ectogenesis might alter this relationship. But I also believe that the assumption that ectogenesis could only ever be damaging to women problematically places a gendered mother-fetus bond on a pedestal. More importantly, it forecloses the possibility that the technology could have emancipatory outcomes for how we construct the family form and the gendered body. I regard this limitation not primarily as a problem with Sander-Staudt's use of a feminist care ethics, but as an issue embedded within this praxis. In what follows, I provide an account of how I intend to address this and other limitations of the feminist care framework.

2.5 ADDRESSING THE LIMITATIONS OF FEMINIST CARE ETHICS

I am making strategic use of "care" as a tool for producing normative recommendations regarding how ectogenesis and abortion might be regulated. As Jennifer Nedelsky notes, selecting a strategic legal approach is a question of making "judgments about the probable consequences of different concepts" (1993, 344) and recognizing the limitations of the concept that one chooses to engage as a tool to further a legal cause or achieve a particular end. I am arguing for the importance of situating discussions of ectogenesis within a particular feminist discourse, but like all strategic tools, care ethics has significant limitations. I am going to attempt to attend to these limitations by drawing on perspectives from reproductive justice scholarship (including Ross, Roberts, Derklas, Peoples, and Bridgewater Toure 2017; Ross and Solinger 2017; Adams and Mikesell 2017; West 2009), and relational feminist legal theory (including Downie and

Llewellyn 2012, Fineman 2017, Nedelsky 1993) to adapt my particular use of feminist care ethics.

A number of branches of feminist relational theories have emerged following care ethics, some of which have divested from the term in recognition of the limitations I will discuss. In the introduction to their recent collection on health law and relational theory, legal scholars Downie and Llewellyn note that while relational theory is informed by a feminist ethics of care, they choose to distinguish their use of relationality from this framework. They write of their praxis that “it is not committed, as some take the ethic of care to be, to the affirmation of certain models or types of relationships or activities as inherently valuable” (2012, 6) and that their “focus, then, is not on particular relationships or types of relationships as might be supposed on some versions of care feminism [. . .] rather, the focus is on the dynamics or characteristics of relationship that need to be supported and encouraged in order to foster human flourishing” (6).

I understand and appreciate the reasoning offered by Downie and Llewellyn here. Creating new frameworks that also centralize relationality is one way of responding to the limitations of a care framework. I am taking a different approach, which is to persist in the use of “feminist care ethics” but to draw from other resources to adapt it. I argue that in this contemporary social moment, in which negotiating notions of gender and relationality have become increasingly imperative, retaining this terminology while also noting and addressing its limitations is a politically useful way to grapple with its difficult lineage, rather than replacing it with a new but similar term. I am also informed here by Thompson, who writes that we might use critiques of care ethics “not to dismiss theories of care but [...] to inform and reorient them in ways that systematically account for race, class, gender, and other cultural differences” (1998, 528).

Ultimately, the relational legal theory and the reproductive justice scholarship and activism that have informed and inspired this thesis are importantly distinct from a feminist ethics of care, born from different contexts and political imperatives. However, I have found that each of these modes of thinking complement each other and diverge in useful ways. Relational feminist legal theory, reproductive justice frameworks, and care ethics share several common features. Each is rooted in a commitment to the idea that individuals are constituted through their relationships with others, and each recognizes that the needs of both individuals and communities are shaped by multiple factors in

their lives. But each calls our attention to a distinct set of concerns in pursuit of justice. Where relational legal theory attends to the restructuring of the law itself, care ethics emphasizes a need to orient toward formulating analyses that attend to how we depend on one another. Reproductive justice calls each of these frames toward an antiracist specific focus on lived experience, on the ways that the contemporary realities of race, class, gender, immigration status, and sexual identity and orientation shape access to care. Olena Hankivsky has similarly recently suggested the use of intersectionality theory in care ethics, to direct care theory toward “the historically rooted ties and mutually constituting processes and patterns of a broader range of oppression” (2014, 253). In engaging reproductive justice work with care ethics, I hope to be attentive to these patterns. In what follows, I will discuss some of the key aspects of my use of a feminist ethics of care that I intend to adapt to address the limitations of this framework, and I will also address which bodies of work help shape my response in each instance.

Specific Application to Evaluate Legal Frameworks

Sophie Lewis writes, “too often, ‘care studies’ and ‘social reproduction’ scholarship merely draws attention to the unpaid love that glues everything together. A critical, anti-violent politicisation of these processes would need to radically transform (and not just revalue, ‘as is’) these domains” (2018). By applying a feminist ethics of care to assess the efficacy of legal frameworks, I am attempting to actively employ this lens not as simply a tool for observation, but as “a practice and politics” (Lawson 2007, 5). This bears some unpacking of what I mean when I refer to both practice and politics. Putting this lens into practice, for me, is using it to make applied suggestions as to how existing laws might be adapted. As to politics, Loizidou (2007) invites us to consider whether there are “particular markers that allow a distinction between political and ethical conduct” (45), and questions the idea that that these realms can be easily disentangled, as in taking ethical action the “political side” (ibid) of that action emerges. Thompson notes one of the more problematic tendencies of initial uses of care ethics to be a tendency to emphasize the home and private sphere as a space of innocence, wherein caring could occur. Glenn, too, emphasizes that “the social organization of care has been rooted in diverse forms of social coercion that have induced women to assume responsibility for caring for family members and that have tracked poor, racial minority and immigrant women into positions entailing caring for others” (2012, 5). Thompson contests that from a black feminist perspective, “caring means bringing about justice for

the next generation, and justice means creating the conditions under which all people can flourish” (1998, 533). I follow this call, and I take it to understand that the “ethics” and the “politics” of care are inherently intertwined. Identifying the multiple structures of oppression that may inhibit “flourishing”, which might constitute an activity informed by an ethic of care, is also a political action in that it identifies the systems in the public realm that oppress, inhibit, or enable life in the “private” realm. In other words, and as Loizidou suggests, “ethical” actions are also political in their doing. Under the contemporary legal and political circumstances in which debates over the uses of artificial womb technology are emerging as this technology is being developed, I feel a feminist relational legal intervention that at least begins to offer active strategies is imperative. In this, I am informed by the work of Robin West, Martha Fineman, Jocelyn Downie, and others who are committed to identifying the ways that a relational feminist praxis can be applied to rethink and reform existing legal structures.

In actually assessing frameworks that have been proposed to govern abortion and ectogenesis, which I will do in chapters four and six respectively, I will be asking questions such as the following: does the suggested framework recognize the presence and importance of relationships? (Between the fetus and caretakers whether mechanical or human, between the prospective progenitor(s), the gestator, the machine, medical personnel, the state?) Is the work of care addressed in the suggested framework, or is it invisibilized? What resources are made available to those who are engaged in care labor? Does the framework protect against the forced constitution of relationships of care and/or dependency? Does the suggested framework sufficiently provide for care of the pregnant person? Does it offer the pregnant person sufficient resources to undertake, redistribute, or reject care of the fetus? What other entanglements may need to be considered in each instance?

Undoing Gender in Care

As I have introduced earlier in this chapter, much has been made of “the maternal” in relation to feminist ethics of care. As Sander-Staudt writes, “Care ethicists speculate that the physical aspects of women’s reproductive biology can contribute to the development of a relational ethical perspective” (2006, 117). This assumption, emphasized by some theorists in particular (Ruddick 1989, Noddings 1995) is perhaps one of the most glaring limitations of early iterations of feminist care ethics. This position is deeply gender-essentializing. The idea of a distinct “maternal power” (Sander-Staudt 123) that is tied to reproductive biology and superior to other

relationships reinforces the limiting notion that those gendered female at birth are inherently more capable of enacting care. This reproduces a fallacy of reproductive biology as determining one's capacity to love and to nurture, and undermines the caring relationships of trans, male, and non-binary people. As Friedman notes in an earlier (1995) critique of Gilligan's work, there is a striking oversight in some of the scholarship on care to acknowledge the difference between genders being moralized in association with particular forms of moral reasoning (women with care, and men with justice), and there in fact being anything determinative about gender in association with either.

I share the position that feminist care ethics takes on pregnancy as a deeply relational entanglement, and feel it is important to address the ways that care work continues to be gendered, raced, and classed. However, following human geographer and reproductive justice scholar Lewis, I consider "care" as work that need not be gendered. I will attempt to bridge this limitation by engaging Lewis's call for a "non-gynocentric gestational politics" (2018, 313). Lewis proposes that shifting the focus of feminist care ethics from the "mother-fetus" relationship to the relationships produced in and through gestation, whether human or automated, may be a means of retaining a relational focus without reinforcing a gender-essentializing purview. With regard to my use of a feminist care ethic, orienting in this way as I assess potential frameworks for ectogenesis and abortion may be a means of addressing the relational aspects of gestation (both human and machinic) without insisting on an un-nuanced veneration of the mother-fetus relationship.

An Emphasis on Care for the Pregnant Person

As Tronto, Friedman, and others have argued, a "feminist care ethics" as conceived by some scholars (notably Noddings and Gilligan) can often fall short of problematizing gendered and racialized social pressure to serve and attend to the needs of others. Noting the way in which the framework emphasizes respecting other people on their own terms, Tronto asks, "how much must one disregard one's own needs in order to be sufficiently attentive?" (106). In my own application of feminist care ethics, I hope to avoid this potential shortcoming by emphasizing that care for the pregnant person, and provision to allow them to act out of care for themselves, are essential in discussions of ectogenesis and abortion. In this, I follow Glenn, who argues for the importance of "a

balancing of the right to receive needed care with the right to provide care without excessive economic penalties or sacrifice of well-being” (2012, 11). In the context of proposals that have been made as to how the law should govern ectogenesis and abortion, I argue that a framework adequately informed by a feminist ethic of care must always provide the means to allow a pregnant person to “opt in” or “opt out” of providing care and of constituting a relationship with a fetus, the machine, or with other humans. Here again I draw from relational legal work by Robin West, Martha Fineman, Susan Sherwin, and others. While adopting different terminologies and approaches, these scholars identify the ways in which the “uncompensated labor of caretakers is an unrecognized subsidy, not only to the individuals who directly receive it, but more significantly, to the entire society” (Fineman 2000, 19). I follow these relational feminist legal scholars, who argue that sufficient redress for this labor is needed, and in addition, I add that provisions for the care of the pregnant person are also vital.

Expanding Relational Thinking Beyond A Mother-Fetus Bond

Beyond its potential to be essentializing, the traditional emphasis of care ethics on the relationship between mother and fetus limits the multiple relationships of care that are possible outside of this binary. I argue that when considering the issue of abortion and ectogenesis, it is important to begin with the relationship between pregnant person and fetus, as my position is that there are no circumstances under which it is ethically acceptable for anyone other than the pregnant person to elect to abort or continue a pregnancy that begins in that person’s body.

However, once this provision is sufficiently attended to, looking beyond the pregnant person and fetus to other progenitors, other family members, and the ectogenic machine, allows for a broader consideration of both the possibilities opened by this technology and the potential dangers it constitutes. As feminist geographer Victoria Lawson argues, “care ethics begins with a social ontology of connection” (2007, 3), and understanding the potentially broad extent of these connections is important for assessing the actual impact of ectogenesis on abortion. Tronto and others have also commented on the way in which the ethic of care can fail to acknowledge relationality beyond the family, turning away from external structures of power and thus allowing “for the marginalization of class and race, and the perpetuation of heterosexual normativity” (Hankivsky 2014, 254). Reproductive justice perspectives (Ross and Derklas et al 2017, Adams and Mikesell 2017, Lewis 2018, Price 2010) are useful here

in that this framework emphasizes the need to consider multiple relationships of both oppression and care beyond the mother-child bond. Care ethics can run the risk of flattening race, gender, sexuality, ability, and the numerous other aspects of one's identity which might impact their access to relationships of care, and the institutional relationalities that impact this access. Drawing on reproductive justice perspectives, which emphasize the importance of attending to these differences in access will help me nuance this limitation in care perspectives. How might a pregnant person's relationships with her family, with her friends, with the other progenitor, and with the state and its agents impact her ability or desire to use ectogenesis rather than abort? What kinds of frameworks to govern ectogenesis and abortion might best serve to protect against the possibility of unwanted relationships being created? Conversely, what kinds of frameworks might best allow for the creation or protection of wanted relationships?

CONCLUSION

While my work builds on the important interventions made by feminist scholars, there has yet to be a feminist relational legal intervention on the issue of ectogenesis and abortion. By intervening in both the hegemony of US-centric perspectives on abortion and artificial wombs, and in the excision of care from the dominant discourse on this subject, I hope to contribute to building recommendations as to what a feminist regulation of this technology might look like.

In chapters three and five of this thesis, I will closely analyze proposed challenges that ectogenesis may constitute for abortion law against existing abortion jurisprudence in the United States, United Kingdom, and Canada respectively. Where chapter three will deal with issues quite specifically tied to abortion law as written (how ectogenesis may impact bodily autonomy and fetal viability), chapter five will take up broader concerns in relation to abortion (the possibility of degendering gestation and the issue of stratified reproduction). In chapters four and six, beginning from conclusions drawn in three and five, I will consider legal frameworks that have been proposed for addressing these challenges and assess the extent to which these frameworks uphold a feminist ethics of care for governing artificial womb technology. Where a given proposal does not give due consideration to relationships of care and/or to the necessity of care for the pregnant person, I will suggest amendments.

Grounding my analysis in a comparative legal approach informed by a feminist ethics of care, I will explore the role of law in shaping the extent to which ectogenesis

can function as an emancipatory or a limiting (and even dystopic) technology. By producing a critical feminist assessment informed by an ethics of care and relationality, I am taking an explicit position on what I believe an ethical legal framework for artificial wombs should look like. In applying this critical and comparative lens both to the problems that scholars have suggested ectogenesis will pose for abortion law, and to the solutions they offer as a resolution to these problems, I will reformulate the questions and provisional strategies that a legal framework for ectogenesis and abortion might consider.

3. Comparing Challenges to the Status Quo of Abortion Law

Contemporary Abortion Law In Canada, the United States, and the United Kingdom Where the Abortion Act 1967 is in Effect

THE UNITED KINGDOM

The jurisdictions of the United Kingdom in which the Abortion Act 1967 applies (England, Scotland, and Wales) differ significantly from the United States and Canada in that abortion is protected through legislation, not case law precedent. As I previously noted, I have chosen to focus only on those jurisdictions in the UK in which the Abortion Act 1967 is currently in effect. My intent in undertaking this project is to compare the possible impact of ectogenesis on abortion across several common law jurisdictions in which abortion rights are protected but subject to regulation. To do so, particularly taking account of the differences between countries covered by the Abortion Act, and differing regulations across American states and Canadian provinces, is already a significant undertaking. A project also covering the history of abortion in Northern Ireland (where the political, social, and legal landscape in this regard is distinct from the rest of Britain) would certainly be enlightening but is beyond the scope of what can be covered here.

Abortion has long been a crime in English Common Law, with statutory provisions introduced in the early 1800s to criminalize abortion after “quickening.” (British Medical Association 2017, 10). The Offences Against the Person Act 1861 was introduced in England, Wales, and Northern Ireland. Section 58 establishes the statutory crime of a woman “unlawfully administer[ing] to herself any poison or other noxious thing” with intent to procure a miscarriage, or of aiding another person in obtaining a miscarriage, either through performing the procedure or providing drugs. In 1929, Section 1 of the Infant Life Preservation Act was introduced alongside the Offences Against the Person Act to establish an offence for aborting a fetus “capable of being born alive”, unless done in good faith to preserve the life of the mother. The Infant Life Preservation Act amended sections 58 and 59 of the Offences Against the Person Act 1861 in providing for this exception to the criminal law where an abortion was performed in good faith to save the pregnant person’s life. Section 1 does not refer to fetal viability but establishes that proof that the aborted pregnancy had reached twenty-

eight weeks or more would be prima facie evidence that the child was capable of being born alive. Neither the OAPA nor the Infant Life Preservation Act apply in Scotland, and abortion jurisprudence in Scotland was defined by Scottish common law prior to the passage of the 1967 act (BMA 2017, 11).

The Abortion Act 1967 did not remove the crime of procuring an abortion, but operates alongside the Offences Against the Persons Act 1861, the Infant Life Preservation Act 1929, and common law, to establish a series of exceptions to the statutory criminal law in England and Wales and to the common law crime in Scotland. The Abortion Act 1967 establishes that:

(1) Subject to the provisions of this section, a person shall not be guilty of an offence under the law relating to abortion when a pregnancy is terminated by a registered medical practitioner if two registered medical practitioners are of the opinion, formed in good faith—

(a) that the pregnancy has not exceeded its twenty-fourth week and that the continuance of the pregnancy would involve risk, greater than if the pregnancy were terminated, of injury to the physical or mental health of the pregnant woman or any existing children of her family; or (b) that the termination is necessary to prevent grave permanent injury to the physical or mental health of the pregnant woman; or (c) that the continuance of the pregnancy would involve risk to the life of the pregnant woman, greater than if the pregnancy were terminated; or (d) that there is a substantial risk that if the child were born it would suffer from such physical or mental abnormalities as to be seriously handicapped.

When determining whether to provide an abortion under grounds (a) or (b), medical practitioners may consider the pregnant person's "actual or reasonably foreseeable environment." As of 1990, the gestational limit for abortion under the Act is twenty-four weeks. The Abortion Act also allows that abortion may be granted after twenty-four weeks, if two physicians agree that continuing the pregnancy would put the mother's life or health at risk, or if the fetus is found to be deceased or to have significant anomalies. The Abortion Act 1967 specifies that abortion must be performed at an approved premise (this includes NHS providers as well as providers such as the British Pregnancy Advisory Service). In 1967, most abortions were surgical or performed through vacuum aspiration. According to the Department of Health and Social Care, in England and Wales "since 2014, medical abortions have been the most common method of abortion" (2019, 14), and as of 2018, "86.1% of terminations" were medical in Scotland according to Scottish National Statistics (2018, 16). In medical abortions, two pills, mifepristone and misoprostol, are consumed or inserted into the

vagina with a break of 24-48 hours in between (ibid). In light of this development, in the last two years (2016-2018), first in Scotland, then Wales, and finally in England, provisions have been made to begin allowing women to take the second pill at home.

CANADA

As a former colony disputed by French and English colonizers, abortion was initially criminalized under English Common Law in the majority of Canada, and by French civil law in Quebec. The Canadian Criminal Code made procuring an abortion a statutory crime in 1869, and in 1969, Section. 251 of the Criminal Code re-established performing an abortion as an indictable offence but made an exception where a hospital abortion committee signed a statement confirming that “continuation of the pregnancy of the female person would or would be likely to endanger (the pregnant woman's) life or health.” Following the passage of the Canadian Charter of Rights and Freedoms in 1982, Canadian pro-choice campaigners began to look for test cases to challenge the criminal law.

Abortion in Canada is now governed at the federal level by the landmark case *R v. Morgentaler* (1988). Henry Morgentaler, along with two other doctors who performed abortions in violation of the requirement for committee approval, challenged section 251 on the grounds that it violated women’s rights under the newly established Charter. In *Morgentaler*, a majority of three out of five of the Supreme Court’s sitting judges held that the requirement for committee approval violated women’s rights under section 7 of the Canadian Charter of Rights and Freedoms, which holds that “everyone has the right to life, liberty, and security of the person, and the right not to be deprived thereof except in accordance with the principles of fundamental justice.” Each of the three majority opinions (from Chief Justice Dickson and Justice Lamer, Justice Beetz and Justice Estey, and Justice Wilson respectively), varied slightly in their interpretation of the Charter. As McConnell argues, Justice Wilson’s opinion constitutes the one instance in in which a justice found that the stipulations violated a right to “liberty” in addition to a right to “security of the person.” Wilson found that “the right to reproduce or not reproduce [. . .] is properly perceived as an integral part of modern woman’s struggle to assert her dignity and worth as a human being ... [Under section 251(4)] she

is truly being treated as a means--a means to an end which she does not desire but over which she has no control.”⁶

Each of the majority judges in *Morgentaler* noted that the state had a valid interest in the life of the fetus and in protecting the mother’s right to make personal decisions, but they established that balancing these interests was a question for parliament. To date, no federal legislation has taken up this question, and while in some provinces abortion is not available after viability,⁷ Canadian federal law sets no specific legal limit for abortion. Since medical abortion became commercially available in Canada in 2017, some provinces, including Alberta, Quebec, British Columbia, Ontario, Nova Scotia, and New Brunswick offer it under their health care plans as a free service (Johnstone and Macfarlane 2015). As of 2018, the pill must be paid for by the individual or via private insurance in Manitoba, the Northwest Territories, Prince Edward Island, and Nunavut. While *Morgentaler* affirmed that Canadian women have a right to choose to end a pregnancy, as Johnstone and Macfarlane note, “most provinces enacted policies designed to limit abortion access in the immediate aftermath of the Court’s 1988 ruling” (105).

THE UNITED STATES

As in Canada, abortion in the United States was initially governed by English common law precedent. Today it is regulated through federal case law and legislation at the state level. The landmark 1973 *Roe v. Wade* Supreme Court case concerned Jane Roe, a pregnant single woman who alleged on behalf of herself and women similarly situated that a Texas statute criminalizing abortion unless the pregnant person’s life was in danger was in violation of the Due Process Clause of the Fourteenth Amendment. The Due Process clause holds that “no state shall deprive any person of life, liberty, or property, without due process of law.” The majority held that the state had competing interests in protecting a woman’s right to privacy and in the life of the fetus throughout pregnancy, and that state laws which mandated that abortion could only be provided where a woman’s life was in danger violated a right to privacy, identified as a key aspect of “liberty” under the Due Process clause. In Justice Blackmun’s majority

⁶ *R. v. Morgentaler*, [1988] 1 S.C.R. (Canada). Available at <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/288/index.do/> (accessed January 8 2019).

⁷ As Johnstone and Macfarlane write “access is also restricted by gestational limits in each province that cut off services between twelve (hospital abortions in New Brunswick) and twenty-four weeks (Ontario)” (2016, 107).

opinion, he established that in the first trimester of pregnancy, abortion decisions should be privately made between a woman and her doctor. The court loosely applied a trimester framework for governing the state's balance of interests, establishing that at "approximately the end of the first trimester, the State, in promoting its interests in the health of the mother, may [. . .] regulate the abortion procedure in ways that are reasonably related to maternal health"⁸ and following viability (then placed between 26-28 weeks), "the State in promoting its interest in the potentiality of human life [p165] may, if it chooses, regulate, and even proscribe" abortion unless necessary for the mother's health or life"(ibid). As in the Abortion Act 1967 and the 1988 *Morgentaler* decision, the court affirmed that the procedure must be performed by a licensed physician on appropriate premises. While I will discuss further restrictions to abortion access in the United States throughout, I want to briefly note several other significant limitations at the federal level.

The Hyde Amendment, in place in different iterations since 1977 and made permanent in 2016, bans the use of federal funds for abortion except where the mother's life is at risk or in cases of pregnancy resulting from incest or rape. The consequence of this amendment is that in five states (ID, KY, MO, ND, OK), insurance to cover abortion is limited in private plans, and in twelve states (CO, IL, KY, MA, MS, NE, DN, OH, PA, RI, SC, and VA) insurance coverage for abortion is restricted (Price 2010 46). Women otherwise covered by Medicaid cannot access the service unless they can pay privately, and funding of abortion is banned for federal employees and their dependents, military personnel and dependents, and Indigenous people otherwise covered by the Indian Health Services Act (ibid).

In the years following *Roe*, a number of states passed legislation to further restrict abortion access. The 1992 *Planned Parenthood v. Casey* Supreme Court decision was the first substantive challenge to *Roe*⁹. It dealt with restrictions to abortion in a Pennsylvania statute passed in 1988, including "a mandatory 24-hour waiting period for all women seeking to have an abortion; a parental informed consent/judicial by-pass procedure for minor women seeking to terminate their pregnancy; spousal notification provisions; physician-only disclosure requirements; and various reporting

⁸ *Roe v. Wade*, 410 U.S. 113 (1973). Available at <https://caselaw.findlaw.com/us-supreme-court/410/113.html> (accessed January 8 2019).

⁹ *Planned Parenthood of Southeastern Pennsylvania v. Casey*. 505 U.S. 833 (1992). Available at <https://www.law.cornell.edu/supremecourt/text/505/833> (accessed January 8 2019).

and disclosure requirements.”¹⁰ *Planned Parenthood v. Casey* was a class action lawsuit brought by clinics that performed abortions against these regulations. The appellants argued that the restrictions were too broad and infringed on the ability of medical professionals to care for their patients. The court in *Planned Parenthood v. Casey* carved out further specifications as to the boundaries in which a right to abortion should be protected. The majority held that *Roe* included three parts:

(1) a recognition of a woman's right to choose to have an abortion before fetal viability and to obtain it without undue interference from the State [. . .] (2) a confirmation of the State's power to restrict abortions after viability, if the law contains exceptions for pregnancies endangering a woman's life or health; and (3) the principle that the State has legitimate interests from the outset of the pregnancy in protecting the health of the woman and the life of the fetus that may become a child.¹¹

The *Casey* court affirmed viability as the key point at which the state's interest in fetal life became more pressing and states could ban or strictly regulate abortion procedures, but also placed further emphasis on the right of states to show interest in the fetus's life throughout pregnancy by initiating state level regulations. To articulate this balance, the court established an “undue burden” standard, finding that “undue burden exists, and therefore a provision of law is invalid, if its purpose or effect is to place substantial obstacles in the path of a woman seeking an abortion before the fetus attains viability” (ibid). This standard, broad in its interpretation, has allowed for states to significantly restrict abortion both before and after viability. I will discuss these restrictions in more detail in what follows.

3.2 A Challenge to Abortion Rights Based in Arguments for Bodily Autonomy

At present, a fetus must be gestated in a person's body. The first key challenge ectogenesis has been understood to pose for abortion law lies in the possibility that gestation could be separated from dependency on the human body. Scholars have argued that if the fetus could be removed from the body and grown in an artificial womb, defences of abortion based on the argument that forced pregnancy is an invasion of a woman's bodily autonomy would no longer be sufficient to protect abortion rights.

¹⁰ Ibid

¹¹ *Planned Parenthood of Southeastern Pennsylvania v. Casey*. 505 U.S. 833 (1992). Available at <https://www.law.cornell.edu/supremecourt/text/505/833> (accessed January 8 2019).

In the 1978 article “Choice Rights and Abortion: The Begetting Choice Right and State Obstacles to Choice in Light of Artificial Womb Technology,” Goldstein starkly notes that artificial wombs could make it possible for a woman to either “feticidally womb-empty” or “non-feticidally womb-empty” (880). Writing from the context of the United States, he argues that given that *Roe v. Wade* established that the state had competing interests in the woman’s right to privacy and in the life of the fetus throughout pregnancy, if technology made it possible to “non-feticidally womb-empty”, the state could compel women to do so. The argument that abortion law will be challenged by ectogenesis because the technology undermines a defence of abortion rights based in claims to bodily autonomy arises frequently in the literature (Favole 1979, Singer and Wells 1984, Tribe 1990, Kaczor 2005, Son 2005, Bennett 2008, Brassington 2009, Schultz 2009, Welin 2009, Reiber 2010, Steiger 2010, Abecassis 2016, Blahuta 2017). Notably, Tribe, Kaczor, Schultz, and Reiber each draw on American case law but present a potential challenge to abortion rights based on the way in which ectogenesis could undermine a justification through bodily autonomy as universally applicable. In what follows, I will consider the question of whether this challenge is in fact likely to apply in each jurisdiction.

THE UNITED STATES

Since the *Roe v. Wade* decision, the argument that ectogenesis will challenge abortion protections based in a claim to bodily autonomy has become well-trodden territory for those writing from an American context (Abel 1975, Favole 1979, Tribe 1990, Son 2005, Kaczor 2005, Bard 2006, Gefland 2006, Randall and Randall 2008, Reiber 2010, Steiger 2010, Schultz 2010, Cohen 2017). With the exceptions of Kaczor, Gefland, and Bard, each of these scholars directly discuss American jurisprudence. Notably, and mostly because of the time of their writing, only a handful of American scholars (Randall and Randall 2008, Steiger 2010, Schultz 2010, Cohen 2017) who write on ectogenesis as a challenge to bodily autonomy-based protections to abortion engage with a case I argue is particularly relevant to this issue in American abortion jurisprudence, *Gonzales v. Carhart*.¹² While I largely agree with the arguments by these authors as to how ectogenesis could undermine justification for abortion rights in an

¹² *Gonzales v. Carhart*, 550 U.S. 124 (2007). Available at https://www.oyez.org/cases/2006/05-380?mod=article_inline (accessed January 8 2019).

American context, I will indicate further points for consideration pertaining to this most recent decision and the contemporary climate around abortion rights in America.

At issue in *Roe v. Wade* was whether a Texas state ban on abortion constituted an infringement of a woman's right to privacy under the Due Process clause of the 14th Amendment, which holds that "no state shall deprive any person of life, liberty, or property, without due process of law."¹³ Reading the opinion of the majority, Chief Justice Blackmun drew on the Bill of Rights and case law dealing with issues in the family home in order to establish that "liberty" interpreted in the specific context of abortion dealt with "protect[ing] against state action the right to privacy, including a woman's qualified right to terminate her pregnancy."¹⁴ As I will discuss when I turn to Canadian abortion jurisprudence, the right to "liberty" may have been more broadly interpreted beyond simply referring to violations of the body, but in *Roe v. Wade*, the court expressly defined the violation of liberty through a right to privacy vested in security of the person.

That a right to privacy in the context of abortion was to quite specifically refer to the way in which pregnancy impacted a woman's bodily autonomy was made clear by the court's affirmation that the state has competing interest in a right to privacy and the fetus's right to life throughout pregnancy. Blackmun's majority opinion establishes that "in assessing the State's interest, recognition may be given to the less rigid claim that as long as at least potential life is involved, the State may assert interests beyond the protection of the pregnant woman alone" (ibid). It is this phrase, *at least potential life* that is of particular importance with regard to the artificial womb. The court's opinion here suggests that where there is a possibility that a fetus could survive, the state has an interest in the fetus's life that can outweigh the pregnant person's privacy in her body. This suggests a right to privacy applied in this context is quite explicitly not intended to extend to a right to the death of the fetus. As Tribe argued in 1990, the *Roe* court's limited application of privacy to physical autonomy in the context of pregnancy suggests quite strongly that were ectogenesis available, under *Roe v. Wade*, a state might well legally require the use of artificial wombs in the interest of protecting "potential life." Abel (1974), Goldstein (1978), Favole (1979) and Tribe, each writing

¹³ *Roe v. Wade*, 410 U.S. 113 (1973). Available at <https://caselaw.findlaw.com/us-supreme-court/410/113.html> (accessed January 8 2019).

¹⁴ *Roe v. Wade*, 410 U.S. 113 (1973). Available at <https://caselaw.findlaw.com/us-supreme-court/410/113.html> (accessed January 8 2019).

following *Roe* but before the 1992 *Planned Parenthood v. Casey* decision, predict the Supreme Court's further movement toward identifying abortion as a physical procedure in which substantive limitations to the exercise of bodily autonomy may be justified.

The *Planned Parenthood of Southeastern Pennsylvania v. Casey* judgement reaffirms that privacy in the context of abortion is unique, with the majority finding "abortion decisions must be recognized as different in kind from the rights protected in the earlier cases under the rubric of personal or family privacy and autonomy."¹⁵ As Son (2005), Randall and Randall (2008), Steiger (2010), Schultz (2010) and Cohen (2017) duly note, the *Casey* decision made clear that states may infringe on a person's bodily autonomy after viability in recognition of the state's interest in protecting a fetus that has a chance of survival. On the basis of this balance, these scholars agree that given that the ectogenic fetus would have a chance of survival in an artificial womb without infringing on the pregnant person's privacy by forcing her to carry the fetus, states may be justified in requiring the use of an artificial womb as an alternative to abortion. The *Casey* court also established the "undue burden" standard, finding that "undue burden exists, and therefore a provision of law is invalid, if its purpose or effect is to place substantial obstacles in the path of a woman seeking an abortion before the fetus attains viability."¹⁶ While a number of American scholars writing on ectogenesis and abortion write after the *Casey* decision (Son 2005, Randall and Randall 2008, Steiger 2010, Schultz 2010, Cohen 2017), only Randall and Randall and Cohen substantively engage with what the "undue burden" standard might mean with regard to the state's ability to intervene in bodily autonomy. Further analysis of the extent to which measuring state intervention against "the undue burden" standard has allowed pregnant peoples' bodily autonomy to be infringed on even prior to viability is important to understanding the possible impact of ectogenesis. Randall and Randall interpret the undue burden standard as follows:

the Supreme Court's current abortion jurisprudence stands for the proposition that the woman's autonomy interest outweighs the state's interest in life until viability, after viability the state may exercise its interest so long as the health and welfare of the mother are provided for in any laws enacted (2008 16).

¹⁵ *Planned Parenthood of Southeastern Pennsylvania v. Casey*. 505 U.S. 833 (1992). Available at <https://www.law.cornell.edu/supremecourt/text/505/833> (accessed January 8 2019).

¹⁶ *Planned Parenthood of Southeastern Pennsylvania v. Casey*. 505 U.S. 833 (1992). Available at <https://www.law.cornell.edu/supremecourt/text/505/833> (accessed January 8 2019).

As Randall and Randall argue here, abortion jurisprudence clearly establishes stronger protections for the right to privacy prior to viability than after. Yet I want to challenge the extent to which they argue that “the state has little ability to protect the life of the fetus if it is not viable” (11). In fact, the undue burden standard quite clearly allows states to significantly limit the exercise of bodily autonomy in pregnancy *prior* to viability without these restrictions being considered “substantial obstacles in the path of a woman seeking an abortion.”¹⁷ Regardless of whether an ectogenic fetus were viable from conception, then, interpretation of the undue burden standard could allow states to justify banning or significantly limiting abortion throughout pregnancy if ectogenesis were available as an alternative. Where currently, a full ban on abortion before viability would clearly be a substantial obstacle in the path of a woman seeking an abortion, if an artificial womb is available in principle (even if not always accessible in practice) an anti-abortion state legislature may accept that a full abortion ban is not a substantial obstacle because a pregnant person would still have the option of having the fetus extracted to an artificial womb.

To justify my position here, I want to turn to a particularly significant example of the interventions on bodily autonomy permitted by the undue burden standard prior to viability. Many American scholars writing on artificial wombs and abortion do so prior to the 2007 United States Supreme Court case of *Gonzales v. Carhart*. While Randall and Randall and Cohen do consider *Gonzales* in relation to ectogenesis, as I have noted above, Randall and Randall curiously do not acknowledge the extent to which the Court’s decision affirmed state intervention in a pregnant person’s bodily autonomy prior to viability.

In this class action suit, doctors who performed second trimester abortions (from twenty weeks on) challenged a federal statute called the Partial-Birth Abortion Ban Act (2003). The statute banned a second trimester abortion procedure called a dilation and extraction, in which a fetus is partially delivered and then excised. The complainants argued that the ban constituted an undue burden on a woman’s right to privacy, because it blocked physicians from using a procedure (prior to viability), that was least invasive on the patients’ bodily autonomy. Appellate courts found in favor of the physicians, in recognition that while the ban had an emergency exception for situations in which the pregnant person’s life was endangered, it had no exception to protect her health. The

¹⁷ Ibid

Supreme Court reversed the decision of the lower court, finding that the ban was not an undue burden. This decision solidified that at both the federal and state level, the “undue burden” standard could allow for significant infringement on the privacy right applied in abortion both before and after viability. In the court’s majority opinion, Justice Kennedy wrote, “the government may use its voice and its regulatory authority to show its profound respect for the life within the woman.”¹⁸ This decision allows for particular abortion procedures to be banned even before viability and even where, as Justice Ginsburg noted in her dissent, the “procedure [was] found necessary and proper in certain cases by the American College of Obstetricians and Gynecologists” (ibid). This ban sets a precedent that suggests that at both the federal and state level, even if the ectogenic fetus was not considered viable, the state may be able to ban abortion procedures that resulted in the death of the fetus (allowing extraction to an artificial womb instead) without this being considered an undue burden on the privacy right.

Following the decision in *Gonzales*, anti-abortion state legislatures acted quickly to apply statutes to further limit the exercise of bodily autonomy prior to fetal viability. A particularly striking example of this is the extension of “chemical endangerment of a child” laws (introduced to protect children from exposure to drugs) to charge pregnant women who use drugs or alcohol with transferring dangerous substances to their fetuses (Paltrow and Flavin 2013). In cases such as these, which Paltrow and Flavin note have become increasingly common, women whose pregnancies are well before viability have been forcibly detained and subjected to invasive medical interventions. While Bard writes in 2006, prior to the decision in *Gonzales*, I find her prediction prescient here: that with reference to existing American case law precedent, “it seems a short leap from the ability to continue a pregnancy in an artificial womb to the requirement that every unwanted pregnancy must be completed in an artificial womb” (152).

Randall and Randall argue, as I do, that existing American abortion jurisprudence could allow states to force the use of artificial wombs in lieu of abortion because a pregnant person’s bodily autonomy may no longer outweigh the life of the fetus. However, where they hold that “pre-viability, the woman’s interest in autonomy and right to control her body trumps the state interest in the potential life of the fetus” (2008, 12), I argue that the decision in *Gonzales v. Carhart* and a number of statutes that have been allowed to pass at the state level following this decision suggest that

¹⁸ *Gonzales v. Carhart*, 550 U.S. 124 (2007). Available at https://www.oyez.org/cases/2006/05-380?mod=article_inline (accessed January 8 2019).

significant restrictions to bodily autonomy even where the ectogenic fetus is not considered viable may be permitted.

I find this an important distinction to make in the interests of establishing what needs to be considered in order to build appropriate, care-based frameworks for mitigating against these challenges. If abortion in the United States were substantively protected as an essential exercise of bodily autonomy prior to fetal viability (as Tribe 1990, Schultz 2010, Bard 2006, and Steiger 2010 among others argue), then a framework for ectogenesis which redefines viability to continue to protect autonomy prior to this point might sufficiently account for care of the pregnant person. But to imagine the steps that will be required to protect abortion if ectogenesis is introduced, we need to first be accurate as to whether contemporary protections to abortion rights in the United States are sufficient.

THE UNITED KINGDOM

Whether ectogenesis may undermine abortion law in the United Kingdom by eliminating a defence of the procedure based in bodily autonomy requires consideration of the legislative intent of the Abortion Act 1967. Sheldon summarizes the impetus for reform as “the protection of medical discretion and autonomy and a desire to bring women out of the backstreets and into contact with their GPs” (1997, 17). It is certainly the case that under this legislation, many people have experienced and understood abortion in England, Scotland, and Wales as a protected right to bodily autonomy. But rather than being intended primarily to codify a state interest in the rights of women to make private choices, the passage of the Abortion Act served to ensure that medical professionals were not penalized for offering abortions, and to protect the health and safety of women and their families.

Alghrani distinguishes between assessing whether the UK would allow for the termination of fetuses that begin in an artificial womb and whether the law would allow the termination of fetuses that begin in a woman’s body. Pertaining to ectogenesis as an alternative to abortion where the fetus began in a person’s body, Alghrani contends that “at present, the surgical procedure that would have to be performed to transfer the foetus intact would probably be akin to a caesarean section after twenty-four weeks’ gestation” (2008 315). She argues that because of this, “to coerce women to continue their pregnancies until foetal transfer into an ectogenic chamber is possible is nothing short of a gross violation of one’s bodily autonomy” (317). She continues that “English

law is clear [that a] competent pregnant woman ‘has an absolute right to choose whether to consent to medical treatment or refuse it’” (316), and concludes that it is likely that a claim to bodily autonomy would still protect access to abortion. Alghrani’s argument depends upon fetal extraction being invasive, and I believe she is right to suggest that based on existing technology, such a procedure could be akin to a c-section. But this is an unknown variable, and one which (as Brassington 2008 argues) may have increasingly less application as the technology advances and pushes back the point at which a fetus might be removed into an artificial womb. With this in mind, I want to consider whether based on the contemporary guidelines established by the Abortion Act, bodily autonomy needs to be defended against ectogenesis if bodily autonomy is not what currently serves to protect abortion access in the UK. To be clear before I embark on this analysis, I am not suggesting that legal protections which do not acknowledge the link between a pregnant person’s bodily autonomy and a right to abortion are preferable. Questions of alternative and appropriate frameworks based on feminist care ethics will be addressed in chapters four and six. In this chapter, however, I am simply following the thread of the arguments built by the scholars I acknowledge here, which is to analyze likely outcomes based on existing law.

The Abortion Act 1967 is quite specifically structured to protect doctors who perform the procedure from criminalization. Prior to twenty-four weeks gestation, Section 1 stipulates that a fetus may be “terminated by a registered medical practitioner if two registered medical practitioners are of the opinion, formed in good faith” that continuing the pregnancy “would involve risk, greater than if the pregnancy were terminated, of injury to the physical or mental health of the pregnant woman or any existing children of her family.” Rather than referring to a balance of privacy rights and the fetus’s right to life, as American jurisprudence does, the Abortion Act’s exceptions to the criminal law make it explicit that prior to viability, the decision is to be left to medical discretion. According to how the Abortion Act regulates the procedure, then, the fact that a pregnant person’s bodily autonomy may no longer be implicated need not mean that the law as it is written would be undermined. The availability of ectogenesis could certainly influence the opinion of “registered medical practitioners” as to whether continuing the pregnancy might have a negative impact on the woman’s physical or mental health. Early extraction to an artificial womb may be less of a physical burden than forced pregnancy, which may mean that some practitioners might feel “in good faith” that refusing the procedure and offering the alternative of ectogenesis would not

constitute a danger to the woman's physical health. But others may reasonably find that neglecting to offer a termination could still produce "injury to the physical or mental health of the pregnant woman or any existing children." This is a point on which I am in agreement with Emily Jackson, who notes that abortion on social grounds (meaning, consideration of negative effects on the pregnant person's mental health or a risk to existing children in her family) could very well still apply even where ectogenesis was available as an alternative. Both before and after viability, physicians may take "account [. . .] of the pregnant woman's actual or reasonably foreseeable environment." As Alghrani argues, the Abortion Act as written could extend to "a risk of injury to the mental health of the progenitors" (2008, 321) or in a situation in which the fetus "may suffer from [significant] physical or mental abnormalities" (321).

Writing of abortion broadly speaking, Kaczor argues (2005, 2019) that "the most prominent defenders of abortion defend only a right to evacuation, not a right of termination" (287) and that therefore protection of an abortion right where the woman's bodily autonomy is no longer at issue will be universally moot. But to reiterate one of the primary aims of this thesis, academic writing on abortion and ectogenesis is almost entirely drawn from a US context. Kaczor's argument is a prime example of a pattern whereby American jurisprudence is used to draw a universal conclusion about the impact of artificial wombs. Looking beyond the specifications set out in the Abortion Act to interpretation and contemporary application of the Act, barring a significant (but possible) back-step in medical and political attitudes to abortion in England, Scotland, and Wales, interpretation of the Act in the context of ectogenesis is likely to err toward granting a continued right to termination. Artificial wombs may well shift the attitudes of medical and legal practitioners in the UK toward abortion. But given the gradual development of the technology, with the line at which a fetus could survive outside the body shifting back by a measure of only a few weeks over decades of time, contemporary practice is likely a good measure of how incremental shifts in this technology will be received.

It is precisely the medical paternalism inherent in the construction of the Abortion Act (and the subsequent way in which the legislation fails to centralize women's autonomy) that many pro-choice reformers cite as problematic. There continue to be cases in England, Wales, and Scotland, in which women have been

criminalized for self-administering abortion after viability.¹⁹ I am in agreement with critics of the Act that the continued presence of abortion as a criminal offence with exceptions, and the treatment of physicians as appropriate gatekeepers to access is an outdated and patronizing practice. These are vital concerns that I take up in chapter four where I consider frameworks for ectogenesis, abortion, and care. But while judicial interpretation of *Roe v. Wade*'s protection of abortion as a balance between autonomy and fetal life has moved in favour of increasing restrictions to access, paradoxically, though the Abortion Act does not enshrine privacy or autonomy, its shifting interpretation has allowed for increasingly greater autonomy for pregnant people in application. As Sheldon argues, in England, Scotland, and Wales, "broad support for the idea that it should be doctors who decide whether an abortion is justified has ebbed away, at least in earlier pregnancy when the overwhelming majority of abortions take place" (2016, 314). As Lee, Sheldon, and McVarish (2018) have argued, while the Act has not been updated since 1990, physicians in these jurisdictions increasingly recognize the abortion decision as properly being in the hands of the pregnant person.

Sheldon's engagement with how application of the Abortion Act has changed over time is not to suggest that significant reform is not required. I too, agree that changes should be made. However, when it comes to contemporary practice, I am attempting to establish that a challenge to the importance of bodily autonomy in the abortion decision introduced by ectogenesis may be unlikely to result in a corresponding attack on abortion rights in the UK context. In 2018, the British Medical Association expressed support for offering women greater autonomy and agreed the position of supporting full decriminalization of abortion, in instances where it is performed by doctors and where it is administered by pregnant people themselves (2018). That the association has taken this policy suggests that physicians would be unlikely to abruptly turn away from recognizing the decision as properly being a pregnant person's choice even if technology would allow the fetus to survive without dependence on her body. Section 4 of the Abortion Act does allow for conscientious objection to abortion, "provided that in any legal proceedings the burden of proof of conscientious objection shall rest on the person claiming to rely on it", and that medical

¹⁹ The British Medical Association's 2017 report, "Decriminalization of Abortion: A Discussion Paper from the BMA" provides thorough coverage of recent cases in which women have been charged for self-aborting after viability, as well as cases in which others have been charged for assisting in unlawful abortions (16).

professionals must perform the procedure in spite of such objections if necessary to save a woman's life or if she faces substantive medical risks if it is not performed. The BMA and Royal College of Obstetricians and Gynaecologists position on conscientious objection is firm that where physicians do not feel they can morally advise on or perform abortions, they should make this clear to the patient and make other arrangements for that patient's care (BMA 2017). Therefore, even if in some cases physician opinions on abortion shifted due to the availability of ectogenesis, for this to lead to a similar shift among all doctors is improbable.

While doctors may apply the Abortion Act in practice in ways which offer greater autonomy to women, ectogenesis could shift their legal liability by altering whether they are able to justify the provision of abortion in "good faith." However, an interpretive shift toward supporting greater autonomy for women is also evident in legal application of the legislation. Prior to 1990, the Abortion Act specified that "any treatment for the termination of pregnancy must be carried out in a hospital." Section 1 (3A) of the 1990 revisions to the Act qualified that the Secretary of State could "in relation to treatment consisting primarily in the use of such medicines" to induce abortion, "approve a class of places" in which these pills could be consumed. This change was made in anticipation of the possibility that abortion pills may one day more appropriately be consumed at home. Because the two pills in the medical abortion cycle are best taken with a space of twenty-four to forty-eight hours between them, the initial requirement that abortions occur at an NHS hospital or licensed clinic meant that women had to make arrangements to cover two visits, with the possible consequence of the termination completing while in transit. Existing laws allowed women who miscarried to take misoprostol in their homes to ensure completion, producing a situation in which women who aborted had to be supervised while consuming the pill but women who spontaneously miscarried did not. Campaigning began in the early 2000s to push the Secretaries of State to use the power designated to them to approve a class of places for abortion and allow for women to take misoprostol at home when terminating. As of 2017, this power has been used in Scotland and Wales to allow pregnant people to take the second pill at home, and as of 2018, in England (BMA 2017). This then, constitutes an example of how application of the Abortion Act, in both a legal and a medical sense, has adapted over time to allow women greater autonomy in the sense of choosing the location and the means of their abortion procedure in practice, even where the law was not written with the intention of protecting this autonomy. With

reference to ectogenesis, the Abortion Act and the ways in which its interpretation by medical professionals and application in law has shifted over time may in fact continue to protect abortion access through not relying on a loosely defined and malleable right to privacy or bodily autonomy.

As Jackson (2000), Sheldon (2016), and others argue, the medical paternalism enshrined by the act is out of step with contemporary legal protections to patients in other areas. The strongest criticism of the Abortion Act levelled by physicians and pro-choice campaigners is that it retains abortion as a criminal offence with exceptions, a position which is unacceptable morally, medically, and legally, and continues to leave women and doctors in a precarious position (see Jackson 2000, Sheldon 2016). I share these criticisms, and I will take up each of these concerns in chapters four and six. It is also the case that in the absence of decriminalization and clearly stipulated protection to abortion on ones' own terms, access remains open to be undermined by a shifting political landscape. However, a shift from abortion pills being available for women to use at home to women being required to subject their bodies to an extraction for the sake of saving an early stage embryo or fetus would require a significant leap. This is in clear contrast with a United States context in which the law grants that restrictions may be placed on abortion from the earliest stages of pregnancy in order to preserve the state's interest in potential life.

CANADA

The text of the Canadian Charter of Rights of Freedoms at issue in *R v. Morgentaler* was Article 7, which reads that “everyone has the right to life, liberty, and security of the person, and the right not to be deprived thereof except in accordance with the principles of fundamental justice.” Article 7 is broadly similar to the text at issue in *Roe*, the Due Process Clause of the 14th Amendment, which holds that “no state shall deprive any person of life, liberty, or property, without due process of law.” Yet where “liberty” in the context of abortion is interpreted in United States' Supreme Court jurisprudence through a narrow application of a right to privacy with reference to the physical body, Canadian jurisprudence offers a broader interpretation of the abortion right. The Canadian Charter distinguishes between “liberty and security of the person,” indicating that “liberty” is to be understood as distinct from physical autonomy vested in the body. Canadian abortion jurisprudence provides a contrast with both the United

Kingdom and the United States in considerations of whether ectogenesis is likely to undermine a bodily autonomy-based protection for abortion.

In the limited Canadian scholarship engaging with ectogenesis and abortion, scholars affirm the position widely held in the American literature that abortion rights will be fundamentally challenged by the way in which ectogenesis may mean that bodily autonomy need no longer be implicated in keeping a fetus alive. While concluding that extraction to an artificial womb is an anti-feminist alternative to abortion, Overall argues that the extrication of the implications of forced pregnancy for a woman's bodily autonomy will challenge abortion rights (2015). Similarly, Blahuta draws conclusions about abortion and ectogenesis which I will argue do not hold in Canadian abortion law in practice. Blahuta writes, "given that the fetus exists, and could be saved without imposing on the mother's bodily integrity, self-determination, privacy, or other freedoms, it is unclear what arguments would warrant not saving a foetus that would otherwise be aborted" (2017 np). I argue that these defences for abortion ("bodily integrity, self-determination, privacy [and] other freedoms") do need to be considered for their continued application with reference to ectogenesis, and in a Canadian context, a number of these protections to abortion may still hold. Though Canadian Supreme Court jurisprudence and case law precedent do in part protect abortion with reference to bodily autonomy, I argue that abortion rights in Canada are unlikely to be undermined by ectogenesis's challenge to the applicability of bodily autonomy-based protections. In Canada, a broader interpretation of "security of the person" as well as an additional protection defined through a right to "liberty" suggest abortion may be more substantively bolstered against this particular challenge.

In the *Morgentaler* decision, three majority opinions were read in which divergent interpretations of the Charter rights were expressed. Chief Justice Dickson and Justice Lamer wrote in their opinion that "forcing a woman, by threat of criminal sanction, to carry a foetus to term unless she meets certain criteria unrelated to her own priorities and aspirations, is a profound interference with a woman's body and thus a violation of security of the person."²⁰ While the Chief Justice and Justice Lamer focused only on "security of the person" and not "liberty," their analysis of "security of the person" has scope beyond the limited rights to physical autonomy ascribed to the privacy protection of abortion in an American context. Dickson CJ notes that a state

²⁰ R. v. Morgentaler, [1988] 1 S.C.R. (Canada). Available at <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/288/index.do/>, 57.

infringement on this right also includes “the psychological effect of state action,”²¹ including the psychological or emotional impact of state interference in decision making. Security of the person interpreted here beyond the context of physical assault on the body has more in common with the Abortion Act requirement that doctors consider a woman’s foreseeable physical and mental health when determining whether to perform an abortion than with *Roe*’s focus on protected rights to privacy limited to the physical body. As in the Abortion Act’s stipulations for a pregnant person’s emotional health, this interpretation of “security of the person” which also accounts for emotional impact, could well extend to protecting termination of a fetus were an artificial womb available.

The second assenting majority opinion, delivered by Justices Beetz and Estsey, offers a more narrow interpretation of security of the person. The justices write that protecting security of the person “must include a right of access to medical treatment for a condition representing a danger to life or health without fear of criminal sanction,”²² quite specifically construing a violation of bodily autonomy as referring to a physical procedure for life or health. Justices Beetz and Estsey devote more time to discussing parliamentary interest in fetal life, and note with reference to *Roe v. Wade* that there is likely some point in pregnancy at which parliament might reasonably infringe on security of the person to protect the fetus. Yet while the *Roe* judges articulated a timeline to balance the extent of such interests, and the Abortion Act also uses a gestational limit after which greater protections are to be offered to the growing fetus, all majority opinions in *Morgentaler* refrained from establishing specific guidelines. Blahuta writes of abortion rights and ectogenesis that “it is not certain that the privacy rights of the mother or the mother’s interest in controlling her genetic material would outweigh the right to life of a foetus that could be transplanted” (2017 np). But while Canadian jurisprudence acknowledges state interest in the life of the fetus, even in the most narrow (Beetz and Estsey) interpretation of security of the person, “a right to life of the fetus”²³ is not balanced against the pregnant person’s bodily autonomy. This indicates that it is unlikely that “a right to life of the fetus” would outweigh a right to

²¹ Ibid, 55.

²² *R. v. Morgentaler*, [1988] 1 S.C.R. (Canada). Available at <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/288/index.do/>, 81.

²³ *R. v. Morgentaler*, [1988] 1 S.C.R. (Canada). Available at <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/288/index.do/>.

security of the person even with the availability of an artificial womb, unless legislative steps were taken to establish a balancing test.

While Justice Beetz and Chief Justice Dickson “focused narrowly on the right to security of the person” (Downie and Kaposy 2008, 290), Justice Wilson found that both a right to security of the person and a right to liberty were violated by Section 251 of the Criminal Code. While in the context of *Roe*, constitutional “liberty” was narrowly interpreted with reference to abortion as a right to make private choices regarding one’s body, Justice Wilson’s reading of liberty in the Canadian Charter is significantly broader in scope. Wilson wrote that liberty “grants the individual a degree of autonomy in making decisions of fundamental personal importance,”²⁴ as informed by “basic theory underlying the Charter, namely that the state will respect choices made by individuals and, to the greatest extent possible, will avoid subordinating these choices to any one conception of the good life.”²⁵ Justice Wilson continues that “the right to reproduce or not to reproduce [. . .] is one such right and is properly perceived as an integral part of modern woman’s struggle to assert her dignity and worth as a human being.”²⁶ Notably, Wilson references a large selection of writings on liberty to support her definition, including quite specific references to “liberty” as discussed in *Roe v. Wade*. When *Morgentaler* was decided (1988), less than twenty years had elapsed since *Roe*. *Casey*, *Gonzales*, and other case law to follow had not yet further narrowed the privacy right. While Wilson did link “liberty” to private decision-making and bodily autonomy (as in *Roe*), she also more expansively interpreted it with reference to “dignity and worth as a human being.” Justice Wilson goes on to assert that Section 251 is explicitly intended to take away rights from women, not simply to protect the life of the fetus. This analysis of liberty goes beyond the question of whether a state can intervene in or enforce a process that occurs in the body and takes specific account of liberty with reference to abortion as a feminist and humanitarian concern. Undoubtedly, whether a concept of “human dignity and worth as a human being” is sufficient to protect abortion access if ectogenesis is available is open to consideration. I will discuss this further with regard to frameworks for abortion and ectogenesis informed by a feminist ethics of care in chapter four.

²⁴ Ibid 166

²⁵ Ibid

²⁶ 171

Justice Wilson also affirms that Section 251 is a violation of security of the person, for which she provides an interpretation in keeping with that offered by Chief Justice Dickson and Justice Lamer, noting that it refers to “both the physical and psychological integrity of the individual,”²⁷ but going further in noting that barriers to abortion access resulting in forced pregnancy create situations in which a woman is

truly being treated as [. . .] a means to an end which she does not desire but over which she has no control. She is the passive recipient of a decision made by others as to whether her body is to be used to nurture a new life. Can there be anything that comports less with human dignity and self-respect?²⁸

This interpretation is consistent with Dickson and Lamer’s opinion and to some extent, with bodily autonomy interpreted in American jurisprudence, in that it refers specifically to the impact on the body of being pregnant against one’s will. However, in referring also to “human dignity and self-respect,” this interpretation of security of the person is also tied back to the violation of “liberty” and is once again more broad than the right outlined in *Roe*, *Casey*, and case law to follow.

In a major review of all Canadian case law dealing with reproductive rights up to 2008, Kaposy and Downie found that though Justice Wilson’s was the only opinion to emphasize that restrictive abortion regulations violated a right to liberty as well as security of the person, it is this more broad justification for abortion that is most “often cited and used to support legal rulings on reproductive choice in other areas of law” (2008, 290). Tracking these references in relation to reproductive choice, Kaposy and Downie note that the affirmation of abortion rights as essential to liberty in Canadian jurisprudence might “signal the embrace of a broader liberty-based justification for the rejection of criminal prohibitions against abortion” (294). The authors suggest that in the future, provincial legislatures wishing to restrict abortion could attempt to do so by weighing interest in fetal life against interest in security of the person. They argue, however, that Wilson’s recognition of a liberty right and the “citation and endorsement” (294) of abortion rights as fundamental to liberty in other areas of law could protect against such attempts, as “it would be more difficult to craft a criminal prohibition that does not infringe the section 7 right to liberty” (*ibid*) than to craft such a restriction balanced against a right to security of the person. Kaposy and Downie discuss the uses of the liberty-based defence of abortion in the context of their general consideration of

²⁷ *R. v. Morgentaler*, [1988] 1 S.C.R. (Canada). Available at <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/288/index.do/>, 173.

²⁸ *Ibid*

how to defend abortion against possible attempts to recriminalize the procedure in the future. While Kaposy and Downie do not give reference to ectogenesis, the development of artificial wombs is precisely the kind of shift that might occasion these attempts by anti-abortion campaigners. Abortion rights construed as essential to fundamental “human dignity” and a right to determine for oneself how a “good life” is to be defined may still justify the termination of a fetus causing its death rather than the forced use of an artificial womb.

With this said, “the Charter is not generally regarded as requiring state action to help facilitate access” (Johnstone and Macfarlane 2016, 99), and as Kaposy and Downie argue, restrictions continue to exist at a provincial level. While federal restrictions to abortion may be unlikely to increase on the basis that bodily autonomy is no longer at issue where ectogenesis is available, provinces that have already shown a strong propensity toward creating barriers to protect fetal life (such as Prince Edward Island, New Brunswick, and Nova Scotia), might be inclined toward claiming the availability of artificial wombs as a justification for further restricting abortion access, even if this did not occur through criminal law. I will discuss provincial level barriers to access further in the chapters to come.

3.3 A Challenge to Abortion Rights Based on Shifting Fetal Viability

A second key challenge that scholars have suggested ectogenesis presents for abortion law is in shifting back the point at which a fetus is understood as “viable.” As I have discussed in my literature review, “viability” is a medical term that refers to the point at which a fetus has a chance of survival outside of the pregnant person’s body. As of 2015, the availability of neonatal technologies and medical expertise at most Western hospitals has set fetal viability between 22-24 weeks gestation, with morbidity for infants “born before 28 weeks” remaining high (Partridge et al. 2017, 1). The biobag is intended for use to save fetuses born between 22-23 weeks gestation, and as I have discussed in my introduction, many scholars who write on ectogenesis anticipate this line moving back slowly as incubation technology improves. A number of legal and bioethical scholars suggest that by sustaining the fetus from earlier and earlier stages of gestation, the artificial womb will challenge abortion law by shifting back the point at which the fetus is viable, perhaps with viability ultimately beginning from conception. Writing from the context of the United States in 1974, Abel argues, “in the case of an

ectogenetic embryo [. . .] viability occurs at conception. It not only is capable of an independent existence; it maintains an independent existence” (253). Assertions that artificial wombs might shift viability, and in so doing, undermine existing abortion law recur in the literature (Abel 1974, Goldstein 1978, Coleman 2004, Son 2005, Bard 2006, Randall and Randall 2007, Alghrani 2008, Jackson 2008, Alghrani and Brazier 2011, Abecassis 2016, Cohen 2017, Langford 2017). While Abel, Goldstein, Son, Bard, Randall and Randall, Abecassis, and Cohen all write from the context of the United States, Alghrani, Jackson, and Alghrani and Brazier specifically consider this challenge in the context of the United Kingdom. This potential challenge is importantly interrelated with the question of bodily autonomy that I have analysed in the earlier part of this chapter, and these two concerns are frequently discussed concurrently in the literature. I’ve chosen to parse them here, however, because doing so can help emphasize that “bodily autonomy” and “viability” are at issue to different extents and interact in abortion law in different ways in each of these three jurisdictions.

Once again a number of American scholars in particular (Abel 1974, Goldstein 1978, Kaczor 2005, Bard 2006, Reiber 2010) write of the moral significance of viability to abortion rights and the way in which this will be impacted by ectogenesis as though this is universally applicable. Catholic bioethicist Reiber is representative in this regard when he writes that “another aspect of abortion ‘rights’ which is invalidated by ectogenesis is the legal construct of fetal ‘viability.’ [. . .With] the development of effective ectogenesis, the relevance of fetal viability as a boundary would be eliminated” (2010, 523). Reiber expresses the sense that viability is a universal and self-evident construct, for which a shift would naturally impact abortion rights. In what follows, I hope to demonstrate that in fact, differences in the applicability of viability as a legal timeline for abortion across these three jurisdictions suggests that a medical shift in viability will not universally challenge abortion rights.

THE UNITED STATES

American legal and bioethical scholars have been the most ardent, since the 1970s, in arguing that an artificial womb could fundamentally change the nature of the abortion debate by potentially rendering the fetus viable from conception (Abel 1974, Favole 1979, Goldstein 1978, Tribe 1990, Pence 2006, Randall and Randall 2008, Cohen 2017). These scholars are attentive to how *Roe v. Wade* establishes that the State’s interest in the life of the fetus increases toward the end of gestation. Though a number

of them write before *Casey* and *Gonzales* (Abel 1974, Favole 1979, Goldstein 1978, Tribe 1990, Pence 2006), they anticipate the affirmation of viability in these cases as the key point in pregnancy at which the state can significantly infringe on a right to privacy.

Blackmun wrote for the majority in *Roe* that while the court could not conclusively answer “the difficult question of when life begins,”²⁹ and opinions on this timeline would widely vary, “the word ‘person,’ as used in the Fourteenth Amendment does not include the unborn.” Balancing this against the sense that the moral significance of a fetus increased as it developed, the court established that the state’s interest in the fetus increased toward the later stages of gestation. To reflect this, the court held that at “approximately the end of the first trimester, the State, in promoting its interests in the health of the mother, may [. . .] regulate the abortion procedure in ways that are reasonably related to maternal health” and following viability, “the State in promoting its interest in the potentiality of human life may, if it chooses, regulate, and even proscribe” abortion unless necessary for the mother’s health or life.³⁰ Blackmun established viability as “the interim point at which the fetus becomes ‘viable,’ that is, potentially able to live outside the mother’s womb, albeit with artificial aid. Viability is usually placed at about seven months (28 weeks) but may occur earlier, even at 24 weeks.”³¹ In specifying that a fetus is viable even where it requires “artificial aid,” the *Roe* court clearly indicated that the viability limit was intended to protect fetuses that remained dependent on machines as well as those able to survive without significant intervention. As Abel, Favole, Goldstein, and Tribe argue, this constitutes compelling evidence that the legality of abortion would be limited at the stage at which a fetus could be transferred to and survive in an artificial womb. Goldstein (1978) rightly notes that “although the *Roe* opinion acknowledges that technological advances might raise difficulties in applying the viability concept, the opinion does not discuss the legal effect of such advances” (Goldstein 1978, 878). With reference to medical advances in viability, later decisions in both *Casey* and *Gonzales* offer further clarification to suggest the capacity of both partial and full artificial womb technology to shift legal application of viability and restrict abortion in American law.

²⁹ *Roe v. Wade*, 410 U.S. 113 (1973). Available at <https://caselaw.findlaw.com/us-supreme-court/410/113.html> (accessed January 8 2019).

³⁰ *Ibid*

³¹ *Ibid*

In *Casey* (1992), the Supreme Court recognized that medical viability had shifted from approximately 28 weeks at the time of *Roe* (1973) to 24 weeks, finding that “advances in neonatal care have advanced viability to a point somewhat earlier.”³² In spite of acknowledging that viability may move back still further as technology improved, the majority opinion of the court dismissed the trimester framework established in *Roe* in favor of affirming viability as the most pertinent marker of when abortion could be restricted. The justices found that

With respect to the State’s important and legitimate interest in potential life, the ‘compelling’ point is at viability. This is so because the fetus then presumably has the capability of meaningful life outside the mother’s womb.³³

In her analysis of ectogenesis and abortion, Son focuses on the court’s justification for affirming the viability timeline in *Casey*. As Son notes, the *Casey* court first defends the viability timeline on the basis that it affirms the principle of *stare decisis*. To explain dismissing the trimester framework in favour of viability, however, the *Casey* court established that it was fair because given its significance as the point at which the fetus has a chance of surviving outside the uterus “there is no line other than viability which is more workable,”³⁴ and because “it might be said that a woman who fails to act before viability has consented to the State’s intervention on behalf of the developing child.” Son focuses on this final justification for the viability timeline, arguing that if ectogenesis shifts back medical viability, the court’s justification of viability as both a point where the fetus could survive independently and “a normative quantity of time deemed sufficient for a woman to have thoughtfully pondered and carried out her decision to abort” (2005 214) would no longer align. While I agree with Son that if ectogenesis moved viability further back this second principle would not be fulfilled, the court’s decision in *Casey* makes it clear that this misalignment is unlikely to impact the use of viability as a definitive timeline in abortion rights. The decision quite clearly establishes with reference to shifts in medical viability that:

The soundness or unsoundness of that constitutional judgment [viability as the key timeline in *Roe*] in no sense turns on whether viability occurs at approximately 28 weeks, as was usual at the time of *Roe*, at 23 to 24 weeks, as it sometimes does today, or at some moment even slightly earlier in pregnancy, as it may if fetal respiratory capacity can somehow be enhanced in the future.

³² *Planned Parenthood of Southeastern Pennsylvania v. Casey*. 505 U.S. 833 (1992). Available at <https://www.law.cornell.edu/supremecourt/text/505/833> (accessed January 8 2019).

³³ *Ibid*

³⁴ *Planned Parenthood of Southeastern Pennsylvania v. Casey*. 505 U.S. 833 (1992). Available at <https://www.law.cornell.edu/supremecourt/text/505/833> (accessed January 8 2019).

Whenever it may occur, the attainment of viability may continue to serve as the critical fact, just as it has done since *Roe* was decided.³⁵

The majority decision gives little consideration here to whether the already evident shifts in medical viability impact the timeframe given to women to make an informed decision about abortion access. But further, this statement appears to quite affirmatively suggest that the court anticipates that viability will continue to shift, and despite this, that the court will stand behind it as a decisive milestone in abortion rights.

The Supreme Court's later decision in *Gonzales* affirmed the importance of the first principle of viability (the possibility that a fetus could survive outside the uterus) and did not acknowledge the second principle emphasized by Son. In fact, the ruling in *Gonzales*, and state-level restrictions to abortion that have followed it, emphasize the significance of viability and suggest that the Court is likely to allow states to significantly restrict or ban abortion with the introduction of ectogenesis both near to and after medical viability.

The court found in agreement with Congress that abortion via dilation and extraction "perverts the birth process," and that "such abortions are similar to the killing of a newborn infant" by a medical professional. Congress's intention in implementing the Partial-Birth Abortion Ban Act, upheld by the Supreme Court, was to prohibit intentionally killing a fetus that was perceived to have a chance of survival. This strongly implies that if it were possible for a fetus to be extracted into an artificial womb and survive, courts would allow a ban on abortions done with the intention to cause the death of the fetus. The court's decision to protect fetuses as early as 20 weeks "from a brutal and inhuman procedure,"³⁶ works on the presumption that fetuses that are near to viability (even by a quite medically significant margin of four weeks), can experience suffering.³⁷ That the court would establish this boundary in spite of the

³⁵ Ibid

³⁶ Ibid, 5

³⁷ I've noted throughout this thesis the importance of attending to the context in which particular arguments emerge. In *Gonzales*, a legal argument was made based on claims of fetal pain near viability in order to curb access to abortion. There is a different strain of argumentation, however, that complicates the question of abortion later in pregnancy by identifying the ways in which disability is often construed in this discourse as a common-sense justification for abortion, thus stigmatizing people with disabilities and conveying the message that a life lived with disability is a life not worth living (see Saxton 147). The significant body of literature by critical race and disability justice scholars that problematizes a tendency within pro-choice feminism(s) to overlook or ignore the eugenic overtones that can emerge in defence of second and third trimester abortions exemplifies that arguments that complicate abortion and autonomy can also emerge from a situated feminist, justice-oriented perspective. See for example Kafer 2013, Chen 2012, Asch 1999, Berne 2015.

absence of medical evidence³⁸ to substantiate this claim suggests that even before artificial wombs are sufficiently advanced to actually allow an early stage fetus to survive, the perception that they could do so may be enough to justify a ban.

Precedent for restrictions on abortion near fetal viability is also evident in a number of state level statutes. “Fetal pain laws” that ban abortion from twenty weeks based on unsubstantiated claims that a fetus begins to feel painful stimuli “near” viability have successfully passed in “Alabama, Arizona, Idaho, Indiana, Kansas, Nebraska, Louisiana and North Carolina [. . .] except for the life or health of the mother” (Bird 2014 48). As of February 2019, the Ohio legislature has voted in support of passing a law which would ban abortion at six weeks, following research claiming that this is the point at which a fetal heartbeat can be detected. The success of these measures to extend the protection afforded to viable fetuses back increasingly earlier suggests that states with anti-abortion legislatures could utilise ectogenesis to argue that fetal viability had shifted and to defend bans at as early in pregnancy as possible.

While, “as of 2013, forty-one states prohibit abortion upon fetal viability, unless to save the life or health of the mother” (ibid), some states notably do continue to allow abortion post-viability, and to have legislatures that are broadly protective of abortion rights (such as California, Oregon, and Connecticut). In these states, it may be improbable that attempts would be made to curb abortion even if an artificial womb were to significantly shift viability, but these jurisdictions would still be impacted by a ban at the federal level.

THE UNITED KINGDOM

That the United Kingdom also limits abortions after viability could suggest that both partial ectogenesis (such as the biobag), and full ectogenesis might also pose a serious challenge to abortion law in the UK. Despite the shared history of the United Kingdom and United States around incorporating scientific and medical developments in fetal viability into law, however, there have been markedly different responses in these two jurisdictions toward attempts to use this research to restrict abortion access. According to the Infant Life Preservation Act, a fetus of twenty-eight weeks or older is presumptively “a child capable of being born alive.” Where federal precedent in the

³⁸ This lack of evidence is noted by the dissenting justices: *Planned Parenthood of Southeastern Pennsylvania v. Casey*. 505 U.S. 833 (1992). Available at <https://www.law.cornell.edu/supremecourt/text/505/833> (accessed January 8 2019).

United States has allowed abortion after 24 weeks to be banned in many states except to save the pregnant person's life, the Abortion Act also provides exceptions for maternal health and fetal anomalies. While as Jackson (2008) and Alghrani (2008) each rightly note, the gestational limit for abortion could be significantly lowered with the introduction of ectogenesis, the current legal justifications given for abortion after 24 weeks would still apply should the ectogenic fetus be considered viable from conception. I will discuss this further in chapter four, when I turn to assessing proposed frameworks for retaining the status quo of abortion rights against a feminist ethics of care. Here, I want to consider whether, based on the Abortion Act as written and contemporary discussion and debate over the gestational time limit for abortion, a shift in viability produced by ectogenesis is likely to challenge these rights in the context of the United Kingdom.

In 1987, the Royal College of Obstetrics and Gynaecology organized a working group on fetal viability, and recommended that to reflect scientific progress, the upper limit of abortion should be lowered to 24 weeks (Sheldon 1997). Between the passage of the Abortion Act and the amendments made in 1990 by the Human Fertilisation and Embryology Act, twelve private members bills were introduced which attempted to lower the upper limit for abortion (105). Of these, the Alton Bill, proposed by David Alton in 1988, generated perhaps the most attention. Alton argued for "reducing the upper time limit of legal abortion to eighteen weeks [from 28], based largely on the claim that technological improvements enabled an earlier age of foetal viability" (Franklin 2014, 110). As Sheldon notes, the Alton Bill was never put to a final vote, having "[run] out of time at the Report Stage" (1997, 107). The passage of the Human Fertilisation and Embryology Act in 1990, then, was preceded by thorough discussion and debate over whether and how to shift the gestational limit for abortion, with lobbying on both sides. Significantly for the consideration of ectogenesis, Sheldon argues that in the lead up to Parliament's vote on the upper gestational limit, anti-abortion MPs, including Alton, pushed for a lower time limit (of 18 or 20 weeks) largely based on the need to "legislate for the future, which will no doubt bring technological advances to lower the gestational age at which the foetus can be considered as viable outside of the womb" (110). Ultimately, while lower limits were tabled during the parliamentary debate, they were voted out, with the agreed upon change lowering the limit to 24 weeks. As Sheldon has noted, while this decision was in one sense a win for pro-choice campaigners, it affirmed a link between fetal viability

and abortion rights, potentially leaving abortion rights open to attack even by partially ectogenic technologies such as the biobag. Up to the amendment lowering the limit from twenty-eight to twenty-four weeks, the changes to legal viability in the United Kingdom based on medical research reflect similar changes initiated by the *Casey* decision during the same period in the United States (1992) at the federal level. Should the partially ectogenetic biobag successfully lower medical viability below 24 weeks, the codification of an upper limit for abortion access in the United Kingdom (barring the exceptions for post-viability coded in the Abortion Act) may be expected to produce further restrictions.

Yet in the United Kingdom, established precedent thus far is to resist attempts to lower the upper limit for abortion. While a number of legal restrictions to abortion in the United States (such as the “fetal pain laws”) are based on inconclusive or suspect scientific research, established practice in the United Kingdom is to reject attempts to lower viability without clear and conclusive evidence. Strongly substantiated evidence that suggests artificial wombs could significantly reduce viability, then, might lead to a lowering of the upper gestational limit. However, UK abortion law may also offer further protection against a challenge to abortion rights based on a lowered viability timeline by the way in which shifts in viability have been assessed in concert with other concerns, including how such changes might impact women.

In anticipation of the amendments to the Human Fertilisation and Embryology Act in 2008, a 2007 parliamentary Science and Technology Select Committee was convened to advise Parliament on the possible justifications for and implications of lowering the gestational limit once again. The inquiry considered developments in technologies impacting fetal viability and assessed these developments alongside “neonatal survival rates and foetal viability, foetal consciousness and pain, and the reasons why women present for late abortions” (2007, 13), among other concerns. The cross-party committee assessed a wide range of data related to neonatal survival and viability, and found that “while survival rates at 24 weeks and over have improved they have not done so below that gestational point [and] we have seen no good evidence to suggest that foetal viability has improved significantly since the abortion time limit was last set, and seen some good evidence to suggest that it has not” (22). This recommendation does leave open the possibility that the upper gestational limit could be lowered in future were even partial artificial womb technology successful in significantly shifting viability. Further, the STS committee’s report cannot be taken

alone as the determinative factor in the ultimate parliamentary vote against lowering the abortion time limit once again. However, in the same era in which the United State's Supreme Court ruling in *Gonzales* (2005) set a precedent for significant infringements on abortion rights based on dubious scientific claims, the STS select committee cautioned that clear and coherent evidence, which would be difficult to gather, would be needed before suggesting fetal viability actually had moved back. The Science and Technology Select Committee also considered the fetal sentience research used to justify 20-week abortion bans in the United States. It found no indication that fetal "pain is consciously felt, especially not below the current upper gestational limit of abortion" (25). But more significantly, the committee advised that evidence of fetal pain "may be relevant to clinical practice but do[es] not appear to be relevant to the question of abortion law" (ibid). I am not attempting to claim a collective pro-choice position on the part of parliament and its investigative bodies. But I wish to emphasize an important contrast here with the United States pertaining to whether medical advancements in the area of fetal medicine are *prima facie* considered to be grounds for limiting abortion access. In the 2008 Parliamentary vote to update the Human Fertilisation and Embryology Act and lower the gestational limit, parliament voted out calls to reduce the limit to 12, 16, 20, and 22 weeks respectively. That the Science and Technology Select Committee concluded that no research could be found to clearly substantiate that viability had shifted below 24 weeks, and that parliament did not move to alter the upper gestational limit does not indicate that parliament would never move to lower the limit, but rather that firm and demonstratable evidence of a shift would likely be required to prompt such a change.

As both Sheldon (1997) and Franklin (2014) have argued, the shift of the gestational limit from 28 to 24 weeks with the passage of the 1990 HFE Act affirmed a problematic linkage between developments in medical technology and access to abortion. But a challenge to abortion rights based on the potential of artificial wombs to lower the viability timeline may also be partially mitigated by the way in which shifts in medical viability have more recently been contextualized with consideration to broader social concerns in more recent discussions of the legal limit. While the undue burden standard in United States jurisprudence allows the interests of the state in the life of the fetus to be weighed increasingly more heavily than the interests of the pregnant person nearing viability, the STS report establishes that parliament should "consider what research has to say about the impact that an alteration on the upper time limit would

have on those women who present late for abortions” (28). As the research considered by the select committee (including data collected from the British Medical Association and Royal College of Obstetricians and Gynaecologists) indicates, the largest number of abortions in the United Kingdom happen in the early stages of pregnancy (prior to 12 weeks), with significantly fewer happening near viability. The STS report includes research on why women seek abortion after 18 weeks, and notes that “many women who present for late abortions do so because they did not know they were pregnant,”(28) and that some “struggle to take the decision for abortion” (ibid). The inclusion of analysis of how lowering the legal limit might impact women suggests an inclination toward assessing what a shifting medical viability might mean for abortion regulation not in isolation but concurrently with broader social issues.

It is important to note that in the 2008 vote, a number of MPs spoke strongly in favour of lowering the gestational limit. But one of the primary arguments that arose against lowering the limit was that restricting abortion access in this way was motivated by anti-abortion sentiment, not simply by progress in science. Should ectogenesis lower medical viability substantively, a significant corresponding legal shift to the upper gestational limit would mean that a much larger cohort would be impacted. The 1990 parliamentary vote, the STS committee’s conclusions, and the 2008 vote suggest that the impact of a lowered gestational limit on pregnant people is a significant concern for parliament. This may be weighed against scientific evidence of lowered viability.

Further evidence that impact on pregnant people may be weighed against substantial proof that medical viability has been lowered may be indicated by the fact that in medical practice in the United Kingdom there is already recognition that a fetus as young as 22 weeks could be viable. Alghrani and Brazier note that “when a termination of pregnancy is to be performed later than 21 weeks 6 days, the current threshold of viability, the Royal College of Obstetricians and Gynaecologists recommend that feticide be carried out before the initiation of labour to ensure that the fetus is not born alive” (2011, 10). Alghrani and Brazier discuss this practice with reference to the question of whether it would be permissible to perform ectogenetic research on a fetus intended to be aborted. This practice is also significant, however, in evidencing that from a medical perspective, it is in fact already the case that at least some fetuses at significantly less than 24 weeks are potentially viable, yet it is common practice to actively terminate these fetuses to cause their death. Where it is already possible that a fetus may be viable earlier than 24 weeks, then, medical and legal

response to this in the mainstream in recent years has not been, as in the United States, to attempt to further restrict abortion rights. While anti-abortion campaigners were vocal in pushing for the updates to the HFE Act to include lowering the gestational limits, and pro-choice campaigners were hopeful that the 2008 amendments would involve re-visiting the Abortion Act to institute more autonomy for women, parliament, informed by the Select Committee, concluded that no action would be taken to alter the Abortion Act.

It remains true that shifts in viability as partial ectogenic technology, and perhaps eventually full artificial wombs, are developed, could impact abortion rights under the Abortion Act. Under existing law, women have been criminalized for abortions procured after the gestational limit (BMA 2017), and even the possibility that in moving back the viability timeline ectogenesis could lead to the criminalization of more pregnant people for seeking abortion is an unacceptable outcome. I will address the problematic nature of the use of a gestational limit to restrict abortion access in the following chapter. However, as discussed above, precedent suggests that given the rejection in the UK, with the exception of a lower timeline in 1990, of attempts to significantly lower the gestational limit, it seems likely that incremental steps toward lowering viability will at least be less likely to interfere with abortion rights in the United Kingdom than in the United States.

CANADA

A consideration of viability in Canadian abortion law demonstrates that universalizing arguments arising in the American literature which hold that “abortion ‘rights’ [will] be invalidated by ectogenesis” as the technology collapses “the legal construct of fetal ‘viability’” (523) must be understood as contextually specific. While in each majority opinion in *Morgentaler*, the judges acknowledged state interest in the life of the fetus, no viability limit was set in the landmark case. Chief Justice Dickson held that “the Court is not called upon in this appeal to evaluate any claim to ‘fetal rights’ or to assess the meaning of ‘the right to life’,”³⁹ and that the court need not consider criteria that was “unrelated to the pregnant woman’s own priorities and aspirations.”⁴⁰ While in both UK and American law, “viability” deals with a fetus that could live independently of

³⁹ R. v. Morgentaler, [1988] 1 S.C.R. (Canada). Available at <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/288/index.do/>, 71.

⁴⁰ 74

another person, and that is therefore a potential life worthy of more protection than an earlier stage fetus but less than a born person, in Canadian law, the absence of a viability timeline at federal level means that consideration of moral status at the federal level begins at birth. According to Section 223 of the Criminal Code of Canada:

- (1) A child becomes a human being within the meaning of this Act when it has completely proceeded, in a living state, from the body of its mother, whether or not
 - (a) it has breathed;
 - (b) it has an independent circulation; or
 - (c) the navel string is severed

The lack of gestational limit at the federal level, and the corresponding presumption of personhood beginning at birth suggests that abortion law in Canada is unlikely to be undermined by shifts in viability. American bioethicists have surmised that “artificial wombs as envisioned are [. . .] the means that would enable the survival of a viable fetus without additional hazard to the health of the mother” (Kaczor 2005, 286), and that as a result, governments could compel their citizens to use this technology. Yet that Canadian law does not set a viability timeline for abortion demonstrates that legal “viability” is not a quality naturally vested in some fetuses, but a fictive construct designed to act as a limitation on abortion. I will take up further considerations of the limitations of the use of viability to protect abortion with the introduction of ectogenesis where I consider care-based frameworks for governing the technology in chapter four. For the moment, I will note that while in the United States and the United Kingdom, amendments have been made already in how the law delineates fetal viability in relation to abortion (from 28 to 24 weeks in both jurisdictions), in Canada, while these changes have been reflected in medical practice, they have not impacted the precedent set in *Morgentaler*. Numerous attempts have been made in Canada by anti-abortion contingents to institute a viability timeline or establish a legal recognition of fetal rights, including private members bills presented from 1988 onward, all of which have failed (Johnstone and Macfarlane 2015). Several cases in which claimants attempted to have fetuses recognized as legal persons (*Tremblay v. Daigle* 1989⁴¹, *R v. Sullivan* 1991⁴²) have reached the Supreme Court, with the court reaffirming that rights are not vested until a child is born. Consistency on the point of the state’s interest in fetal life at the

⁴¹ Tremblay v. Daigle, [1989] 2 S.C.R. 530 (Canada). Available at <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/515/index.do> (Accessed January 24 2019).

⁴² R v. Sullivan, [1991] 1 S.C.R. 489 (Canada). Available at <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/733/index.do> (Accessed January 24 1990).

federal level commencing at birth has positive implications for abortion rights even as partial and then full ectogenesis may introduce incremental shifts into viability. With this noted, as in the United States and the United Kingdom, there is a further question to explore here as to when the ectogenic fetus will be considered “born.” Referring back to the definition of a person in the Criminal Code, could an early stage fetus, or even an embryo, that had “completely proceeded in a living state” from the pregnant person be considered born? Or would the fetus only be considered born on emerging from the ectogenetic incubator? I do not address these questions here, as I am seeking to grapple with the possible implications of this technology for abortion regulations as they are currently constructed to apply before birth. But more research is need on this importantly intersecting question, some of which has already begun to be addressed elsewhere (Romanis 2018).

A final but quite significant point here is that while there is no federal governance around viability, there are ongoing provincial restrictions and medical guidelines which limit abortions to those occurring prior to viability. These restrictions are largely due to the availability of expert care to provide the later stage service (Johnstone and Macfarlane 2015). In some instances, pregnant people need to travel to from their home province to another part of Canada in order to access the procedure, and a small number of pregnant people are referred to clinics in the United States (Abortion Rights Coalition of Canada 2017). Further, the Canadian Medical Association clearly affirms in its policy that physicians must consider fetal viability, and that “elective termination after viability may be indicated [only] under exceptional circumstances” (2). In Canada, “More than 90 percent of abortions are performed during the first trimester and only 9 percent between twelve and twenty weeks of gestation” (Johnstone and Macfarlane 2015, 107), with “approximately 0.4 percent of abortions each year” (ibid) occurring after viability. The Canadian Medical Association’s policy to allow for elective termination after fetal viability only in exceptional circumstances then, reflects that a person presenting for an abortion after viability is already an exceptional occurrence. While some physicians may be reluctant to offer the procedure if artificial wombs allowed fetuses to be medically viable at an earlier stage in gestation, the further back viability shifted, the larger a portion of the population might be impacted if the CMA retained guidelines limiting abortion after viability. Given the recognition of abortion in Canada as an essential health service, it may be possible that were this shift to occur, the CMA would adjust their guidelines toward the provision of

abortion after medical viability. It is of course also possible that they would not do so, in which case access to abortion might be significantly impacted.

CONCLUSION

In this chapter, I have addressed two interrelated challenges that scholars have proposed ectogenesis will present for abortion law. First, I analysed the contention that ectogenesis will undermine abortion rights by negating a defence for abortion based in bodily autonomy. I tentatively demonstrated through a close look at abortion law in the United States, the United Kingdom, and Canada, that contrary to the universalizing claims made in some of the American literature on ectogenesis (Favole 1979, Goldstein 1978, Tribe 1990, Kaczor 2005, Reiber 2008, Sander-Staudt 2006, Schultz 2010), this is unlikely to hold true across all three of these jurisdictions. Looking at the narrow interpretation of abortion as protected through a right to privacy with reference to the physical body in the United States, I have agreed with American scholars who argue that the way that ectogenesis undermines a defence based in bodily autonomy will pose a threat to abortion protections. I go further, however, to make the claim that significant attacks on bodily autonomy in abortion decisions before fetal viability have already been allowed in the context of the United States. Understanding that ectogenesis is likely to worsen this reality rather than introducing a novel threat to autonomy-based protections is necessary for assessing the suitability of proposed frameworks for ectogenesis and abortion, which I will turn to in the following chapter. Considering the United Kingdom, I have suggested that while UK scholars are right to contend that the paternalism of the Abortion Act 1967 is outdated and problematic (Sheldon 2016, Alghrani 2008 among others), consideration of the Act as written as well as how it has been applied in medical and legal practice in recent years suggest that artificial wombs are unlikely to present a challenge for abortion law based on a threat to bodily autonomy. Looking finally to the Canadian context, I argue that contrary to the suggestion made in the limited Canadian literature on artificial wombs (Overall 2015, Blahuta 2017), a challenge to bodily autonomy-based protections is unlikely to undermine abortion rights in Canada, as Canadian jurisprudence articulates the abortion right with broader reference to liberty. In the second part of this chapter, I considered the proposed challenge of the shift introduced by ectogenesis to medical viability resulting in a corresponding restriction of abortion rights. Through analysis of contemporary law, I have suggested that in the United States, a shift in medical viability

introduced by artificial wombs is very likely to result in a reduction of abortion rights, as both demonstrated medical developments in this area and contentious scientific claims have already been used to block abortion access near viability. By contrast I have suggested in the United Kingdom, while the connection between abortion rights and a gestational time limit is worrying and potentially leaves abortion open to attack, precedent is to resist limiting abortion rights based on a lowered legal limit, and to contextualize scientific developments in research on medical viability alongside their possible impact on pregnant people. Finally, I considered that in Canada, where no federal limitation is set through fetal viability, ectogenesis is unlikely to result in an attack on abortion rights in this way. My analysis here lays the groundwork for my assessment of proposed frameworks for governing ectogenesis and abortion which retain the status quo (protections based in bodily autonomy and viability) against a feminist ethics of care. Given the malleable, fictive, and contingent ways in which “bodily autonomy” and “fetal viability” have been constructed to articulate abortion rights, can any framework for ectogenesis and abortion that retains these limitations significantly account for relationships of care and care for the pregnant person?

4. ASSESSING FRAMEWORKS THAT RETAIN THE STATUS QUO FOR ATTENTION TO RELATIONALITY AND CARE

Bioethical and legal scholars have suggested several possible frameworks for addressing the problems that they conclude ectogenesis will pose for regulating abortion with reference to bodily autonomy and fetal viability. In what follows, I consider each of these proposed frameworks within the respective contexts of the United States, the United Kingdom, and Canada against a feminist ethics of care. I will begin by unpacking the suggestion that ectogenesis will mark the end of abortion rights (Abel 1974, Favole 1979, Goldstein 1978, Singer and Wells 1984, Cohen 2017, Blahuta 2017, Abecassis 2016, Randall and Randall 2008). I will then consider two further proposals. Firstly, that abortion rights could continue to be protected after the introduction of ectogenesis through a redefined argument based on bodily autonomy (James 1987, Alghrani 2007/2008, Jackson 2008, Overall 2015, Kendal 2015, Langford 2017), and secondly that they could continue to be protected by altering the definition of “viability” in abortion law (Lupton 1997, Son 2005, Raskin and Mazor 2006, Alghrani 2007/2008, Abecassis 2016).

As I have argued in chapter two, I regard a care analysis as a practical tool with which to centralize a particular set of concerns: namely, the health of the pregnant person, and consideration of relationships between fetus, progenitors, machine, and others. I am mobilizing this praxis strategically to assess the efficacy of given frameworks according to whether they sufficiently acknowledge and address these concerns. Several of the frameworks I analyze in this project, particularly proposals to redefine bodily autonomy and/or fetal viability to maintain the status quo of abortion regulation have important strategic merits. But before proceeding, I want to reiterate that this normative aspect of my project is intended to go beyond considering what is simply strategic to speculate on what might be ideal from a relational feminist perspective, regardless of the potential difficulty of realizing these aims.

4.2 ECTOGENESIS AS THE END OF ABORTION

There is an important nuance between scholarship where authors come to the conclusion that ectogenesis will inevitably result in a total ban on abortion (Randall and Randall 2008, Cohen 2017, Abecassis 2016, Blahuta 2017), and scholarship in which authors suggest that this outcome should be actively sought (Abel 1974, Favole 1979, Goldstein

1978, Singer and Wells 1984, Welin 2004, Reiber 2010, Kaczor 2005). Many scholars in the first group explicitly state that this kind of ban would be morally problematic and have a grave impact on people's lives. Nevertheless, they suggest that it would likely occur and leave questions of how it might be prevented unanswered (Cohen 2017, Randall and Randall 2008, Abecassis 2016). The second group, by contrast, take the position that ectogenesis as an alternative to abortion would be beneficial and may even be useful for justifying scientific research on this technology (Blackshaw and Rodgers 2018, Mathison and Davis 2017, Singer and Wells 2006, Reiber 2010, Kaczor 2005, Welin 2004). I acknowledge these differences to ensure I am not attributing scholarly intent to promote an anti-feminist position where there is none, but I ultimately contend that regardless of whether or not scholars believe it to be a positive outcome, a framework in which ectogenesis resulted in a ban on abortion with the possible use of the technology as an alternative fails to attend to both care and relationality and is an unequivocally unacceptable outcome.

In this I am aligned with Jackson (2008), and other feminist scholars (Overall 2015, Cannold 2006, Langford 2008) who insist that abortion must first and foremost be understood in relation to pregnant people's health and rights. These scholars reject the way that consideration of ectogenesis as a possible "solution" to abortion frames the procedure as a moral problem that may eventually be circumvented by technology rather than as an essential medical service. As Jackson writes, speculation about the impact of this technology needs to remain tethered to the reality that "where abortion is illegal or unavailable, women do not continue their unwanted pregnancies, but resort instead to backstreet and unsafe abortion practices" (2008, 363). A ban on abortion, or the forced alternative of an artificial womb, would not result in an "end" to abortion, but in increased or introduced criminalization of women caught seeking the procedure and as Jackson warns, a possible increase in abortion sought through unsafe means.

As Langford writes, "the argument that ectogenesis can 'solve' the abortion 'problem' promotes the patriarchal notion that pregnant women are foetal incubators rather than people, as it is assumed that the foetus can simply be transferred from one incubator (a woman) to another (a fake womb)" (2008, 267). In making this proposal, scholars presume that the only legitimate reason a pregnant person could have for seeking abortion is a wish to physically end a pregnancy. Based on this assumption, they then propose a universal rule: that abortion will be banned, but an artificial womb

will be available as an alternative to provide recourse for the reason (ending a physical pregnancy) that people have for seeking the procedure. Alison Jagger writes of a feminist ethic of care that “rather than validating its responses by reference to general principles, care reasoning is likely to take the form of a narrative in which the concrete details of specific situations become intelligible in the context of people’s ongoing lives and relationships” (1995, 180). With regard to regulating abortion, then, this means having frameworks in place that are flexible and adaptable, shaped by awareness that different circumstances produce different needs, and not constructed around the assumption that there is only one universal explanation as to why a person would seek abortion. A legal framework that presumes otherwise is not sufficiently attentive to care for the pregnant person.

This framework also fails to account for relationality. As Hendricks writes, “the fantasy of artificial wombs is a psychic representation of our cultural myth of individual autonomy” (2011, 403). In other words, by imagining that this technology will allow every individual to gestate “alone” from conception and suggesting that abortion law be revised to protect the fetus as an autonomous entity, scholars are affirming an ideology of a self that is unbound from human dependency. Singer and Wells are representative in this regard when they write that by mandating extraction to an artificial womb, “abortions could be done using techniques that would not harm the fetuses, and the fetuses, or newborn babies as they would then be, could be adopted” (2006, 12). For Singer and Wells, the fetus is an entity that would be a “newborn baby”, a legal person, if only it were removed from the mother’s womb. Ectogenesis becomes the means of “rescu[ing] embryos” (Reiber 2010 524) and fetuses from dependency on the mother, and thereby, realizing full physical autonomy.

As Langford writes, what those who propose that ectogenesis could “replace” abortion forget is that “regardless of where or by whom the foetus is gestated, it remains dependent upon someone” (2008, 267). These proposals either ignore the fetus’s continued dependency on care while gestating or equate the availability of the technology with a sufficient replacement for any form of human care. As Aristarkhova (2012) aptly argues, even the most highly advanced ectogenetic incubator in which an embryo could be gestated through to term would ultimately require human oversight. But if we accept for a moment that the technology could be entirely automated, it remains true that just as a pregnant person’s experience of pregnancy may be shaped by

relationships external to her and the fetus, relationships will be produced with and around the fetus as it gestates in the machine. West writes, “we do not [. . .] spring upon this earth mushroom style, as fully formed, autonomous adults. Rather, all of us enjoy or suffer an extended period of absolute dependency upon caregivers” (2001 1925), one that produces a relational connection (whether wanted or not) between ourselves and those caregivers, between and amongst these caregivers, and between these caregivers and the state. A framework that imagines ectogenesis as an alternative to abortion fails to account for relationality by not sufficiently answering the question of how the relationships between the fetus’s potential caregivers and the pregnant person who seeks an abortion will be addressed, and how the relationships between these caregivers and state and institutional actors will be managed.

The proposal that an artificial womb could act as an alternative to abortion, then, is insufficient in any jurisdiction for its lack of attention to care for the pregnant person, and its failure to consider relationality and the fetus’s ultimate dependence on care. I am now going to turn to the proposal that abortion rights could continue to be protected through reference to a redefined right to bodily autonomy. On this point, it becomes necessary to think through what is actually meant or intended by the terms “autonomy” and “choice”.

4.3 PROTECTING ABORTION THROUGH A REDEFINED RIGHT TO BODILY AUTONOMY

After concluding that ectogenesis will challenge abortion rights by allowing a pregnancy to end without the death of the fetus, some scholars, writing across several jurisdictions, have proposed or suggested that abortion could still be protected through reference to a right to bodily autonomy (James 1987, Alghrani 2007/2008, Jackson 2008, Overall 2015, Kendal 2015, Langford 2008). James observed that as of the time of his writing (1987) most abortions occurred early in pregnancy and were minimally invasive procedures. He contended that “it is safe to assume that [transferring a fetus to an artificial womb] would be more like a caesarean section than a first trimester vacuum aspiration abortion⁴³” (87). James presumes that the fetus would have to begin its growth in the human womb and that ectogenesis would only be possible after a certain

⁴³A form of abortion performed in the first trimester in which the contents of the uterus are removed via either automatic or manual suction through a narrow tube.

point in a pregnancy. He places the point at which the fetus would likely be removed to an artificial womb at around 22 or 23 weeks, and argues that “freedom to choose or reject one’s own medical treatment entails the right to choose a less risky and invasive abortion over a more risky and invasive one” (87). Since a fetal extraction would be more invasive than an early stage abortion, he hypothesizes that artificial wombs could not act as an alternative to the procedure without undermining bodily autonomy.

Writing more than twenty years after James, Alghrani agrees that extracting the fetus “would probably be akin to a caesarean section after twenty-four weeks gestation” (2008 315). She affirms that a requirement to use an artificial womb would remain a “gross violation of one’s bodily autonomy” (317) both in that a person would need to remain pregnant until the fetus could be extracted, and in that fetal extraction would necessitate an unwanted physically invasive procedure. For Alghrani, this constitutes grounds for a defense of abortion based in an argument for bodily autonomy. As Alghrani notes, as of the last several years, most abortions in the United Kingdom (and in the United States and Canada) occur before 14 weeks and are medical rather than surgical, involving the consumption or insertion of two pills (Johnstone and Macfarlane 2015 107). If, as James suggested, fetal extraction were more invasive than a manual vacuum aspiration, it would certainly also be significantly more physically invasive than consuming two pills.

Recognizing that references to bodily autonomy have been successfully mobilized in the past to stake a legal claim to abortion rights, James, Alghrani, and others (Jackson 2008, Overall 2015, Kendal 2015, Langford 2017) who propose continuing to protect abortion rights through a claim to bodily autonomy are making a strategic argument. By this I mean that rather than looking to possibilities such as the passage of new legislation (which would require significant political campaigning among other resources) their intention is to offer a means of moving swiftly to protect abortion access by giving reference to a concept with a strong precedent in existing case law.

To understand what is at stake here, and the strategic argument that these scholars are making, it is necessary to first unpack what “bodily autonomy” means in this context. With reference to protecting pregnant people from the forced alternative of an artificial womb, scholars (Overall 2015, Langford 2017, Kendal 2015, James 1987, Alghrani 2008) that make a continued argument for protections based in autonomy

define “autonomy” as protection from unwanted procedures on the physical body, and a right to choose between medical procedures that are more or less physically invasive.

Alghrani, Overall, Kendal, Langford and James’s claims that the use of ectogenesis as a forced alternative to abortion would be a violation of bodily autonomy hinge on two assumptions. Firstly, that the process of removing a fetus to an artificial womb would occur after the first trimester of pregnancy (and between approximately 18 and 24 weeks). Secondly, that as a result of this first condition, “to transfer the foetus intact” (Alghrani 2008, 315) from the person’s body to an artificial womb would be an invasive surgical procedure. Protecting autonomy in this sense, then, means protection from a physical attack on the body. Feminist pursuits of abortion rights have long revolved around an understanding that bans and restrictions on the procedure are a means of implementing institutional control over women’s bodies and lives. Bodily autonomy, then, is a deeply important feminist goal in principle. But as I will discuss with reference to the way that bodily autonomy has been applied in the United States, the deployment of “bodily autonomy” in practice often falls short of feminist aims when it comes to reproductive rights. Turning to how bodily autonomy is articulated in arguments for protecting abortion on these grounds after the introduction of ectogenesis, I am also interested in the intentions behind this strategy and its limitations if applied in practice.

To foreground this analysis with what a feminist, relational understanding of autonomy might look like, I want to briefly discuss how “autonomy” is engaged with from a feminist care and reproductive justice perspective. As West (2017) argues, international feminist mobilization around abortion rights in the 1960s and 70s fought for autonomy in abortion decisions broadly conceived. In this context, “autonomy” was not simply a means of granting women a right to control their bodies, but also of securing the tools with which to enact this control in practice. However, as she argues of the United States (and as I will argue applies in different capacities in Canada and the UK), in achieving legal protection to abortion, the goal of autonomy in principle was limited to a right to decide as opposed to a right to access. As a consequence, the state is not required to provide the resources with which to secure an abortion in practice.

In contrast to the Western liberal tradition in which autonomous action is understood in the context of “rugged individualism” (Sherwin 14), in reproductive justice organising, “autonomy” is understood as a relational attribute that is shaped,

confined, and enabled by personal and institutional relationships⁴⁴. Ross, Derklas, Peoples, and Bridgewater Toure acknowledge the value of autonomy as a feminist goal and argue that beyond the “right to make personal decisions about one’s life” (2017, 14), a robust protection to autonomy would entail “the obligation of government and society to ensure that the conditions are suitable for implementing one’s decisions” (14). They call for

the right not to have children, using safe birth control, abortion, or abstinence; the right to have children under the conditions we choose; and the right to parent the children we have in safe and healthy environments (ibid).

In reproductive justice discourse, then, bodily autonomy is essential, but to be meaningful it must be mobilized within a relational framework of positive resources that would allow a person to make a decision to end or to carry on with a pregnancy and to be provided with resources in either instance. Feminist legal scholar Sherwin proposes a “relational autonomy,” (13), which is intended

to invoke the socially and politically situated positions in which persons live and from which they may exercise (or seek to exercise) control over aspects of their lives that are important to them [and] to make visible the ways in which specific details of agent’s embodied identity, and the social practices that shape their experiences, may affect the degree of autonomy available to them (13).

While engaging different language, this articulation of autonomy understood within a relational framework adopts the same core principles as the reproductive justice approach I have described, in retaining the importance of choice while insisting it must be understood in relation with others. It is with the disparate definitions of autonomy as a protected sphere of individual action, and autonomy as a relational concept enabled by resources and relations with others, that I want to proceed with assessing a framework for abortion and ectogenesis that protects abortion through a claim to bodily autonomy in the context of the US, UK, and Canada.

⁴⁴ There is a lengthy and well-established history of critique of liberal rights and autonomy in the feminist and critical legal literature. Critiques of these concepts borne out of the reproductive justice movement and feminist relational legal theory offer language and examples that I find particularly prescient to my analysis of abortion and ectogenesis here.

UNITED STATES

In the previous chapter, I discussed the way in which abortion rights in the United States are protected through a limited right to privacy in relation to decisions regarding the physical body. Given that this right is articulated in balance with a competing state interest in the life of the fetus, and ectogenesis is likely to reduce state interest in the woman's privacy right and increase interest in fetal life, I agreed with scholars who have argued that ectogenesis is likely to pose a threat to abortion protections in the United States (Tribe 1990, Schultz 2010, Bard 2006, and Steiger 2010 among others). While many of these scholars suggest that the privacy right currently sufficiently acts to protect bodily autonomy in abortion decisions, I also argued that the "undue burden" standard established in *Planned Parenthood v. Casey*⁴⁵ and reiterated in *Gonzales v. Carhart*⁴⁶ has already allowed states to intervene in bodily autonomy in significant ways considerably prior to fetal viability.

Kendal is representative of scholars who make universalizing claims that contemporary "respect for autonomy" (2015, 73) in law and policy means that "the recriminalisation of abortion" (76) would not be allowed with the introduction of artificial wombs. But like Overall, Langford, and James, whose claims to the primacy of bodily autonomy are not grounded in the context of particular jurisdictions, Kendal's argument here only in fact holds where "respect for autonomy" (73) sufficiently functions to protect abortion rights. Abortion in the US context has been protected through case law precedent with reference to a right to privacy that extends to making decisions about one's reproductive body. The strategic appeal of a continued argument for abortion rights on the grounds of bodily autonomy already articulated in *Roe v. Wade*⁴⁷ is evident. The proposal made by James, Overall, and others who outline the plausibly invasive nature of a fetal extraction procedure to suggest that a right to bodily autonomy could protect abortion after ectogenesis may in fact be the most straightforward means of holding on to abortion rights in the United States. As some contemporary American feminist scholars and activists have argued, while the right to privacy, closely tied to the physical body, may already be insufficient to protect access

⁴⁵ *Planned Parenthood of Southeastern Pennsylvania v. Casey*. 505 U.S. 833 (1992). Available at <https://www.law.cornell.edu/supremecourt/text/505/833> (accessed January 8 2019).

⁴⁶ *Gonzales v. Carhart*, 550 U.S. 124 (2007). Available at https://www.oyez.org/cases/2006/05-380?mod=article_inline (accessed January 8 2019).

⁴⁷ *Roe v. Wade*, 410 U.S. 113 (1973). Available at <https://caselaw.findlaw.com/us-supreme-court/410/113.html> (accessed January 8 2019).

to abortion for all women, continuing to protect a right to bodily autonomy as already articulated in case law may be the only path forward for holding on to even the limited rights articulated in *Roe v. Wade*. But I am not assessing, as James and others have done, what the most straightforward strategy for protecting abortion against challenges wrought by ectogenesis may be.

In her own argument that abortion rights might best be protected with reference to bodily autonomy, Kendal asserts that “using existing medical and legal standards as the baseline” (2015 63) will be an effective means of establishing “a minimal threshold of rights for women and fetuses” (63). Kendal refers to “rights for women and fetuses,” as though the interests of both parties should be given equal consideration. But the construction of abortion rights as a balance between the rights of women and the rights of fetuses, as I’ve established in the previous chapter, is not the only plausible way to articulate abortion law. Instead, it is a construct ingrained in US case law, which has rendered pregnant people’s access to abortion contingent and precarious. In the United States, the “baseline” of “existing medical and legal standards” has not sufficiently protected pregnant people in practice.

As I argued in the previous chapter, the “undue burden standard” has already allowed states to justify significant interventions on pregnant people’s bodily autonomy. People living in states where abortion has been banned after six weeks of pregnancy, people in states with no abortion facilities, and those who depend on Medicaid and are unable to secure the funds for the abortion procedure are not provided with the enabling conditions for acting on autonomy. As reproductive justice activists have demonstrated, these constraints have most significantly impacted black and indigenous women and low-income women (Ross and Solinger 2017, Price 2010). With the introduction of ectogenesis, continued protection through a claim to bodily autonomy that was not accompanied with a requisite requirement that states positively provide access to abortion could well mean that while the law protected a right to decide in principle, in practice, anti-abortion states could provide fetal extraction facilities but not offer terminations. In this way, states could uphold their legal duty to grant a right to bodily autonomy. Because they were not required to provide resources to enable women to act on this autonomy, the result would be that some women would be forced to “choose” between carrying a pregnancy to term, having a fetal extraction, or attempting to seek termination outside of state provided resources.

As Downie and Llewellyn write, a relational approach to law means placing “focus [. . .] on the dynamics or characteristics of relationships that need to be supported and encouraged in order to foster human flourishing” (2012, 5). Human flourishing, in the sense of access to reproductive care including access to abortion, is in fact undermined in the United States by the existing lack of attention to personal and institutional relationships that would “need to be supported and encouraged” to actually enable autonomy in abortion decisions. Strategizing to protect abortion access against the way ectogenesis may undermine a defense of abortion rights based in bodily autonomy by simply redefining or asserting that physical bodily autonomy is still at issue would simply reinforce this limitation.

Alghrani, James, Overall, Langford, and Kendal each build arguments for a bodily autonomy-based protection of abortion rights that relies on the assumption that ectogenesis will still entail gestation beginning in a human womb, and that the fetus would be extracted through a relatively invasive procedure. This is in fact an unknown variable. Each of these authors write before the 2017 development of the biobag. Their assumptions are well founded with reference to this technology, which would allow a fetus to grow in an artificial womb only after approximately 22/23 weeks gestation and would involve either early labour or a procedure akin to a c-section to transfer the fetus. But given that advancements in incubation technology have allowed the viability line to shift from 26-28 weeks in the 1960s and 70s to 24 weeks in the 1990s (Bulletti et al 2011), to 22 weeks today, the historical progression of this research suggests that this line could shift still further.

The argument for continuing to protect abortion with reference to bodily autonomy acknowledges care for the pregnant person to the extent of recognizing the importance of protecting against unwanted physically invasive procedures. In the United States, it also centers care to the extent of trying to hold the line on a right to abortion that is continuously being undermined. But as with the contemporary articulation of abortion rights in the United States with reference to privacy rights, the bodily autonomy-based framework these scholars propose leaves abortion rights contingent on the degree to which a convincing argument can be made that a procedure is physically invasive. Because this articulation of autonomy leaves abortion rights precarious and contingent on the development of technology, it does not sufficiently attend to care for the pregnant person.

If a framework for ectogenesis and abortion based on a limited right to bodily autonomy would not sufficiently uphold a feminist ethics of care in the US context, this raises the question of what kinds of frameworks would. Reproductive justice activists emphasize the need for pursuing medical and legal apparatuses that would provide for “reproductive issues across the life span, including pre-and post-birth healthcare; the availability of sexual education, contraceptives, and reproductive technologies; and affordable childcare” (2017, 594). West argues for a new strategic approach to abortion rights, writing that “the choice rhetoric of Roe undercuts arguments for the development of [. . .] ‘caregiver rights’ -the rights of caregivers, women and men both, to a level of public assistance for their caregiving work” (2017, 1411). In chapters five and six, as I take up the broader questions posed by ectogenesis for existing inequities in access to reproductive care and for its possible impact on gendered reproductive labor, I will consider what kinds of frameworks for the technology in the United States might meet these aims.

UNITED KINGDOM

Alghrani is unique among scholars who make a claim for continuing to protect abortion through an argument based in bodily autonomy in that she specifically considers this possibility with reference to the UK⁴⁸. On the grounds that a fetal transfer procedure would be invasive, she concludes that “to coerce women to continue their pregnancies until foetal transfer into an ectogenic chamber is possible is nothing short of a gross violation of one’s bodily autonomy” (317). She continues that “English law is clear [that a] competent pregnant woman ‘has an absolute right to choose whether to consent to medical treatment or refuse it’” (316). Alghrani gives particular reference to consistent precedent in case law protecting women from forced c-sections. Following Jackson, who has written on the way in which such precedent for bodily autonomy in reproductive decisions elsewhere in English common law demonstrates that the medical paternalism of the Abortion Act 1967 is in need of reform, Alghrani suggests that “ectogenesis will necessitate revising the legislation” (2008, 327). Other scholars also argue that abortion could still be protected on the grounds of bodily autonomy, but state their claims in general terms (James 1987, Kendal 2015, Overall 2015, Langford 2017).

⁴⁸ Alghrani also considers several other means of protecting abortion rights after ectogenesis, including a right not to be a parent. I will discuss this further in chapter six.

I want to assess here how revising the Abortion Act 1967 to protect abortion from the challenges of ectogenesis on the grounds of bodily autonomy might uphold or undermine a feminist ethics of care.

In chapter three, I argued that the potential of ectogenesis to reduce the applicability of a bodily autonomy-based defense for abortion may not challenge these rights in the context of the UK. I made this claim on the grounds that as opposed to protecting abortion with reference to a right to bodily autonomy, the Abortion Act 1967 was written to protect the discretion of medical professionals, whom the Act positions as gatekeepers to abortion. I also argued, however, that shifting medical and legal interpretations of the Act have meant that while not necessarily the original intention, contemporary application of the Act has protected autonomous action to some extent in practice. With this considered, the argument that abortion could continue to be protected from challenges introduced by ectogenesis through reference to bodily autonomy is of particular interest in a UK context in that as I have argued, it is not clear that ectogenesis would challenge UK abortion protections to begin with.

Outside of the context of ectogenesis, many feminist legal scholars have made the argument that the Abortion Act 1967 requires revision. Of the way in which the Act dictates the circumstances under which two medical practitioners may approve an abortion in good faith, Jackson writes that “a woman's access to abortion is therefore conditional upon her reasons for wanting to terminate her pregnancy” (2000 468), a circumstance entirely at odds with respect for patient autonomy in other areas of law. But what I am interested in here is whether, given the ways that the Abortion Act 1967 is currently interpreted and applied, a revision to articulate abortion rights through bodily autonomy would in fact protect greater autonomy for pregnant people in practice, and better prepare for the introduction of ectogenesis, or result in an even greater narrowing of the “reasons” a person could legitimately have for terminating a pregnancy.

James presumes the invasive nature of a foetal transfer procedure in vivid detail, writing that “unlike an early abortion, foetal transplantation would thus require general anaesthesia as well as a surgical incision through the abdominal wall and uterus, with all the risks of medical complications which accompany these more invasive procedures” (1987, 87). Alghrani later echoes his concerns and adds that “mandating fetal transfer would be to force women to endure the pain, inconvenience, and risks of carrying a

pregnancy for twenty-four weeks [. . .] then to have to undergo invasive surgery to transfer the foetus” (2008, 316). Amending the Abortion Act 1967 or passing new legislation to defend abortion and protect against the forced use of ectogenesis on the grounds of bodily autonomy as it is defined in these proposals would mean articulating autonomy as a right to refuse unwanted, invasive medical procedures. This framework would acknowledge care for the pregnant person to the extent that it would guard against attacks on the physical body.

As I have noted, however, the efficacy of protections to abortion articulated in this way would depend upon fetal extraction being more significantly invasive than abortion. Brassington (2009) demonstrates the limitations of enshrining abortion rights through a definition of autonomy so tied to the physical body. He writes that because an abortion requires a surgical procedure anyway, it would not infringe on a woman’s bodily autonomy to require her to extract a fetus to an artificial womb rather than terminating it. Brassington’s claims are undermined somewhat by the reality of contemporary abortion practices. According to data released in 2017 by the Department of Health and Social Care, “over 90 percent of [. . . abortions] are carried out at 13 weeks or earlier” (BMA 2017) in England, Scotland, and Wales, and a majority of these procedures are medical, not surgical. Brassington is misguided here in that consuming a pill and having a surgical fetal extraction operation are not comparably invasive. In addition, as Alghrani argues (though not with reference to Brassington’s work), case law regarding patient autonomy protects a right to choose between more and less invasive medical procedures, and to refuse medical treatment or intervention (2008, 316). With both of these significant limitations acknowledged, Brassington’s argument does demonstrate that if the Abortion Act 1967 were revised to articulate abortion rights through bodily autonomy defined in relation to physical procedures, or new legislation were passed to this effect, a fetal extraction would need to remain invasive in order to protect a person’s choice to elect to abort rather than use an artificial womb. If technology evolved to the point that fetal extraction and medical abortion were in fact comparable, as Brassington suggests, a piece of legislation that enshrined abortion protections on these grounds would fail to guarantee access to the procedure.

This strategy then, may still result in the circumstance that Jackson argues constitutes a failing in the contemporary Act, that is, “the assumption that a woman’s reasons for wanting to terminate her pregnancy are a matter of legitimate public

interest” (2000 468) and that “a woman’s access to abortion should depend upon whether or not those reasons are acceptable.” (2000 468). As Jackson concedes, the current application of the Abortion Act 1967 suggests that medical practitioners tend toward broad interpretations of the social grounds for granting abortion, accepting numerous “reasons” as acceptable for granting termination. By contrast, revising the legislation to enshrine a right to bodily autonomy “concerning medical procedures” (James 1987, 87), as the key means of protecting abortion access in fact limits the acceptable reasons for seeking an abortion to one.⁴⁹ In this sense, this strategy could in fact undermine current attention to care for the pregnant person by narrowing the justifications for abortion access.

So long as an argument could be made that the procedure was invasive, pregnant people could give reference to this while in fact seeking abortion for other reasons, such as the desire to avoid genetic parenthood or a relationship with another progenitor. But as Sherwin argues, a relational feminist perspective on abortion demonstrates that the application of universal “rules for determining when abortion is morally justified” (Sherwin 1991 329) constitutes a failure to recognize that “women have abortions for a wide variety of reasons” (328). A feminist infrastructure would provide resources that would enable a person to seek abortion or carry a pregnancy to term; but would acknowledge her as “the only one able to weigh all the relevant factors” (329) and arrive at a decision.

Sherwin invites us to consider “what people really seek under the label ‘autonomy’” (16). As I’ve noted in the introduction to this chapter, in thinking about abortion rights, I follow a feminist relational approach that does not reject “autonomy” entirely, but orients toward a way of articulating it that goes beyond protecting an individual sphere of non-intrusion. I would argue that a feminist relational approach demonstrates that it is not only a right to avoid invasive medical procedures that people

⁴⁹To be very clear: the authors whom I am responding to here, as I show with reference to their work in this chapter, are contending that a fetal extraction would be a physically invasive procedure. On this basis, they then suggest that articulating the abortion right through bodily autonomy, understood as a right to avoid or refuse physically invasive procedures, would protect abortion rights after ectogenesis. As I discuss further in the following chapter, my issue with this strategy is not that protecting autonomy is an ineffectual means of articulating the abortion right, but rather, that the definition of autonomy offered by these authors (namely, a right to avoid physically invasive procedures) is not broad enough to sufficiently protect access because it provides limited reference to physical security. I am arguing that this could pose a challenge should the fetal extraction procedure one day become minimally physically invasive, and that autonomy would need to be articulated in a broader sense in order to offer sufficient protections to abortion rights.

seek when fighting for autonomy in relation to abortion decisions. In an effort to consider what kinds of revisions to abortion legislation might actually uphold a feminist ethics of care with the introduction of ectogenesis, it is useful to look toward contemporary feminist critiques of the Act and toward a more robust, contextual feminist definition of “autonomy.” Jackson emphasizes not just “a right to be free from unwanted intrusion, but [. . .] the idea that individuals should be able to pursue their own goals according to their own values, beliefs, and desires” (2000, 469). In order to be able to enact autonomy in pursuit of these goals, they must also be provide with the resources with which to do so.

Where the arguments made by James and others as to the bodily invasiveness of an ectogenic transfer would protect autonomy in an individual sense, Jackson suggests that this form of autonomy is already protected in the UK in that current practice means many doctors regard the abortion decision as correctly falling with women. But it is a relational understanding of autonomy that needs to be accounted for: she argues that the Act’s continued “entrench[ing of] deference to medical opinion” (Jackson 2000, 471) primarily reduces the autonomy available to “disadvantaged women (471). Jackson argues that this occurs through the Act’s lack of attention to the ways in which relationships outside the pregnant person’s control (such as living in an area with medical practitioners that are particularly resistant to providing abortion, or facing language or travel barriers that stop them from pursuing a second opinion if initially refused) are integral to being able to enact autonomy in the abortion decision.

UK abortion law, then, could be updated to better attend to relationships and to care for pregnant people by protecting a broader notion of relational autonomy, as well as the means to realize it. A revision of the Abortion Act 1967 to protect abortion rights on the grounds of bodily autonomy would further a cause of putting abortion in the language of pregnant people’s rights to control their bodies, emphasizing that the decision should rightfully be in their and not those of doctors, and potentially offering a clear articulation of abortion rights after ectogenesis. But this framework also significantly reduces the reasons considered legitimate for seeking an abortion, and makes a right of access contingent on fetal extraction always remaining more invasive than medical abortion. In chapter six, drawing on Sheldon’s work in particular I will give greater consideration to what kinds of reforms ahead of the introduction of ectogenesis would orient toward a more relational protection of autonomy.

CANADA

I established in chapter three that there is precedent to protect abortion on the grounds of a right to security of the person (referring quite specifically to control over one's body) in Canada. I also argued, however, that there is well-established precedent in case law for protecting the procedure with reference to a right to liberty, broadly defined as protecting a pregnant person's "dignity and worth as a human being."⁵⁰ As I have argued in chapter three, the continued applicability of protection to abortion on these grounds indicates that ectogenesis is unlikely to pose a challenge to abortion based on the way it may weaken an argument based in bodily autonomy.

With the introduction of ectogenesis, a continued protection to abortion with reference to both liberty and security of the person would potentially allow for the procedure to still be accessed on broadly interpreted grounds. These might include a desire to not be a genetic parent, a desire to physically end a pregnancy, and a desire to avoid constituting a relationship of care or dependency. Downie argues of the contemporary state of abortion rights in Canada that "very strong statements have been made by the Supreme Court of Canada about women's reproductive autonomy (albeit based on a liberal individualist conception of autonomy)" but that "security in the reproductive realm for women is at best tenuous and at worst absent for many" (2012, 226). I agree with Downie that greater access to reproductive care is needed on a province to province basis, and I will discuss this further in what follows. But in fact, I would argue that there is legal precedent in the Canadian context for an understanding of autonomy in reproductive decisions that is relational, not individualist.

In her original decision in *R v. Morgentaler*, Justice Wilson emphasized that, "an individual is not a totally independent entity disconnected from the society in which he or she lives. Neither, however, is the individual a mere cog in an impersonal machine in which his or her values, goals, and aspirations are subordinated to those of the collectivity".⁵¹ Here, and in her articulation of a right to "liberty", Wilson presents autonomy as individual action that is shaped in relation to others. This interpretation may move further toward articulating the kind of relational autonomy that reproductive justice and care scholars have argued for. In Downie and Kaposy's review of "choice" and relationality in Canadian judicial decisions pertaining to reproductive decision-

⁵⁰ *R. v. Morgentaler*, [1988] 1 S.C.R. (Canada). Available at <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/288/index.do/> (accessed January 8 2019).

⁵¹ *Ibid*

making, they found that while there are a number of instances in which judges rely heavily on the notion of reproductive choice divorced from questions of access, there are also a number of cases in which “choice” is understood as shaped, limited, and enabled in relation to one’s personal and institutional relationships. Kaposy and Downie emphasize the importance of continued precedent for such relational interpretations of reproductive autonomy.

In Canada, a move to protect abortion with the introduction of ectogenesis on the grounds that fetal extraction would be invasive and “abortion would remain a necessary alternative to ensure respect for bodily integrity” (Kendal 2015, 76) would fall short of care for the pregnant person and acknowledgement of relationality. In the Canadian context, arguments made for protecting abortion on the broader grounds of liberty, with reference to a relational understanding of autonomy, would go further in protecting multiple, contextual reasons for seeking abortion instead of ectogenesis, and in recognizing the relationships that may shape or enable these reasons.

Downie, MacFarlane and Johnstone and others argue that greater changes must be made with regard to protections to actual access to abortion and other reproductive health services in Canada. So long as “a positive right of access to abortion” (Johnstone and Macfarlane 2015, 102) remains un-engrained, attention to care for the pregnant person cannot be said to be entirely addressed, a problem that could worsen with the introduction of ectogenesis. In chapters five and six, I will take up this question of access.

4.4 PROTECTING ABORTION RIGHTS BY REDEFINING FETAL VIABILITY⁵²

The final proposed framework I want to address in this chapter is the argument that the most suitable or most probable means of articulating abortion rights after ectogenesis could be through redefining the point at which a fetus could be considered viable. Some

⁵² I have emphasized in this chapter that the use of a redefined viability limit to protect abortion rights after ectogenesis is problematic primarily because to govern abortion access in this way is to set an ultimately arbitrary limit to the provision of care for pregnant people. As I have noted in an earlier footnote, the work of disability justice theorists on the way in which both abortion regulation and pro-choice feminisms have engaged in eugenic discourses that ask people with disabilities to justify their right to exist (see Chen 2012, Kafer 2013, Saxton 2000) is an important correlate to this discourse. My contention here, as I argue further in the last chapter of this thesis, is that abortion should not be the business of criminal law. In shifting to treating abortion as a medical procedure, not a crime with exceptions, I believe that the critiques of disability justice scholars of the ways in which discourses on abortion have stigmatized people with disabilities will be vital to informing care-informed approach to abortion and ectogenesis.

scholars who discuss this possibility do so with specific reference to given jurisdictions (Alghrani [2007/2008] and Jackson [2008] in the UK, Abecassis [2016] and Son [2005] in the United States), while others (Lupton 1997, Raskin and Mazor 2006) propose that the redefinition of viability could be a universally applicable framework. At present, “viability” refers to the point at which a fetus has a chance of survival outside of the womb. Scholars who propose abortion rights be retained by redefining viability after ectogenesis suggest that “viability” in law could be redefined to refer to an advanced gestational stage (within or outside of the pregnant person’s womb), or to the point at which the fetus could survive without depending upon either the pregnant person’s body or the ectogenic machine. Without specific reference to abortion law in context, Lupton writes that “the gestational period spent in the artificial uterus should be viewed as synonymous with time spent in an intensive care unit” (1997, 630), while Raskin and Nadov, again writing in general terms, hold that “the moral status of a fetus must gradually increase as the fetus’s development progresses” (2006, 167), regardless of whether it grows within a person or a machine. Before assessing a framework for abortion and ectogenesis that protects the procedure through the redefinition of “viability” in the specific context of each jurisdiction, there are some general points I wish to address here pertaining to the link between abortion rights and viability and how this impacts relationality and care for the pregnant person.

As Cohen and Sayeed write, methods for measuring gestational age vary within and across nations, and a fetus’s potential of survival outside the womb is also impacted by its sex, birth weight, the exposure of the mother to steroids, and the prevailing medical and sociocultural attitudes toward premature babies (2011, 236). As Erdman argues, then, the translation of viability into a legal limit is an attempt to institute a bright line for something that is extremely variable from a medical perspective. Maintaining “viability” as a determinative legal timeline should artificial wombs be introduced may preserve the status quo of abortion rights in jurisdictions that currently allow access prior to this point. But even if the term were redefined to refer to advanced gestational age or purported ability to survive without significant technological support, it would remain subject to variability in interpretation and application.

More importantly, in legal frameworks that regulate abortion through a timeline of fetal development, “the ethical or moral significance of abortion is derived from scientific or medical knowledge” (Erdman 2017, 33). In other words, by constructing

abortion rights around scientific research on the fetus's development and increasing potential for personhood, the use of viability timelines for abortion decentralize the health, needs, and desires, of the pregnant person. Instead, as Sheldon (1997) and Franklin (2014) have also argued, it frames the abortion decision as being properly arrived at through a medical assessment of fetal development. In this regard, the moral status of the fetus is determined independently of the pregnant person and impacts her right to terminate it. Erdman, Jaggar, Gilligan, and others who write of abortion from a relational perspective do not dismiss the possibility that a fetus's moral status changes over the course of gestation. However, they argue that these shifts in status should only be understood from the perspective of the pregnant person's perceived relationship with the fetus. As Victoria Browne writes, "the moral status of the fetus is not absolute and apprehendable from an external perspective; rather, it is relational and can only be determined in relation to the particular pregnant woman and her particular situation" (2016, 397). Bearing this in mind, by setting a universal principle establishing the moral status of the fetus from the outside, a limit to abortion rights based on fetal viability, however defined, introduces an externally constructed limitation, and fails to leave space for the pregnant person's relational encounter with the fetus, or in the case in which the fetus may begin in an artificial womb, other caretakers' relational experiences.

Raskin and Mazor's proposal that viability be redefined to refer to an advanced stage of fetal development demonstrates the way in which a viability timeline shifts focus from the interests of the pregnant person to the fetus as a moral entity. They write, "equal moral status should be applied to both kinds of fetuses" (2006, 169), meaning those within the pregnant person's body and those in the artificial womb, increasing toward the end of gestation to ensure that "an in vivo fetus should not enjoy more moral weight merely because of its physical connection to a pregnant woman" (169). Raskin and Mazor write of abortion law without reference to a specific jurisdiction, and in so doing overlook that the project of balancing "conflicting legal rights" between the pregnant person and the fetus, on which their argument for redefining viability is based, is derived from an American construction of abortion rights. Giving reference now to the application of this framework within the context of each jurisdiction, I want to unpack the ways that a framework for abortion and ectogenesis that is reliant on fetal viability, while in some instances potentially a strategic tool, falls short of upholding a feminist ethics of care.

UNITED STATES

Like Raskin and Mazor, Steiger (2010), Schultz (2010), and Abecassis (2016) make arguments for reinstating viability that are shaped by the realities of an American context. Where Abecassis and Schultz explicitly acknowledge this context, Steiger does not. Steiger considers the possibility that different rules could apply to fetuses gestated in machines and those gestated in humans, but concludes that “it would be unfair to use two sets of rules for two fetuses at the exact same stage of development, simply because of the environment in which they are developing” (2010, 158). Instead, he argues that the only solution is for fetal viability to be redefined to refer to an advanced stage of development. Schultz comes to the same conclusion, arguing that “any other standard [than viability] seems inappropriate” (2010, 903). Schultz’s argument here is again a striking reminder of the hegemony of American perspectives on ectogenesis and abortion, in that to find “any other standard” than viability with which to establish abortion rights, one might reasonably look to other common law jurisdictions which do not use this standard, such as Canada. In concluding that the only reasonable framework to contend with the challenge posed by ectogenesis is to redefine and reaffirm fetal viability as a legal timeline, both Steiger and Schultz perform a curious contradiction. By acknowledging that a viability timeline is always subject to change as technology develops, they reveal it as an unstable means of protecting abortion rights. But despite proclaiming to want to protect these rights, they reinforce a timeline that by their own analysis will always leave abortion rights contingent on potentially changing and unstable medical and legal understandings of viability. Erdman writes that “there is no standard definition or mode of measurement of viability [. . .] nor any standard of what probability of survival is enough” (2017, 33) to justify the refusal of an abortion. Viability as it would be redefined according to Steiger and Schultz to refer to an advanced stage of fetal development, could potentially provide more certainty than viability as it is now defined to refer to a chance of survival outside of the womb. But given the significant variation both globally and at different medical centers across nations in how gestational age is measured (Cohen and Sayeed 2011, Erdman 2017), medical judgement as to fetal development would still remain subject to interpretation. As Erdman explains, in some hospitals, gestational age is measured from the estimated date of conception, and in other hospitals, often even within the same nation, it is measured from the pregnant person’s last menstrual period (2017). Even allowing for the possibility that if the framework proposed by Steiger and others were applied in the

United States, more clear and specific guidelines as to how to measure advanced fetal development would be required, the uncertainty of both conception date and date of last menstrual period would leave significant room for medical interpretation. Regardless of how viability is defined, so long as abortion law in the United States remains constructed such that undergoing the procedure after viability results in the criminalization of pregnant people, this kind of framework fails to sufficiently provide for the care of pregnant people. By vesting a limitation for abortion access in a fictive timeline of fetal development, the framework fails to centralize care for the pregnant person by making the fetus's development, not the pregnant person's wishes, desires, health, or interests, the key question in whether states should allow abortion access.

UNITED KINGDOM

Jackson notes with reference to English law that one possible strategy with the introduction of ectogenesis might be to "define viability as a stage in fetal development when it can survive with minimal assistance" (2008, 364). She goes on to suggest that "we could say that the fetus which is developing in an artificial womb acquires personhood when it can be safely removed from the artificial uterine environment, but until then it has the same status as a fetus in utero" (364). In altering the definition of viability that is enshrined in the Abortion Act 1967, and the point at which the fetus would be considered born, this strategy would allow for the status quo to be retained. This would mean that prior to viability medical professionals could still perform abortions on social or physical grounds.

However, unlike Steiger, Schultz, and Lupton, Jackson acknowledges the problematic nature of retaining a viability timeline. She argues that in contemporary UK law, as in an imagined future where partial or full ectogenesis lowers viability, "if gestational age determines the boundaries of a criminal offence, this level of inaccuracy is self-evidently unsatisfactory" (2008 366). As Jackson recognizes here then, the viability timeline in the UK, as in the United States, falls far short of centralizing care for the pregnant person by criminalizing abortion that occurs after this point.

Of the debates over lowering the time limit during the 1990 passage of the Human Fertilisation and Embryology Act,⁵³ Sheldon writes that "the effect of the 1990

⁵³ The Human Fertilisation and Embryology Act 1990. Available at <https://www.legislation.gov.uk/ukpga/1990/37/contents> (accessed January 8 2019).

debates has been to entrench in the public-and parliamentary consciousness that abortion is permissible prior to viability, but should be forbidden after this point” (1997, 113). This perception of abortion rights as inevitably linked to fetal viability is evident in the universalizing claims of bioethical and legal scholars that a redefinition of fetal viability is the only suitable framework for regulating abortion if ectogenesis is developed. As Sheldon argues, a focus on viability has meant that abortion has been understood as “primarily a medical phenomenon [. . .] that [. . .] must fall into the sphere of authority of doctors to maintain both technical and decisional control over it” (1997, 114). While in the UK context, as Jackson suggests, redefining viability might be one of the most straightforward possible ways of retaining the status quo for abortion rights, it would in fact reiterate the contemporary medical paternalism of abortion law in the UK, as opposed to moving the law closer to a feminist relational articulation.

CANADA

I want to return first here to Steiger’s proposal that we should redefine viability to refer to an advanced stage of fetal development in order to regulate abortion after ectogenesis. Steiger writes that this approach is the best way to retain abortion rights because “it would be unfair to use two sets of rules for two fetuses at the exact same stage of development, simply because of the environment in which they are developing” (2010, 158). Raskin and Mazor similarly argue in favor of this strategy on the grounds that a fetus inside the womb should not be granted more protection from termination than one outside the womb. As I have argued, it is possible that a claim could be made within the context of the United States that such a strategy might be justified as an attempt to hold on to the unstable status quo of abortion rights in the United States. However, when this proposed framework is considered in the context of Canadian law, it is revealed for what it is. Not the only means of articulating abortion rights against a challenge raised by ectogenesis, but instead a constructed strategy which reinstates a framing of abortion as a limited right primarily tied to the status of the fetus, rather than as an essential medical service.

To introduce a framework in which abortion was limited after an agreed upon point in the development of both a fetus in a human womb and an artificial one in Canada would reduce contemporary attention in Canadian law to care for pregnant people and relationality. The current framing of abortion in Canada, in which precedent holds that there is no legal gestational limit in place, means that according to the letter

of the law, the timeline for abortion access is dictated by the pregnant person's decision in relation to the fetus. That implementing Steiger's proposed framework in Canada, where there are currently no criminal sanctions for abortion after viability would constitute reducing the law's current emphasis on the pregnant person's priorities and needs, also indicates that reinstituting such a framework within other jurisdictions (the UK and US) is not a strategy that centralizes care for the pregnant person.

As Erdman argues, as a fictive legal construct, "gestational age [. . .] proves an arbitrary means of regulating access to abortion and thereby runs afoul of human rights protection against arbitrary laws" (2017, 32). I have shown how, in the context of Canada, because there is no legal restriction around fetal viability, ectogenesis is unlikely to challenge abortion rights on this ground. In the UK and the US, I argue that the fact that this technology could in fact challenge abortion rights on the basis of fetal viability should not be taken to indicate that a new definition of "fetal viability" is required, but instead, to highlight that "viability" as a governing timeline is a legal fiction that falls short of protecting a robust, relational understanding of abortion rights.

Lest I risk suggesting that the abortion situation in Canada is ideal, while the lack of criminal sanctions means that there are no legal consequences for seeking abortion after fetal viability, "access is restricted by gestational limits in each province that cut off services between twelve (hospital abortions in New Brunswick) and twenty four weeks (Ontario)[. . .]" (Johnstone and Macfarlane 2015 107). As Johnstone and Macfarlane note, in these circumstances, "The gestational age at which abortions are available in each province is not limited by law but, rather, by the discretion of physicians [. . .] funding regulations, and the availability of facilities" (2015, 107). The law does not provide for positive rights to abortion access, and therefore barriers based on finances, proximity to a clinic offering abortions, and regulations within given provinces remain in place. While Johnstone and MacFarlane as well as Downie acknowledge, as I do, that Canadian abortion law is in many ways more constructed around care for the pregnant person than abortion law in many other jurisdictions, given these continued restrictions, a more relational adaptation of the law is still needed.

CONCLUSION

In this chapter, I have considered three frameworks that bioethical and legal scholars have either suggested are likely outcomes for abortion law following the introduction of ectogenesis or have argued are the best means of responding to the development of this

technology. With regard to the first proposed outcome, a total ban on abortion or the use of ectogenesis as a forced alternative, I argued that in inaccurately constructing the fetus as an entity capable of being autonomous, and in presuming the only possible reason a woman may have for seeking an abortion is to physically end a pregnancy, this framework would fail to account for relationships of care or care for the pregnant person if instated in any jurisdiction.

I then considered two other proposed strategies, firstly, making an argument for protection based on bodily autonomy on the grounds that a fetal extraction procedure instead of an abortion involving termination would be invasive, and secondly, an argument for redefining fetal viability to refer to an advanced stage in fetal development or to the point at which a fetus could survive without depending upon either a pregnant person or a machine. I unpacked these two arguments in the specific contexts of Canada, the United States, and the United Kingdom. I argued that the concept of autonomy is an important one in the feminist effort to protect pregnant people's reproductive control over their bodies. But I noted that in the strategic argument made by some scholars for protecting abortion through reference to bodily autonomy, "autonomy" refers only very narrowly to a protected sphere of control over the physical body. I also argued that this way of protecting abortion rights leaves them contingent on a fetal extraction procedure always being invasive. In the context of the United States, I acknowledged that such a strategy for trying to protect the status quo would be understandable in an effort to hold the line on rights that are already under attack. But I also pointed to the way in which existing protections for abortion based on bodily autonomy, defined in narrow reference to protections from invasions on the physical body, have proven to be insufficient to protect abortion access thus far. Even without the introduction of artificial wombs, articulating abortion rights in this way has allowed for states to institute significant restrictions, most recently, by banning abortion at six weeks on the balance of competing interests in women's bodily autonomy against fetal life. By rendering abortion rights always contingent on the degree to which extraction would be invasive, then, I argued that this strategy does not sufficiently account for care for the pregnant person or for relationality.

In the context of the United Kingdom, I argued that while the Abortion Act 1967 is outdated and problematic when assessed against feminist care ethics for the way in which it defers to medical paternalism, the revision that some scholars have suggested of adapting or replacing the Act to protect abortion from challenges introduced by

ectogenesis on the grounds of bodily autonomy may in fact narrow protections for abortion rights by reducing the legitimate reasons for a woman to access the procedure. In Canada, I similarly argued that such a redefinition would reduce existing attention to care.

Finally in this chapter, I assessed the proposal that fetal viability could be redefined to refer to an advanced stage of fetal development or to the point at which the fetus could survive without dependency on an ectogenic machine or the pregnant person. Of this strategy, I argued that as feminist relational scholars have noted of contemporary use of a viability timeline, by associating the right to an abortion with the fetus's moral status, such a framework fails to centralize care for the pregnant person. In the United States, as with the proposed redefinition of a bodily autonomy argument, a case may be made for using a redefinition of viability as a strategic means of trying to protect limited abortion rights against attack. In the United Kingdom, I acknowledged that this strategy would allow for the status quo, in which there are a range of justifications allowable for abortion prior to viability and fewer (maternal health or life) after, to be retained. But ultimately, in either jurisdiction, such a strategy of redefinition still means that abortion rights depend upon objective medical interpretation as to when viability has occurred. This contingency speaks to a failure to fully protect care for the pregnant person. In addition, in retaining a link between abortion rights and the fetus's biological development, this framework fails to sufficiently account for relationality by presuming that the moral status of the fetus, which remains dependent regardless of whether it gestates in a woman or in a machine, can be assessed independently. Turning to Canada, in which there is currently no legal limit to abortion based in viability, I argued that introducing such a framework would significantly reduce contemporary attention to relationality.

Ultimately, I have concluded that a framework based on bodily autonomy specifically defined in relation to the physical body, or based on fetal viability regardless of how it is defined, fails to sufficiently account for relationality and care for the pregnant person. This is both in presuming a universal, singular reason as to why a person would seek abortion (therefore reducing the particular ways in which an individual's circumstances might impact this choice), and in failing to understand the ways in which the fetus can only be understood relationally as a dependent entity. In my introduction, I noted that this thesis takes a reproductive justice approach to abortion in understanding that abortion rights must be understood as inevitably intersecting with

broader questions of social justice, access to reproductive care, and rights to have and raise wanted children. In this chapter and the previous one, I have dealt with questions in relation to abortion law as written, by considering the ways that ectogenesis has been understood to challenge abortion protections as well as strategies for regulating abortion and ectogenesis. In chapters five and six, I turn to broader questions of reproductive stratification, and de-gendering or sharing the work of gestation, as well as possible frameworks for ectogenesis and abortion that would impact reproductive labor and social care more broadly.

5. “DEGENDERING GESTATION” AND WORSENING STRATIFIED REPRODUCTION: A COMPARISON OF BROADER CHALLENGES IN ACCESS TO REPRODUCTIVE CARE

Reproductive justice activists and scholars emphasize the importance of organizing and policymaking that understands abortion not as a standalone issue but as one among many vital aspects of reproductive health and care that must be protected (see Ross 2007). In this dissertation, this means thinking beyond how ectogenesis may impact a right to end a pregnancy to consider how it could impact access to reproductive care, a person’s “right to have a child” (Ross and Solinger 2017, 9), and their ability to build families of their own making. In this chapter, I consider the possibility that ectogenesis will render gender irrelevant to distributing responsibility for gestation and the possibility that it will enhance existing reproductive stratification. These two contentions have frequently arisen in the literature, but often without reference to how they may be enabled or limited by contemporary law and policy. In this chapter, I will examine existing regulation within each jurisdiction to understand whether, how, and under what circumstances ectogenesis may impact the distribution of gendered labor in gestation or impact existing stratification in access to reproductive care.

5.1 DEGENDERING GESTATION: ECTOGENESIS AS REDISTRIBUTING RESPONSIBILITY FOR A GESTATING FETUS

I want to begin by analyzing the contention that in removing gestation from the body, ectogenesis might effectively “degender” reproduction, and in turn, result in a redistribution of responsibility⁵⁴ for a gestating fetus. The idea that ectogenesis will make gender essentially irrelevant to responsibility for the gestating fetus is often presented by bioethicists as a means of legitimating a contemporary anti-abortion narrative (Kaczor 2005, Reiber 2010). In these instances, references to equality and shared responsibility are used to enact discourses of fetal rescue, imagined scenarios in which a prospective father “saves” an ectogenetic fetus that would otherwise be

⁵⁴ I use “responsibility” in this chapter when referring to a person or person(s) in relation with an ectogenetic fetus. I have done this for a few reasons. I am avoiding using the term “parent” here, because I refer to gestation and I do not want to imply that a growing fetus is a child. I also do not wish to refer to “rights” unless I am specifically referring to circumstances in which the law has constructed rights for a person in relation to an embryo or fetus. Finally, “responsibility”, while imperfect, helps to communicate the complexities of caring for a fetus in gestation: one may want or not want it to be born, may terminate it or wish for it to grow, may ultimately end one’s relation to it, or may become a parent to the person who is born.

terminated by a female progenitor. Even among some bioethical scholars who do not position themselves as anti-abortion (Brassington 2009, Randall and Randall 2008, Bennett 2008, Singer and Wells 2006, Coleman 2004), there is slippage between the proposition that the technology would allow male progenitors to assist with gestation, and language suggesting reproductive autonomy for women has gone too far and ectogenesis could beneficially limit the “monopoly of women [. . .] deciding the fate of the embryo and fetus” (Welin 2004, 624).

These arguments, which are primarily interested in increasing the reproductive decision-making capacities of men intersect with a recurring claim in the feminist literature that ectogenesis could allow women to share the physical and social consequences of gestating a pregnancy. The potential of an artificial womb to someday contribute to “the freeing of women from the tyranny of their reproductive biology by every means available, and the diffusion of childbearing and childrearing role to the society as a whole” (Firestone 1970, 206), has continually resurfaced in feminist engagements with this technology (Oakley 1984, Murphy 1989, Kamm 1992, Woolfrey 2006, Sander-Staudt 2006, Smajdor 2007, Takala 2009, Kendal 2015, Overall 2015). Writing nearly forty years after Firestone, Smajdor argues that “the fact that women have to gestate and give birth in order to have children, whereas men do not, is a *prima facie* injustice that should be addressed by the development of ectogenesis” (2007, 338).

Despite differing political aims, this strain of feminist literature arrives at the same end as the bioethical literature I have noted above: a claim that artificial womb technologies could radically reorganize the relationship between men, women, and fetuses. What allows these two discourses to converge in a claim that artificial wombs may produce “gender equality” is a shared treatment of “gender” and “sex” as interchangeable, binary, and fixed. These works begin with the assumption that there are two categories of person, “men”, and “women”. Women, and not men have the biological capacity to become pregnant, and thus it is only in creating an artificial womb that men will be able to share in pregnancy. Namely, this technology becomes the tool that will disrupt what has henceforth been a rigid division between two roles in a family: a woman who is the genetic, gestational, and social mother of a child, and a man who is the genetic and social father of a child. Ectogenesis “degenders” gestation by allowing it to be shared between a man and a woman, and thus, the family is reordered: a woman who is the genetic and social (and perhaps gestational) mother of a child, and a man who is the genetic and social (and perhaps gestational) father of a child. It is

important to note here that while a number of these feminist and bioethical authors are cautious as to what they believe the outcome of this reorganizing may be (see especially Murphy 1989, Woolfrey 2006), much of this scholarship concludes that it will have the effect of producing “true equality” (Takala 2009, 191). In other words, these scholars conclude that ectogenesis will produce equality within families through the sharing of gestation, which will in turn result in a more equal society (Smajdor 2007, Kendal 2015, Singer and Wells 2006, Pence 2006).

In contrast, there is another thread in the feminist literature on ectogenesis in which “sex” and “gender” are understood in a different way, thus producing a different assessment of how the technology might impact gendered relations in gestation. We can understand Firestone’s work as a kind of (ambivalent) bridge between these two approaches. Firestone, like the scholars I’ve discussed above, takes for granted biological, binary understandings of sex and gender by presuming that “reproductive biology” (1970, 206) is an inescapable “tyranny” that produces one’s gender. But Firestone’s understanding of the possible role of ectogenesis in altering gendered relations to gestation does not end with equality between “men” and “women”. Instead, artificial wombs are considered as a means through which we could achieve the “diffusion of childbearing and childrearing role[s] to the society as a whole” (206). There is a distinction here between a “gender equality” approach and what we might call Firestone’s “gender diffusion” approach, in which ectogenesis might one day mean the categories of “men” and “women” could continue to expand and perhaps one day disappear altogether. Lewis (2018, 2019), places herself in this lineage of thinking about artificial womb technology when she imagines a future that could include a “queer gestational commune in which ‘bio-bags’ of some kind enabled gestators to pause, share, transfer, redistribute, and walk away from pregnancies” (2019 b, np).

Where the “gender equality” approach to thinking about ectogenesis’s impact on gestation begins with an assumption of binary gender, Lewis begins with an understanding of both sex and gender as fluid, socially constructed categories. Lewis knows well that gestation is a particularly evocative site for demonstrating the social construction of biological gender. The place of artificial wombs in altering gendered relations to gestating for Lewis, then, originates from a position in which the pregnancies of gender queer, nonbinary, and trans people are already recognized as realities that disrupt a binary understanding of human reproductive roles, and where multitudes of queer forms of kinship already create families and communities outside of

a nuclear norm. Consequently, in Lewis's writing (as in Firestone's), artificial wombs are not the tool that cause gender to become irrelevant to gestation, the dismantling of institutions that violently enforce gender must come first. As Karaian argues, medical and legal institutions in many parts of the world have increasingly produced barriers to recognizing the healthcare needs and identities of non-binary and trans pregnant people, and in so doing, have demonstrated a resistance to the contemporary disruption of gendered relations to gestation. Karaian writes, "pregnant men engender a critical re(conceive)ing of the idea that sex is biologically determined, that pregnancy is necessary sexed as female, and that one's sex, gender identity and identification as mother/father neatly align" (2013, 213). Before ectogenesis could allow us to "diffuse" gestation, we would need to live in a world in which institutions and individuals had accepted these re-conceptions of gender in pregnancy.

As I have made clear throughout this work, this is ultimately a normative project, one that seeks to understand what a feminist, relational framework for regulating the artificial womb would look like. In this, I follow Lewis's understanding of sex and gender, and share her position that in order for gestation to become a shared, "degendered" project, we would first need to arrive at a social circumstance in which the existing pregnancies of people of many sexes and genders were accepted on their terms. As will become clearer as I proceed in my analysis, the vast majority of literature on ectogenesis that argues that the technology will alter gendered relations to gestation instead takes sex and gender as binary, fixed categories in order to read artificial wombs as a tool to introduce equality.

Perhaps unsurprisingly, the language of court decisions and legislation addressing the frozen embryo disputes that many scholars cite as the most analogous existing circumstance to a case involving an ectogenetic embryo, and in which I will therefore ground my analysis, also frequently understand sex and gender as binary and fixed (see Alghrani 2007, Son 2010, Schultz 2010, Bard 2006, Reiber 2010, Pence 2006). Frozen embryo disputes involve instances in which individuals have created embryos together using either their respective eggs and sperm or donor eggs and sperm. Generally created with the intention of implantation, it is standard procedure for clinics to prepare multiple embryos with the knowledge that it may take several attempts for one to result in a pregnancy. Leftover embryos are then deep frozen in nitrogen and stored in sub-zero temperatures, and can either continue to be stored, be used to attempt pregnancy in the donor or intended parent, be donated to research, or be destroyed.

Because these cases involve an embryo that exists outside of the body, many legal and bioethical scholars argue that precedent in cases in which courts have established how responsibility for embryos should be handled where a relationship breaks down are indicative of how responsibility for the ectogenic fetus may be managed.

In what follows, negotiating the different understandings of gender and how ectogenesis is subsequently understood to challenge gendered roles in the family I have described, I will explore the potential impact of ectogenesis on gendered familial relations to gestation. Before I continue I want to note that while I have established that I share Lewis's vision of what a "degendered" approach to gestation would look like, I do also find it important to consider the possibility proposed by many other scholars that the technology could change the relational outcome of pregnancy within heterosexual couples. In my analysis then, I am interested in both whether precedent in frozen embryo cases could suggest a move toward "equal" treatment of men and women, and in whether there are spaces here where we might see movement toward a more expansive understanding of gender in gestation.⁵⁵

THE UNITED STATES

While the United States Supreme Court has been petitioned to hear disputes over frozen embryos, it has declined to do so thus far (Cohen and Adashi 2016). As a consequence of this and a lack of clear federal statutory guidance, there is variation across the United States as to how decisions are made, with these matters being left to individual state Supreme Courts. Alghrani notes that while in some instances, state courts have found in favor of honoring previously written embryo agreements, courts in other districts have heard the preferences of each partner. Where no previous agreement exists, courts have tended to balance the interests of each party and favor the partner who does not want to reproduce so long as the other can have children in some other way.

Son (2005), Schultz (2010), Steiger (2012), and Brassington (2009) each draw on precedent in these cases to suggest that artificial wombs will bring about the logical

⁵⁵ Should full ectogenesis become possible, one of the more confounding issues that will need to be addressed is the propensity of statutory and case law in many jurisdictions to default to gestational parents as mothers (including several American states and the United Kingdom). The question that arises here is if the person who gestates a pregnancy is the legal mother, would an ectogenetic machine be legally attributed with motherhood? While interrelated with what I explore in this chapter, I am not going to address this issue in depth here: the focus of my analysis is on unborn embryos and fetuses, and this question pertains to the attribution of parenthood after birth. It is, however, a compelling question that is due thorough future consideration.

extreme of a shift in gendered reproductive responsibility that has its roots in egg freezing. It is true, as these scholars argue, that US courts have tended to recognize the interests of both male and female progenitors who have contributed to frozen embryos. But while the decisions in these cases may be purportedly “gender neutral”, I will argue that there is little evidence to support a conclusion that gender is irrelevant here, or that these cases may foretell familial equality produced through ectogenetic gestation (Brassington 2009, Schultz 2010, Steiger 2010). The limitations of a broader expansion in gendered relations to gestating are also made immediately clear by the fact that of the embryo cases heard by state Supreme Courts in the last twenty years, all have involved heterosexual couples. The dominance of heterosexual couples in embryo dispute cases and the consequent focus of ectogenesis scholars on the claim that gender will be irrelevant in ectogenetic gestation because “neither the genetic mother nor the genetic father has a greater legal right” (2009, 883), already speaks to the limits of the potential for ectogenesis to “degender gestation” in this context.

Davis v. Davis (1992) was the first frozen embryo dispute to be heard in a state Supreme Court in the United States. After a Tennessee District Court found against Mary Sue Davis, who initially petitioned for the embryos she had frozen with her former partner Junior Davis to be donated to another couple rather than being destroyed, she appealed to the Tennessee Supreme Court. As a matter of first impression, there was no preexisting statutory law, case law, or common law to inform the judges on how to proceed. In keeping with claims made in the ectogenesis scholarship that neither a male nor female progenitor would have greater rights incidental to the ectogenetic fetus, the *Davis v. Davis* court decision explicitly considered and dismissed the relevance of gender to determining rights to the embryos. From Mary Sue Davis, the court heard an argument that decision-making power should be afforded to “the female gamete-provider in every case, because of her greater physical and emotional contribution to the IVF process”⁵⁶. Mary Sue’s legal team emphasized that while Junior’s contribution involved ejaculation on one occasion, Mary Sue endured regular hormonal injections, the aspiration of her eggs under anesthesia, and the transfer of the fertilised embryos into her womb, only to experience miscarriage.

While acknowledging Mary Sue’s ordeal, the court explicitly dismissed the relevance of these gendered biological processes to its decision. Instead, it resolved that

⁵⁶ *Davis v. Davis*, 842 S.W.2d 588 Tennessee (1992).

“none of the concerns about a woman’s bodily integrity that have previously precluded men from controlling abortion decisions is applicable [. . .] As they stand on the brink of potential parenthood, Mary Sue Davis and Junior Lewis Davis must be seen as entirely equivalent gamete-providers”.⁵⁷ This then, is a key moment in the court’s decision to take a “gender-neutral” approach to determining responsibility for frozen embryos. It is this precedent that scholars site as the grounds for gender equality in gestational responsibility after ectogenesis (Son 2005, Steiger 2012, Schultz 2010, Randall and Randall 2008).

The *Davis v. Davis* court advised that in future embryo dispute cases, where there was a prior contractual agreement between progenitors, this should take precedence, and without it, the decision should be made by balancing the interests of each party. As Son (2005), Schultz (2010), and others conclude, this method of determining responsibility for an embryo is ostensibly gender neutral to the extent that the gender of the progenitors is not explicitly considered as a factor in assessing their respective interests. Here, it is important to return to how claims about the presumed equality between progenitors in these cases is then used to argue that “with extracorporeal gestation, a man could much more easily be the primary nurturer” (Pence 2006, 78), and that as a consequence, the technology would create a challenge to “conventional notions of family and female nurturing (78). Examining the decision in *Davis v. Davis*, I would argue that despite the absence of direct references to the gender of the progenitors, gendered ideas of appropriate familial roles and “conventional notions of family” (ibid) shape the Court’s consideration of Junior Davis’s argument.

Junior Davis’s desire not to have genetic children was heard by the court in the context of his own purported family history. He testified that as a child, “his parents divorced [and] his mother had a nervous break-down” following separation from his father. When it found in favor of Junior Davis’s interests in destroying the embryos, the court held that

he clearly feels that he has suffered because of his lack of opportunity to establish a relationship with his parents and particularly because of the absence of his father [and] In light of his boyhood experiences, Junior Davis is vehemently opposed to fathering a child that would not live with both parents[. . .] he is opposed to donation because the recipient couple might divorce, leaving the child (which he definitely would consider his own) in a single-parent setting.⁵⁸

⁵⁷ Ibid

⁵⁸ Ibid

The court, then, emphasized Junior's assertion that having grown up without a father himself, he would be "opposed to fathering a child that would not live with both parents"⁵⁹. While donating the embryos would not require Junior Davis to take any "fathering" role, the court cites his concern that if the embryos were donated, the future parents could divorce and his prospective genetic child would end up in a "single-parent home". Parental interests in the reproductive decision here, and presumptively in the use of ectogenesis, may be considered "equal" or "neutral" in the sense that the court's decision is not swayed in one way or another based on physical references to a gendered body. But we cannot conclude from this that gendered notions of appropriate familial roles would be absent from consideration in establishing reproductive interests.

What is particularly striking is the way in which though not made explicit, gendered parental roles are negotiated here around the imagined best interests of a future child. In a custody dispute involving a born child, the child's best interests would be of primary concern in determining the rights and responsibilities of the child's parents. Though an embryo is not a juridical person (as discussed below, this is in the process of changing in some parts of the United States), where courts have assessed progenitors' respective interests in the use of embryos, the imagined best interests of the future child are close to the surface. In *Davis v. Davis*, the best interests of the imagined future child are aligned with Junior Davis's purported desire not to have a genetic link with a "fatherless" offspring. If the movement of conception outside of the body in the form of frozen embryos is to be understood as a precursor to the movement of gestation outside the body through ectogenesis, precedent here suggests that gendered logics of a two-parent nuclear family are likely to be used to reorder the roles of those in relation to an ectogenetic fetus. Writing of the ways in which people in a clinical setting negotiated the complexities of kinship produced through IVF, Charis Thompson refers to "the manner in which people in this site routinely used tropes (including conservative ones like male eponymy) with which they were familiar from other contexts and extended them to cover and disambiguate kinship in this novel setting" (2005 161). While the courtrooms in which embryo disputes are heard differ in important ways from a clinic, this same use of "tropes" of what the traditional family could or should look like are

⁵⁹ *Davis v. Davis*, 842 S.W.2d 588 Tennessee (1992). Available at http://scholar.google.com/scholar_case?q=Davis+v.+Davis&hl=en&as_sdt=806&case=17302847389043812781&scilh=0 (accessed June 10 2019).

often drawn upon to inform decisions about rights or responsibilities toward the frozen embryo. In this circumstance in which social, biological, and gestational parenting roles are disentangled, Junior Davis's role as a biological progenitor is then used in order to situate him as a future father who wishes to cede both his biological and social role rather than risk "his" child being born without a father figure. It is this pattern of "disambiguat[ing]" parental relations to the frozen embryo that suggests to me that rather than ectogenesis undoing legal assumptions about maternal and paternal roles in relation to the ectogenetic fetus, these concepts are likely to shape and constitute who is allowed to use ectogenesis for gestation and under which conditions.

In *Szafranski v. Dunston*, heard in the Illinois Supreme Court in 2005, the court similarly used a "gender neutral" balance of interests test which was ultimately also coded with normative ideas of appropriate familial roles. Jacob Szafranski and Karla Dunston disputed over embryos they had created after Dunston was diagnosed with ovarian cancer. Following the end of their relationship, Szafranski expressed that he did not want the embryos used because he was "worried that no one will want to have a relationship with him knowing that he has fathered a child with Karla through IVF [...]" he testified that he does not "want to be a father like this" and contended that he should not be forced to procreate with a woman whom he does not love."⁶⁰

The court heard that the progenitors had a prior agreement, and that at each stage of the fertility process Szafranski had consented to the use of his sperm and to the preservation of the embryos. Weighing these prior agreements alongside the fact that because "[Dunston] suffered ovarian failure as a result of her chemotherapy treatment [she] cannot have a biological child without using the pre-embryos," the court found in favor of Dunston.⁶¹ By contrast to *Davis v. Davis*, in *Szafranski v. Dunston*, the court interpreted Szafranski as a kind of absentee father, giving particular reference to his preoccupation with his contemporary relationship prospects and the fact that he had committed to contributing his sperm to the embryos made with Dunston. In coming to a decision, the court emphasized that Dunston "was devastated upon learning that she would lose her fertility and thought about how she wants to have a child "with part of" her father, who passed away when she was five years old".⁶² While deference to the

⁶⁰*Szafranski v. Dunston*, 2015 Il. App. Available at <http://www.illinoiscourts.gov/Opinions/AppellateCourt/2015/1stDistrict/1122975.pdf> (accessed June 10 2019).

⁶¹ *Ibid*

⁶² *Ibid*

previous consent of both parties and the balancing of their interests is ostensibly non-gendered, Dunston's purported desire for biological children on the basis of her connection with her father is cited as a significant factor in weighing the balance of interests between the two progenitors. As opposed to destabilizing "conventional notions of family" (Pence 2006, 78), it may be the case that it is precisely conventional notions of a patriarchal lineage, rendered through biological kinship, that would inform how rights to an ectogenetic fetus were delineated. There is a shift in the physical relation of the male and female progenitor to the embryo, namely, it is not inside a woman, yet this does not necessarily equate to a shift in social relation to the embryo. Those who are considered to have an interest in it remain the genetic "father" and genetic "mother," whose potential interests it seems may be weighed differently depending upon the claims they make to upholding a traditional lineage in relation to the future child.

The most recent embryo dispute to arise in the United States is *McQueen v. Gadberry*,⁶³ heard by the Missouri Appellate Court in 2016, and ultimately rejected for review by the Supreme Court. This case is particularly significant as the first example in the United States of a court finding that embryos are akin to property. After a divorce, McQueen and Gadberry disputed over two frozen embryos they had created together, with Gadberry petitioning for the embryos to be destroyed and McQueen for them to be considered children whose best interests would be met in McQueen's custody. Unlike in the previous two cases I have described, where the "best interests" of a future child were not explicitly discussed, McQueen argued that the embryos were not only potential children, but existing legal persons. Gadberry disputed that the embryos were persons, yet he too eluded to the best interests of a future child by maintaining that he did not wish to have genetic offspring with McQueen as they were not good co-parents to their pre-existing children. Weighing the concerns of both parties, the court resolved that the only fair means of resolving the dispute was to treat the embryos as a form of special property. As a result, the embryos would remain frozen, shared by McQueen and Gadberry, and "no transfer, release, or use of the frozen [pre-]embryos [would] occur without the signed authorization of both [Gadberry] and [McQueen]". Though seemingly evident from the two progenitors previous interactions with each other that a resolution would not be possible, the court found that this decision was one that

⁶³ *McQueen v. Gadberry*. 507 S.W.3d 127 (Mo. Ct. App. 2016). Available at <https://casetext.com/case/mcqueen-v-gadberry-2> (accessed June 10 2019).

“subjects neither party to any unwarranted governmental intrusion but rather leaves the intimate decision of whether to potentially have more children to the parties alone.”⁶⁴

Following significant campaigning by McQueen and others, the Mississippi state legislature heard a bill in 2016 that would make all embryos persons from conception. While this bill did not pass, in 2018, Arizona became the first state legislature to pass a statute dictating that where a couple is in dispute, frozen embryos must go to the party who “wants them to develop to birth.” Where the decision in *McQueen v. Gadberry* is “gender neutral” in that it does not establish either the male or female progenitor as the sole decisionmaker, Arizona Senate Bill 1393 is similarly “gender neutral” in that whichever progenitor wishes the embryos to live will be granted responsibility for them. Considered against the context of ectogenesis, a statute that favored whichever progenitor intended to attempt pregnancy with the embryos would be “degendering” in that both could have the right to implant the embryo, but neither could destroy it. But strikingly here, gestation, and the state control over gestation that has long focused on the bodies of women in America, is not “degendered”. True, either progenitor could bring the embryo to term, but rather than “gestation” being diffused, as something that anyone of any gender could do, we instead have a situation in which gestation can either be something that a woman does or something that an object (the artificial womb) does. The gendered relationship of the male progenitor to the embryo does not change in this scenario, nor does the relation of the state to the embryo or the progenitors.

If decision-making power with the use of artificial wombs were to be determined based on the requirement for mutual consent established in *McQueen*, gender could be “irrelevant” to responsibility for the ectogenetic embryo to the extent that neither party could implant it in an artificial womb without the consent of the other. This is precisely what Steiger (2012), Schultz (2010), and Brassington (2009) imagine, a contractual model of ectogenetic pregnancy in which the fetus in the artificial womb is the shared property of two genetic parents. In chapter six, I will draw on a feminist ethic of care to critique the intersecting frameworks of protecting a right to end a pregnancy with reference to genetic parenthood or a property claim that these and other scholars propose. But what I wish to do here is simply to assess whether it is in fact likely that in removing pregnancy from the body, ectogenesis would remove “the biggest difference

⁶⁴Ibid

between the sexes [,] take away the grounds for oppression and eventually, lead to true equality” (Takala 2009, 191). While I agree with Schultz, Pence, and others that with ectogenesis, as in frozen embryo cases, the location of the embryo outside of the body may mean that “neither the genetic mother nor the genetic father has a greater legal right incidental to their bodily integrity” (2009, 883), the consequence of this is not the absence of gendered logics of the biological, traditional family. Consequently, I would argue that there is limited possibility here for ectogenesis as a means of producing gender equality.

The pervasiveness of the focus on genetic parenthood in these cases, also leaves little room for conceptualizing what I would argue, following Lewis, reflects a true “degendering of gestation”: a scenario in which genetic connection and gendered embodiment could essentially be irrelevant to becoming the caretaker of an ectogenic fetus. In chapter six, I consider a right not to be a genetic parent as a means of protecting abortion rights with the introduction of ectogenesis in a US context, I will also unpack, drawing especially on Fineman and West, the extent to which such a claim can be understood as “gender neutral.”

CANADA

Akin to the Mississippi Supreme Court’s decision in *McQueen v. Gadberry*, the Assisted Human Reproduction Act 2004 establishes that even when a contract exists stating otherwise, the use of previously frozen embryos must only occur with the consent of both progenitors. In addition, it bans the purchase of gametes with which to create embryos. The most relevant passage of the Assisted Human Reproduction Act 2004 to the question of rights and responsibilities for frozen embryos is section 13, which specifies that:

the human reproductive material will be used in accordance with the donor’s consent to create an embryo for one or more of the following purposes, namely

- (a) the donor’s own reproductive use,
- (b) the reproductive use of a third party,
- (c) improving assisted reproduction procedures,
- (d) providing instruction in assisted reproduction procedures,

or

- (e) a specific research project, the goal of which is stated in the consent

A donor may withdraw consent in writing before the use of embryos. If they initially consent in writing to the embryos being used for the purposes of reproduction by a third

party, however, after the embryos are created only the party or parties that the embryos were made for (not the donors) need to consent to further use.

Despite the expectation that the Assisted Human Reproduction Act 2004 would prevent disputes over frozen embryos, conflicts have arisen. In the 2018 case of *S.H. v. D.H.*,⁶⁵ the court heard that a married couple (S.H. and D.H.) traveled to the United States to purchase donor eggs and sperm from an American clinic, paying \$11,500 and signing a contract dictating that the embryos be treated as property. They then returned to an Ontario clinic to fertilise the embryos, where they signed a further contract stating that in the event of a relationship breakdown, the clinic should follow the wishes of the “patient”, which in this context referred to a female progenitor in whom the embryos were to be implanted. In the initial trial over how the embryos were to be divided post-divorce, the Ontario Superior Court ruled that despite the explicit ban on the purchase of gametes in the Assisted Human Reproduction Act 2004, “there is no law [. . .] that has considered how to dispose of embryos when neither party has a biological connection to the embryos”⁶⁶. While the AHRA specified that genetic progenitors who create embryos together must both give consent for their use, since neither was genetically related to the embryos in this case, the court ordered that their previously written contract should be upheld. In 2019, the Ontario Superior Court of Appeals reversed the trial court’s decision, emphasizing that the Assisted Human Reproduction Act 2004 sets clear statutory requirements that embryos cannot be used without the consent of both parties. The court offered a clarification of the AHRA in finding that it “considered each spouse a “donor”, regardless of genetic contribution, and gave each a right to withdraw consent prior to an embryo’s use, creating essentially a unilateral veto by either party”⁶⁷.

In the analogous instance of an ectogenetic embryo, it would seem likely that the consent of both parties for whom that embryo was created would be required prior to implantation in an artificial womb. I have suggested that where courts use a balance of interests test (as in *Davis v. Davis* and *Szafranski v. Dunsworth*) to establish responsibility for an ectogenetic fetus, it is likely that pervasive ideas of traditional, patriarchal familial roles will impact judicial decisions. The use of a consent-based model, as dictated by the AHRA and affirmed by the decision in *S.H. v. D.H.*, may mitigate against this possibility by establishing a blanket rule. To this point, the decision

⁶⁵ *S.H. v. D.H.*, 2019 ONCA 454

⁶⁶ *S.H. v. D.H.* (2018) OJ No. 3961

⁶⁷ *S.H. v. D.H.*, 2019 ONCA 454

is similar to the Mississippi Court's ruling in *McQueen v. Gadberry*, with both progenitors having the ability to give or withdraw permission for use at least prior to the beginning of gestation.

But there is a significant difference here pertaining to the way that responsibility for the embryos is articulated. Rather than two parties having "equal" say to an ectogenetic embryo due to their respective genetic contributions, precedent in this instance would suggest that once the embryo is created, responsibility for implantation (and presumptively, responsibility during ectogenetic gestation) lies with the people for whom the embryos were made. Applying this interpretation to ectogenesis, we could imagine a situation in which one or more persons of any gender intentionally set out to create embryos and gestate them in an artificial womb. In removing emphasis from biological contribution and shifting it to intentionally seeking to create an embryo for implantation, there is greater space created here for a variation of family forms produced through ectogenesis. Namely, where focus is not placed on genetic contribution, but instead on a deliberate shared intent to create embryos, the persons in relation to the ectogenetic fetus need not be a heterosexual couple, nor necessarily a couple at all.

But it is important not to overstep in speculating on what this precedent makes possible. While de-centralizing genetic relatedness, *S.H. v. D.H.* still involved a married couple who traveled to the United States from Canada in order to purchase sperm and eggs. What we can read from this is the possibility that with the introduction of ectogenesis, couples with the financial means to do so, perhaps regardless of their gender, might experience a sense of equality in responsibility for gestation that would be supported in law. This does not, however, act as a clear demonstration that artificial wombs will have the effect that some predict of changing gendered familial roles in the family and thus addressing gender inequality in society on the whole (Smajdor 2007, Kendal 2015, Singer and Wells 2006, Pence 2006). At most, it suggests that shifting relations to gestation could be accessible to some individuals or families.

As in the American case law, claims in the literature that artificial wombs will "alleviate the social injustices" (Smajdor 2007, 337) associated with gender also meet a limit in the ways in which gendered understandings of appropriate familial roles inform decisions in Canadian embryo cases. In *C.C. v. A.W.*,⁶⁸ a 2005 case heard in the Alberta

⁶⁸ *C.C. v. A.W.* 2005 ABQB 290

Supreme Court, a woman (C.C.) had created frozen embryos using sperm donated by a platonic male friend (A.W.). C.C. had twins with two of the embryos, and two remained frozen. The initial agreement between the two parties established that C.C. intended to be a single mother to her two existing children, with A.W. acting only as a sperm donor. Prior to coming into conflict over the use of the remaining embryos, A.W. had successfully petitioned an Alberta court for access to the twins. In *C.C v. A.W.* the court heard C.C.'s argument that she wished to attempt pregnancy with the remaining embryos, and A.W.'s argument that because he had insufficient visiting time with the existing children, he did not want C.C. to use the remaining embryos to have additional children using his genetic material.

Despite the agreement between the parties that A.W. would act as a sperm donor, the court criticized C.C. for "[seeing] an extremely limited role for the father".⁶⁹ The language of the Alberta court's decision emphasizes an investment in a two-parent family with a "mother" and "father" acting in complimentary roles. The court dismissed C.C.'s arguments against A.W.'s involvement in the lives of the existing children, finding that "the smothering care that she claims that the children require can be as easily interpreted as the unnecessary and potentially harmful actions of an overprotective and controlling mother."⁷⁰ However, as to the use of the additional frozen embryos, the court found in favor of C.C., finding that A.W. "extended a courtesy" in donating his sperm, that "he knew what it would be used for"⁷¹, and that the embryos were C.C.'s "chattels that can be used as she sees fit."

The court's decision here is striking in simultaneously deferring to the intentions of the two parties as to how their previously created embryos should be used, and in dismissing these intentions in finding that A.W.'s biological contribution should be used to reconfigure the parenting of the existing children to ensure they would have both a mother and a father. On the one hand, the court acknowledged that determining the best interests of the existing children and determining responsibility for the frozen embryos were two separate questions. But on the other hand, the court's decision pertaining to the best interests of the existing children suggests the likely outcome of the court's response should a future dispute over the as-yet hypothetical offspring produced from the embryos arise. In this case, and according to the Assisted Human Reproduction Act

⁶⁹ Ibid

⁷⁰ Ibid

⁷¹ Ibid

2004, C.C. was the “person for whom the embryos were created” whose consent as to their use is protected according to the terms of the Act. At the very same time, the Alberta court’s emphasis on the need for A.W. to be granted more involvement as a father to the existing children created using his donated sperm suggests that should he apply for access to any further children born from the remaining embryos, the court might very likely find in his favor.

It is relevant to the question of whether ectogenesis could destabilize gendered expectations about gestational responsibility that though the Alberta court granted C.C. rights over the frozen embryos, it also affirmed A.W.’s access to the existing children created using his sperm in spite of C.C.’s intention to parent those children alone. Acknowledgement of initial consent and intention to determine the use of frozen embryos may have eliminated gendered determinations in this dispute, but it is not clear that A.W. would not ultimately be allowed to seek access to the embryo while it was gestating if, for example, C.C. used an artificial womb. What I wish to emphasize here is that while it is true that in moving gestation outside of the body, artificial wombs open “new possibilities that could upset the traditional male-dominated family structure” (Singer and Wells 2006, 14), their capacity to do so does not equate with legal regulation, or existing social norms, subsequently allowing for this to occur. *C.C. v. A.W.* is just one case, and with reference to the emphasis on intentions over genetic relatedness in the use of embryos, there is potential in the Canadian context for a more “degendered” approach to ectogenetic gestation. But I remain skeptical of the extent to which these cases indicate that ectogenesis could destabilize the nuclear family, and argue that courts may still ultimately make rulings regarding parentage that reconfigure such arrangements to resemble the traditional family form.

THE UNITED KINGDOM

The United Kingdom is well known for the *Human Fertilisation and Embryology Act 1990*, which governs the use of human gametes and embryos at authorized clinics under the Human Fertilisation and Embryology Authority. The specificity of the Human Fertilisation and Embryology Act (HFE Act) which was first introduced in 1990 and updated in 2008, means that since the act was passed, it has been rare for embryo disputes to reach the courts. In light of this, I will consider the HFE Act here and in

addition, the 2007 *Evans v. UK* case, which was heard first in a UK lower court but ultimately decided by the Grand Chamber of the European Court of Human Rights⁷².

Schedule 3 of the HFE Act addresses the provision of consent by gamete providers as well as by those for whom embryos are intended. Both those who provide gametes, and those who the embryos are created for (sometimes the same and sometimes different individuals than the gamete providers) must consent to their use. Options are provided for the embryos to be used in treatment, donated for research, or stored for up to ten years (though this limit can be extended under some circumstances). Consent may be withdrawn by any party prior to the “use” of an embryo.

But while the language of consent provided for in the HFE Act is purportedly gender neutral, the legislation is shaped by notions of how responsibility for embryos should be established that are rooted in retaining traditional gendered reproductive roles. As fertility lawyer Natalie Gamble has noted, through the 1990 passage of the HFE Act, “parliament sought to protect (heterosexual) parents from claims from egg and sperm donors, and to protect gamete donors from financial responsibility and possible inheritance claims” (2013, np). Consequently, the initial guidance produced by the HFE Act as to under what circumstances clinics should permit the preparation and use of embryos was constructed with the intention of reproducing a traditional, two-parent heterosexual family. Regardless of whether a donated embryo was used, the woman in a couple (presumed to be heterosexual) who gestated and gave birth to a child was the legal mother. In addition, under the 1990 Act, the woman’s husband was the presumed father of the child, again, whether or not a donor was used. The original Act recognized male partners of married women as parents automatically but excluded female partners from this recognition. With the presumption of the parenthood of surrogates, it also seriously undermined the parenthood of male same-sex partners. Finally, under the original wording of Section 13(5) of the 1990 Act, fertility clinics were required to consider the best interests of a child born through IVF, including considering the “need of that child for a father.”

A notable counterpoint to claims made by Brassington (2009) and others that frozen embryos already render gender less relevant to reproductive responsibilities and ectogenesis will pave the way “to true equality” (Takala 2009, 191) in the family are the relatively limited ways that the 2008 revisions to the Act update its gendered provisions.

⁷²*Evans v. United Kingdom*. App. No. 63339/05. European Court of Human Rights, 2007.

As McCandless and Sheldon argue, though the 2008 revisions were in part intended to acknowledge same-sex couples, and were met with criticism for taking too radical an approach, “these provisions equally reflect deep rooted assumptions and highly conservative understandings about who should count as family” (2010, 176). The 2008 Act, for instance, retains the provision that the gestational mother is the presumptive legal mother at birth, regardless of whether she is acting as a surrogate and regardless of whether the embryo carries an intended mother’s genetic material. While, as noted, I do not want to speculate extensively here about parenthood determinations after the point when an ectogenic fetus is born, I want to flag the potentially significant issue that the emphasis on gestational motherhood raises here. Namely, according to the current stipulations of the HFE Act in cases of full ectogenesis, the gestational mother and therefore legal mother of the full-term fetus would possibly be the artificial womb. Given that this would produce a significant logical fallacy (how could the legal “parent” continue to take care of the fetus after birth?) the designation of mother to the birth parent would need to be revised. But with this noted, I argue that whether the law would defer to a less gendered model of gestational responsibility is unclear.

As McCandless and Sheldon note, the 2008 revisions to the Act allow female partners of women who seek IVF treatment to be recognized as legal parents on analogous lines to male partners, and notably, the revisions amended the Section 13 (5) requirement that clinics consider a child’s need for a father. Instead under this section, clinics are now required to consider the “welfare of any child who may be born as a result of treatment (including the need of that child for supportive parenting).” In considering the disposition of frozen embryos, this change should mean that the gender of the potential parents or parent should not be relevant. However, in practice, the requirement that clinics consider a child’s need for “supportive parenting” in the context of ectogenesis could retain significant gendered barriers to the implantation of the ectogenic embryo.

Based on the current provisions of the HFE Act whether a single man, two fathers, a single woman, or a group of more than two would be able to take responsibility for gestating an ectogenetic fetus would be open to potentially gendered clinical interpretation of whether these parties could provide supportive parenting. Smajdor, Bennett, Brassington and others suggest that ectogenesis may mitigate the alleged “desire of women to be able to reproduce as men do” (Smajdor 338). They go further to emphasize that the technology could result in the achievement of equality

between cis-gendered, heterosexual men and women by allowing such couples to choose to gestate using an artificial womb. But given the provision for clinics to consider “supportive parenting”, it could well be that cis-gendered, heterosexual women would be most likely to be proscribed from elective use of an artificial womb. As Smajdor notes, the idea of ectogenesis having merit simply because it could provide women with an alternative to pregnancy has been continually dismissed by both scientists and ethicists. Smajdor (2007) and Kendal (2015), who are each adamant that the technology could produce gender equality, themselves note that this dismissal is likely associated with deeply ingrained cultural investment in gestational motherhood as a social good. Rather than ectogenesis acting as a means of disrupting this narrative, I would argue based on contemporary law that the narrative of the gestational mother as the “true” mother that Kendal and Smajdor note is in fact likely to shape how and whether ectogenesis is permitted. Given the sanctity of gestational motherhood in UK law⁷³, it seems likely that unless a woman could not physically gestate or give birth, a desire to simply “reproduce as men do” (340) by using an artificial womb might in itself be seen as an absence of “supportive parenting”. It may also be unlikely that ectogenesis would grant men the ability to “be the primary nurturer” (Pence 2006, 78) or to intervene in a pregnancy that would otherwise be terminated as some bioethicists have purported (Welin 2004, Brassington 2009). Given that clinics are required to consider “supportive parenting” of the future child, there may be concerns that a fetus that was unwanted by a pregnant person and transferred into an artificial womb under the care of another progenitor would be born into emotionally fraught circumstances. To be clear here, I am not seeking to make a judgement about the requirement for clinics to consider supportive parenting, but simply to consider how it might be applied in the use of ectogenesis. Thompson notes of the decisions taken by clinical practitioners in a US IVF clinic about whether to offer individuals treatment were in part shaped by “the baby-centered heterosexual nuclear family [. . .] that is normative for the society in which these clinics are positioned” (2005 92). Following Thompson, I would argue that

⁷³ It is worth noting here the very recent *R on the Application of TT* (2019) case, in which a trans man who had given birth to his child sought to be recognized as the child’s legal father. The court ruled that TT was a “male mother.” While acknowledging TT’s legal gender as male, the court held that as the person that had gestated the pregnancy, he was a legal mother, not a father. This case, which is set to be appealed, raises many questions that might be relevant to the regulation of ectogenesis. Among them, it speaks to the way in which ideals of gestation as something a *mother* does or should do might be likely to circumscribe the use of an artificial womb under precisely the circumstances (for elective use by a cisgendered, heterosexual couple) in which some authors have alleged the technology could produce new equality in reproductive roles (Pence 2006, Smajdor 2007).

the families that emerge in these contexts and are likely to emerge through ectogenesis, cannot simply be said to be uniformly forced into a nuclear norm. There is of course agency on the part of individuals seeking fertility treatments, clinical practitioners, judges, and other parties that are involved here. But what I wish to emphasize is that traditional narratives of family and the gendered relations that structure those narratives are likely to inform who is allowed to use ectogenesis. Lest I imply that what is “normative for the society” (Thompson 2005, 92) in which the US IVF clinic is positioned is interchangeable with what is normative for the UK society in which UK clinics must consider the need of a child for “supportive parenting,” as I have emphasized throughout this thesis, there are important distinctions between the constraints of each of these contexts. But in each setting, normative social ideals as to appropriate gender roles in a family and how that family should be formed, inform the conditions under which use of ectogenesis is likely to be permitted.

McCandless and Sheldon write, “in the context of widespread political and cultural disagreement regarding on what grounds parents should be recognized, acceptance of the fact that we can have two and only two ‘real’ parents has proved a unifying article of faith” (2010, 190). Given that two cis-gendered men would already be expected to have to contract a gestational carrier, the Human Embryology and Fertilisation Authority might look favorably on such couples using the technology (rather than involving a surrogate) and being identified as legal parents during gestation. So too with heterosexual couples in which the woman was physically unable to carry a pregnancy.

I want to turn now to the landmark *Evans v. U.K.* case. When Evans was diagnosed with ovarian cancer, she sought to preserve her ability to have genetic children. While given the option of freezing her unfertilised eggs, the clinic advised Evans that freezing fertilised embryos was a safer option, and her partner “Mr. Johnston reassured Ms. Evans that they were not going to split up. She did not need egg freezing”⁷⁴. Evans and Johnston therefore produced and stored six embryos. Following Evans’s cancer treatment, the couple separated, and Johnston subsequently wrote to the clinic withdrawing his consent. Evans appealed to the High Court, which rejected her claims and found in Johnston’s favor, and the case went to the European Court of Human Rights before ultimately going to the Grand Chamber of the European Court,

⁷⁴ *Evans v. United Kingdom*. App. No. 63339/05. European Court of Human Rights, 2007.

with each court finding in favor of Johnston on the grounds that as a gamete provider he had the right to withdraw his consent. The case presented the first interpretative test of the Human Fertilisation and Embryology Act and specifically, of how and when consent to the use of ones' gametes was to be required. The court weighed Evans's argument for respect for private family life against Johnston's and found that it was necessary to infringe on Evans's privacy to protect fundamental rights and freedoms.

Upholding the decisions of the lower courts, the Grand Chamber affirmed that Paragraph 2(1) (a) of Schedule 3 provides for an important distinction between consenting for the embryos to be used by another person alone, and consenting to use them with "another specified person together". While Johnston had consented for the embryos to be used in "treatment together" the court affirmed that because the couple had separated and the embryos would now be used by Evans alone, Johnston was entitled to withdraw consent. As I have noted in the Canadian context, the use of a consent-based model here could provide grounds for the gender neutral responsibility in ectogenesis that Bennett and others have extrapolated from it. But, returning to a theme I have traced throughout embryo dispute cases, normative ideas of what a father's role is in a family permeate the court's decision.

In the decision upheld by the Grand Chamber, the court noted that "there are a number of possible reasons for requiring the consent of the genetic father at all stages. It can be said that it is important to involve the male at all stages so as to ensure that he will be involved in the upbringing of a child"⁷⁵. The court went on to consider Evans's desire not to be a genetic father in terms of concern that having an absentee father could result in damage to the child, holding that "it may be that [...] if the father were to reject the child, that could be distressing for both parties[] even without meeting the child, the father's own freedom of action may be inhibited by feelings of guilt or even responsibility."⁷⁶ As in *Davis v. Davis*, the imagined impact on a future child of having an absentee father is plain here, and reiterates the notion that a genetic relation automatically begets an emotional, financial, and/or social bond. While, as Takala, Pence, Bennett and others imagine, ectogenesis may present the opportunity for gender no longer being a considered factor in gestation, existing statutory and case law on frozen embryos in the UK, as in Canada and the United States, would suggest that ectogenesis is unlikely to mean the arrival of "true equality" (2009, 191) of gestational

⁷⁵ *Evans v. United Kingdom*. App. No. 63339/05. European Court of Human Rights, 2007.

⁷⁶ *Ibid*

responsibility and family-making. As Zakiya Luna argues, “to be more productive technology users would need to align themselves more closely with the maligned disruptors of ideas of the family [. . .] To truly change the family we have to embrace the discomfort of deviance” (2018, 99). This too, can be said of ectogenesis. Truly “degendering” gestation would require first a “degendering”, and de-normalizing those institutions that currently either exclude “maligned disruptors of ideas of the family” entirely or reconfigure these families to more closely resemble a nuclear one.

In the second half of this chapter, I want to turn to considering the possible relationship between ectogenesis and contemporary inequalities in access to reproductive care. Dorothy Roberts, writing in the mid-1990s, made a compelling point about in vitro fertilisation that I believe acts as a useful bridge here between thinking about gendered family relations and thinking about stratified reproduction with respect to ectogenesis. Roberts observed that IVF was often positioned as a means for women to delay reproduction in order to build their careers. She cautioned that “relying on expensive interventions to resolve the tension between child-raising and work destroys the possibility of unity in women’s struggle for fundamental change in the sexual division of labour” (1997, 292). Roberts emphasizes that approaching reproductive technologies as possible “solutions” to gender inequality is only likely to continually leave behind the women who are already most marginalized. The same can be said for an uncritical approach to ectogenesis as a tool for achieving gender inequality in and of itself. I have identified one strain of bioethical and feminist literature that purports that ectogenesis could serve to “alleviate [...] social injustice” (Smajdor 2007 337) by negating reproductive difference between men and women. Just as this literature takes for granted that there are only two genders, by treating “men” and “women” as monolithic categories whose relations would change with the introduction of this technology, it also negates difference within these groups across race, class, geographic location, ability, and other lived realities.

5.2 ECTOGENESIS AND STRATIFIED REPRODUCTION

For the final part of this chapter, I want to turn to considering to a concern flagged by numerous feminist scholars, namely the possibility that ectogenesis could exacerbate existing social inequalities between women (Corea 1985, Rowland 1987, Kamm 1992, Woolfrey 2006, Sander-Staudt 2006, Limon 2016, Langford 2017). As Limon notes in her critique of Kendal’s “liberal feminist” analysis of the artificial womb, given that

reproductive oppression is experienced in different ways based on race, class, ability, sexual and gender identities, among other characteristics, the possibility that ectogenesis could constitute an additional reproductive “choice” for some women may mean it could constitute an additional danger for others. Sander-Staudt considers the history of “emancipatory” reproductive technologies such as birth control pills, which were also used coercively for population control projects directed at women labelled by the state as undesirable mothers. Sander-Staudt notes the same danger in ectogenesis, cautioning that “women who are already socially underprivileged due to race, class, sexual orientation, or nationality [. . .] may be compelled to use such technologies should certain social institutions deem them unfit to begin or continue an organic pregnancy” (114).

Each of these arguments deals with what Colen termed “stratified reproduction,” referring to the persistence of inequity of access to reproductive care and technologies across “hierarchies of class, race, ethnicity, gender, place in a global economy, and migration status” (1995, 78). These hierarchies, which have been shaped and reinforced by colonialism and racism, are rooted in histories that begin well before the introduction of reproductive technologies such as the birth control pill. As I will discuss, they also live on in contemporary practices and policies in the United States, Canada, and the United Kingdom.

Feminist scholars who emphasize that claims that ectogenesis “could [...] free the mother” (Adinolfi 2004, 570) must be understood in conjunction with historical and contemporary inequity in access to and experiences of reproductive technologies make an important intervention in the literature on artificial wombs. Thinking informed by a reproductive justice framework means not solely centering a limited right to end a pregnancy, but, as Ross writes, recognizing that

for Indigenous women and women of color it is important to fight equally for (1) the right to have a child; (2) the right not to have a child; and (3) the right to parent the children we have, as well as to control our birthing options [. . .] (2007, 4)

In the context of thinking about the impact of ectogenesis, I argue that we must explore in concrete ways whether ectogenesis could undermine pregnant peoples’ rights to continue to carry a wanted pregnancy.

Many of the feminist scholars who express the strongest concerns about the danger that ectogenesis could worsen inequity in access to reproductive care write from

the context of the United States (Corea 1987, Murphy 1989, Adams 1995, Sander-Staudt 2006). I have come across no literature on this subject written from a Canadian context, but both Alghrani (2008) and Jackson (2009) briefly consider possible inequities in experience of ectogenesis across racialized and classed lines. I have identified in earlier chapters of this thesis a tendency for universalizing claims to be made in the American literature which do not hold true in the context of the United Kingdom and Canada. In feminist literature in which scholars raise concerns about the effect of ectogenesis on inequality in access to reproductive care, aspects of this pattern are evident. Most notably, scholars frequently neglect to note that the privatized healthcare system creates a financial stratification in the United States that is particularly pronounced. Yet this body of feminist literature also raises concerns about structural racism and its impact on access to and experience of reproductive technologies, an issue that is deeply relevant in the UK and Canadian context as well. As I will explore further in what follows, comparison here in fact draws these similarities to the fore. In the first part of this section, I will consider structural racism in reproductive care in each of these nations. While dealing with medical institutions and not with the law, I want to include this engagement here because it is relevant to broader questions of how artificial wombs may worsen, have no impact on, or improve existing inequalities in care.

In the second part of this section, I turn to the concern raised in the feminist literature that by virtue of the existence of ectogenesis, pregnant people deemed insufficient or problematic caretakers for their fetuses (such as women in prison and women who have consumed alcohol in pregnancy) would be forced to use artificial wombs. I explore this question with specific reference to what could be limited or enabled by existing laws and policies in the United States, United Kingdom, and Canada respectively regarding intervention in wanted pregnancies.

5.3 ARTIFICIAL WOMBS, STRUCTURAL RACISM, AND ANTENATAL CARE

Beyond the claim that ectogenesis could produce greater equality, many scholars have also cited the health risks of pregnancy as a positive incentive for developing the technology (Pence 2006, Singer and Wells 2006, Smajdor 2007, Kendal 2015, Coleman 2004). Indeed, given that so much of the social science literature on ectogenesis (including this thesis) deals with abortion and questions about how the technology might impact the future of gender and parenthood, it can be easy to forget the clinical

importance of artificial wombs. The primary scientific and medical justification for these technologies has been to save the lives of extremely preterm wanted babies, and improve health and survival for people experiencing complications in pregnancy (Partridge et al 2017, Usuada et al 2017). The scientific researchers doing this work have identified that maternal morbidity and mortality remains high, and that when babies are born at the cusp of viability even survive, they frequently suffer significant health consequences. For these research teams, artificial wombs stand to be a revolution in maternal and preterm care. The feminist literature often critiques the focus of scientific researchers on the health of the fetus, emphasizing that ectogenesis should be a worthwhile goal solely for its capacity to alleviate the impact of pregnancy on women's health (Firestone 1979, Smajdor 2007, Lewis 2018, Kendal 2015). Lewis and Smajdor each observe that the fact that the symptoms of an ordinary pregnancy can range from morning sickness to death should be reason enough to take research on ectogenesis seriously. While I agree with these scholars that the possibility that artificial wombs could alleviate the risks of pregnancy is a worthy goal, I would also emphasize firstly that the scientific literature, too, acknowledges this goal. Secondly, I would note that taking a relational feminist approach to thinking about pregnancy also means acknowledging that the goal of improving care for a prematurely born baby is also emphasizing the pregnant person's needs in many instances.

I too want to take seriously the possible benefits of both partial and full ectogenesis for providing reproductive care in a wanted pregnancy. Biologist Adinolfi writes that beyond "free[ing] the mother from the discomfort and potential risks associated with pregnancy" (2004, 570), the artificial womb might be useful in numerous situations, such as blood incompatibilities between gestator and fetus, prenatal surgery, and other practices that could be dangerous for both the pregnant person and the wanted fetus. In what follows, I consider existing inequalities in risks and outcomes for pregnant people and preterm babies and argue that for artificial wombs to be beneficial they must be accompanied by structural and social change across each jurisdiction.

THE UNITED STATES

Once trialed and demonstrably safe for both the pregnant person and the extremely prematurely born baby⁷⁷, partial ectogenesis like the biobag could have the greatest impact on improving maternal health rates overall if made available to the women most likely to experience preterm birth or complications in the latter stages of a wanted pregnancy. As Novoa and Taylor (2018) and Matoba and Collins (2017) have thoroughly tracked, rates of maternal mortality and morbidity among black women in the United States remain unconscionably high. Novoa and Taylor write that as of 2018, “African American mothers are dying at three to four times the rate of non-Hispanic white mothers, and infants born to African American mothers are dying at twice the rate as infants born to non-Hispanic white mothers” (2018, np). Technologies like the biobag, as Adinolfi and others argue, could have significant clinical use in addressing these high rates of maternal mortality and infant morbidity if, firstly, the technology were readily available, and secondly, if it were the case that the primary cause of these high rates of maternal and infant morbidity was lack of access to advanced life-saving technologies. As to the possibility that biobags will be readily available, under current circumstances, the costs of staffing and equipping Neonatal Intensive Care Units (NICU), and for pregnant people, the cost of such care, are extremely high (Cohen and Sayeed 2011). In the United States, then, biobags are likely to first be available only in specialist care units and at high cost to the patient. Barring a change to the financial cost of healthcare in the United States, then, a disparity in access to the biobag along classed lines is inevitable. As regards morbidity and mortality among women of color but particularly black women in the United States, however, these disparities remain when studies control for income (Matoba and Collins 2017; Novoa and Taylor 2018). As Novoa and Taylor note in their review of the literature, these health outcomes cannot be solely traced to a lack of access to life-saving technologies, a fact which suggests that the introduction of a biobag in and of itself would do little to mitigate them.

While one aspect of these disparities can be traced to “significant underinvestment in family support and health care programs” (Taylor, Novoa, Hamm and Phadke 2019), which disproportionately impact black families, significant recurring factors are discrimination in the hospital setting and maternal stress produced by the persistence of structural racism. Though Firestone did not write about ectogenesis with

⁷⁷ The question of the ethics and the challenges of conducting such trials is an extremely important area where research has already begun. See Romanis 2018, 2019.

consideration of race in the United States, and indeed, discussion of racism is conspicuously absent from her treatise, her argument that the technology could only be emancipatory after a revolution is relevant here. I would argue that it may indeed be the case that once demonstrably safe, bio-bags should be distributed in the United States to ensure that the pregnant people who are currently the most impacted by maternal morbidity and mortality as well as high rates of preterm birth have access. This is a point on which significantly more research engaging both patients and medical practitioners should be done. But I want to emphasize here that these disparities in access to maternal care, given that they stem from systemic inequities, would not be redressed with the introduction of ectogenesis without also addressing the root causes. As Taylor, Novoa, Hamm, and Phadke write, “the maternal and infant mortality crisis cannot be adequately addressed without first understanding and then dismantling racism and bias in the health care system” (2019).

THE UNITED KINGDOM

In contrast to the United States, the universal healthcare system in the United Kingdom means that access to reproductive care is broadly more consistent. But despite the low overall rates of maternal morbidity and mortality and as well as low rates of inequity in access to neonatal care overall, disparities remain along racial lines. Notably, “in 2012-14 the risk of maternal death was much higher for black and minority ethnic background women compared to white women. The stillbirth rate for white women in the UK was 4.5, while for black women 9.2 and for Asian 7 (per 1,000 maternities)” (*Access to Health and Midwifery* 29). Further, studies which consider circumstances where mothers come close to death reflect rates “for African and Afro-Caribbean women [that are] double those for White women” (Smalls et al 2018). As in the United States, these disparities remain even after adjustments for socio-economic status and health risk factors. Research as to the causes of these discrepancies cite “disrespect from healthcare providers” (ibid) as well as ineffectual and insensitive communication from providers as key determinants.

Since 2013, measures have been taken to address racial disparities in neonatal care, through targeted training of healthcare professionals, resulting in a decrease of maternal mortality and morbidity for African women, but this rate still remains higher than for white women. Particularly in the context of the United Kingdom, where NHS antenatal care is available, these discrepancies indicate that bio-bag technology would

need to be accompanied by requisite structural and social changes in order to create change. Without such changes, as Jackson has noted, we would see a “counterpoint to claims that artificial gestation would benefit women as a class” (2009, 410), as it may be likely that there may be improvements to maternal morbidity and mortality and care for premature babies overall, but no requisite change in these racial inequities.

CANADA

As in the United Kingdom, the public health care system in Canada means that disparities in access to maternal and neonatal care are not as extreme as they are in the United States. However, maternal morbidity and mortality in Canada are higher among recent immigrant populations and Indigenous women (Kolahdooz et al 2016). Morbidity may include “complications in pregnancy and childbirth, such as hemorrhage, infections, high blood pressure, ectopic pregnancy, preterm birth, unsafe abortion and obstructed labor” (334). A number of these health concerns are precisely those identified by bioethicists and scientific researchers as possible circumstances in which women’s health might benefit from the use of a partial or full artificial womb (Partridge et al 2017, Smajdor 2007, Gefland 2006, Coleman 2004). As Kohladooz writes, while the risk of maternal mortality and morbidity are both low overall in Canada, “Indigenous women in Canada have a two times higher risk of maternal mortality in comparison to the general Canadian population” (2016, 335) and also “experience higher rates of adverse outcomes including stillbirth and perinatal death, and, in some cases, low-birth-weight infants, prematurity and infant death” (Kohladooz et al 2016, 335). In a review of numerous studies on the causes and possible responses to this disparity, Kohladooz et al note that many scholars emphasize the need to improve geographical access to care. Conversely, Kohladooz et al also emphasizes that improvement of outcomes in these circumstances is not simply reducible to the availability of healthcare providers or technologies, but also requires active engagement with the perspectives of Indigenous Canadian women, the situating of maternal services within communities, and cultural sensitivity to the importance of place for Indigenous pregnant people. In particular, Kohladooz et al note the importance of “educating [health care providers] to understand Indigenous history and by valuing Indigenous maternal traditions and prenatal knowledge” (Kohladooz et al 2016, 344).

As in the United States and United Kingdom, then, racialized health disparities are not reducible to a question of better access to clinical expertise and advanced

neonatal technologies. Instead, as Kohladooz et al suggest, in the Canadian context, addressing stratification in sufficient care for pregnant people is more likely to be rooted in contemporary issues as to the provision of culturally sensitive practices, and active engagement with community knowledge. The introduction of ectogenesis in this context, then, may be unlikely to worsen existing stratification in care, but is also unlikely to improve it. In addition, Kolahdooz et al emphasize, considering the present situation, that one particular area for improvement is for healthcare providers to appreciate the history of Indigenous people in Canada, include the ways that white Canadian institutions have used reproductive technologies to eugenic ends, have both removed children from Indigenous families and communities and sterilised Indigenous women against their will. The idea that ectogenesis “would not only free women from pregnancy, but [. . .] take away the grounds for oppression and eventually, lead to true equality” (Takala 2009, 191), which arises in much of the literature, then, is also inattentive to existing stratifications in reproductive care and is contextually specific.

Contemporary racialized disparities in preterm births and maternal morbidity and mortality lay bare the importance of thinking about the artificial womb as a technology that can only be as innovative as the social context into which it arrives. Roberts (1997) notes that considerations of the impact of new reproductive technologies that proceed only with imagining how the technology may increase healthcare choices centralizes a subject for whom healthcare and basic rights against discrimination and structural oppression are presumed to be already stable. Roberts argues that this tendency “operates like blinders that obscure issues of social power that determine the significance of reproductive freedom and control [...] not by ignoring them altogether, but by claiming to achieve individual freedom without the need to rectify social inequalities” (1997, 298). The artificial womb then, can be imagined as a technology that could radically decrease maternal morbidity, but if it is considered only in the sense of its capacity to empower individual choice, rather than analyzed within the context of existing social inequalities, it cannot move a collective project of reproductive freedom forward.

5.4 ECTOGENESIS AND REPRODUCTIVE COERCION

The concerns of some feminist scholars (Corea 1985, Sander-Staudt 2006, Murphy 2006) that ectogenesis might be forced on women considered to be “unfit” mothers are often dismissed in the broader bioethical literature as paranoia (Singer and Wells 2006,

Coleman 2004). Yet these concerns find justification in the context of recurring suggestions that ectogenesis might be safer for fetuses than human pregnancy (Singer and Wells 2006, Reiber 2010). Kaczor writes that “partial ectogenesis may someday become less risky than normal gestation, since an artificial womb would not, presumably, get into car crashes, slip and fall, or be assaulted” (2005, 298). Similarly, Pence suggests that ectogenesis could be used to “change the gestational course for a poor baby of an alcoholic mother from being born addicted to alcohol and retarded to being born alcohol free and with superior nutrition and oxygenation” (2006, 82).⁷⁸ While feminist scholars have been attentive to the way such proposals might be used to coerce women to use an artificial womb, with the exception of a brief note in Jackson (2009) and Abecassis’s (2016) work there has been little engagement with precedent in existing law that might allow or prevent such intervention from occurring. In what follows, I consider the extent to which existing laws or policies might prevent or enable coercive use of artificial womb technology.

THE UNITED STATES

Paltrow and Flavin have tracked “more than four hundred” (2013 300) instances of pregnant women being detained on charges of endangering their fetuses “in forty-four states, the District of Columbia, and federal jurisdictions from 1973 to 2005” (300). In the majority of these cases, pregnant people were arrested and detained on the grounds that they had exposed their fetuses to harmful substances. As Paltrow and Flavin, Ross and Solinger, West, and others have traced, numerous states have statutes under which courts have been allowed to take such actions.⁷⁹

A Wisconsin statute, for instance, allows the state to detain people believed to be pregnant who “demonstrate ‘habitual lack of self-control’ in the use of alcoholic beverages or controlled substances” (Wis. Stat. Ann. § 48.193 cited in Paltrow and Flavin 2013). Similar statutes are also in place in Minnesota and South Dakota, and while not every state has statutes that explicitly apply to actions in pregnancy, Paltrow

⁷⁸ As Hendricks notes, these kinds of claims “resonate with a prevailing cultural view of pregnant women as threats to their fetuses” (2011, 411), and proceed with the unsubstantiated assumption that either the artificial womb itself and/or those monitoring the artificial womb will provide infallible care to the fetus.

⁷⁹ Future research could also be done to consider the relationship between discourses of preventing risk to foetuses by extracting them to artificial wombs to be adopted and existing practices of forced adoption. I do not take up this comparison here because I believe that we may learn more about what needs to be addressed in advance of the introduction of artificial wombs by focusing on the forms of legally permitted reproductive violence that have occurred even where the fetus remains inside a person’s body.

and Flavin also identify increasing use of statutes intended to protect older children in order to criminalize pregnant people for harming their fetuses. While drugs or alcohol are cited as the primary issue in these cases to justify detention, other activities were also referenced as concerns for medical practitioners and police, such as the presumption that the pregnant person had not actively sought prenatal care or “gave birth at home or in another setting outside a hospital” (ibid). As Ross and Solinger (2017) aptly demonstrate, criminal cases like these actively target poverty: a lack of seeking prenatal care, for example, in the privatized healthcare system of the United States, speaks to a lack of resources with which to enable someone to seek such care. Were a wealthy person to drink or use drugs and give birth at home, it is unlikely that the police would become involved. Cases involving drug use in particular are disproportionately targeted at low income pregnant people, and widely disparate according to race:

Overwhelmingly, and regardless of race, women in our study were economically disadvantaged, indicated by the fact that 71 percent qualified for indigent defense. Of the 368 women for whom information on race was available, 59 percent were women of color, including African Americans, Hispanic American/Latinas, Native Americans, and Asian/Pacific Islanders; 52 percent were African American (Paltrow and Flavin 2013 311)

While scholars such as Pence and Gefland speculate about the possible uses of the technology to preserve the health of the fetus from a mother who may expose it to “harm”, they do so without reference to the ways in which existing statutes such as those traced by Paltrow and Flavin already allow the state to intervene in such cases. To return to the concerns of Sander-Staudt, Woolfrey, and others that ectogenesis could result in some women being coerced to use the technology, the application of statutes to arrest and detain a pregnant person is not interchangeable with enforced extraction of a fetus to an artificial womb for the duration of the fetus’s gestation. But the legally permitted detention of pregnant women for actions against their fetuses in the United States does present a precedent for the possibly coercive use of ectogenesis that some feminist scholars identify.

A particularly prescient example here is the case of Martina Greywood, an Indigenous woman who was arrested and detained in North Dakota on charges of exposing her pre-viable fetus to toxins. While awaiting trial, Greywind sought an abortion. On learning of Greywind’s abortion, the state dropped the case, finding that it

was no longer relevant.⁸⁰ To return to the concerns that Murphy and Corea express over ectogenesis being used coercively, if a woman such as Greywind were arrested for exposing a previable fetus to harm, she could be informed that the charges may be dropped should she allow the fetus to be extracted to an artificial womb. In this instance, the introduction of artificial wombs could raise a very real probability in the United States not of fetuses being forcibly extracted from women's bodies, but as in the Greywind case, of a pregnancy being ended by "choice" by a person who would face substantive criminal charges if they did not comply.

Equally, as Smith notes of a review of drug rehab centers in the United States, "two-thirds of drug treatment centers would not treat pregnant women" (2017, 158), and, as Paltrow and Flavin tracked, many such centers are the sites of pregnant women being referred to the police. In contemporary situations in which a drug or alcohol-using pregnant person has sought rehabilitation, she risks being criminalized and detained. In the future, the use of an artificial womb may be offered as a means of receiving treatment and avoiding criminalization. Where a pregnant person may need to consent to such an exchange, given that the choices would be between criminalization without treatment and fetal extraction, the situation would remain coercive. Based on existing precedent, this kind of coercion would not be circumscribed by US law, as it would involve no forced bodily procedure, and would uphold state statutes targeting drug use in pregnancy. What is also significant here, however, is that as I have previously argued, at least in its initial stages, the artificial womb is likely to be costly and not widely available. The purpose of considering these questions then, should be to identify that there is a clear contemporary context that would allow artificial wombs to be used in coercive ways with the approval of the law, in order to address these limitations well before the technology arrives.

THE UNITED KINGDOM

In the United Kingdom, there are no statutes to allow the state sanctioned surveillance and punishment of pregnant people for consuming substances that may harm their fetuses. Strong precedent has been established against attempts to criminalize pregnant women for actions against fetuses. Most recently, in 2014, *CP v. First Tier Tribunal and Criminal Injuries Compensation Authority* was heard by the Court of Appeals. This

⁸⁰ Martina Greywind Motion to Dismiss with Prejudice, *State v. Greywind*, No. CR-92-447 (N.D. Cass County, Ct. Apr. 10, 1992)

case involved a claim made on behalf of a six-year-old girl who had fetal alcohol spectrum disorder against her mother for injuring her in utero. Beginning with the Criminal Injuries Compensation Authority, “which refused the claim on the grounds that she had not been a victim of violence”⁸¹ the case continued to the Court of Appeal, where the court affirmed CICA’s stance. The Court of Appeal established that the case was not analogous, as the claimants argued, with *Attorney Generals Reference (No.3 of 1994)*. In this case, a man stabbed his pregnant girlfriend, resulting in significant injuries to the woman and the premature birth of her baby, who died shortly after birth. In *Attorney General’s Reference*, harm was caused to a person (the pregnant woman) resulting in the death of a person (the baby born prematurely, who later died due to injuries caused in the stabbing). The court in *C.P. v. CICA* clearly establishes this as distinct from the circumstances of harm caused by drinking in pregnancy, noting that “an essential ingredient of the offence [...] is the infliction of grievous bodily harm in a person. Grievous bodily harm to a foetus will not suffice” (19). The court also considered the claimant’s argument that an offence had been committed under Section 58 of the Offences Against the Person Act 1861, referring to the prohibition against a woman administering poison to herself with the intent of causing miscarriage, and found that this did not apply because the pregnant person had not consumed alcohol with the intention of having a miscarriage. The court took a firm position that “in English law women do not owe a duty of care in tort to their unborn children” (19). As a test case that was an attempt to establish a crime of consuming toxins while pregnant, *C.P. v. CICA* instead had the effect of establishing a clear precedent against treating such actions as a crime. The possibility that because “artificial wombs [...] wouldn’t be threatened by irresponsible introductions of alcohol or illegal drugs” (Rosen 2003, 72), some women might be forced into use, is likely to be strongly censured in the UK.

This does not mean, however, that coercive use of ectogenesis would not occur. Alghrani briefly considers the danger of drug or alcohol using pregnant women being forced to use artificial wombs but asserts that barring a significant change to the legal status of a fetus, this would be prohibited under English law. While I agree that it is improbable that a pregnant person would be legally ordered to have her fetus extracted into an artificial womb in the UK, it is necessary to think about how coercion can operate without requiring the force of law. In her short consideration of whether women

⁸¹ CP (A Child) v First-Tier Tribunal (Criminal Injuries Compensation) [2014] EWCA Civ 1554

could be pressured to use artificial wombs, Jackson (2009) makes the point that if the technology were to come to be seen as safer for the fetus than human gestation, people with “a less than ideal lifestyle” (361) may find themselves placed under social pressure to use ectogenesis. Jackson does not consider specific examples, and in what follows, I explore two sites through which this kind of social pressure might operate.

First, in the contemporary UK, the two child benefit limit on universal credit means that as of 2017, recipients of universal credit cannot receive additional support for a third or additional child born after April 2017 unless they were “born as part of a multiple birth [or] born as a result of a non-consensual conception (including rape) or conceived when [the pregnant person was] in a controlling or coercive relationship” (Universal Credit, 2019). In the second and third instances, a woman must also be able to prove she is not living at an address with the abuser at the time of making the welfare claim, a stipulation that significantly overlooks the realities of abusive relationships. As the British Pregnancy Advisory Service has stated in criticism of the credit limit, in many situations of abuse, women remain with abusive partners for reasons including financial dependency and a fear of loss of access to their children. The exceptions to the two child limit, which are provided to account for situations in which the birth of a child is beyond a woman’s control, much like the specifications permitting abortion in the Abortion Act 1967, do not account for the breadth of reasons why a person may become pregnant with an additional child, or why they may continue that pregnancy.

As the British Pregnancy Advisory Service has argued, the welfare cap “fails to meet its stated aim of ensuring that individuals in receipt of welfare supports face the same choices about having kids as those in active employment do [and] traps families in poverty”. Most notably, the policy has significant implications for reproductive choice. It explicitly invites women to consider abortion in order to provide for their existing children, using the language of encouraging people “to think carefully about whether they can afford to support additional children” (British Pregnancy Advisory Service 2019). The universal credit limit is distinct from American statutes in which pregnant people might feel coerced into using ectogenesis in order to avoid criminalization in that the consequences of continuing a third pregnancy do not extend to detention or incarceration. But, given that a number of scholars have proposed that ectogenesis could be used electively by women who did not wish to continue a pregnancy (Smajdor 2007, Kendal 2015), were policies actually in place to allow elective use, women reliant on universal credit might be presented with ectogenesis as a “choice.” Electing ectogenesis

would allow them to continue to receive support for their existing children while also not terminating a fetus. In such instances, social inequity would be a factor in generating pressure to use an artificial womb.

The second example I want to consider here is the related, non-governmental but judicially supported PAUSE project. PAUSE is a charity that works with women who have more than one child who has been removed from their care. The project “offers women an 18-month, individually-tailored, intensive package of support”, which they are able to access if “beginning this voluntary programme, women agree to use an effective form of reversible contraceptive for the 18-month duration of the programme” (McCracken et al 2017). The PAUSE project has already been purchased by “34 local authorities”, with plans to expand to coverage for women considered to be “at risk”, meaning, those without children who are judged by the program to be at risk of having children who would be taken in to care. PAUSE again works on a model of voluntary compliance: an agreement to use long acting birth control in exchange for support and rehabilitation. But given the lack of alternative broad-reaching support programs for women who, as many of the members of the program have, face issues ranging from domestic violence, homelessness, and drug and alcohol use, the voluntary choice to use long-acting birth control again occurs under circumstances in which the opportunity for choice are limited. In this instance, there is a striking parallel between the United States context, in which the provision of welfare has long been associated with punitive measures and coercive pressure for women to use long-acting contraceptives (see Ross and Solinger 2017). In both contexts, this is an example of the necessity that provisions for choice be accompanied by resources in which to actually enact those choices in the absence of external pressure. As Roberts writes, we cannot solely be concerned with choice, we “should also be concerned about the quality of options available [...] it is possible that all the alternatives decrease [a person’s] control over her reproductive health” (1997, 136). In the context of the United Kingdom practices such as the choice between a prison sentence or the use of ectogenesis would be likely to be roundly condemned, but both the two-child benefit limit and the PAUSE project should be taken as examples of sites wherein the option of ectogenesis could result in reproductive coercion.

CANADA

As in the United Kingdom, Canada does not have statutes in place that criminalize women for the consumption of drugs or alcohol in pregnancy. In 1997, the Canadian Supreme Court made a decisive interpretive ruling in *Winnipeg Child and Family Services (Northwest Area) v. G (D.F.)*. Winnipeg Child and Family Services sought permission from the Manitoba Court of Queen's Bench to hold a woman (G) who was twenty-two weeks pregnant in treatment for glue-sniffing until she had given birth. The order was granted by this court but reversed on appeal, and when the case was ultimately appealed to the Canadian Supreme Court, the reversal was upheld. The Supreme Court affirmed that a fetus is not a legal person in Canada, and that to detain the woman would violate all women's rights under *Morgentaler*'s protections to bodily autonomy and liberty.⁸² At the highest level of the Canadian justice system, then, there is strong precedent against criminalizing women for actions against their fetuses. There is also broad precedent toward affirming that a fetus is not a person until birth. Given this, it is likely that Canadian law would prohibit people being coerced to use the technology to avoid criminalization.

But as in the United Kingdom, existing practices that are not mandated by law must be considered with reference to feminist concerns that ectogenesis could be used coercively. I want to consider one particularly pressing example. In the recently released final paper of the National Inquiry Into Missing and Murdered Indigenous Women and Girls, the nonconsensual sterilization of Indigenous women is noted as a means of genocide, a project beginning in the 1920s by which "sterilization was viewed as a way to eventually eliminate the Indigenous population entirely" (*Reclaiming Power and Place* 2019, 266). As the authors of the report note, while statutory laws permitting forced sterilization in Alberta and B.C. were repealed in the early 1970s, these abuses have continued to occur throughout the country. Class action lawsuits on behalf of Indigenous women who have experienced tubal ligation (a sterilization procedure) without consent, often while in hospital recovering from the birth of children, are underway across Canada (Kirkup 2018, Kusmer 2018, Boyer and Bartlett 2017). Three of these suits have been filed against the Governments of Alberta, Saskatchewan, and Manitoba, with the experiences reported by claimants spanning the 1980s through to 2018.

⁸² *Winnipeg Child and Family Services (Northwest Area) v. G. (D.F.)*, [1997] 3 S.C.R. 925

To turn back to the question of potentially coercive uses of artificial womb technology, these cases are not indicative of the possibility of a situation in which a woman would face coercion in the form of a “choice” between criminalization and ectogenesis, as I suggested could be possible in the US context. Nor are they suggestive of the “choice” between losing vital resources and ectogenesis that I have indicated in the United Kingdom. However, the cases addressed in these lawsuits involve practices condoned within Canadian hospitals whereby many women were given false information about tubal ligation procedure immediately after giving birth, and many involve situations in which “women were denied access to their newborn babies unless they agreed to the procedure” (Kirkup 2018). A situation in which a woman might be coerced into using an artificial womb is importantly distinct here, in that this would involve coercive action at the beginning of a pregnancy, whereas these cases refer to such actions after birth. However, the significant history of coercive and forced sterilization of Indigenous women in Canada, and the absence of specific legislation to ban these procedures, suggests that practices of offering ectogenesis without provision of actual informed consent or under coercive circumstances could occur in Canadian hospitals. Where, as in many of the instances of contemporary sterilization abuse, hospitals could demonstrate that women had given consent (in spite of an absence of evidence that consent was freely given), this would be a practice that may not be circumscribed by law.

CONCLUSION

In her 1993 critique of feminist literature imagining a utopian future wrought by the introduction of artificial wombs, Alice Adams notes that this vision emerges from a particular situated position from which reproductive technologies are largely imagined to be a tool for emancipation. To Adams, this utopian rendering of a collective commune of degendered caretakers built around artificial wombs excises the oppressive, eugenic history of how reproductive technologies have been targeted to limit the reproductive capacities of women of color. Indeed, Adams calls our attention to the fact that medical and legal institutions are shaped by colonialism and white supremacy, such that if we fail to take up the existing inequalities and injustices that these institutions have produced, artificial wombs as a means of liberation will remain a fantasy that is only accessible to the most privileged of subjects. In this instance, these inequities reverberate across the United States, United Kingdom, and Canada.

I have first considered the speculative position that ectogenesis will result in a “degendering” of gestational responsibility, and secondly, considered the possibility that as some feminist scholars fear, ectogenesis could reinforce inequality in relation to reproductive rights and care. With regard to a “degendering” of gestational responsibility, I considered that in the United States, the significant variation of court decisions as to how to resolve frozen embryo disputes suggests similar variation is possible with regard to assigning gendered responsibility in ectogenesis. Looking at instances where courts deferred to balance of interests tests, I suggested that while ostensibly a “degendered” approach, gendered logics of family forms still permeate these decisions, suggesting a significant limitation on the imagined escape from a nuclear family form often intimated in the literature on ectogenesis. Looking at a case resolved through the requirement of mutual consent, I suggested that the emphasis on genetic parenting might also pose limitations as to the degendering possibilities opened by the artificial womb. In Canadian law, I considered that a requirement of mutual consent emphasizing the people for whom embryos are created rather than the genetic progenitors may move further toward a framework that would allow for “degendering” of gestational responsibility in ectogenesis. However, I also noted the continued persistence of gendered ideas of the nuclear family, and suggested that it is unlikely in Canada, too, that artificial wombs would result in a challenge to this logic. Finally, in the United Kingdom, I argued that deference to genetic contributions as well as to gestational motherhood may also limit the capacity for ectogenesis to mean a challenge to the “prima facie injustice” (Smajdor 2007, 338) of unequal gendered responsibility for caregiving.

The idea that ectogenesis will “degender” gestation as it recurs in the feminist literature is very much aligned with Adam’s critique of the particular positionality that allows for ectogenesis to be envisaged as a tool for communizing care labor. Limon, critiquing Kendal’s argument to this effect, notes that “pronatalism reads like an all-powerful ideology where women may be ‘overwhelmed’ or unable to resist the social pressures to have children” (2017, 211). Limon asserts that this position falls short of acknowledging “the diversity and complexity of women’s experiences let alone resistance to such discourses” (212). In particular, Limon argues that “a liberal feminist account that universalises women’s experiences, or assumes that pronatalism operates in a singular oppressive fashion, risks ignoring reproductive stratification” (2017). With regard to the possibility that ectogenesis could worsen existing inequalities in

reproductive care, I considered first the existing racialized inequities in maternal morbidity and mortality and preterm births across all three jurisdictions. I argued that in each jurisdiction, these continued inequities even after controlling for financial differences and pre-existing health risks demonstrate the need for structural and social change in order for artificial wombs to have the intended effect of improving reproductive care. Turning to the question of whether ectogenesis could be used in coercive ways, in the United States I argued that current legal frameworks that target low income women of color for criminalization for their actions during wanted pregnancies indicate precedent for coercive pressure to use the artificial womb. In the United Kingdom and Canada respectively, I argued that the absence of statutory law or case law precedent criminalizing women for actions against their fetuses means that forced fetal extraction is unlikely on these grounds. Conversely, I identified in the UK several instances in which coercion to limit reproduction has been permitted and suggested this could occur with regard to use of ectogenesis without prohibition. In Canada, I similarly identified that based on existing practices, coercive use of the artificial womb could be allowed to occur. I have sought to show here that ahead of the development of ectogenesis, it is not enough to focus on ensuring that pregnant people will continue to be permitted to terminate a pregnancy, though this is a primary aim of this thesis. We must also take great care in identifying and addressing how this technology will impact people's access to reproductive options during wanted pregnancies.

In the final chapter of this thesis I will turn to assessing property rights and rights to avoid parenthood, as well as the possibility of decriminalized and deregulated abortion access as means of continuing to protect abortion after ectogenesis. Returning to thinking about ectogenesis and the regulation of abortion, I will argue that the best means of protecting abortion from challenges posed by ectogenesis is to focus on decriminalization and open access. But what I have sought to show in this chapter is the need for significant, structural, systemic change in the provision of reproductive care, and in the relational autonomy granted to pregnant people during wanted pregnancies. I have sought to emphasize that this technology cannot straightforwardly be read as it is in much of the literature as a means of simply enhancing already existing control over reproductive choice. I believe that these issues are importantly interconnected, as I will note in chapter six. With this said, this thesis is ultimately focused on abortion. What I wish to emphasize here, then, is the need for substantive, community engaged future

work on how this technology could best be mobilized to benefit the health of pregnant people, not to take away control, and not to serve to increase existing inequalities.

6. REGULATING ABORTION AFTER ECTOGENESIS THROUGH PROPERTY RIGHTS, GENETIC PARENTHOOD, OR FULL DECRIMINALIZATION

Irina Aristarkhova writes, “the necessity to work with the legal framework that exists [. . .] does not diminish the need for a new framework” (2012, 112). Aristarkhova works from outside the disciplinary constraints of doctrinal legal theory, and calls for a critical, feminist approach to law. By contrast, the literature on ectogenesis and abortion that emerges from legal scholarship is frequently preoccupied with accepting the law as it is rather than exploring law as it could be.

There is an obvious explanation for this focus. It is practical to emphasize swift reforms that might be made in anticipation of this new technology, rather than more major changes that could leave a lag between the arrival of the artificial womb and sufficient regulation. If the majority of the bioethical and legal literature took up legal questions posed by partial artificial wombs such as the biobag, which are currently in development, this explanation would hold. These technologies present an immediate possibility that the latter half of human gestation could occur outside the body. In the face of this technological progress, which is predicted to be ready for human trials within the next several years, it is strategically sound to focus on minor changes to ensure this development does not challenge abortion rights. Yet the vast majority of the literature does not address the urgent reality of partial ectogenesis. It addresses the distant and currently speculative possibility of full ectogenesis. There is a contradiction here, then. Even as this body of literature imaginatively explores the hypothetical subject of full ectogenesis, it does not apply imagination to the law, remaining instead deeply mired in the constraints of contemporary legal practices. This reflects less a practical restriction that arises from a need to focus on imminent challenges, and more an inability or unwillingness to imagine new futures for abortion jurisprudence to accompany a futuristic technology.

In this last chapter, I will first consider two proposals for governing ectogenesis and abortion that would involve a significant reform of existing legal frameworks: protecting abortion through a right not to be a genetic parent, and protecting the procedure through a property right. Since these two proposals are substantially interlinked, I will analyse them together to avoid repetition. I will argue that the use of these frameworks in any jurisdiction would significantly fall short of acknowledging the relationships inherent in gestation and ensuring care for the pregnant person. Finally, I will assess a possibility that has not yet been proposed in the literature on ectogenesis

and abortion: a framework for full decriminalization and the provision of positive protections for access to abortion. We have seen through analysis of Canadian regulation that artificial wombs need not pose a challenge to abortion rights when the law is constructed in such a way that technological advances are irrelevant to the protection of a vital medical service. The striking absence of an argument for decriminalization as a means of addressing the “problem” ectogenesis poses for abortion regulation, then, speaks to the way in which state governance of gendered, gestating bodies is taken for granted. With the assistance of perspectives from feminist ethicists of care and reproductive justice scholarship, I will argue that the only sufficient framework for guarding abortion against a challenge posed by ectogenesis is one in which abortion is decriminalized and freely available. To conclude this thesis, I want to imagine what it would look like for ectogenesis to pose no threat to abortion rights, not by dreaming of a different future but by considering the contemporary existing example of the Canadian system. If the paternalistic governance of abortion by the state can be imagined as a practice that has outgrown its necessity, how can we change the law as it is to create a framework in which new technologies do not threaten the fundamental needs of pregnant people? In what directions must we orient ourselves to disentangle the institutional forces that still undermine these needs? And, once this is established, what other dreams and possibilities could the artificial womb then open?

6.2 PROTECTING ABORTION THROUGH A PROPERTY RIGHT OR A RIGHT TO AVOID GENETIC PARENTHOOD

Building upon the purported gender neutrality precedent in frozen embryo cases, a number of legal scholars have argued that abortion rights might be protected after ectogenesis by emphasizing a protected right not to be a genetic parent (Coleman 2004, Alghrani 2007/2008, Bard 2006, Son 2005, Lupton 1997, Overall 2015). Other scholars have suggested the closely related framework of protecting abortion through reference to a property right for both progenitors in relation to the ectogenetic fetus (Murphy 1989, Bard 2006, Schultz 2010, Steiger 2010). In both instances, scholars are suggesting that contracts be used to determine when and under what circumstances either party could terminate an ectogenetic embryo or fetus. Some, like Schultz, propose that applying these contracts to ectogenesis would be a matter of drawing on existing embryo case law, while others, like Abecassis, suggest new legislation may be required.

As Ford argues in her exploration of the uses of a property right to protect abortion (2005), there are a number of different ways in which we might conceptualize an embryo and/or fetus as property. Because embryos are produced through labour (the production of gametes) they may be considered the property of those who generate them. Relatedly, because they contain the progenitors' genetic material, they may be thought of as their property. Finally, Ford suggests that given the physical location of embryos and fetuses in a human pregnancy, we could treat them as the exclusive property of a pregnant person: the fetus, in a sense, occupies a physical space that belongs to that person.

In the frozen embryo cases discussed in the previous chapter, such as *McQueen v. Gadberry*⁸³ and *C.C. v. A.W.*⁸⁴, courts have judged embryos to be property in the sense of these first two definitions (gamete production constituting labour, and embryos containing the progenitors' genetic material). In the literature in which scholars argue for protecting abortion after ectogenesis by drawing on embryo dispute cases to argue that "embryos and pre-viable fetuses must be acknowledged as property" (Stieger 2010, 169), it is also these two definitions of property they reference. The argument for protecting abortion through a property right and the argument for protecting it through a negative right to avoid genetic parenthood, then, are very similarly expressed in the literature in that both stem from an understanding of genetic contribution as the morally and legally significant factor in determining rights to an ectogenetic fetus. Räsänen, for instance, argues that "when ectogenesis becomes possible, men and women can exercise equally their rights not to become a genetic parent [and] their rights to genetic privacy and property" (2017, 702). In both instances, it is a presumed harm arising from unwanted genetic ties that grants "genetic parents [a right to] destroy their fetus" (700).

There are three key ways in which both of these frameworks fail to uphold a feminist ethics of care and fail to recognize the enabling and limiting relationships produced through pregnancy and care labor. Firstly, because they draw on precedent from the frozen embryo disputes which I have argued frequently reinforce nuclear, patriarchal ideals of the family, these frameworks presume only one possible kind of relational entanglement: a family in which the genetic, gestational, and social parenting roles are vested in just two individuals. Schultz, for instance, in making a case for a

⁸³ *McQueen v. Gadberry*. 507 S.W.3d 127 (Mo. Ct. App. 2016). Available at <https://casetext.com/case/mcqueen-v-gadberry-2> (accessed June 10 2019).

⁸⁴ *C.C. v A.W.* 2005 ABQB 290

shared right to avoid genetic parenthood, writes that “neither party should unilaterally have the right to unplug” (2010, 884) an ectogenetic fetus. Similarly, Bard argues that both a male and female progenitor should have a protected right to end pregnancy based on genetic contribution since “mothers and fathers have made biologically equivalent contributions” (2006, 151). And Steiger too, writes of a shared property or negative genetic right to determine abortion that “control over [the fetus] must stem from [a woman’s] interest in it as a progenitor, which is equal to that of the father” (2010, 160). Solely focusing on a male and female genetic progenitor who are also the prospective parents, the authors propose a means of protecting abortion that presumes that the only people who may be involved in the process of making a baby or have parental intention are the biological progenitors. Räsänen is representative of a number of scholars who make an argument for a negative right to avoid parenthood or a property right when he argues:

Becoming a biological parent causes harm to the couple because of parental obligations towards the child [,] The couple has the interest to avoid the harm of parental obligations [and] Therefore, the couple has a right to the death of the fetus to avoid the harm of parental obligations (2017, 468).

The assumption that is made here, drawing on the logic of the embryo dispute cases I discussed in the previous chapter, is that an unwanted biological link is an inevitable harm, even in instances in which no parental bond is created or intended. Son takes a particularly extreme position here when she writes of “the mental anguish to which a person would be subjected for a lifetime if he or she would be made to become a genetic parent” (2005, 231). As I will discuss, if someone is coerced into genetic parenthood by another progenitor with the intention of manipulation or emotional abuse, it is certainly the case that to be a genetic parent may cause them harm. But the presumption that genetic parenthood inevitably causes harm reinforces a particular biological view of gender and reproductive labor. This is a point on which I agree with Overall. Like me, Overall concedes that creating space for a pregnant person to choose termination because they do not wish to have genetic offspring is important, but she argues against the assumption that the existence of genetic offspring one does not intend to care for is automatically damaging. Overall writes that this approach “admits of no moral process by which [responsibility for a fetus] may be transferred” (2015, 132). In other words, it insists that a biological relationship is always and inevitably an inescapable familial bond. Overall emphasizes that we should not assume that “genetic motherhood [...]

always morally require[s] a woman to assume social motherhood” (132). Enforcing a genetic or property-based model in ectogenesis then, would be the logical extreme of the pattern I have traced in frozen embryo disputes, in which a biological contribution comes to be understood as indicating a social, emotional, and perhaps financial connection. Not only does this assumption fail to reflect the diversity and complexity of contemporary family-making, it poses a problem for protecting abortion rights in situations in which the genetic parents and the gestational parent, or the genetic parents and the intended parents, are not one and the same.

It is frequently the case, for instance, that a person who is approached to act as a gestational surrogate for an individual or a couple is neither the intended parent nor the genetic parent of the resulting child (Lewis 2019). Where two men commission a surrogate, it is possible that both partners are intended fathers but only one is a genetic contributor, and that the surrogate is a gestational but not genetic mother. It is possible also that a heterosexual couple may commission a surrogate and the embryo may be genetically related to the commissioning parents only. Lewis has called attention to the way in which surrogacy is often treated as unique from other forms of gestating when in fact many of the same practices occur outside these circumstances. Romantic and sexual relationships are frequently entangled in such a way that a person may become pregnant with no intention of involving the other progenitor, or the genetic progenitor and any additional intended parent are different people. As Ross and Solinger argue, it has long been true that families are built through “foster parenting, collective parenting, and other nuclear-family and non-nuclear family options” (2017, 208).

In the previous chapter, I noted that in thinking about how ectogenesis could change gendered relations to gestation and care, I follow Lewis’s approach to gender and artificial wombs. In Lewis’s vision for ectogenesis, gender is not reducible to biological difference or binaries. Men can and do get pregnant, there are many women that will never or can never gestate. Uteruses can be constructed and they can be removed, allowing pregnancies to flourish in non-binary bodies. For Lewis (and Firestone), in a future in which gestation was valued as an inevitable and vital form of care, ectogenesis could become a potential opportunity for sharing this labor. But crucially, Lewis and Firestone would reject the idea that this sharing could occur simply by designating men and women equal rights holders to a fetus due to their genetic contributions. They would reject the way that this approach forecloses the many-varied relationships of care and intention that could be produced through ectogenesis. A

necessary prerequisite for opening these possible relationships is first relinquishing the idea that “genetic motherhood [...] always morally require[s] a woman to assume social motherhood” (Overall 2015,132).

Like the decisions I have traced in frozen embryo disputes, a framework here solely focused on male and female genetic progenitors precludes imagining other possibilities artificial wombs might offer for family-making. But there is also a potential for harm caused through a distribution of the right to end gestation that does not acknowledge these relational entanglements. By placing sole emphasis on genetic contribution, the effect of ignoring the possible relationships produced through gestation here is that intended parents who are not genetically related to the fetus could be at risk of the biological progenitors “pulling the plug”. And conversely, gestational parents who are not genetic parents may be left vulnerable to forced gestation.

How would these relationships be addressed through a property or genetic parenthood-based framework? Most scholars who make these arguments are silent as to intended or gestational parents who are not genetically related to the ectogenetic fetus and suggest by omission that only biological parents should have rights to continue or terminate a pregnancy (Bard 2006, Steiger 2010, Schultz 2010). Räsänen is representative of another group, who explicitly suggest that genetic progenitors (including sperm and egg donors) should indeed be privileged over others (including surrogates or intended parents) in making a decision to continue or end an ectogenetic pregnancy (2018). This poses a significant potential limitation with regard to providing the pregnant person with recourse to end an unwanted pregnancy. Consider, for instance, a situation in which a surrogate has been commissioned to be the gestational, but not the genetic parent. A right to avoid genetic parenthood would protect the right of the commissioning parents to end her pregnancy, but it would not protect her right to do so.

Some scholars, in justifying their proposed genetic or property-based framework, argue that if the pregnancy began in a person’s body they would either have an exclusive right to terminate it or alternatively, they could have it extracted to an artificial womb if another genetic progenitor wished to take responsibility (Schultz 2010, Steiger 2010). But where existing abortion rights and access are likely to be further undermined by the introduction of ectogenesis (United States), unless significant changes were made, a framework to protect abortion based on genetic connection (vested either in property, or a negative right to avoid parenthood) would very likely

undermine the ability of people who were not genetically related to their fetuses to seek abortion.

Additionally, surrogacy already involves significant global supply chains, with intending parents from places such as the US, UK, and Canada travelling to nations in which they may pay to have more access to and more control over the surrogacy process (Lewis 2019). It is entirely possible that if rights to abortion in ectogenesis were designated through genetic relatedness in the UK, and/or Canada, even if these jurisdictions retained specific protections to abortion where the fetus began in a person's body, commissioning parents might seek jurisdictions where this was not the case in order to ensure that if a surrogate sought abortion they could have a legal claim to enforce transfer to an artificial womb instead. Consider that it is already true that surrogates working in some less heavily regulated nations have reported being prevented from seeking abortion and being coerced to have an abortion respectively (Lewis 2019). To be clear here, we can imagine it would be possible that if, as Abecassis (2016) suggests, new legislation were to be passed to establish specific guidelines, we could anticipate and clarify protections for non-genetic gestational surrogates and intending but non-genetic parents. But this framework is not the most straightforward and certain means of ensuring care for the pregnant person, or of ensuring the different possible relational entanglements emerging from human pregnancy and ectogenetic gestation are acknowledged. As I will argue later in this chapter, decriminalizing abortion and improving access offer a much more stable and ethical first step.

This brings me to another limitation of a framework that uses a right to avoid genetic parenthood or a property right to protect abortion, namely, a failure to consider the ways in which interpersonal relationships under such conditions may result in manipulation. The threat of possible coercion sits beneath the surface of a number of arguments made for the use of a genetic or property-based claim to protect abortion. Räsänen, while arguing broadly against conservative claims that ectogenesis will bring the end of abortion, concedes that he agrees with these scholars on one point, which is that fathers might intervene to stop abortion. He holds that “when it is possible to gestate the fetus outside the womb, the fate of the fetus is not her decision, but their decision” (2017, 699). A number of other scholars who argue for a right to avoid genetic parenthood or a property right appear to show an unsubstantiated faith that legally enforcing contracts as to couples respective rights to terminate a fetus will

protect pregnant peoples' interests in any disputes that arise (Bard 2006, Schultz 2010, Steiger 2010).

Here, it is helpful to turn to Martha Fineman, who argues that “although concepts of formal equality and gender neutrality are useful in defining some relations between adults, they are inadequate, even detrimental, in addressing the dynamics inherent in the family” (2017, np). When it comes to systemic inequality, to families operating within external structures that enforce and reproduce significant disparities in power, we will not arrive at equality simply by declaring that we have decided that everyone is to be equal under the law. This is potentially the most dangerous limitation of deciding to apply a framework based on genetic contribution to abortion, without accounting for structural inequity.

Ross and Solinger note that abuse remains a motivating factor in some abortions, referring to circumstances under which a person is coerced or manipulated (economically, emotionally, and/or physically) to remain pregnant or end a pregnancy as “reproductive violence” (2017). As they note, domestic abuse is known to increase during pregnancy, creating circumstances under which a pregnant person may struggle to access reproductive care. The British Pregnancy Advisory Service (BPAS) has also reported that “Pregnancy is a time when domestic abuse is more likely to start or to escalate, with 15% of women reporting violence during a pregnancy” (2017, 6). BPAs has tracked that “physical abuse is common in women seeking abortion and may be one factor in their decision to end the pregnancy” (6). Ectogenesis could allow a fetus to be removed from the body for either part or all of gestation. As Murphy notes, this raises the potential for abusive or controlling partners either to attempt to implant and gestate a fetus unwanted by the other progenitor, or to terminate a fetus in an artificial womb that is wanted by that progenitor. To be explicit here, it is precisely in relationships between heterosexual, cisgendered couples that reproductive violence, by men against women, has been demonstrated to increase during pregnancy (Ross and Solinger 2017). It has already been well documented that abuse and/or coercion is a factor in a majority of cases where men have attempted to file injunctions in order to stop their partners from securing an abortion (Kaposy and Downie 2015). The framework for abortion which protects a shared right between a male and female genetic progenitor to end ectogenetic gestation is a proposed “gender neutral” strategy of the kind Fineman critiques. In its lack of attention to unequal, structural power dynamics related to reproductive violence, it has the potential to essentially protect and enable

circumstances in which pregnant people are pressured into the use of an artificial womb, or in which one partner is able to exercise power over the other to ensure that ectogenesis does or does not go forward, in the name of “equal” distribution of responsibility.

I do not wish to make the paternalistic suggestion here that women need to be protected from ectogenesis simply because it could be manipulated for abusive ends. And lest I seem to be contradicting myself, I want to be clear that it is not the existence of a genetic connection in and of itself that I am arguing causes harm. I have already established that I do not believe this to be the case. Instead, it is the possibility of unwanted genetic parenthood constituted by the other progenitor with the intention of enacting reproductive violence that could constitute serious harm. What I am highlighting here is that a shared right to terminate or gestate a fetus based on genetic relatedness explicitly opens the possibility for emotional, physical, and financial coercion as a means of forced extermination or forced gestation.

Undoing the association of pregnancy with women’s bodies is a precondition for a vision of the future in which the work of gestation is shared. The idea of using property rights to distribute responsibility for an ectogenetic fetus may be appealing in that it could seem to be a means of allowing for this responsibility to be shifted and transferred. And with reference to the possibility that a framework based on genetic connection or property rights could result in coercion or manipulation, one could make an argument that this is simply the trade off, the possible price that might sometimes have to be paid for “degendering” care for a fetus. But this is an unacceptable concession that again, puts the chicken before the egg in making the assumption that ectogenesis will produce the opportunity for “equity” in gestation and society will follow. Fineman argues, “we can impose all the gender equality aspirations we want in the family, but if the state and the market continue to operate in ways that conform to old gendered patterns, gender equality will be close to impossible to achieve” (2017, 16). And similarly, we could use an “equitable” model for distributing the right to continue or end an ectogenetic pregnancy, but so long as the “old gendered patterns” (16) remain, we are sacrificing care for pregnant people to an alleged pursuit of equity that may never transpire. And finally, on this point, as I will argue when I turn to considering decriminalization and improving the accessibility of abortion: this is simply not the most straightforward means of protecting abortion rights that is available to us.

The final limitation of a framework for abortion after ectogenesis based on a property right or a negative right to avoid parenthood that I want to address here is the way in which both of these proposals continue to treat abortion rights as a private sphere of non-intervention, rather than providing positive recourse to access. Across the United Kingdom, United States, and Canada, I have noted continued inequities in access to reproductive care. While factors shaping inequitable access to abortion differ across these jurisdictions, in the absence of a positively articulated protection for abortion access in the United States and Canada in particular, these disparities continue. To come back to an argument I introduced earlier in this chapter: there is a significant lack of imagination in most proposals for ectogenesis and abortion in that even as they imagine a speculative technology, they retain the existing limitations associated with contemporary abortion rights.

Criticisms of a limited, private sphere of non-interference to protect abortion rights have a long and prolific career in the feminist literature on abortion. Yet when it comes to speculating on what abortion rights could look like in the future, the scholarship on ectogenesis insists on reinvigorating models that many feminists have argued are ineffectual. Here, I argue that we should follow the criticisms made by reproductive justice activists and scholars as to the way in which negative rights in the absence of resources fail to protect the interests of pregnant people, and particularly impact those already marginalized. As Ross and Solinger write, a framework for reproductive justice is one that not only secures access to the resources to end a pregnancy and control one's reproductive body, but also supports "the right to become pregnant, to have a child, to be a parent, and to raise that child within a safe, dignified, and healthy context" (2017, 167).

In the context of the United States, in which privatized healthcare produces significant issues of inequitable access to reproductive care, this is particularly pressing.⁸⁵ Of the reproductive justice movement, Ross, Roberts, Derklas, Peoples, and Bridgewater Toure write, "we challenge [...] how liberal ideology misused the concepts of rights and justice to situate responsibility for health and wellness in individual

⁸⁵It is also important to note here that particularly within the context of the United States, a right to property is mired in the racialized lineage of slavery and the legal protections given to white slave owners to hold adults, infants, and children as property. For further discussion of the origins of the private property right in the United States and its relation to white supremacy and social reproduction, and context on the problematics of the use of this frame in relation to "owning" fetuses or infants, see Glenn 2012 and Roberts 1997.

choices, while ignoring the institutionalized barriers that constrict individual choices such as racism, homophobia, sexism, classism, ableism, or xenophobia, or more simply, lack of access to appropriate and comprehensive healthcare” (2017, 19). As with an argument for redefining viability or bodily autonomy, the benefit of a negative right to avoid genetic parenthood or a property right in the United States context arises from the fact that as some scholars trace (Schultz 2010, Son 2005, Steiger 2010) this precedent already exists in frozen embryo case law and is markedly similar enough to a future abortion case in which ectogenesis could otherwise be pushed as an “alternative” to termination. Given what I have already established is a high probability that ectogenesis will challenge abortion rights in the American context, drawing on established precedent is an understandable tactic for holding the line.

Yet, the status of *Roe* as a “truncation of the aspirational feminist vision of reproductive justice from which it was forged” (West 2009, 1422) lies in the way that to retain bare rights to abortion for some, continual concessions have been allowed which have carved away at the original goal of universal access to abortion. Consider, for instance, the Hyde Amendment which bans the use of federal funds for abortion. Renewed every year since the 1970s, reproductive justice activists have noted that fighting the amendment was long left off of the agenda of the mainstream movement for reproductive rights, out of fear that this could stir trouble for the protections carved out by *Roe v. Wade* (Ross and Solinger 2017, West 2009). As a consequence, while *Roe v. Wade*’s protection of abortion under a right to privacy remained intact, American women dependent on federal funds (disproportionately low income women, young women, Indigenous women, and women of color) were no longer able to access abortion.

I note this example because to attempt to protect abortion rights from ectogenesis by fighting for acknowledgement of a negative right to avoid parenthood or a property right, and thus re-enshrining a precarious, negative right to access would simply be to continue to accept a “truncation of the aspirational feminist vision of reproductive justice” (West 2009, 1422). It may protect abortion rights for some women but would do nothing to ensure protection for the many others to whom abortion is already inaccessible. While committing to full decriminalization of abortion and full accessibility may be more “aspirational” than strategic, so long as full ectogenesis, too, remains aspirational, accepting a framework that offers less is a pre-emptively defeatist move.

I have already established in this thesis that ectogenesis is unlikely to undermine abortion rights in Canada. There is a need for further reforms in the Canadian context ahead of this technology to offer better affirmative avenues of care for pregnant people as a lack of positive protection to access continues to limit some peoples' ability to secure the procedure. But a shared, negative right would be a step in the wrong direction, a movement toward contracts as opposed to towards the potential for greater emphasis on relational autonomy.

In the United Kingdom, the Abortion Act 1967, is likely to retain some protection to abortion. The aspects of abortion jurisprudence in the United Kingdom where there are potential gaps in guarding reproductive rights after ectogenesis are the requirements for approval of two physicians, the retention of a gestational limit, and the continued presence of abortion outside of these guidelines as a criminal offence. Attempting to protect abortion through a right to avoid genetic parenthood or a property right in this context would address none of these problems. As I will discuss in the next part of this chapter, advancing relational autonomy in UK abortion law requires a focus on decriminalization and escaping the paternalism of the existing Abortion Act.

In a 1995 study in which she interviewed women who self-identified as both prochoice and anti-abortion, Leslie Cannold concluded that women's "moral meaning and justification of abortion radically differs from that provided by Severance theorists, who justify abortion on the ground that it enables women to exercise their right to bodily autonomy" (51). A number of later scholars have drawn on Cannold's work to suggest that what women really seek in abortion is a right to the death of their genetic progeny (Schultz 2010, Overall 2015, Räsänen 2017). While these scholars are right to note that this is one possible motivation that leads people to seek abortion, there is a nuance to Cannold's assessment of her data which often gets lost. Cannold wrote that the women she interviewed understood abortion partially as a desire not to be pregnant, or have genetic progeny, but also as a "sense of responsibility to their fetuses" (52). For the pro-choice women, having an abortion was a means of enacting responsibility: making the decision that the best way to care for this unwanted fetus was not to bring it in to the world at all. I am reminded here as well of Lewis's careful unpacking of all of the ways in which a pregnant person gives of themselves to the fetus, and how, with regard to an unwanted pregnancy, we should consider that "refusal" (2018), or "self-defence" (ibid) in the form of abortion might be considered "care".

Cannold's data pointed to the complexity of gestation and abortion: it is not simply not wanting to be pregnant, nor is it not wanting to be a genetic parent, nor a sense of property or ownership. These different experiences may all be present, or they may not be. A sense of belonging or dissociation, connectedness or rejection, love or disgust, may all shape how a person may feel toward a fetus. A relational understanding of pregnancy and of the desire for abortion means a recognition that all of these feelings may lead to someone seeking abortion. Both Cannold and Sherwin have emphasized something that has regrettably been unheeded in literature on ectogenesis: "theoretically dispassionate" (Sherwin 1991 329) moral philosophers who seek a singular justification for abortion are not speaking the same language as the pregnant people who seek it. They are not listening.

As a final point here, Ford argues that a property-based justification for abortion is a relational way of approaching the right, in that "it focuses on relationships surrounding an object rather than the intrinsic nature and status of the embryo itself" (2005, 9). I agree with this logic to some extent, in that it is a compelling means of turning moral and legal attention away from the often fruitless question of how we should understand and acknowledge the moral status of the fetus. But even so, a property approach to a fetus potentially reinforces the economization of reproduction. And more importantly, articulating the abortion right in this way is *unnecessary*. It emerges from a situated position in which abortion is understood to begin with not as a medical necessity, not as an essential resource, but as a moral ill that must be monitored, limited, justified, and ideally abolished. To this end, I want to turn to my argument for decriminalization, for full, accessible, and free abortion care as the best way of protecting abortion against challenges posed by ectogenesis.

6.3 DEFENDING ABORTION THROUGH DECRIMINALIZATION AND UNIVERSAL ACCESS

In the bioethical text that is often cited as the origin of the argument that ectogenesis poses an agreeable "solution" to abortion, Singer and Wells write that "we" protect abortion because forcing a woman to remain pregnant against her will is a violation of her autonomy, but in spite of this, "we" understand that the fetus has some moral status. They go on to state that:

Unless we were to change our mind about this, it is difficult to see why we should give this right to a woman in respect of a fetus she is carrying if her desire to be rid of the fetus can be fully satisfied without threatening the life of the fetus (1983, 12)

To reduce a lengthy analysis to a single thread: what I have sought to establish by considering the way ectogenesis might impact abortion rights in three specific jurisdictions, is that the “we” that has allegedly taken a clear stance on abortion rights is neither universal nor constant. Singer and Wells speak of “our minds” and “our” perspectives. But how “we” view gestation, women’s bodies, fetuses, and abortion, varies significantly across the jurisdictions of Canada, the United Kingdom, and the United States, and has varied significantly over time. While the legislatures of each nation have codified particular attitudes toward abortion, these do not necessarily reflect the opinions of their citizens.

Sheldon has written extensively of the failure of parliament to take the opportunity to address the medical paternalism of the *Abortion Act 1967* upon its review in 1990. By retaining abortion as a criminal offence with exceptions and neglecting to address the medical paternalism inherent in the legislation’s requirements, she argues that parliament participated in a project of “speaking from the past to govern the future” (2016). Sheldon’s observation of this anachronistic approach to abortion aptly applies to many of the claims that arise in the literature on ectogenesis.

Like their predecessors Singer and Wells, the authors of the most recent articles proclaiming that artificial wombs foretell the end of abortion rights (Colgrove 2019, Blackshaw and Rodger 2018, Mathison and Davis 2018) return to one seminal philosophical text on abortion: Judith Jarvis Thomson’s violinist analogy. In her 1971 article “A Defense of Abortion,” Thomson drew a comparison between an unwanted pregnancy and the experience of one’s body being used as a life support system for a famous violinist. Her intent was to establish that even if we consider for the sake of argument that the fetus has a right to life, this would not justify forcing another person to use their body to sustain that life. Blackshaw and Rodger write, “according to Thomson’s reasoning, there is no right to the death of the foetus, and so if ectogenesis is available, we are morally obliged to utilize it for unwanted pregnancies rather than aborting the foetus” (2018, np). So too Mathison and Davis (2017), who try to prove with reference to Thomson that according to the logic of pro-choice advocates women

have only a protected right to bodily autonomy, and no right to terminate rather than extract a fetus.

But these authors neglect the strategic nature of Thomson's reasoning. Writing in 1971, Thomson spoke from a social context in which abortion rights in her home nation of the United States had not yet been won. In 1971, the vast majority of abortions were surgical, and winning the support of a bare majority to change the law was essential: women were bleeding to death as they sought the procedure by any means necessary. Between 1971 and 2019, decades of ethical, philosophical, and legal debate have transpired. Abortion regulations have been established in Canada, the United States, and the United Kingdom. The legacy of Thomson's thought experiment, the idea that it is a right to physically sever a fetus from one's body and nothing more that justifies abortion, has been revealed, through the example of US abortion jurisprudence, to be an insufficient means of protecting abortion as an affirmative right. And in Canada and the United Kingdom, this logic was never the primary justification used for abortion in the first place.

I have traced throughout this dissertation the competing claims made by authors writing from bioethical, legal, and feminist perspectives (perspectives which often importantly overlap) as to how abortion rights will be impacted with the introduction of ectogenesis. Proposals intended to guard abortion rights against challenges, while formulated differently in different articles, take one of a few recurring forms (a redefinition of bodily autonomy or fetal viability, and guarding abortion rights on grounds of a negative right not to be a genetic parent or a right to property). Nedelsky writes that when faced with a legal challenge, lawyers and legal scholars may choose any of a number of strategic arguments, each of which have inevitable limitations. These are tools that can be justified as a practical means of responding to a difficult legal question.

Whichever we pick, we must proceed with an awareness of the limits and uses of the tool we chose. Each of the frameworks for ectogenesis and abortion that I have examined in this dissertation could be mobilized strategically. But one strategy for defending abortion against possible challenges posed by ectogenesis that has not been raised in the literature is the decriminalization of abortion. And to take this argument further, the case has yet to be made for building a framework in which safe, self-managed abortion is freely available, and robust, relational autonomy is protected. I will

argue that these are the best means available to us for protecting abortion against a challenge introduced by ectogenesis, and the best steps we can take toward a future where ethical discussions of artificial womb technology focus on how it may benefit pregnant people, not how it may strip away their rights.

What the Canadian context should show us is that ectogenesis will only pose a challenge to abortion rights where these rights have been constructed as contingent, limited, and subject to challenges introduced by advancements in technology or changes of political leadership. But while the Canadian framework for abortion comes the closest to presenting a contemporary set of circumstances in which this technology need not present a challenge to abortion rights, further reform with a view to a true feminist relational framework for the present health of pregnant people and the future use of ectogenesis are needed.

DECRIMINALIZATION

Decriminalization⁸⁶ is the first step toward a relational, care-based framework for abortion rights and ectogenesis. This would centralize care for the pregnant person by ensuring that regardless of whether ectogenesis lowered medical viability or made it possible for a fetus to be extracted without being terminated, there would be no criminal consequences for seeking termination. Those against decriminalization in fact frequently mobilize under the banner of care for pregnant people by making the claim that retaining abortion as a criminal offence is necessary to protect their health and safety. But consider that one constant, from well before the *Roe v. Wade*⁸⁷ ruling and the passage of the *Abortion Act 1967*, has been that if a person wants an abortion, criminal law will not stop them from finding one, nor will the threat of injury or death. Pregnant people would continue to seek abortion instead of ectogenesis even if the technology was available and to do so put them at risk of criminalization. And today, the safety of modern abortion procedures quickly exposes the argument that criminal consequences

⁸⁶ To be clear here, I refer to full decriminalization, which would also involve removing a legally enforced gestational limit. Currently, in both the United Kingdom and United States, there can be criminal consequences for self-induced abortion at any time in pregnancy (for instance, buying abortion pills online from an unapproved provider). However, the gestational limit is the point at which these consequences can become more severe for pregnant people who self-induce abortion after viability in the United States. Providers in both the United Kingdom and the United States are also significantly restricted in the circumstances under which they are able to perform abortions without facing criminal consequences after the gestational limit. What I am proposing is decriminalization throughout pregnancy.

⁸⁷ *Roe v. Wade*, 410 U.S. 113 (1973).

for abortion are necessary to protect women as the straw man argument that it is. As Sheldon argues, we have in fact long had the medical technology to allow early-stage abortion to occur outside of medical supervision without posing a danger to pregnant people. Laws that legitimate criminal consequences on the grounds of protecting health and safety then, are no longer serving this function, but instead serve to send the message that pregnant people, and women in particular, are not to be trusted with their own bodies. To mobilize to protect pregnant people, and those who would help them, the energy of policymakers ahead of ectogenesis should be directed not toward making minor changes to still largely paternalistic forms of regulation, but toward abolishing cruel and unnecessarily punitive consequences for a medical procedure that will inevitably be sought.

The creators of the biobag have been clear that their research is intended as a life-saving technology where other forms of intervention simply would not work. And as feminist scholars from many varied political standpoints have firmly argued (Woolfrey 2006, Smajdor 2007, Kendal 2015, Firestone 1979, Lewis 2019), pregnancy has significant side effects, many of which are most troubling in the latter months of gestation, and many of which put the pregnant person's health and life at risk. As I addressed in the previous chapter, care for pregnant people and for wanted, prematurely born babies is precisely the clinically intended purpose of artificial wombs. In these circumstances, ectogenesis could be useful in the ways that so many feminist scholars have desired: to ease pain, to treat the side effects and symptoms of pregnancy, to save wanted fetuses and to relieve the burden of care on the pregnant person. One effect of criminal consequences for abortion, particularly where they are tied to a gestational limit that must be determined by a medical professional, is to create a divide where what protects care for pregnant people in some circumstances may render them vulnerable to criminalization in others. For example, if the biobag is successful in sustaining the lives of wanted fetuses at 23 weeks of gestation, it could significantly improve reproductive care if doctors could offer pregnant people at serious risk of injury or death in latter term the option of transferring the pregnancy to ectogenesis. But so long as seeking abortion after viability continues to put other pregnant people at risk of criminalization (as it does in the US and UK), emphasizing patient care on the one hand means potentially undermining pregnant peoples' rights to abortion on the other hand. Decriminalization, then, may also have the effect of opening out a conversation in

which protecting abortion and protecting access to care in preterm birth or where complications arise later in pregnancy need not be incompatible.

Victoria Browne (2016) deftly engages the example of the work of full-spectrum doulas to emphasize how treating abortion and birth as experiences that must be thought and protected together will offer a more robust framework for reproductive freedom. Doulas work with pregnant people throughout their pregnancies in order to offer emotional and physical support, as well as advocacy. A full-spectrum doula does this work during wanted pregnancies, but also during abortions, oftentimes working with the same people to care for them as they end an unwanted pregnancy and support them to give birth during a wanted one. Browne writes that this approach, bringing together the different possible experiences in reproductive life, is one that works toward centralizing care for and the perspective of the pregnant person in all instances. Decriminalizing abortion, while certainly not the only measure that must be taken, is a step toward divorcing ectogenesis from the discourse on abortion, and creating space exploring how the technology could benefit pregnant people without the specter of how it could end their abortion rights. In turn, it would allow us to shift our emphasis on to other ethical questions, such as when, and under what circumstances, people would have access to use of ectogenesis.

ACCESS TO CARE

If decriminalization is the first necessary step toward a framework for ectogenesis and abortion that centralizes care for the pregnant person, then instituting measures for positively protecting access to abortion and reproductive care is the first step toward acknowledging the relational factors that enable or restrain a person's ability to access that care. Decriminalization removes the criminal consequences of abortion, but will do nothing to affirm access if not accompanied by a "relational conception of autonomy" (Kaposy and Downie 2008, 99) that "places the exercise of reproductive choice within an environment of positive and negative interpersonal, institutional, and social forces" (ibid). To protect relational autonomy in this context means moving toward frameworks that mobilize "interpersonal, institutional, and social forces" to offer positive protection for abortion services.

Human pregnancy demands an intimate physical, emotional, and social connection with a growing fetus, sometimes provided joyfully, sometimes with

ambivalence, and sometimes with horror. In the absence of a single human who, by virtue of the fetus's location, provides the sustenance it needs to survive, ectogenetic gestation in fact draws attention to the way that external relationships shape, harm, limit, protect, or allow gestation to occur. Creating an alternative to the care the pregnant person gives the fetus means building a medical apparatus that mimics the delivery of nutrients and extraction of toxins performed by the placenta, that expands with the fetus's growth, and that allows it to stay safely ensconced for months until it is ready to come out. It means, as Aristarkhova emphasizes, engaging the (paid) work of numerous medical experts who can monitor the minutiae of the fetus's movements, and it means finding caretakers before it emerges who will treat it as a loved baby when it arrives. When you spell out all of the small acts of care, whether given willingly or demanded, that are required to allow a fetus to gestate in this way, it is incredible that ordinarily we expect one person to perform these acts alone. It makes explicit that we presume that pregnant people should provide these resources to the fetus with the expectation that they need not receive outside support. And it becomes particularly painful to think that we would fail to provide a person with the means to refuse to perform these acts, that we would ask women to do this work while offering nothing in the way of enabling it.

Martha Fineman writes "the concept of derivative dependency captures the very simple but often overlooked fact that those who care for inevitable dependents (such as mothers caring for children) are dependent on resources in order to successfully undertake that care" (2017 7). In pregnancy, a truly relational, feminist framework would recognize gestation as a state in which a pregnant person experiences derivative dependency. And it would create the necessary conditions to allow people to choose to undertake that care work or to refuse it.

Ultimately, this would involve making changes to apparatuses of care provided before, during, and after pregnancy, but also in the course of people providing care for others throughout their lives. But in the immediate future, when we consider what this means for abortion care, it means ensuring that recourse to opt out of carrying a pregnancy must be accessibly and widely available. I am reminded in particular here of Adams and Mikesell's position that "a robust reading of the right to choose would [. . .] cover a variety of [. . .] abortion experiences, including ordering abortion pills from a pharmacy and having the pills shipped directly to a person's home [. . .] as well as a

person taking an abortifacient provided by an indigenous healer, midwife, herbalist, curandera⁸⁸ or trusted friend, instead of a doctor” (2017 327). Adams and Mikesell acknowledge that under current circumstances, these possible means of seeking abortion seem nearly impossible. But this, again, raises the question of what kind of future with ectogenesis we should be trying to seek.

To bring this thesis to a close, I want to consider some examples of changes that could be sought in each jurisdiction in support of realizing decriminalization and improving accessibility ahead of ectogenesis. The intention that has driven this work has been to redirect the lens through which abortion and ectogenesis have been viewed. There are many other future projects that could emerge with the express intent of prescribing instructions as to how the law of abortion should change with each step toward the development of artificial wombs. But what I have sought to do here is to demonstrate that we must reorient our approach to this question away from ineffectual models and methods that represent the past of abortion regulation, and toward creative future frameworks informed by feminist care ethics and reproductive justice. I have endeavored to turn the discourse on artificial wombs and abortion away from an often singular focus on the fetus, and toward pregnant people and the inevitable structures of care, relationality, and reproductive labor in which they are situated. What follows is not a prescriptive list of recommendations, then, but rather a few proposed possibilities for places where we might begin a much longer project of reaching toward a feminist future for abortion, ectogenesis, and care.

CANADA

While artificial wombs will not pose a challenge to abortion rights in Canada in principle, there are still changes that must be made ahead of the introduction of both partial and full ectogenesis in the interest of recognizing the relational network in which gestation occurs, and in the interest of protecting care for pregnant people. Kaposy and Downie celebrate that in jurisprudence on abortion and pregnancy, there is significant precedent showing that judges are attentive to how access to abortion is a necessary precondition for choice. But they also argue that because of the relatively liberal state of abortion rights in Canada, there is a danger that:

⁸⁸ Curandera is a Spanish word that refers, in this context, to a traditional healer.

if judges believe that women automatically have the ability to make reproductive choices as long as the criminal law is not prohibitive, then they will be less able to see the hardship created by other barriers to reproductive choice, or they may be more inclined to see autonomous choices being made in cases where the capacity for exercising autonomy has actually been restricted (2008, 303)

It is precisely these “barriers to reproductive choice” that most need to be addressed in order to ensure that the technology would never be presented as a person’s only option (in lieu of abortion), and to allow for circumstances in which therapeutic use might one day be enabled without posing a threat to reproductive care more broadly.

I have discussed barriers to access to abortion care in Canada in chapters four and five, and so I will not repeat them here. But changes are needed in the Canadian context to address the inequity of access that stems from provincial differences as to whether abortion clinics (or hospitals that perform abortions) are available, and from whether travel for abortion and access to the procedure is treated as a reimbursable healthcare cost. Firstly, clinics or hospitals at which abortion services are provided, in addition to effective telemedicine⁸⁹ through which to acquire abortion pills must be made more widely available across each province, a change that would require the government to treat abortion as an essential and reimbursable form of medical care. The realization of this goal would mean provinces covering insurance costs for each of these modes of access, rather than limiting reimbursement, as some provinces currently do, to where abortion occurs in hospital (Johnstone and Macfarlane 2015). As Johnstone and Macfarlane argue, we can look to the Quebec approach to abortion rights in this regard. While where a pregnant person may need to go to seek abortion could vary depending on how far advanced her pregnancy is, services are widely available and are covered regardless of where the procedure occurs, both for health card holders and for immigrants without cards.

As a stop-gap in the pursuit of universal access, as Downie argues, the *Interprovincial Billing Agreement* (2007), which ensures that people are reimbursed for procedures and travel costs where they must seek medical treatment outside of their provinces, should be revised to include all abortion. But shifts toward positive protections for abortion access must also be accompanied by a concurrent move toward positive protections for antenatal care in provinces in which these provisions remain inaccessible. A “guarantee of safe and timely access to abortion services” (Johnstone

⁸⁹ The prescription of medications online or via phone for mail order.

and Macfarlane 2015, 115), in addition to “safe and timely” provision for antenatal care abided by provincial governments would help to ensure that the introduction of the artificial womb will not produce false “choices” between forced pregnancy and ectogenesis. By placing “focus [. . .] on the dynamics or characteristics of relationships that need to be supported and encouraged in order to foster human flourishing” (Downie and Llewellyn 2012, 5), in this case, access to reproductive care in both wanted and unwanted pregnancy, these changes would allow movement toward a more relational approach to governing ectogenesis and abortion.

UNITED KINGDOM

In the United Kingdom, abortion must be fully decriminalized prior to the arrival of ectogenesis. I have argued throughout this thesis that given that some of the justifications for the provision of abortion under the *Abortion Act 1967* would continue to apply after ectogenesis, and given public sentiment in favor of reproductive rights, it is improbable that the introduction of ectogenesis would lead to an end to abortion. But so long as abortion remains a criminal offence with exceptions, pregnant people and healthcare practitioners will remain vulnerable to criminal charges under some circumstances if ectogenesis is introduced. And the current political climate (the rise of right-wing populism) should also tell us that public support for reproductive rights, too, may be subject to change. Therefore, to protect against this possibility and to move toward a framework for abortion, ectogenesis, and human pregnancy that better recognizes care and relationality, abortion must first be decriminalized.

Secondly, and in keeping with the recommendations of providers, gestational limits to abortion should be removed. As the British Medical Association reports (2018), as of 2015, 92% of abortions in England and Wales are carried out under 13 weeks gestation, and 80% under 10 weeks (in Scotland, those numbers are reported as 94.7 % under 14 weeks and 72.5 % under 9 weeks respectively). Where later stage abortions do occur, this is frequently as a consequence of the pregnant person’s lack of access to services earlier in pregnancy, or significant risks to the fetus or pregnant person. That few people have abortions in the UK after 14 weeks speaks to the way in which the translation of a gestational limit in law acts as an unnecessary fiction, communicating that there is to be a limit to the control we allow women in particular to exercise over their bodies. Removing the gestational limit to abortion would not mean

then, that more pregnant people sought abortions late in pregnancy, but would remove the association of abortion rights and medical viability. In so doing, we would take steps toward ensuring that medical changes to the fetus's ability to survive at earlier and earlier stages outside of the womb would not impact abortion rights, and we would redirect the question of when a fetus becomes morally significant to rightfully fall with the pregnant person.

Finally, as Jackson (2000), Sheldon (2016), and others have argued, removing the requirement for a doctor's approval and the narrow grounds under which this approval is to be granted would modernize the legislation and ensure that pregnant people would be protected against the (unlikely but feasible) possibility of an antichoice medical professional advising or pressuring them to use an artificial womb in lieu of abortion. Medical professionals would be free to offer abortion as a medical service without needing to assess whether or not, for instance, a transfer to an artificial womb could equally address the pregnant person's physical or emotional well-being. While, as I've argued it remains true that physicians could still provide abortion after ectogenesis without running afoul of the restrictions articulated in the *Abortion Act 1967*, we fall short of upholding a commitment to ensuring that pregnant people will always have access to reproductive care if we assume an outdated law need not be changed because we hope it may still work. As Margaret Urban Walker writes, an ethics informed by care makes space to address the concerns of "unrepeatable individuals in what are often distinctive situations and relationships" (1995, 146). Where pregnancy is "repeatable", in that it occurs every day, all over the world, the experience of the pregnancy is "unrepeatable", the person's processing of it involves "distinctive situations and relationships" that shape whether it is wanted or not. We cannot assign a "repeatability" rule to those experiences. The *Abortion Act 1967*, in continuing to require physician approval within parameters designated under the legislation, is an attempt to do just that. Removing these restrictions is a means of redirecting the discursive approach to abortion ahead of the arrival of ectogenesis: away from a perception of a fetus as a being with a moral status that only physicians are equipped to assess and protect, and away from abortion as something that must always be justified through prescriptive reasons.

As a final point here, as the British Pregnancy Advisory Service has recently highlighted (2017), one recurring concern with the possibility of updating the *Abortion*

Act 1967 to remove the requirement for doctors to assess whether people's reasons for presenting for an abortion align with the legislative guidance is that pregnant people will not be safeguarded against abortion occurring without their informed consent, that coercion or manipulation could occur, and that particularly vulnerable people might require guidance. As I have outlined in the previous chapter, there are very real possibilities for coercive use of an artificial womb. The possibility that some practitioners, in some settings, may encourage abortion or the use of long acting birth control where these are unwanted is also real. However, it is not through liberalizing abortion regulation that these possibilities, which are already present, would come to pass, and it is not through continuing to legislate paternalism that they would be guarded against. Concerns that removing the requirement that physicians approve a person's reasons for getting an abortion would undermine informed consent and safeguarding arise from a misunderstanding of the law. Safeguarding and protections to informed consent "are all contained in entirely separate bodies of regulation and legislation, which would remain firmly in place were abortion decriminalised" (BPAS 2017). And as I have addressed in the previous chapter, the coercion that could potentially occur is likely to come from other social institutions. To address and prevent this, further research into safeguarding against coercive pressures to use artificial wombs should be done.

UNITED STATES

As of 2019, six states have passed bills essentially banning abortion entirely after six weeks of pregnancy, a measure that effectively works as a total ban given that most people do not know they are pregnant until well after this time (Nash, Cappello, Naide, and Ansari-Thomas 2019). And across a number of states, other measures have been taken to make the procedure all but impossible to access, through means such as the closure of clinics, an increase in pre-abortion counselling requirements and wait times, and crackdowns on requirements for parental consent where the pregnant person is under age (ibid). Under these circumstances, and against a renewed cacophony of American scholars (Blackshaw and Rodger 2018, Colgrove 2019) declaring that the arrival of artificial womb technology is imminent and will bring with it a solution to abortion, it is challenging to speculate about how the future could be different. But to fail to do so, to accept the status quo of abortion rights in the United States and consider

limited strategies for a future with ectogenesis that would reiterate existing limitations is to ignore the decades of work by activists, communities, health practitioners, lawyers, and policymakers towards making abortion more accessible and sustainable, and abolishing criminal consequences. We must remember that the steps toward full ectogenesis are incremental: a full artificial womb will not land, entirely functional for the duration of pregnancy, in the mire of United States's politics tomorrow. This is what gives us time to prepare.

As I have thoroughly described the barriers to abortion access in the United States, and established that ectogenesis poses a serious threat to abortion protections as they are currently articulated, I will not reiterate these points here. Instead, this is a plea for not ceding to the temptation, ahead of ectogenesis, to focus on making minor changes that will do nothing to address the fact that the status quo of abortion protections in the United States is insufficient: it leaves women subject to criminalization, and it means that “abortion services are largely unavailable” (Rebouche, 2011, 5) even while protected in principle. Instead, we must set our sights on a horizon that may feel more speculative: the abolition of all laws that criminalize abortion or action against a fetus by a pregnant person at any stage of pregnancy, the removal of viability limits, and affirmative measures to ensure the accessibility of abortion clinics.

These changes may seem too big to process in the contemporary climate, so I want to turn here to one small example from the work of one organization of many that is actively working toward these measures. *If/When/How: Lawyering for Reproductive Justice*, is focused on the decriminalization and safe promotion of self-managed abortion. As Diaz-Tello, Mikesell, and Adams, write, in order to address the problem of accessibility “there is a need for both clinic-based and non-clinical abortion options” (2019, np), and an immediate response to the scarcity of abortion services in many parts of the United States is in ensuring pregnant people will not be criminalized for seeking abortion pills via telemedicine and self-treatment. Ahead of ectogenesis, this is one small (but, in the mobilization efforts required, monumental), measure that can be focused on to orient abortion jurisprudence toward relationality and care. Campaigning for self-managed abortion, rather than applying the frame that is recurrent in literature on abortion and ectogenesis (that abortion must be regulated and justified), offers a new frame. It centralizes the pregnant person, in not requiring them to seek approval or

supervision from a physician to have a procedure that they themselves can manage. It allows them to choose the conditions under which their abortion occurs: alone, or at home in the company of a loved one. It acknowledges the relational restrictions that shape and determine whether access is feasible: if a clinic is not available to a person, or if it is but it will require them to undergo lengthy approval procedures, or if for cultural or personal reasons they do not trust the care they will receive, it allows them to secure abortion on their own terms.

To be clear: it will not be enough until pregnant people are guaranteed funding and access to abortion across states, and antenatal care where they wish to continue a pregnancy. But it does far more to centralize care for pregnant people and to acknowledge the relational factors that enable or interrupt abortion access than does a strategy that retains an unjust status quo. In New York, the If/When/How team has successfully, with the help of other reproductive justice organizations, seen the passage of the *Reproductive Health Act*, which strikes down criminal consequences for abortion and allows for self-managed abortion to occur.

It is true that ectogenesis will threaten abortion rights in the United States, and it is also true that these rights are under threat now. But organizations currently on the ground are using a myriad of strategies to resist this threat. Following the framework initially proposed by practitioners of reproductive justice, some of these groups are focused on fighting for positive protections to reproductive health care, including abortion, under a human rights claim, while others, including If/When/How, propose other strategies such as appealing for positive access under the federal “undue burden” standard, arguing that unless positive recourse to services is granted, states are placing an undue burden on pregnant people who seek these services.

Strategies for protecting abortion against challenges posed by ectogenesis, should not, like the proposals I have argued against in this thesis, accept the existing problems produced by how the abortion right has been articulated in the United States. Rather than looking to the past and being informed by the early severance theories of pro-choice activists fighting for a bare right to physical autonomy, they should be informed by the present-day movement for reproductive justice. The call for “the right not to have children, using safe birth control, abortion, or abstinence; the right to have children under the conditions we choose; and the right to parent the children we have in safe and healthy environments” (Ross, Roberts, Derklas, Peoples, Bridgewater Toure

2017 14), may seem a lofty goal, and it is. But if we are to speculate on what we wish a future, as yet uncreated technology to mean, then so too should we speculate on a future for abortion rights that is free, safe, and universally accessible.

CONCLUSION: Flower Baby; Capsula Mundi

The association that is perhaps most provocatively triggered by the before-and-after images of the biobag is that of the sacrificial lamb. In fact, while one of the lambs used in the initial experiment was kept alive for a year after its gestation to ensure that it fared well, the rest of the group was euthanized. These creatures, extracted from their mother's wombs long before their naked bodies were ready for exposure to air, have the distinction of being the first animals to survive growing to term from such a fragile state in an artificial womb. But they are not the first casualties of such experiments, and they will not be the last. The creators of the biobag, ever-aware of the dystopian lineage of ectogenesis, acknowledged when they announced the success of their study that its key limitation was parental perception of their baby in a plastic bag. The image of a lamb pressed against the polyurethane surface of the technology, its eyes looking ready to open, is undeniably disconcerting. The instinct that a newborn, of any species, should be held by someone, whether one wants to be the one holding it or not, is a sensation many of us might be said to share.

By contrast to the image of a lamb fetus entangled in a plastic organ and synthetic veins, I want to return to the more whimsical vision that accompanied Victorian speculation on ectogenesis following the introduction of the first functional incubators. Perhaps first inspired by the ferns that punctuated rows of babies in glass at the incubator baby shows, media claims circulated that it had become possible to grow a baby like an orchid in a hot-house. This fantasy of ectogenesis can evoke a different kind of cultivation: watered, fed, and whispered to by interrelated gardeners and perhaps the automatic features of the greenhouse itself, a baby grows amidst petals and leaves. A modern image is that of the organic burial pod: a Capsula Mundi. The Capsula Mundi marks the end of life, the encapsulation of a body in a seed to grow into a tree. But I want to link together these two images: Capsula Mundi, and greenhouse flower, to speculate on the way that the stories we tell about ectogenesis, realized and applied in the form of the materials used to produce it, the regulatory frameworks we build to govern it, the social steps we take toward shaping it, can create meanings for the technology that are worlds apart.

Whether we read either of these stories (the sacrificial lamb, the baby in a greenhouse) as foretelling an emancipatory, unfolding future for the nature of human care, or as a stomach-churning harbinger of a new form of state violence, depends very much on our positionality. And whether either of these stories result in one outcome or

the other depends on what we do now. The biobag, though sterile and sealed, is both a closed entity and a relational object. The carefully measured and monitored artificial amniotic fluid and the way in which it is circulated by the fetus's own heartbeat are functional features designed to protect the fetus from outside contaminants. Yet there are other design features— “a darkfield camera allowing real-time visualization of the fetus within its darkened environment and the ability to play maternal heart and abdominal sounds to the fetus”— that are expressly designed to “allow the parent to be connected” (Partridge et al 2017). These elements are not to serve clinical ends, they are to counter familial anxieties about “having their fetus in a bag,” and to encourage these families to understand that while they can't hold the fetus, it remains close to them.

Irina Aristarkhova (2012) notes the overconfident assumption in the literature on ectogenesis that fully automated artificial wombs in the absence of any need for human connection are inevitable. While it may be tempting to see the biobag as an isolating entity, we must avoid the impulse to firmly categorize it, and bear in mind the features of its design that emphasize that it sits within a network of essential human care. There need not be a contradiction between recognizing these elements of the biobag's design and maintaining a degree of suspicion as to what end (replacement, enhancement, emancipation?) they serve.

Michelle Murphy beautifully demonstrates the multiple meanings a single technology can contain when she explores the history of manual vacuum aspirators for abortion (2012). Working through the extraction of menstrual blood, the device could be understood as a technique to simply avoid or manage one's period, while in fact also acting as a self-managed early abortion technique: if a woman was in fact pregnant at the time of use, the device would extract the early stage fetus. Murphy traces the technology's introduction and development. Initially designed by a radical feminist collective in 1960s New York, and referred to as ME (Menstrual Extraction), the device had a life as a tool for women to use on themselves with the support of other women, and was promoted as a technique of emancipation. But in short order, a new version of the same device, referred to as MR (Menstrual Regulation) had been adapted for use by the state in developing nations to prevent pregnancies among women who were given the device to use without clear explanation, and thus without clear consent, of its implications as an abortion inducing technology. Murphy's argument, in her analysis of the twin meanings that emerge here: one, a tool for informed collective and subversive empowerment, the other, a tool for state governance and control, is that “The same bit

of technology could-by being animated in different assemblages of technique, discourses, and subject positions - be meaningfully said to be two different things” (2012, 152). This is what we must also understand of ectogenesis. What this technology means, what it does for the gendered reproductive body, for care labour, for abortion rights, is entangled with how it is “animated in different assemblages”, or more precisely, in what contexts it will be available for use, and what kinds of uses will be enabled or prohibited in law.

This is a question of who controls the narrative, who is allowed to write the story of what artificial womb technology can be made to do. In this dissertation, I have sought to redirect the emerging (but not novel) discourse on ectogenesis and abortion. I have taken a normative, relational feminist position to claim that we must begin from a place in which we affirm abortion as a resource that is nonnegotiable. I have argued that we should be attentive to the ways in which different jurisdictions have articulated the abortion right in order to understand that contrary to the recurring position in literature arising from the United States, artificial wombs need not pose an inevitable challenge to these rights. I argue for beginning from a place in which abortion must always be protected as free, accessible, easy to find, culturally sensitive, and available both as a clinical and as a self-administered procedure. To take a feminist approach to thinking through the ethics of artificial womb technology is to first ascertain that the technology will not undermine the provision of and access to abortion, nor will it be used coercively. I have explored some of the ways in which this first requirement might be upheld, and with regard to the second in particular, I believe there is much more work to be done. But it is in first addressing these concerns, in taking measures to protect pregnant people, that we can then turn to other areas of inquiry: to whom will the technology be made available, and when? What will it be made from (can it be used in multiple environments, or only state of the art hospitals?) Could it one day be available for elective use?

Despite the numerous possible stories we could tell about ectogenesis, legal scholarship has clung to and replicated what we might call the path of least imagination. Though often packaged with the claim that ectogenesis will change everything we take for granted about human reproduction, much of this literature simply reproduces the status quo at best, and at worst, reaches into the past to find a template for a narrative about the future. I am not suggesting here that we need to disregard history in order to allow a feminist future for ectogenesis to unfurl. On the contrary, we need only look as

far as feminist accounts of how ectogenesis might result in “true equality” that fail to take account of the multiple and complex ways that reproductive technologies have been used to enact violence against some women and of the multiple pre-existing inequities produced by such technologies to see that this is not the case.

But like the different stories we can find in the image of the lamb and that of the orchid baby, there are multiple ways we can read ectogenesis. And in this dissertation, I have argued that one of these ways of reading is to use the fantasy offered by the technology to imagine not a future that replicates the lack of relational attention to care that constitutes a limitation to present day abortion rights in some jurisdictions, but as a way of imagining ourselves away from such limitations. To take a critical approach to law is to understand how legal frameworks, too, operate as fictions (Douzinas, Warrington, and McVeigh 1991). Ectogenesis poses a challenge to abortion rights only if we accept a particular set of fictions, then. We can choose to follow the threads of other possible stories, other possible futures.

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