

2021

Equal Protection and Ectogenesis

Brit J. Benjamin

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APA 7th ed.

Benjamin, B. (2021). Equal protection and ectogenesis. Vanderbilt Journal of Entertainment & Technology Law, 23(4), 779-820.

Chicago 17th ed.

Brit Janeway Benjamin, "Equal Protection and Ectogenesis," Vanderbilt Journal of Entertainment & Technology Law 23, no. 4 (Summer 2021): 779-820

McGill Guide 9th ed.

Brit Janeway Benjamin, "Equal Protection and Ectogenesis" (2021) 23:4 Vand J Ent & Tech L 779.

AGLC 4th ed.

Brit Janeway Benjamin, 'Equal Protection and Ectogenesis' (2021) 23(4) Vanderbilt Journal of Entertainment & Technology Law 779

MLA 9th ed.

Benjamin, Brit Janeway. "Equal Protection and Ectogenesis." Vanderbilt Journal of Entertainment & Technology Law, vol. 23, no. 4, Summer 2021, pp. 779-820. HeinOnline.

OSCOLA 4th ed.

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Equal Protection and Ectogenesis

*Brit Janeway Benjamin**

ABSTRACT

Ectogenesis is the gestation of a fetus in an artificial womb. This suite of technologies, now in use to preserve the lives of premature infants, is on the cusp of being a viable method of reproduction from conception to term. This Article argues that an equal protection challenge to a ban on utilizing ectogenetic technologies should be analyzed under intermediate or strict scrutiny. Should the US Supreme Court apply the rational basis or rational basis “with bite” standard of review to such a challenge, the petitioner should prevail.

The nature of ectogenesis is a technological alternative for a sex-specific organ. Intermediate scrutiny is well suited to address the discriminatory intent and effect behind denying access to ectogenesis, particularly against the backdrop of an extensive history of bipartisan legislative support for other artificial organs like the pancreas, kidneys, and heart. Strict scrutiny further supports protecting access to ectogenesis, as the fundamental right to procreative freedom necessarily encapsulates choosing the method of gestating one’s offspring.

While there are legitimate state interests in regulating the practice of medicine and ensuring the safety of reproductive biotechnology, prohibiting the use of ectogenesis on the grounds of preserving the natural order or moral disapproval would fail under even the most deferential rational basis review standard. Considering the immutability of reproductive roles, as well as the significance of the right to choose one’s method of reproduction, if the Court applies this deferential standard, the rational basis should “bite.”

Under the aforementioned standards of review, access to these important reproductive biotechnologies should be protected. Whether the Court finds invidious gender discrimination, the infringement of the fundamental right to procreate, or impermissible moral condemnation,

* Santa Clara University School of Law; This is dedicated to Tovar and Izzy, my very favorite miracles of reproductive biotechnology. I love you both forever. My gratitude to Marina Hsieh and Kerry Macintosh for their guidance, comments, and inspiration. And to Haylee Johnson for protecting my time to write.

it is likely that a ban on ectogenesis would be found to be unconstitutional.

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I. INTRODUCTION

A very premature infant lies in an incubation bed in a neonatal intensive care unit (NICU). Born at twenty-four weeks of gestation, she is considered *periviable*, meaning born right at the threshold of modern

medicine's capacity to save her life.¹ Her breathing is supported by continuous positive airway pressure, which keeps the air passages in her fragile lungs open.² Continuous bedside telemetry monitors her seizure activity and pulmonary function.³ An extracorporeal membrane oxygenation system takes blood from her veins, pumps it through an artificial lung where oxygen is added and carbon dioxide removed, and then returns the blood back into her body.⁴ The acidity of her blood is monitored and adjusted using a self-contained blood gas laboratory.⁵ Countless other technologies support this fragile new life as she struggles to build enough strength to survive. Her parents spend every day of her three-month NICU stay praying for medical miracles and treasuring small victories. Her doctors rely on partial ectogenetic technology to replicate as many of the functions of the mother's body as possible to, in essence, continue the infant's gestation extracorporeally.

Ectogenesis is the gestation of a fetus outside of a woman's body in another substrate, sometimes called an "artificial womb." The term was coined by J.B.S. Haldane in a 1923 lecture to the Heretics Society at Cambridge.⁶ The etymology of ectogenesis is from the ancient Greek *ektòs* ("outside") and "genesis" ("origin" or "production").⁷ Partial ectogenesis refers to the types of technologies described above, and it is used all over the world in advanced NICUs to save the lives of premature infants. Full ectogenesis refers to comprehensive external gestation, potentially from conception in a laboratory to term and delivery.

Twenty years ago, it was all but impossible for a twenty-four-week-old premature infant to survive to hospital discharge.⁸ With every passing year, survival rates increase and the risk of long-term serious disability decreases. In the 1980s, continuous

1. See The Am. Coll. of Obstetricians & Gynecologists, *Perivable Birth*, 130 OBSTETRIC CARE CONSENSUS e187, e188–89 (2017).

2. See *Life-Saving Technology in the NICU*, CHOC, <https://www.choc.org/programs-services/nicu/technology> [<https://perma.cc/JAL4-R6WX>] (last visited Feb. 24, 2021).

3. *Id.*

4. *Id.*

5. *Id.*

6. J.B.S. HALDANE, DAEDALUS OR SCIENCE AND THE FUTURE 63–67 (1924); see Zoltan Istvan, *Artificial Wombs Are Coming, but the Controversy Is Already Here*, VICE (Aug. 4, 2014, 3:26 PM), <https://www.vice.com/en/article/8qx8kk/artificial-wombs-are-coming-and-the-controversy-already-here> [<https://perma.cc/U84U-275G>].

7. See Patricia de Vries, *The Speculative Design of Immaculate Motherhood*, DIGICULT, <http://digicult.it/design/the-speculative-design-of-immaculate-motherhood/> [<https://perma.cc/6GJC-YYA3>] (last visited Feb. 28, 2021); *Ectogenesis*, WIKTIONARY, <https://en.wiktionary.org/wiki/ectogenesis> [<https://perma.cc/L6HA-MMYJ>] (last visited Feb. 28, 2021).

8. See LEE M. SILVER, REMAKING EDEN: HOW GENETIC ENGINEERING AND CLONING WILL TRANSFORM THE AMERICAN FAMILY 66–67 (1997).

positive airway pressure (CPAP) and mechanical ventilation were used to support extremely premature infants.⁹ By the mid-to-late 1990s, exogenous surfactants—which support fragile lungs from collapse—and antenatal steroids (to accelerate the maturation of fetal organs) became part of the neonatologists’ repertoire, substantially increasing survival rates.¹⁰ These and other technological advances pushed viability from 25–26 weeks in the mid-1990s to 23–24 weeks by the mid-2000s.¹¹ Infants now routinely survive delivery at 23–24 weeks. Survival rates continually tick up while subsequent morbidities gradually decrease.¹² In essence, by using partial ectogenetic technology, better mimicking the support provided by a mother’s uterus, researchers and doctors continue to expand the timeframe within which infants can be gestated *ex vivo*.

Ectogenesis captures the imagination. Haldane’s talk to the Heretics Society directly inspired Aldous Huxley’s classic work of fiction, *Brave New World*, forever cementing ectogenesis in the collective consciousness as extreme and dystopic. Feminists speculate that ectogenesis will either liberate women from the foundational biological disadvantage of gestation or, alternatively, usher in a mass “gynocide” by rendering women biologically expendable.¹³ It is unsurprising that full ectogenesis triggers such a visceral response. The emergence of this technology would represent a fundamental disruption of The Way Things Are. Decoupling women’s bodies from reproduction—for those that opt to—could make the humankind of the future as different from present-day humans as *Homo habilis* was from *Australopithecus*.¹⁴ It would transform our species in unknown ways, and that disruptive potential has generated decades of dystopian fiction and bioethicist fretting.

It seems intuitive that most would not object to the use of partial ectogenetic technology to save the lives of premature infants. Yet, the objections to full ectogenesis or voluntary reproduction via ectogenesis

9. Hannah C. Glass, Andrew T. Costarino, Stephen A. Stayer, Claire M. Brett, Franklyn Cladis & Peter J. Davis, *Outcomes for Extremely Premature Infants*, 120 ANESTHESIA & ANALGESIA 1337, 1339 (2015).

10. *Id.* at 1337–42.

11. *Id.* at 1340.

12. *Id.* at 1340–42.

13. See SHULAMITH FIRESTONE, *THE DIALECTIC OF SEX* 205–07 (1970); ANDREA DWORKIN, *RIGHT-WING WOMEN* 191–94 (1983).

14. Australopithecines are considered to be the missing link between apes and the genus *Homo*. They had smaller cranial mass and more pronounced jaws. See Adam P. Van Arsdale, *Homo Erectus – A Bigger, Smarter, Faster Hominin Lineage*, NATURE EDUC. KNOWLEDGE PROJECT (2013), <https://www.nature.com/scitable/knowledge/library/homo-erectus-a-bigger-smarter-97879043/> [<https://perma.cc/YW5Q-XYFS>].

abound. Somewhere along the spectrum of intervention, somewhere between the use of extracorporeal membrane oxygenation and full ectogenesis, revulsion kicks in for many. That revulsion even unifies disparate and surprising groups like family-values Republican senators and every flavor of feminist.

But the equal protection clause is concerned with equality under the law and specifically precludes government action that is motivated by disgust or stereotypes. This Article argues that whether the Court ultimately applies intermediate scrutiny, strict scrutiny, rational basis review, or rational basis “with bite,” the use of full ectogenesis for reproductive purposes ought to be protected under the Fourteenth Amendment’s equal protection clause. Moral objections cannot legitimately bar access, nor can dystopian science fantasies. Both the equal protection clause of the Fourteenth Amendment and ectogenesis are tools for promoting the flourishing of human life. Full ectogenesis is coming, perhaps within a few years. Society must be prepared to grapple with the constitutional issues implicated by its birth.

Part II of the Article gives an overview of available and nascent ectogenetic technologies. In Part III, it sets forth the approach to the equal protection analysis herein. Part IV explores how gender-based classifications made in the regulation of ectogenesis might trigger the application of intermediate scrutiny and the likelihood of success under that standard of review. Part V considers whether a ban on full, voluntary ectogenesis infringes on the fundamental right to procreate, thus triggering strict scrutiny. Parts VI and VII assess how a rational basis or rational basis “with bite” analysis might apply if the Court found no suspect class or fundamental right was implicated by a ban on ectogenesis.

II. STATUS OF THE TECHNOLOGY

The “14-day rule” is a prohibition on research that involves growing human embryos *ex vivo* beyond fourteen days from fertilization. The rule has been adopted in at least seventeen countries, including the United States, either by legislative acts or government-issued scientific guidelines.¹⁵ Since its emergence in a 1979 report by the Ethics Advisory Board of the United States Department of Health, Education, and Welfare, the 14-day rule has substantially impacted the rate and nature of research into human reproduction and reproductive biotechnology. Indeed, between 1979 and 2016, progress

15. See Insoo Hyun, Amy Wilkerson & Josephine Johnston, Comment, *Revisit the 14-Day Rule*, 533 NATURE 169, 170 (2016).

toward ectogenesis moved slowly, and there were few major advances. In 1996, Yoshinori Kuwabara, then-chairman of Tokyo's Jutendo University Department of Obstetrics and Gynecology, developed a technique for gestating perivable goat fetuses in a synthetic uterus termed "extrauterine fetal incubation."¹⁶ His team's work, which used oxygenated blood and artificial amniotic fluid, was widely reported as an important step forward in embryology, despite technical difficulties and the ultimate death of the goat fetuses.¹⁷

However, due to advances in embryology and the growing awareness of the potential medical value of research into early human development, the movement to abolish or substantially alter the 14-day rule found international support among researchers and bioethicists by 2016.¹⁸ When researchers at Cambridge University and Rockefeller University in New York announced their successful growth of human embryos in vitro for thirteen days, the debate surrounding the 14-day rule was once again revived.¹⁹ This announcement—wherein the scientists profoundly expanded the window of functional *ex vivo* gestation via "[a]n improved culture medium and a better substrate for embryo attachment"—renewed the bioethical debate about limitations on human embryo research.²⁰

Prior to this 2016 announcement, Dr. Hung-Ching Liu—a researcher at Cornell University's Department of Reproductive Medicine—ran up against the 14-day rule in her team's embryological research. In 2003, Liu and her team successfully gestated a mouse embryo in a bioprosthetic uterus, almost to full term.²¹ Following that success, Dr. Liu grew a human embryo in a similar bioengineered uterus for ten days, terminating the incubation prior to the fourteen-day limit placed on embryological researchers.²² Liu, whose

16. Perri Klass, *The Artificial Womb Is Born*, N.Y. TIMES MAG. (Sept. 29, 1996), http://www.nytimes.com/1996/09/29/magazine/the-artificial-womb-is-born.html?_r=0 [<https://perma.cc/83DZ-82RS>].

17. *Id.*; Katarina Lee, *Ectogenesis*, 2 VOICES IN BIOETHICS 1, 1 (2016).

18. See Sarah Knapton, 'Artificial Womb' Breakthrough Sparks Row over How Long Human Embryos Should Be Kept in Lab, TELEGRAPH (May 4, 2016, 10:00 PM), <http://www.telegraph.co.uk/science/2016/05/04/artificial-womb-breakthrough-sparks-row-over-how-long-human-embryos-should-be-kept-in-lab/> [<https://perma.cc/3EMF-DUH2>].

19. *Id.*

20. Janet Rossant, *Implantation Barrier Overcome*, 533 NATURE 182, 182–83 (2016).

21. Gretchen Reynolds, *Artificial Wombs*, POPULAR SCI. (Aug. 1, 2005), <https://www.popsci.com/scitech/article/2005-08/artificial-wombs/> [<https://perma.cc/DAR9-ZZV3>]. At this time, Dr. Liu was serving as the Director of the Reproductive Endocrine Laboratory at the Center for Reproductive Medicine and Infertility at Cornell. See *id.*

22. Soraya Chemaly, *What Do Artificial Wombs Mean for Women?*, REWIRE NEWS GRP. (Feb. 23, 2012, 8:11 AM), <https://rewire.news/article/2012/02/23/what-do-artificial-wombs-mean-for-women/> [<https://perma.cc/7Q5X-3UXZ>].

ultimate goal is to develop a “functioning external womb,” grew a bioprosthetic uterus by “adding engineered endometrium tissue to a bio-engineered, extra-uterine ‘scaffold.’”²³

The race to develop full ectogenesis was now in full swing. In April 2017, researchers at the Children’s Hospital of Philadelphia (CHOP) published the results of their fetal lamb study wherein their novel system of extracorporeal gestation successfully supported the growth of extremely premature and periviable fetal lambs.²⁴ The CHOP researchers’ system, termed the “biobag,” was intended to closely mimic the conditions of a sheep uterus, hosting the lambs in a closed synthetic amniotic sac, circulating fetal blood to oxygenate it, and utilizing an umbilical interface to their pumpless oxygenator circuit.²⁵ The system was pumpless in order to protect the fragile fetal hearts from overload and thus was powered by the beating of the fetal hearts themselves.²⁶ The lambs were born and grew up normally without complications or defects.²⁷ Dr. Flake, the fetal surgeon in charge of these experiments, believes his biobag technology could be available for human use within a few years.²⁸

Hoping to build on CHOP’s successful incubation of lambs, researchers at the Dutch Eindhoven University of Technology received a grant of €2.9 million to build a prototype of a new artificial womb in October 2019.²⁹ The grant was awarded through the Horizon 2020 EU Program and will enable the Dutch researchers to more accurately model the experience of a baby in utero using 3D-printed replicas of human babies monitored with sensors.³⁰

Along with these more visible and controversial announcements, advances in the less contentious constituent parts of artificial womb technologies have progressed steadily, mostly without bioethicist and

23. *Id.*

24. Emily A. Partridge, Marcus G. Davey, Matthew A. Hornick, Patrick E. McGovern, Ali Y. Mejjaddam, Jesse D. Vrecenak, Carmen Mesas-Burgos, Aliza Olive, Robert C. Caskey, Theodore R. Weiland, Jiancheng Han, Alexander J. Schupper, James T. Connelly, Kevin C. Dysart, Jack Rychik, Holly L. Hedrick, William H. Peranteau & Alan W. Flake, *An Extra-Uterine System to Physiologically Support the Extreme Premature Lamb*, NATURE COMM’NS, Apr. 25, 2017, at 1, 2.

25. *Id.* at 2–3.

26. *Id.*

27. *Id.*

28. Zoltan Istvan, *The Abortion Debate Is Stuck. Are Artificial Wombs the Answer?*, N.Y. TIMES (Aug. 3, 2019), <https://www.nytimes.com/2019/08/03/opinion/sunday/abortion-technology-debate.html> [<https://perma.cc/96FM-QQ6K>].

29. Nicola Davis, *Artificial Womb: Dutch Researchers Given €2.9m to Develop Prototype*, GUARDIAN (Oct. 8, 2019, 7:13 AM), <https://www.theguardian.com/society/2019/oct/08/artificial-womb-dutch-researchers-given-29m-to-develop-prototype> [<https://perma.cc/2CB6-84RP>].

30. *Id.*

journalistic attention. Improvements in scaffolding materials, substrates, tubing, and fluid filtration make once-science-fiction artificial wombs more likely with each passing year. Whether it takes years or decades to achieve full human ectogenesis, a technological innovation of this magnitude will certainly engender debates about the bioethical and legal issues created by its use or regulation. Next, this Article addresses the question of whether the existing equal protection clause jurisprudence likely protects the right to reproduce with ectogenesis.

III. EQUAL PROTECTION FOR REPRODUCTIVE BIOTECHNOLOGY

While the due process clause likely provides protection against a ban on ectogenesis via the fundamental procreative liberty it enshrines, the equal protection clause provides another avenue through which the right to gestate via ectogenesis could be protected.³¹ The same body of law ensuring a robust right to reproductive privacy under the due process clause and the right to be free from government discrimination under the equal protection clause ought to protect the use of other forms of reproductive biotechnology. While this Article's analysis is focused on ectogenetic technology, most arguments made herein can be logically extended to protect the individual use of in vitro fertilization, traditional gestational surrogacy, and other forms of reproductive biotechnology as of yet unknown to us. Because it is unclear how the Supreme Court would orient itself toward reproductive ectogenesis, this Article will evaluate the probability of a successful challenge under each of the four analytical methods that the Court historically uses for equal protection challenges.

This Article concludes that whatever the standard of review, as outlined below, a ban on ectogenesis would be unlikely to pass constitutional muster. Given the dangers of traditional gestation, a technological alternative could save countless maternal and fetal lives. Beyond the physical impacts of gestation, this Article discusses the social and economic costs of traditional physical gestation and the disproportionate harms borne by gestating women. When ectogenesis reaches the stage of safety and availability for patient adoption, all but the most regressive and illegitimate government interests will remain. As discussed herein, a ban on this technology would thus violate the equal protection clause's guarantees against legislation that promotes

31. See Brit Janeway Benjamin, *Ectogenesis: Is There a Constitutional Right to Substrate-Independent Wombs?*, 20 U. MD. L. J. RACE, RELIGION, GENDER & CLASS 166 (2020).

mandatory adherence to traditional sex and gender roles, including that which ensures a permanent gestating caste.

First, this Article discusses the intermediate scrutiny standard applied to gender-based classifications. As a threshold matter, a gender-based classification can only withstand intermediate scrutiny if the challenged classification serves important government objectives and the discriminatory means employed are substantially related to the achievement of that objective.³²

Second, this Article considers strict scrutiny, which is applied to violations of equal protection where a fundamental right is implicated. When government action treats classes of people unequally with regard to a fundamental right, the court applies strict scrutiny. The government then bears the burden of proving the classification is narrowly tailored to fulfill a compelling government interest.³³

Third, this Article considers a ban on ectogenesis under the rational basis test. Under this test, the classification carries a presumption of constitutionality, and the claimant must prove that the government action is not even a rational means for furthering a legitimate government interest. This is the standard most deferential to the government. Even in light of the extraordinary deference to the government's actions, this Article argues that a ban on voluntary reproduction via ectogenesis could not survive an equal protection challenge under rational basis review.

Fourth, this Article analyzes ectogenesis under the rational basis "with bite" standard set forth in *Plyler v. Doe* for classifications based on a semi-suspect class or regarding a semi-fundamental right.³⁴ Although this standard has been used only sparingly, when used, the Court applies a presumption of unconstitutionality requiring the government to prove that the classification was "a demonstrably and substantially effective means to further its goals."³⁵ For this rule to apply, the challenger must demonstrate "that the class affected has some similarities to suspect or semi-suspect classes, that the right affected is very important, and the disability imposed is very severe."³⁶

32. *Craig v. Boren*, 429 U.S. 190, 197 (1976).

33. See *Skinner v. Oklahoma*, 316 U.S. 535, 541 (1942); *Strict Scrutiny*, CORNELL L. SCH. LEGAL INFO. INST., https://www.law.cornell.edu/wex/strict_scrutiny [https://perma.cc/GAJ4-LRXK] (last visited Feb. 22, 2021).

34. *Plyler v. Doe*, 457 U.S. 202, 216 n.14 (1982).

35. Russell W. Galloway, Jr., *Basic Equal Protection Analysis*, 29 SANTA CLARA L. REV. 121, 158 (1989).

36. *Id.*

IV. GENDER-BASED CLASSIFICATIONS AND INTERMEDIATE SCRUTINY

A statute that discriminates on the basis of gender is presumed unconstitutional and evaluated under the intermediate scrutiny standard of review.³⁷ Intermediate scrutiny requires that the gender classification “serve important government objectives and must be substantially related to the achievement of those objectives.”³⁸ Before evaluating whether the statute satisfies intermediate scrutiny, however, the court must evaluate whether the gender classification appears in the statute. If the statute is gender-neutral on its face, the challenger bears the burden of establishing that the government’s classification discriminates both in effect and purpose—often referred to as the “*Feeney* evil purpose test.”³⁹ This Part addresses facial neutrality and assesses how government action may or may not satisfy the *Feeney* evil purpose test if it banned ectogenesis.

A. *Facial or Neutral Classification*

The government could establish an ectogenesis ban that equally restricts all people from the gestation, development, or nurturance of a child via ectogenesis. In this hypothetical ban, the government would make no mention of the actor’s gender, and it would disallow all people from participating in full reproductive ectogenesis. This hypothetical statutory language, modeled off of existing state anti-cloning laws,⁴⁰ reflects what such a facially neutral ban may look like:

No person shall gestate, develop, or otherwise nurture a human embryo or fetus extracorporeally after fourteen days from fertilization, except for the purpose of preserving the life or health of an infant born of a woman before reaching full term.

This type of statute prohibits ectogenesis for reproductive purposes, except to preserve the life and health of premature infants. The language “born of a woman” is drawn from state and federal statutes regarding personhood, parentage, and putative fatherhood, and would likely be included to exempt the widely supported practice of saving infants who are born preterm following *in vivo* gestation.⁴¹

37. *Id.* at 142.

38. *Craig v. Boren*, 429 U.S. 190, 197 (1976).

39. Galloway, *supra* note 35, at 142.

40. *See, e.g.*, OKLA. STAT. ANN. tit. 63, § 1-727(B) (West 2020); 105 MASS. CODE REGS. 960.007 (2020).

41. *See generally* 1 U.S.C. § 8(a)–(b) (defining the word “person” as “every infant member of the species *homo sapiens* who is born alive at any stage of development”). A member of the species *Homo sapiens* is born alive following “the complete expulsion or extraction from his or her

If a state adopts a similar statute in which there are no facial classifications, then constitutional challengers will bear the burden of satisfying the *Feeney* evil purpose test before the Court applies intermediate scrutiny. Alternatively, if a future ban on ectogenesis includes a facial gender classification, then intermediate scrutiny would automatically apply. Given the legislative history of reproductive biotechnology statutes, however, it is unlikely that a state would enact a ban with facial gender classifications.

B. Discriminatory Effect

When a government action is facially neutral, whether heightened scrutiny applies depends on whether the government action discriminates in both effect and purpose. The discriminatory effect of a ban on ectogenesis is self-evident. The burdens borne by the female sex in traditional gestation are significant. Radhika Rao, a constitutional law scholar and professor at UC Hastings, powerfully and accurately described pregnancy as “a profound invasion of the body that imposes physical, psychological, and social burdens upon a woman, threatening both her right to bodily autonomy and gender equality.”⁴² The physical impacts of pregnancy for women are well measured, as are the economic risks. Pregnancy is uncomfortable in the best case, deadly in the worst, and always imposes social and financial costs that are unique to women.⁴³ Even healthy women experience a range of symptoms, including “morning sickness, dizziness, headache, bone and muscle aches, loss of visual acuity, bleeding gums, breathlessness, heartburn, varicose veins and haemorrhoids.”⁴⁴ In at least 15 percent of pregnancies, life-threatening complications arise to put the gestating mother at risk of death. Even safer deliveries can result in vaginal tearing and episiotomy.⁴⁵ Women of advanced age or physical immaturity, and those who have ailments like diabetes or HIV, face increased physical risks from gestation and delivery. Further, working professionals who are visibly pregnant are “judged as less committed to their jobs, less dependable, and less authoritative” than nonpregnant

mother of that member,” which would seem to exclude infants born via ectogenetic technology from legal personhood. *See id.*

42. Radhika Rao, *Equal Liberty: Assisted Reproductive Technology and Reproductive Equality*, 76 GEO. WASH. L. REV. 1457, 1485 (2008).

43. *See* Michelle J. Budig & Paula England, *The Wage Penalty for Motherhood*, 66 AM. SOCIO. REV., no. 2, 2001, at 204, 219.

44. EVIE KENDAL, EQUAL OPPORTUNITY AND THE CASE FOR STATE SPONSORED ECTOGENESIS 3 (2015).

45. *Id.*

women in comparable managerial roles.⁴⁶ Women whose careers render pregnancy unsafe or impossible must often sacrifice their careers to pursue motherhood or forgo it altogether.⁴⁷

The pursuit of procreative liberty is unique among all constitutional rights, as access to no other constitutional right is predicated upon a violation of bodily integrity. The absence of a negative right to utilize ectogenesis means that women must bear enormous physical risk, economic disadvantage, and social stigma just to participate in the central survival task of our species—procreation. Men bear no such costs. Therefore, it is clear that a ban on the use of ectogenesis would have a substantially disparate impact on women as a class. It would deprive women of an opportunity to remove a fundamental biological disadvantage, cementing a sexual hierarchy that could be avoided through technology. However, the profound discriminatory effect alone is not sufficient to justify the application of the intermediate scrutiny standard; the challenger must also prove that the government acted with a discriminatory purpose, as articulated in *Personnel Administrator of Massachusetts v. Feeney*.

C. Discriminatory Intent: Feeney Evil Purpose Test

In *Feeney*, plaintiff Helen B. Feeney, a female nonveteran, challenged a Massachusetts statute that provided an absolute preference for hiring veterans to fill state civil service jobs on the grounds that the statute “operate[d] overwhelmingly to the advantage of males” in contravention of the equal protection clause of the Fourteenth Amendment.⁴⁸ Although Feeney achieved the second- and third-highest scores on two of the civil service examinations she took, she was placed sixth on the list of eligible hires, behind five lower-scoring male veterans for one position and twelfth behind eleven male veterans for another.⁴⁹ The Court found that the “impact of the veterans’ preference law upon the public employment opportunities of women ha[d] . . . been severe.”⁵⁰ As the Court explained, the states retain power to make classifications that cause statutes to have uneven impact on certain groups and “uneven effects upon particular groups

46. Shelley J. Correll, Stephen Benard & In Paik, *Getting a Job: Is There a Motherhood Penalty?*, 112 AM. J. SOCIO., no. 5, 2007, at 1297, 1298.

47. See Ellen L. Mozurkewich, Barbara Luke, Michal Avni & Fredric M. Wolf, *Working Conditions and Adverse Pregnancy Outcome: A Meta-Analysis*, 95 OBSTETRICS & GYNECOLOGY, no. 4, 2000, at 623, 633.

48. *Pers. Adm’r of Mass. v. Feeney*, 442 U.S. 256, 259 (1979).

49. *Id.* at 264.

50. *Id.* at 271.

within a class are ordinarily of no constitutional concern.”⁵¹ However, certain classifications, such as race, “in themselves supply a reason to infer antipathy,” a motivation that does run afoul of the Fourteenth Amendment.⁵²

Citing its prior decisions in *Washington v. Davis* and *Arlington Heights v. Metropolitan Housing Development Corp.*, the Court held that “if a neutral law had a disproportionately adverse effect upon a racial minority, it is unconstitutional . . . only if that impact can be traced to a discriminatory purpose.”⁵³ A law banning the use of ectogenetic technology would not likely classify individuals on the face of the statute. Instead, as with the hypothetical ban and current laws that ban human reproductive cloning, the law would likely seek to prohibit doctors, researchers, and prospective parents from utilizing the technologies for reproductive purposes.⁵⁴ When a law “appears to be neutral but in reality is a subterfuge designed to impose hidden burdens on an unpopular class,” the Court will find that it violates the equal protection clause.⁵⁵

In *Feeney*, the Court articulated a two-part inquiry to be utilized when “a statute gender-neutral on its face is challenged on the ground that its effects upon women are disproportionately adverse.”⁵⁶ The first part seeks to determine “whether the statutory classification is indeed neutral in the sense that it is not gender based” and whether “the classification itself, covert or overt, is not based upon gender.”⁵⁷ The second part of the inquiry “is whether the adverse effect reflects invidious gender-based discrimination.”⁵⁸ It is the “purposeful discrimination,” not the disproportionate impact alone, that is unconstitutional.⁵⁹ Intermediate scrutiny is applied to facially neutral classifications where both parts of the test are satisfied.

51. *Id.* at 271–72 (first citing *N.Y.C. Transit Auth. v. Beazer*, 440 U.S. 568 (1979); then citing *Jefferson v. Hackney*, 406 U.S. 535, 538 (1972); and then citing *James v. Valtierra*, 402 U.S. 137 (1971)).

52. *Id.* at 272.

53. *Id.*; *Washington v. Davis*, 426 U.S. 299 (1976); *Vill. of Arlington Heights v. Metro. Hous. Dev. Corp.*, 429 U.S. 252 (1977).

54. See KERRY LYNN MACINTOSH, *ILLEGAL BEINGS: HUMAN CLONES AND THE LAW* 155 (2005).

55. *Id.*

56. *Feeney*, 442 U.S. at 274.

57. *Id.* (citing *Arlington Heights*, 429 U.S. 252).

58. *Id.*

59. *Id.* (citing *Swann v. Charlotte-Mecklenburg Bd. of Educ.*, 402 U.S. 1, 16 (1971)).

1. Whether the Classification Is Neutral-in-Fact

In determining whether the veterans' preference statute passed constitutional muster in *Feeney*, the Court stated that “[i]f the impact . . . could not be plausibly explained on a neutral ground, impact itself would signal that the real classification made by the law was in fact not neutral.”⁶⁰ The Court evaluated the composition of the veteran class, noting that “[v]eteran status is not uniquely male” and that the “nonveteran class is not substantially all female.”⁶¹ It found that “[t]oo many men are affected [by the statute] to permit the inference that the statute is but a pretext for preferring men over women.”⁶²

In the ectogenesis context, there are persuasive indications that a ban would be “in fact not neutral.”⁶³ Unlike veteran status, gestating status is unique to the female sex. All female-bodied individuals will decide whether to gestate after considering the costs and benefits of pregnancy and parenthood. Ectogenesis can influence this calculus because it alleviates some of the economic, political, and social costs of pregnancy that are borne all but exclusively by female-bodied individuals.⁶⁴ Unlike the veterans in *Feeney*, the gestating class of people (those who would be disproportionately disadvantaged by a ban on ectogenesis) is exclusively female.

Also in *Feeney*, the Court stated that a classification that was based on gender, either covertly or overtly, would not be neutral-in-fact.⁶⁵ Thus, a statute outright banning ectogenesis might use ostensibly gender-neutral language, but the regulation would be inherently gender-referential by referring to gestation at all. The word “gestation” comes from the Latin word “gestare” meaning “to carry in the womb.”⁶⁶ Since womb bearers are people with female reproductive organs, whatever their gender identity, any reference to gestation is a sex-specific reference. A statute regulating the manner of gestation will always be an overt or covert sex or gender reference.

60. *Id.* at 275 (first citing *Washington v. Davis*, 426 U.S. 229, 242 (1976); and then citing *Arlington Heights*, 429 U.S. at 266).

61. *Id.*

62. *Id.*

63. *Id.* (first citing *Washington*, 426 U.S. at 242; and then citing *Arlington Heights*, 429 U.S. at 266).

64. “All but exclusively” refers to the capacity for some transgender men, who have retained their uteruses post-transition, to gestate. See Thomas Beatie, *Labor of Love*, ADVOCATE (Mar. 14, 2008, 12:00 AM), <http://www.advocate.com/news/2008/03/14/labor-love> [https://perma.cc/8B5U-XMRC].

65. *Feeney*, 442 U.S. at 274 (citing *Arlington Heights*, 429 U.S. 252).

66. *Gestate*, LEXICO, <https://en.oxforddictionaries.com/definition/gestate> [https://perma.cc/W9Z6-7T2M] (last visited Mar. 1, 2021).

Because the affected class of gestating people is occupied all but exclusively by females, and because any reference to gestation implicates female reproduction, the Court could reasonably find a ban on ectogenesis to not be neutral-in-fact. As a result, the Court would analyze the challenge under intermediate scrutiny. Should the Court find that a ban on ectogenesis is neutral-in-fact, a second inquiry would be required to assess whether the classification was motivated by invidious sex or gender discrimination. If the answer is affirmative, the Court would then analyze the statute under intermediate scrutiny.⁶⁷

2. Whether the Classification Is Motivated by Invidious Gender Discrimination

In *Feeney*, the Court noted that the legislature must have been aware that “most veterans are men,” and that it would “thus be disingenuous to say that the adverse consequences of the legislation for women were unintended, in the sense that they were not volitional or in the sense that they were not foreseeable.”⁶⁸ However, intent as to discriminatory purpose “implies more than intent as volition or intent as awareness of consequences.”⁶⁹ To prove that the legislature acted with discriminatory intent in promulgating a neutral-in-fact statute requires proof that it “selected or reaffirmed a particular course of action at least in part ‘because of,’ not merely ‘in spite of,’ its adverse effects upon an identifiable group.”⁷⁰ The legislative history of the original veterans’ preference law, as well as the modern iterations, supported the conclusion that the law was intended to benefit all veterans, not merely males or male veterans.⁷¹ Since the plaintiff failed to demonstrate that the “law in any way reflect[ed] a purpose to discriminate on the basis of sex,” the Court found that the statute did not violate the Fourteenth Amendment.⁷² However, the cases of *Washington v. Davis* and *Arlington Heights v. Metropolitan Housing Development Corp.*, provide parameters for evaluating whether state action is motivated by invidious gender discrimination.

In *Washington v. Davis*, applicants for police officer positions at the District of Columbia Metropolitan Police Department challenged

67. See *Feeney*, 442 U.S. at 274 (explaining the intermediate scrutiny framework that applies to statutes found to have a discriminatory effect on one sex).

68. *Id.* at 278.

69. *Id.* at 279 (citing *United Jewish Orgs. of Williamsburgh, Inc. v. Carey*, 430 U.S. 144, 179 (1977) (Brennan, J., concurring)).

70. *Id.*

71. *Id.* at 279–80.

72. *Id.* at 281.

the department's recruiting procedures, including a written personnel test that "excluded a disproportionately high number" of Black applicants.⁷³ The test, referred to as "Test 21," was designed by the Civil Service Commission to test "verbal ability, vocabulary, reading, and comprehension."⁷⁴ Black applicants failed Test 21 more often than white applicants.⁷⁵ The Court held that despite the disproportionate impact on Black applicants, no cognizable equal protection claim existed absent a racially discriminatory purpose.⁷⁶

One year later, in *Arlington Heights*, the respondent MHDC sought to build low-income and moderate-income housing, requesting a rezoning of a parcel of land from single family to multifamily.⁷⁷ MHDC's rezoning application included a reference to Section 236 of the federal Fair Housing Act, which required "an affirmative marketing plan designed to assure that a subsidized development is racially integrated."⁷⁸ The Village Plan Commission denied the respondent's petition for rezoning on the grounds that (1) rezoning the parcel "threatened to cause a measurable drop in property value for neighboring sites" and (2) the Village's zoning policy stated that multifamily zoning was "primarily to serve as a buffer between single-family development" and "commercial and manufacturing districts."⁷⁹ MHDC challenged the Village's decision on the grounds that their denial of the rezoning request was racially discriminatory and thus violated the equal protection clause of the Fourteenth Amendment.⁸⁰ Both the US District Court for the Northern District of Illinois and the US Court of Appeals for the Seventh Circuit found that the Village's decision was motivated not by racial animus, but by a desire to protect property values and zoning plan integrity.⁸¹ However, the courts' opinions differed on whether the denial would have a racially discriminatory effect—the district court concluded that the denial would not have a racially discriminatory effect, while the court of appeals found just the opposite.⁸² Under the appellate court's decision, strict scrutiny must apply.

73. *Washington v. Davis*, 426 U.S. 229, 232–33 (1976).

74. *Id.* at 234–35.

75. *Id.* at 235.

76. *Id.* at 245.

77. *Vill. of Arlington Heights v. Metro. Hous. Dev. Corp.*, 429 U.S. 252, 254 (1977).

78. *Id.* at 257.

79. *Id.* at 258.

80. *Id.* at 254.

81. *Id.* at 259.

82. *Id.* at 259–60.

When the Supreme Court decided *Arlington Heights*, it reiterated that “official action will not be held unconstitutional solely because it results in a racially disproportionate impact” and that “[p]roof of racially discriminatory intent or purpose is required to show a violation” of the equal protection clause.⁸³ The Court set forth a “sensitive inquiry” for determining whether the government actor’s decision was motivated, at least in part, by a discriminatory purpose.⁸⁴ The proof of discriminatory purpose should be drawn from whatever “circumstantial and direct evidence of intent” is available, including, but not limited to, the disparate impact of the decision, the historical background of the decision, departures from normal procedures, and the legislative history of the action.⁸⁵ If the decision can be explained on no grounds other than discrimination—even where it appears neutral on its face—the “evidentiary inquiry is then relatively easy.”⁸⁶ The Court upheld the rezoning denial, finding that the respondent failed to meet its evidentiary burden of establishing that the aforementioned factors suggest that the denial was motivated by a discriminatory intent.⁸⁷

Considering the standard set forth in *Washington v. Davis* and affirmed in *Arlington Heights*, there is a substantial likelihood that any ban on ectogenesis for non-safety reasons⁸⁸ (assuming the technology is safe for the prospective gestated fetus) would be motivated by invidious gender discrimination. First, the disparate impact of a ban on ectogenesis is notable, as previously discussed in Section IV.B, and is a factor favoring the conclusion of invidious gender discrimination. Second, the historical background of the dialogue surrounding ectogenesis in politics and art supports the same conclusion, although the specific legislative history of any statute (what would be the third factor) does not yet exist. One congressman has previously contended that the transition from viviparous gestation to ectogenesis would lead to the production of offspring that are “nothing but psychological monsters.”⁸⁹ It is reasonable, therefore, to expect any legislative history

83. *Id.* at 264–65.

84. *Id.* at 265–66.

85. *Id.* at 266–68.

86. *Id.* at 266.

87. *Id.* at 270.

88. *See id.* at 264–65; *Washington v. Davis*, 426 U.S. 229, 245 (1976). In this context, “non-safety reasons” means that the technology is assumed to be safe for the gestated fetus.

89. *See* 117 CONG. REC. 12736–44 (1971) (citing *Man into Superman: The Promise and Peril of the New Genetics*, TIME, Apr. 19, 1971, at 33, printed into the *Congressional Record* on request of Senator Walter Mondale in support of his proposal to create a Commission on Health, Science, and Society).

for ectogenesis bans to contain gendered references to the natural order and a host of implied or express gender discrimination. Similarly, congressional debates about anti-cloning bills have contained equally extreme denunciations. "There is no great invention," as Haldane's 1923 address notes, "from fire to flying, which has not been hailed as an insult to some god."⁹⁰ This apothegm is manifest across the *Congressional Record* when reproductive biotechnology or comparably disruptive technologies are addressed.

The history of congressional debate and activity provides insight into the moral disapproval that has informed prior legislative discussions on ectogenesis. David Weldon cosponsored a bill (H.R. 534) entitled the Human Cloning Prohibition Act of 2003, which sought to ban human cloning for both research and reproductive purposes.⁹¹ Weldon asserted that the "artificial womb is available to us today" and that the combination of human cloning and artificial wombs rendered fetal tissue harvesting "the next place these researchers will want to go."⁹² He argued that "it is a moral and ethical minefield that . . . we as a Nation should not enter into."⁹³ In 2007, an article by William B. Hurlbut was printed into the *Congressional Record*, stating that "the ongoing research to create an artificial endometrium (a kind of artificial womb) that would allow extracorporeal gestation of cloned embryos to later stages for the production of more advanced cells" posed "concerns about the commodification and commercialization of eggs and embryos."⁹⁴ These statements reflect congressional attitudes, especially, but not exclusively, that more technologically conservative factions would likely advance any ban on ectogenesis. This suggests that impermissible invidious gender discrimination would be present.

In addition to the established legislative history, an ectogenesis ban could prove to be invidious discrimination when one considers the technology's effect on traditional gender-based household dynamics. Ectogenesis will be a meaningful departure from the once-unavoidable gender roles implicated in traditional gestation. Given the intense moral dialogue around gender roles in the United States and the far-reaching impact that changes in the gestational status quo would have, the historical background of a ban on ectogenesis must be read broadly to be read accurately. Along with specific discussions of ectogenesis before the legislature, the discussions of gender morality in

90. HALDANE, *supra* note 6, at 44.

91. 149 CONG. REC. 4412 (2003) (statement of Rep. David Weldon).

92. *Id.* at 4414.

93. *Id.*

94. 153 CONG. REC. 8564 (2007).

US politics should come to bear on the historical background of any statute regarding ectogenesis. The Moral Majority, the organization whose socially conservative mission has continued to inform the US religious right, coalesced in the late 1970s and early 1980s, intent on “responding to a host of societal ills through legislation.”⁹⁵ Their stated goals included reestablishing traditional gender roles and preventing the passage of the Equal Rights Amendment, which “challenged the very foundation of the conservative Christian worldview: the idea that gender was a sacred, God-given certainty in an uncertain fluctuating world.”⁹⁶ James Dobson, a psychologist whose books on gender and marriage captured the traditionalist models of sex and gender adopted by the Moral Majority, derided feminists for the erosion of respect for the masculine, viewing this “as a crisis of gender, but also as a threat to national security.”⁹⁷ The gender-essentialist mission of the Moral Majority has persisted long after the formal dissolution of the organization in 1989.⁹⁸

Family values and the nature of gender roles are still important issues to US voters and their congresspeople. In 2015, 21 percent of Americans said they would only vote for a political candidate who shared their views on abortion, the highest in Gallup’s nineteen-year history of gathering data on this question.⁹⁹ By 2020, that figure reached 24 percent, with 47 percent placing abortion as one of many important factors to their vote.¹⁰⁰ Today, about 85 percent of Americans view cloning humans as morally wrong.¹⁰¹ While only 34 percent believe that children are just as well off if their mother works outside of the home, 76 percent believe the children are just as well off if their father works outside of the home.¹⁰² When surveyed, 53 percent believe that a

95. Doug Banwart, *Jerry Falwell, the Rise of the Moral Majority, and the 1980 Election*, W. ILL. HIST. REV. 133, 133–35 (2013).

96. Kristin Du Mez, *Donald Trump and Militant Evangelical Masculinity*, RELIGION & POL. (Jan. 17, 2017), <http://religionandpolitics.org/2017/01/17/donald-trump-and-militant-evangelical-masculinity/> [<https://perma.cc/2Y33-HXFC>]; *id.* at 135.

97. Du Mez, *supra* note 96; see JAMES C. DOBSON, *STRAIGHT TALK TO MEN AND THEIR WIVES* (1980).

98. See Banwart, *supra* note 95, at 154.

99. Rebecca Riffkin, *Abortion Edges Up as Important Voting Issue for Americans*, GALLUP (May 29, 2015), <http://www.gallup.com/poll/183449/abortion-edges-important-voting-issue-americans.aspx?> [<https://perma.cc/LCZ4-8DK7>].

100. Megan Brenan, *One in Four Americans Consider Abortion a Key Voting Issue*, GALLUP (July 7, 2020), <https://news.gallup.com/poll/313316/one-four-americans-consider-abortion-key-voting-issue.aspx> [<https://perma.cc/UMC3-F5HK>].

101. *Moral Issues*, GALLUP, <http://www.gallup.com/poll/1681/Moral-Issues.aspx?> [<https://perma.cc/22YW-4L34>] (last visited Feb. 17, 2021).

102. D’Vera Cohn, Gretchen Livingston & Wendy Wang, *Public Views on Staying at Home vs. Working*, PEW RSCH. CTR.: SOC. & DEMOGRAPHIC TRENDS (Apr. 8, 2014),

woman would do a better job than a man in caring for a new baby, even excluding breastfeeding from consideration.¹⁰³

In a 2007 Gallup poll, 86 percent of Republicans and 72 percent of Democrats said that the presidential candidates' "positions on family values" would be "extremely important" or "very important" to their voting choice. As of May 2016, 73 percent of Americans think "the state of moral values in the country as a whole" is getting worse.¹⁰⁴ As moral and reproductive issues continue to dominate US political discourse, these perceptions and fears of technological disruption of reproduction are likely to influence legislative action. If and when a ban on ectogenesis is passed and challenged, evaluating the history of gender discrimination and related antecedent moral views must inform the inquiry into whether the historical background supports an implication of invidious gender discrimination.

As to the fourth and last *Arlington Heights* factor, a ban on full ectogenesis would be a departure from normal procedure showing evidence of discriminatory intent. Importantly, Congress has previously offered regular support for the development and approval of artificial organs and research into the technological assistance of vital organ functions. In April 2011, 250 members of the House of Representatives and 60 senators sent a letter to the Food and Drug Administration expressing their support for the approval of the artificial pancreas.¹⁰⁵ A bipartisan coalition of congressional leaders continued to speak out in favor of the development and approval of the artificial pancreas, calling it a "transformative medical technology" with the "potential to dramatically improve the health and quality of life of those who have diabetes."¹⁰⁶ Other artificial organs have received broad support from Congress. The 2010 Department of Defense and Related Agencies Appropriations Act contained a \$1 million funding allocation for work by the University of Tennessee College of Medicine with artificial bone implants and grafts.¹⁰⁷ Members of Congress have praised the

<https://www.pewresearch.org/social-trends/2014/04/08/chapter-4-public-views-on-staying-at-home-vs-working/> [https://perma.cc/GDC7-43S3].

103. Juliana Menasce Horowitz, Kim Parker, Nikki Graf & Gretchen Livingston, *Gender and Caregiving*, PEW RSCH. CTR.: SOC. & DEMOGRAPHIC TRENDS (Mar. 23, 2017), <http://www.pew-socialtrends.org/2017/03/23/gender-and-caregiving/> [https://perma.cc/DFS7-9M2X].

104. *Moral Issues*, *supra* note 101.

105. 157 CONG. REC. 14168 (2011) (statement of Rep. Gene Green).

106. *Id.* at 16215 (statement of Rep. John Kline), 18145 (statement of Rep. Patrick Tiberi).

107. 155 CONG. REC. 32623 (2009) (statement of Rep. Zach Wamp).

life-saving impact of the artificial kidney and the research into developing artificial livers.¹⁰⁸

In light of the aforementioned congressional endorsements of artificial organ development, it is apparent that Congress has no reservations about the replacement or salvaging of human organs with technological alternatives.¹⁰⁹ The Court should consider this favorable disposition toward other artificial organs when analyzing any ban on ectogenesis. Congressional disapproval of this one technological organ, combined with the history of disapproval of artificial wombs in Congress and culture, would be strongly suggestive of invidious discrimination. If Congress espouses a general approval of artificial organs but carves out an exception for artificial wombs, combined with the congressional history of revulsion towards reproductive changes via technology, then invidious discrimination resolves the cognitive dissonance and balances the equation. The objections are not about artificial organs—they are about shifting gender norms.

In *Washington v. Davis*, the Court held that where a legislative action could be explained by nothing other than invidious discrimination, it would fail even when the statute was neutral on its face. As discussed throughout this Article so far, the economic and social costs of physical gestation are great. The availability of a technological alternative stands to alleviate these enormous costs and provides an alternative to gestation that is safer for both the mother and fetus. Should fetus-safe full ectogenesis become available, it would be difficult to explain its prohibition on any grounds other than a desire to preserve traditional gender roles.

In sum, given the disparate impact on women, the likely legislative discourse, and subsequent deviation from the historical legislative support of artificial organs, a ban on ectogenesis would likely be found to have been motivated, at least in part, by intentional invidious gender discrimination. Thus, at a minimum, both the discriminatory impact and discriminatory purpose required by *Feeney* would be met by any ban on ectogenesis, urging the application of intermediate scrutiny to a ban on ectogenesis.

3. Whether an Ectogenesis Ban Would Survive Intermediate Scrutiny

If a ban on ectogenesis either contained a facial classification on the basis of gender or was facially neutral but the *Feeney* evil purpose

108. See 148 CONG. REC. E199 (daily ed. Feb. 26, 2006) (statement of Rep. Jim McDermott); 152 CONG. REC. 8857 (2006) (statement of Rep. Stephen Lynch).

109. This author performed a thorough search of the *Congressional Record* and found no negative treatment of any artificial non-uterus organ by any member of Congress from any party.

test was satisfied, the Court would apply intermediate scrutiny to evaluate the constitutionality of the statute. Intermediate scrutiny requires that the government establish that there is an important government interest and that the classification is substantially related to that interest, serving as a middle ground between strict scrutiny and rational basis review.¹¹⁰ Given the enormous potential benefits of ectogenetic technologies, it would be difficult for the government to articulate important interests that could be advanced by a ban on ectogenesis.

The Court has yet to hear an equal protection case regarding ectogenesis or a direct analogue to ectogenesis, which renders the task of analyzing the constitutionality of such a potential statute premature. Furthermore, whether an interest is sufficiently "important" for intermediate scrutiny purposes is an exercise in subjectivity that varies depending on the level of generality the Court uses to articulate the interest.¹¹¹ However, the equal protection jurisprudential landscape does provide some sense of the types of government interests that are or are not characterized as "important" and, more operatively, whether gendered classifications are held to be substantially related to those interests. While important interests in support of a ban on ectogenesis might include ensuring the health of prospective mothers and gestated infants or regulating the practice of medicine, the government would also bear the burden of establishing that a ban on ectogenesis is substantially related to those interests. While intermediate scrutiny appears to be a two-part test, the prongs are typically analyzed together such that the inquiry is in fact whether the stated government interest is substantially advanced by the classification.

Predicting accurately how the Court might interpret the importance of the interests set forth in support of a ban on ectogenesis is difficult. The case law provides limited instruction. Interests that have been held insufficiently important include "reducing the workload on probate courts" and "avoiding intrafamily controversy."¹¹² Achieving administrative efficiency is likewise an inadequate state objective.¹¹³ Benign race or gender classifications, classifications drawn in an attempt to remedy specific historical examples of prejudice, are unconstitutional under intermediate scrutiny where the classification is not tied to a sufficiently precise historical disadvantage.¹¹⁴ In *United*

110. *Craig v. Boren*, 429 U.S. 190, 197 (1976).

111. See Roger Craig Green, *Interest Definition in Equal Protection: A Study of Judicial Technique*, 108 YALE L.J. 439, 443-59 (1998).

112. *Reed v. Reed*, 404 U.S. 71, 76 (1971).

113. See *Frontiero v. Richardson*, 411 U.S. 677, 690-91 (1973).

114. See *Miss. Univ. for Women v. Hogan*, 458 U.S. 718, 728-29 (1982).

States v. Virginia, the Supreme Court reviewed the Virginia Military Institute's male-only admissions policy under intermediate scrutiny.¹¹⁵ While the Court held that the mission of educating "citizen soldiers" was important, the discriminatory admissions policy was not "substantially advanced by women's categorical exclusion."¹¹⁶

In the case of ectogenesis, if the articulated government interest was the protection of the health of prospective mothers, it would be difficult, if not impossible, to argue that a ban on the technology substantially serves that interest. As discussed throughout this Article, gestation is a dangerous endeavor. Since the Center for Disease Control began its Pregnancy Mortality Surveillance System in 1987, maternal mortality in the United States has steadily risen.¹¹⁷ For women in their childbearing years, death as a result of complications from pregnancy is a top-ten cause of death for women in their childbearing years.¹¹⁸ While protecting maternal life and health would very likely constitute an important government interest, a ban on ectogenesis would actively undermine that purpose, not substantially advance it. Protecting the lives of infants gestated by ectogenesis is also likely to be understood as an important government interest. Whether a ban substantially relates to that goal would simply depend on the nature of the technology. If the technology substantially improves outcomes for gestated infants, such as reducing the incidence of birth defects, or has a neutral impact on neonatal outcomes, the government would be unlikely to succeed in satisfying its burden to prove that a ban is substantially related to the interest of protecting gestating infants. If the technology is unable to safely bring a child to term, then even rational basis review would be inadequate to prevent a ban, as discussed later in this Article.

If the Court applies intermediate scrutiny to a ban on ectogenesis, the likelihood of success would vary based on the actual impacts of the applied technology, the level of generality with which the Court articulates the government interest(s), and whether those interests are deemed sufficiently important.

115. *United States v. Virginia*, 518 U.S. 515, 548, 555–58 (1996).

116. *Id.* at 547–48.

117. *Pregnancy Mortality Surveillance System*, CDC: REPROD. HEALTH, <https://www.cdc.gov/reproductivehealth/maternal-mortality/pregnancy-mortality-surveillance-system.htm> [<https://perma.cc/KZ8Y-A9WC>] (last updated Nov. 25, 2020).

118. *Leading Causes of Death - Females - All Races and Origins - United States, 2017*, CDC: HEALTH EQUITY, <https://www.cdc.gov/women/lcod/2017/all-races-origins/index.htm> [<https://perma.cc/CM73-BAEZ>] (last updated Nov. 20, 2019) (characterizing "childbearing years" as the 20–44 year age range).

V. STRICT SCRUTINY OF CLASSIFICATIONS IMPLICATING A FUNDAMENTAL RIGHT

When an equal protection challenge is brought on the grounds that a classification implicates a fundamental right, the Court performs a two-part analysis. First, the Court asks whether the classification implicates a fundamental right.¹¹⁹ Second, the Court asks whether that right was infringed.¹²⁰ If both of these parts are satisfied, the Court applies strict scrutiny to the constitutionality assessment.¹²¹ In the case of a ban on ectogenesis, the Court should find that the two-part test is satisfied and require, pursuant to strict scrutiny, that the government bear the burden of proving that its classification is narrowly tailored to fulfill a compelling government interest.¹²²

A. *The Classification Implicates the Fundamental Right to Procreate*

The Court has held that the right to procreate is fundamental, as it is both essential “to the very existence and survival of the race” and “one of the basic civil rights of man.”¹²³ In *Skinner v. Oklahoma*, the petitioner was convicted once for stealing chickens and twice for robbery with firearms and was imprisoned in the Oklahoma State Reformatory when Oklahoma’s 1935 Habitual Criminal Sterilization Act was passed.¹²⁴ The Act provided that those convicted of three or more “felonies involving moral turpitude” be subject to sterilization, and so a judgment directing that he be sterilized by vasectomy was made.¹²⁵ In reviewing his case, the Supreme Court defined procreation as a fundamental right whose infringement should be subject to heightened scrutiny.¹²⁶ Sterilizing some types of criminals, and not others “who have committed intrinsically the same quality of offense,”

119. See Galloway, *supra* note 35, at 125.

120. *Id.*

121. *Id.*

122. See Robert T. Miller, *What Is a Compelling Governmental Interest?*, 21 J. MKTS. & MORALITY 71, 71, 79 (2018); *Skinner v. Oklahoma*, 316 U.S. 535, 541 (1942); *supra* Part V. For an interest to be considered compelling, it must be necessary or essential, and pursued in the least restrictive manner possible. Miller, *supra*, at 71–72. This requirement is a departure from the substantial interest pursued in a narrowly tailored way as required under intermediate scrutiny. *Id.* at 73. Under strict scrutiny, the burden on the government to articulate and defend the stated end-interest and means is heavy. *Id.* The Court has refrained from articulating the exact edges of what circumstances constitute a compelling interest, likely because there is insufficient normative clarity and consensus to justify such a definition. See *id.*

123. *Skinner*, 316 U.S. at 541.

124. *Id.* at 537.

125. *Id.* at 537, 539.

126. *Id.* at 541.

was held to run afoul of the equal protection clause.¹²⁷ The characterization of procreation as a fundamental right in *Skinner* has been upheld, without exception, in subsequent case law since the seminal holding in 1942. Because the manner of gestation is central to the process of procreating, ectogenesis implicates this fundamental right to procreate. Parents who wish to procreate must have a viable womb or contract to utilize a viable womb in order to procreate.

In *Griswold v. Connecticut*, which involved a challenge to a Connecticut ban on contraceptive distribution, the Court held that a “zone of privacy” is “created by several fundamental constitutional guarantees” and that the marital relationship, including the marital bedroom and choices made therein, is protected by this right of privacy.¹²⁸ The Court held that the ban on contraceptive use was an unconstitutional intrusion into the realm of marital privacy, “a right of privacy older than the Bill of Rights.”¹²⁹ A decision about how to gestate one’s child lands squarely within this zone of privacy because it is a choice undertaken with the highest sensitivity, having the nearest connection to marital and medical privacy of almost any other decision a person might make. Since it was decided, *Griswold* has been consistently cited and reaffirmed by the Supreme Court as meaning that “the Constitution protects individual decisions in matters of childbearing from unjustified intrusion by the State.” Further, *Griswold* and its jurisprudential progeny clarify that the “decision whether or not to beget or bear a child is at the very heart of this cluster of constitutionally protected choices.”¹³⁰ Therefore, a ban on ectogenesis—one of the few available gestational methods—would clearly implicate the fundamental right to procreate.¹³¹ Like contraception, ectogenesis is technology that would have been unimaginable to the framers of the Constitution. Yet, the use of both technologies falls within the zone of privacy older than the Bill of Rights and is essential to the expression of personhood and family: whether, when, and how to bear a child.

B. The Fundamental Right to Procreate Would Be Infringed

Once the Court has found that a classification implicates a fundamental right, it endeavors to determine whether that right is

127. *Id.*

128. *Griswold v. Connecticut*, 381 U.S. 479, 485–86 (1965).

129. *Id.* at 486.

130. *Carey v. Population Servs. Int'l*, 431 U.S. 678, 685, 687 (1977).

131. For a more in-depth discussion of the fundamental nature of the right to reproduce via ectogenesis, please see Benjamin, *supra* note 31.

infringed by the classification. Infringement may take the form of either an outright prohibition on the exercise of a fundamental right or some lesser means of limiting the exercise of that right. In *Kramer v. Union Free School District*, a bachelor who neither owned nor leased taxable property within a school district challenged a New York education law on the grounds that it violated the equal protection clause.¹³² The law specified that only those who owned or leased "taxable real property within the district" or who were parents or custodial guardians of "children enrolled in the local public schools" were entitled to vote in the school district elections.¹³³ The Court gave "the statute a close and exacting determination" because the right to vote is a fundamental one. It therefore found that the extension of the franchise to some residents and not others denied equal protection of the laws to Kramer and others who were excluded by the statute.¹³⁴ An outright ban on ectogenesis would justify a comparably exacting determination about whether the right to procreate was infringed. The fundamental right to control and manage one's own reproductive choices deserves the same scope of protection as the right to vote, as it is at least as essential to the exercise of liberty in a free society as participation in the political process.

Infringement may also be found from a "lesser interference" that "substantially deters the exercise of the right or makes the exercise of the right materially more difficult."¹³⁵ In *Attorney General of New York v. Soto-Lopez*, veterans who enlisted while domiciled in Puerto Rico brought an equal protection challenge to a civil service employment preference.¹³⁶ The preference granted additional points on the civil service examination scores to honorably discharged veterans who were domiciled in New York at the time they joined the military.¹³⁷ The petitioners argued that this preference infringed upon the right to travel, a fundamental constitutional right, which is "firmly established and has been repeatedly recognized by our cases."¹³⁸ Noting that the "right-to-migrate cases have principally involved the . . . indirect manner of burdening the right," the Court found the right infringed upon by the deprivation of the veterans' credits based on residence at time of entry.¹³⁹ By denying these benefits to otherwise qualified

132. *Kramer v. Union Free Sch. Dist. No. 15*, 395 U.S. 621, 622 (1969).

133. *Id.*

134. *See id.* at 626-33.

135. Galloway, *supra* note 35, at 149.

136. *Att'y Gen. of N.Y. v. Soto-Lopez*, 476 U.S. 898, 899-901 (1986).

137. *Id.* at 900.

138. *Id.* at 902-03.

139. *Id.* at 903, 910-11.

veterans, New York sufficiently deterred the exercise of the right to migrate in violation of the equal protection clause.

In the case of a ban on ectogenesis, the fundamental right would indeed be infringed. Rather than an outright prohibition on the exercise of the right to procreate, as in *Kramer*, a ban on the use of ectogenesis would be an indirect infringement on women's right to procreate by both deterring its exercise and by making "the exercise of the right materially more difficult."¹⁴⁰ Indeed, the burdens on the right to procreate would be notably similar to the infringement on the right to travel in *Soto-Lopez*. Like the right to travel, the right to procreate is a fundamental right firmly established and repeatedly reaffirmed by the Court. Under *Soto-Lopez*, when a classification materially deters the exercise of a fundamental right, that right is infringed and the classification cannot withstand scrutiny.¹⁴¹

Gestation imposes physical and psychological burdens and injuries on even healthy women. There are few procreative options for women who cannot or will not undergo the difficulties of traditional reproduction, and a ban on reproductive ectogenesis would unquestionably make procreation materially more difficult. Gestation requires a womb—an organ that a broad class of individuals does not have access to—including but not limited to heterosexual and homosexual men, women with uterine malformations, women who cannot gestate, women whose careers make gestation impossible or unsafe, single parents, low-income couples with infertility, and women who are HIV positive or who have other high-risk pregnancy markers. In order to procreate, members of this "wombless class" must gain access to a womb, which is often accomplished through a coparenting relationship (marriage or parenting as a couple). But sometimes, these wombless individuals can gain access via costly gestational surrogacy. A ban on ectogenesis would substantially deter the members of the aforementioned class from procreation, as cost-effective womb access is a high barrier to their reproductive endeavor.

Currently, traditional and gestational surrogacy are some of the only options for those who cannot traditionally bear children.¹⁴² Although traditional surrogacy is less expensive than gestational

140. Galloway, *supra* note 35, at 149.

141. *Id.*; see 476 U.S. at 903.

142. *The Different Types of Surrogacy: Which Is Right for You?*, SURROGATE.COM, <https://surrogate.com/about-surrogacy/types-of-surrogacy/types-of-surrogacy/> [https://perma.cc/7FZE-HXFJ] (last visited Mar. 2, 2021). Traditional surrogacy is where the surrogate is artificially inseminated and both gestates the child and is the child's biological mother. *Id.* Gestational surrogacy is where in vitro fertilization is used to impregnate the surrogate with an embryo created from the intended parents' genetic material. *Id.*

surrogacy, it produces a child genetically unrelated to the intended mother, and still costs between \$90,000 and \$130,000 in the United States.¹⁴³ These factors render it inaccessible to the vast majority of Americans. On the other hand, reproductive medical tourism to countries like the Ukraine brings the cost of gestational surrogacy to an average of \$30,000, which is both still financially out of reach for most prospective parents and inextricable from ethical concerns.¹⁴⁴ Due to widespread exploitation of surrogates, commercial surrogacy has been banned in India, Nepal, and Thailand.¹⁴⁵ These figures do not include the cost of in vitro fertilization, which can cost anywhere between \$12,000 and \$17,000 per cycle—and multiple cycles are frequently required—nor do they include the potential costs of the surrogate's loss of work or other injuries, which are typically covered by the intended parents.¹⁴⁶ Surrogacy is a costly alternative, out of reach for most, and sometimes ethically fraught.

Ectogenesis will enable women to exercise their right to procreate without bearing the exceptional physical discomfort and injury, risk of death, professional harm, and emotional stress inherent to *in vivo* gestation. The existence of a technology that could drive down the costs of gestating a fetus *ex vivo* would make procreation possible for many, and it could obviate the choice between bodily integrity and parenthood faced by all women. There can be little disagreement that any child-bearing endeavor, whether by traditional gestation or gestational surrogacy, involving the aforementioned harms of pregnancy would be materially more difficult than the same endeavor involving no such burdens. Therefore, the Court should find that a ban on ectogenesis infringes on the fundamental right to procreate and require, pursuant to the strict scrutiny standard, the government to show that a ban is narrowly tailored to fulfill a compelling government interest.

143. *Surrogate Mother Costs*, W. COAST SURROGACY, <https://www.westcoastsurrogacy.com/surrogate-program-for-intended-parents/surrogate-mother-cost> [<https://perma.cc/VJL7-ZFZJ>] (last visited Mar. 2, 2021).

144. See Madeline Roache, *Ukraine's 'Baby Factories': The Human Cost of Surrogacy*, AL JAZEERA (Sept. 13, 2018), <https://www.aljazeera.com/features/2018/9/13/ukraines-baby-factories-the-human-cost-of-surrogacy> [<https://perma.cc/ZS7A-LNDN>].

145. *Id.*

146. *IVF – In Vitro Fertilization*, AM. PREGNANCY ASS'N (Apr. 24, 2019), <https://americanpregnancy.org/infertility/in-vitro-fertilization-70966> [<https://perma.cc/DA3T-ZK9M>].

VI. RATIONAL BASIS: NO SUSPECT CLASS AND NO FUNDAMENTAL RIGHT

Furthermore, even if the Court failed to recognize the immutability and burden of a significant right demanding more bite to its rational basis review, any ban on safe ectogenesis should still likely fail for lack of a legitimate interest. If the Court were to conclude that a ban on ectogenesis neither contains impermissible gender-based discrimination nor infringes upon the fundamental right to procreate, then the statute would be analyzed under a much less demanding judicial standard: rational basis review. The rational basis test is the “traditional standard of review,” applying to all government action not subject to heightened scrutiny. The test “requires only that the [state action] be shown to bear some rational relationship to legitimate state purposes.”¹⁴⁷ The standard is highly deferential to the government, presuming its classification to be constitutional, and the challenger must prove that there is no conceivable rational basis that could support the action.¹⁴⁸ However, there are still government actions struck down under rational basis review as being based on illegitimate state interests, and any state interest in banning safe ectogenesis is likely illegitimate.

A. Legitimate State Interests

Under rational basis review, the challenger bears the burden of proving that there is no rational relation between the government action and a legitimate state interest.¹⁴⁹ In rational basis jurisprudence, courts have broadly construed the legitimacy of state interests to ensure wide latitude for a government’s enactment. In addition, courts have often considered any conceivable government interest as sufficient grounds for enactment.¹⁵⁰ The legislature is permitted to fashion remedies that are over- or underinclusive, and “reform may take one step at a time, addressing itself to the phase of the problem which seems most acute to the legislative mind.”¹⁵¹ In the absence of an actual statute and corresponding legislative history to analyze, this Article is limited to a discussion of what state interests *might* be set forth in support of a ban on ectogenetic technologies, although they are not difficult to predict. In the ectogenesis context, stated legitimate interests might include the preservation of maternal health, the safety

147. *San Antonio Indep. Sch. Dist. v. Rodriguez*, 411 U.S. 1, 40 (1973).

148. *See Heller v. Doe*, 509 U.S. 312, 320 (1993).

149. *See id.*

150. *See Madden v. Kentucky*, 309 U.S. 83, 88 (1940).

151. *Williamson v. Lee Optical of Okla., Inc.*, 348 U.S. 483, 489 (1955).

of unborn fetuses, the welfare of children potentially born via ectogenesis, or the regulation of the practice of medicine. If any of the aforementioned legitimate interests are the only ones evidenced by the legislative history, any legal challenge to an ectogenesis ban, if analyzed under the rational basis review, would likely fail. Throughout this Part, the Article discusses those interests that are illegitimate and cannot support government regulations, even under rational basis review.

There is a middle-ground state, whereby a legitimate government interest is “tainted” by an illegitimate purpose.¹⁵² In this hybrid situation, “the reasoning or motivation leading a state to pursue an ostensibly legitimate state interest includes an illegitimate assumption or belief, such as an irrational fear or impermissible stereotype.”¹⁵³ To give a hypothetical example, if the legitimate interest of protecting the welfare of infants is based on the illegitimate stereotype that a mother who would choose to gestate via ectogenesis is uncaring and thus unfit, the legitimate interest is tainted as inextricably linked to the illegitimate one. Given the congressional tendency toward Puritanism regarding reproductive biotechnology, this type of hybrid legitimacy situation is likely to occur.

Plainly illegitimate interests, including any interest rooted in animus or manifesting moral disapproval, cannot validly support a ban on ectogenesis, even under the most deferential rational basis level of scrutiny.

B. Animus Is Not a Legitimate State Interest

In *Romer v. Evans*, the Court struck down an amendment to Colorado’s constitution prohibiting any “legislative, executive or judicial action at any level of state or local government designed to protect . . . gays and lesbians.”¹⁵⁴ The Amendment (Amendment 2) required the immediate repeal of any state or local policy that “barred discrimination based on sexual orientation” and prevented any such measures from being adopted in the future.¹⁵⁵ The Court opinion stated that Amendment 2 “impose[d] a special disability upon” gay and lesbian people and denied them “protections against exclusion from an almost limitless number of transactions and endeavors that

152. Kim Forde-Mazrui, *Tradition as Justification: The Case of Opposite-Sex Marriage*, 78 U. CHI. L. REV. 281, 308 (2011).

153. *Id.*

154. *Romer v. Evans*, 517 U.S. 620, 623–24 (1996).

155. *Id.* at 626–27.

constitute[d] ordinary civic life in a free society.”¹⁵⁶ Finding that the Amendment was an excessively broad “status-based enactment,” the Court held that it was too “far removed” from the articulated state interests to be rationally related to them.¹⁵⁷ Referring to the holding in *United States Department of Agriculture v. Moreno* that animus can never be a legitimate state interest, it struck down Amendment 2 as violative of the equal protection clause.¹⁵⁸

Under *Romer*, any ban on the use of ectogenesis rooted in disgust or animus is illegitimate. As discussed throughout this Article, ectogenesis invokes visceral responses from individuals all over the political, spiritual, and identity spectrums. The reaction to a certain technology as “unfair, unseemly, or just plain wrong” has been called the “yuck factor.”¹⁵⁹ Bioethicists have raised these arguments “in an effort to defeat the use or expansion of biotechnological advances such as human cloning, nanotechnology (including nanobiotechnology and nanomedicine), assisted human reproduction” and many others.¹⁶⁰ Leon Kass, former chairman of the President’s Council on Bioethics characterized the yuck factor as “the emotional expression of deep wisdom, beyond reason’s power completely to articulate.”¹⁶¹ He suggested that this “wisdom of repugnance” should guide discussions and decisions regarding bioethics.¹⁶²

While Kass proposes origins of wisdom for these admittedly “emotional expression[s],” reason is a process of conscious deductive reasoning from verifiable facts, not an amorphous and immeasurable gut feeling. Instead, the yuck factor is a form of knee-jerk animus. It is the revulsion one feels toward someone or something before they are able to bring forth any rational basis. Martha Nussbaum has criticized reliance on the yuck factor, noting that, historically, yuck factor arguments have been used to justify racism, sexism, anti-Semitism, homophobia, and other forms of discrimination.¹⁶³ She posits that the “moral progress of society can be measured by the degree to which it separates disgust from danger and indignation, basing laws and social

156. *Id.* at 631.

157. *Id.* at 635.

158. *Id.* at 634–35 (citing *U.S. Dep’t of Agric. v. Moreno*, 413 U.S. 528, 534 (1973)).

159. Jamila Jefferson-Jones, *The Exchange of Inmate Organs for Liberty: Diminishing the “Yuck Factor” in the Bioethics Repugnance Debate*, 16 J. GENDER RACE & JUST. 105, 106 (2013).

160. *Id.*

161. LEON R. KASS, *LIFE, LIBERTY AND THE DEFENSE OF DIGNITY: THE CHALLENGE FOR BIOETHICS* 150 (paperback ed. 2004).

162. See generally Leon R. Kass, *The Wisdom of Repugnance*, NEW REPUBLIC, June 2, 1997, at 17.

163. See Martha C. Nussbaum, *Danger to Human Dignity: The Revival of Disgust and Shame in the Law*, CHRON. HIGHER EDUC., Aug. 6, 2004, at B6, B7–B8.

rules on substantive harm, rather than on the symbolic relationship an object bears to our anxieties.”¹⁶⁴

In the case of ectogenesis, constitutionally illegitimate animus might manifest as disgust for the suite of technologies involved in full ectogenesis. This would be a misinterpretation because the technologies utilized in full ectogenesis are the same technologies already used in partial ectogenesis to finish the development of premature infants. Breathing apparatus, feeding tubes, waste removal, incubation, and other pieces of the ectogenesis suite are currently operating in NICUs worldwide, much to the appreciation and praise of Congress and society at large. To achieve full ectogenesis, modifications of preexisting technologies will be made, but the essential functions of these technologies will not be novel. If disgust is absent toward the technologies already applied in other contexts, then disgust toward the same technologies applied to full ectogenesis must not be about the technology itself, but the intended end: the voluntary gestation of babies outside of a woman’s body. In other words, liberating women from the risks and discomforts of gestation may be what provokes the yuck response.

Animus toward the process of full ectogenesis would be animus toward the female rejection of or incapacity for the childbearing role. Men face no such animus for failing to gestate their children inside their bodies. Instead, this animus would be particularized toward women and based on social expectations for the roles occupied by women’s bodies. In the context of gestation, there is no meaningful distinction between biological roles and social roles. *Romer* and its progeny have instructed that animus is not a legitimate government interest. Therefore, any ban on ectogenesis based on a government purpose rooted in bare disgust or a yuck response should not satisfy the requirement of legitimacy, even under the deferential rational basis standard.

C. Moral Condemnation Is Not a Legitimate State Interest

In the 2003 case of *Lawrence v. Texas*, the Supreme Court struck down a Texas anti-sodomy statute on due process and equal protection grounds, reaffirming the right to privacy within interpersonal and family decisions, as well as the right to equal treatment under the law.¹⁶⁵ Importantly, *Lawrence* held that moral disapproval does not constitute a legitimate state interest.¹⁶⁶ This holding suggests that, in

164. *Id.* at B8.

165. *Lawrence v. Texas*, 539 U.S. 558, 578 (2003).

166. *See id.* at 571.

the future, the Court would be unlikely to uphold a ban on ectogenesis that is justified by any blatant moral propositions. Impermissible manifestations of moral condemnation include assertions that it is wrong to deviate from biological imperatives, beliefs that the traditional social role of women should be preserved, and the belief that ectogenesis offends a spiritual entity or nature. Indeed, any permutation of a government interest that seeks to preserve the biological role of women as gestators can be reduced to the illegitimate morality-based purpose of condemning deviation from a biological and social role.

With regards to gestation, biological and social roles have been, thus far, inseparable. In *Nguyen v. INS*, the Court held that the “difference between men and woman in relation to the birth process is a real one, and the principle of equal protection does not forbid Congress to address the problem at hand in a manner specific to each gender.”¹⁶⁷ One might interpret this to suggest that any gender-based distinctions regarding the birth process are legitimate. However, the Court considers the classifications made in the context of the specific problem the legislature seeks to address. In *Nguyen*, the government sought to assure a parent-child relationship between the citizen parent and the child seeking citizenship. In childbirth, the gestating mother is apparent so the ease of proving maternity exceeds the ease of proving paternity. There is a meaningful distinction to be made between the sexes for the purposes of proving a parent-child relationship, which is rationally related to the heightened standards for establishing paternity created by the challenged statute. No such meaningful distinction would exist between men and women with regards to a ban on ectogenesis. Instead, a ban on ectogenesis justified by the distinct biological role of women would be an impermissible attempt to legislate social roles or to preserve a gestating class of persons.

A gender-based stereotype is “a generalised view or preconception about attributes or characteristics that are or ought to be possessed by, or the roles that are or should be performed by women and men.”¹⁶⁸ The social roles we occupy, and the stereotypes used to enforce them, are partial products of our biological capacities and limitations. The biological “birth lottery” determines the reproductive organs we are and are not born with, and social gender roles influence how others react toward us vis-à-vis biological chance. The Court should find resounding injustice in allowing the enforcement through law of

167. Tuan Anh Nguyen v. Immigr. & Naturalization Serv., 533 U.S. 53, 73 (2001).

168. *Gender Stereotyping*, UNITED NATIONS HUM. RTS. OFF. OF THE HIGH COMM’R, <http://www.ohchr.org/EN/Issues/Women/WRGS/Pages/GenderStereotypes.aspx> [https://perma.cc/2XAZ-7U6Q] (last visited Feb. 23, 2021).

immutable biological roles, as these roles are meaningful only to the extent that society maps behavioral expectations onto biological attributes. Forcing female-bodied humans, rather than machines, to perform the social function of gestation creates a caste based on immutable characteristics, which is repugnant to the principles of equal protection.

Per the *Lawrence* holding that moral disapproval cannot be a legitimate state interest, any government interest that is based on the moral position that biological destiny requires female-bodied people to gestate cannot prevail under rational basis review. In *Lawrence*, the Court found that the impermissible moral objection had been “shaped by religious beliefs, conceptions of right and acceptable behavior, and respect for the traditional family.”¹⁶⁹ The gendered biosocial roles implicated by ectogenesis are shaped by these same factors.

Moral objections to ectogenesis are widespread. Religious bodies and authors have singled out ectogenesis as a unique threat to the traditional family. Susan E. Wills wrote that despite the “burden on a mother’s physical health,” pregnancy is “a graced time . . . for learning the selfless art of mothering.”¹⁷⁰ The inference is that ectogenesis would remove the mother and child from “grace” and prevent the mother from developing the virtue of selflessness required to be a good mother. Further, in 1987, the Vatican released *Instruction on Respect for Human Life in its Origin and on the Dignity of Procreation*, explaining the Roman Catholic Church’s moral objections to the use of heterologous and homologous in vitro fertilization, gestational and traditional surrogacy, and heterologous- and homologous-assisted insemination.¹⁷¹ In this position paper, the Church stated that “[s]urrogate motherhood represents an *objective failure* to meet the obligations of maternal love, of conjugal fidelity and of responsible motherhood; it offends the dignity and the right of the child to be conceived, carried in the womb, brought into the world and brought up by his own parents.”¹⁷² Asserting that surrogacy “sets up, to the detriment of families, a division between the physical, psychological and moral elements which constitute those families,” the Church takes

169. *Lawrence*, 539 U.S. at 571

170. Susan E. Wills, *Growing Babies in Artificial Wombs: Inevitable? Desirable? Moral?*, ALETEIA (Aug. 13, 2014), <https://aleteia.org/2014/08/13/growing-babies-in-artificial-wombs-inevitable-desirable-moral/3/> [<https://perma.cc/VUL8-ZXFR>].

171. THE VATICAN, *INSTRUCTION ON RESPECT FOR HUMAN LIFE IN ITS ORIGIN AND ON THE DIGNITY OF PROCREATION* (1987), http://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_19870222_respect-for-human-life_en.html [<https://perma.cc/UD79-AQKM>].

172. *Id.* (emphasis added).

a clear stance in opposition to the use of traditional or gestational surrogacy.¹⁷³ While the Roman Catholic Church has not yet given a formal statement on the permissibility of ectogenesis, it has held that “the hypothesis or project of constructing artificial uteruses for the human embryo” is “*contrary to the human dignity proper to the embryo.*”¹⁷⁴ These religious arguments speaking to the division of labor within and nature of a traditional family are precisely the type of moral objections that *Lawrence* has held cannot support legislative action, even under rational basis review.

Moral objections based on other, less-gendered conceptions of “right and acceptable behavior” are likewise wrongful bases for support of legislative acts. In a 1996 interview with the *New York Times*, bioethicist Arthur L. Caplan stated that the intervention in human reproductive processes poses many moral and ethical questions such that “[t]he future is rosy for bioethicists.”¹⁷⁵ Feminist bioethicist Rosemarie Tong has expressed concern that ectogenesis “could lead to a commodification of the whole process of pregnancy.”¹⁷⁶ And Stephen Wilkinson has addressed arguments against commodification in the context of selective reproduction, noting that “to call something ‘commodification’ is to express moral disapproval and to refer to a distinctive kind of wrong: the wrong of commodification.”¹⁷⁷ To commodify something, Wilkinson argues, is to treat it as if it (1) has a price, (2) is fungible, and (3) has only instrumental value.¹⁷⁸ While no cogent outlines of how ectogenesis will cause this purported commodification of babies or pregnancy have been set forth, such arguments are rooted in moral disapproval and, thus, cannot serve as legitimate state interests.

In *Lawrence*, the Court made clear that arguments based on moral disapproval, such as religious beliefs, views of the traditional family, or conceptions of proper and acceptable behavior, are not legitimate state interests. Our cultural, political, and bioethical landscapes are littered with moral critiques of ectogenesis, and these critiques are guaranteed to inform Congress’s treatment of ectogenesis in the future. Therefore, any state interest backing a ban on safe ectogenesis is likely to be illegitimate and unable to withstand even rational basis review.

173. *Id.*

174. *Id.*

175. Klass, *supra* note 16.

176. Christine Rosen, *Why Not Artificial Wombs?*, NEW ATLANTIS, Fall 2003, at 67, 72.

177. STEPHEN WILKINSON, CHOOSING TOMORROW’S CHILDREN: THE ETHICS OF SELECTIVE REPRODUCTION 132 (2010).

178. *Id.*

VII. RATIONAL BASIS WITH BITE

Even if the Court were to conclude that a ban on ectogenesis neither contains impermissible gender-based discrimination, nor infringement upon the fundamental right to procreate, the Court should find ectogenesis bans violative of equal protection. When the Court finds that neither strict nor intermediate scrutiny applies, it analyzes statutes under the much less demanding judicial standard—rational basis review. The rational basis test is the “traditional standard of review,” applying to all government action not subject to heightened scrutiny, which “requires only the [state action] be shown to bear some rational relationship to legitimate state purposes.”¹⁷⁹

However, while cases analyzed under the deferential rational basis test generally resolve in favor of the government actor, there were eighteen cases between 1971 and 2014 that were analyzed under rational basis and resolved in favor of the challenger.¹⁸⁰ These cases, where the Court seemed to apply a somewhat higher standard, have been referred to as “rational basis with bite” cases.¹⁸¹ In an analysis of these cases, Raphael Holoszyc-Pimentel identified nine factors that generally recur, casting some light on the conditions that cause the Court to apply this modified rational basis standard.¹⁸² The factors include “history of discrimination, political powerlessness, capacity to contribute to society, immutability, burdening a significant right, animus, federalism concerns, discrimination of an unusual character, and inhibiting personal relationships.”¹⁸³ Of the aforementioned factors, the two most likely to appear where the Court applies rational basis with bite are immutability and the burdening of a substantial right.¹⁸⁴ This Part briefly discusses the Court’s use of rational basis with bite and evaluates the likely outcome of a challenge to a ban on ectogenesis should the Court apply this heightened standard. The ability to gestate is immutable, pertains to the exercise of the fundamental right to procreate, and carries a history of discrimination. Thus, if the Court applies rational basis to a ban on ectogenesis, that rational basis should “bite” and some of the burden should be shifted to the government to provide the rationality of its actions.

179. *San Antonio Indep. Sch. Dist. v. Rodriguez*, 411 U.S. 1, 40 (1973).

180. Raphael Holoszyc-Pimentel, *Reconciling Rational-Basis Review: When Does Rational Basis Bite?*, 90 N.Y.U. L. REV. 2070, 2072 (2015).

181. *Id.* at 2072.

182. *Id.* at 2077.

183. *Id.*

184. *Id.* at 2072.

In the rational basis with bite cases, the Court purports to apply the rational basis test, yet deviates from some of the core features that define that deferential standard. Whereas the challenger bears the entire burden of proving that there is no conceivable state interest rationally related to the government's enactment under the traditional rational basis test, the Court might "shift the burden to the State to prove the enactment's rationality," "deem the purpose of the legislation to be an illegitimate state interest," "weigh the benefits and harms of the challenged statute," "demand persuasive evidence" from the government, or "reject a statute that furthers a state interest by burdening one group while ignoring the other groups" when rational basis bites.¹⁸⁵ While under the traditional rational basis test the challenger bears the entire burden of proving that there is no conceivable state interest rationally related to the government's enactment, the Court takes liberties with this level of deference whenever rational basis bites. A ban on ectogenesis would implicate a majority of the recurring factors in rational basis with bite cases, including a history of discrimination, immutability, burdening a significant right, animus, federalism concerns, discrimination of an unusual character, and inhibiting personal relationships. The Sections that follow consider immutability and the burdening of a significant right because these factors seem most suggestive of the Court's willingness to apply the heightened standard.¹⁸⁶

A. Immutability

A trait is immutable when it is not amenable to change. Immutable traits include race, national origin, alienage, illegitimacy, and gender.¹⁸⁷ Judge William A. Norris discussed the nature of immutable traits stating that "at a minimum . . . the Supreme Court is willing to treat a trait as effectively immutable if changing it would involve great difficulty, such as requiring a major physical change or a traumatic change of identity."¹⁸⁸ The difficulty of the change is not the dispositive feature of immutability; instead, it implicates "those traits that are so central to a person's identity that it would be abhorrent for

185. *Id.* at 2075.

186. *See id.* at 2078.

187. *See Parham v. Hughes*, 441 U.S. 347, 351 (1979) (first citing *Brown v. Bd. of Educ.*, 347 U.S. 483 (1954); then citing *Oyama v. California*, 332 U.S. 633 (1948); then citing *Graham v. Richardson* 403 U.S. 365 (1971); then citing *Gomez v. Perez*, 409 U.S. 535 (1973); and then citing *Reed v. Reed*, 404 U.S. 71 (1971)).

188. *Watkins v. U.S. Army*, 875 F.2d 699, 726 (9th Cir. 1989) (en banc) (Norris, J., concurring).

government to penalize a person for refusing to change them.”¹⁸⁹ Continuing, Judge Norris held that, for example, racial discrimination “would not suddenly become constitutional if medical science developed an easy, cheap, and painless method of changing one’s skin pigment.”¹⁹⁰ In *Plyler v. Doe*, the Court held that “legislation imposing special disabilities upon groups disfavored by virtue of circumstances beyond their control suggests the kind of ‘class or caste’ treatment that the Fourteenth Amendment was designed to abolish.”¹⁹¹ Thus, the US legal system rejects the imposition of burdens on individuals due to the fortunes or misfortunes of their draw in the birth lottery. In *Frontiero v. Richardson*, for example, the Court identified “that the key factor is that the trait is beyond the individual’s control” because in order to adhere to basic principles of equal protection, “legal burdens should bear some relationship to individual responsibility.”¹⁹²

The inability to pursue the fundamental right to procreate without the painful and sometimes dangerous physical burdens of pregnancy is necessarily an immutable characteristic. A person is either born with or without the physical capacity to gestate. For those born with female reproductive organs, the survival of our species and the transmission of the individual’s genetic material to the next generation requires a substantial invasion of bodily autonomy. Absent ectogenesis, every person who becomes a parent does so through the use of a woman’s uterus: either their own, their partner’s, or a surrogate’s. This biological fact renders women indispensable parts of the reproductive process, but it also burdens their bodies in ways dangerous and difficult, as discussed throughout this Article. These burdens are immutable in that they are unavoidable without technological intervention. The Court has consistently recognized procreation as a fundamental right and should thus recognize the importance of access to reproductive biotechnology in furtherance of the expression of that right.

The immutability of reproductive organs in the context of the essential function of reproduction, both for individual and broader survival needs of humankind, renders ectogenesis important for relieving women of their technologically avoidable roles within the hierarchy of reproductive burdens. Precluding women from utilizing technologies that could enable procreation without bodily intrusion

189. *Id.*

190. *Id.*

191. *Plyler v. Doe*, 457 U.S. 202, 216 n.14 (1982).

192. *Holoszyc-Pimentel*, *supra* note 180, at 2085–86; *Frontiero v. Richardson*, 411 U.S. 677, 686 (1973) (plurality opinion).

prevents women from leaving the gestating class, unless they are also willing to sacrifice the pursuit of parenthood—a right that has been repeatedly affirmed as fundamental. But women do not gestate for themselves alone. They bear the societal burden of gestation to the benefit of other women (in the case of surrogacy), men (in nearly all cases), the children gestated and delivered, the government, and the human species as a whole. But the role of gestator is assigned at birth and carries physical, economic, and social costs. Judge Norris spoke of immutable characteristics as traits “that are so central to a person’s identity that it would be abhorrent for government to penalize a person for refusing to change them.”¹⁹³ The corollary of this is that an immutable characteristic is so central to a person’s identity that it would be abhorrent, and contrary to principles of equal protection, to penalize a person for changing them. Ectogenesis provides an opportunity for women to change the impact of an immutable characteristic on their roles in society and within the family, without having to sacrifice the deep personal meanings of parenthood or the privacy of the marital relationship by involving another woman to serve as surrogate. For a legislature to deny them that opportunity is to legislate a permanent class or caste of gestating people, which is repugnant to the equal protection clause of the Fourteenth Amendment.

B. Burdening of a Significant Right

As when legislative action implicates an immutable characteristic, the Court is more likely to apply rational basis with bite when the government act burdens a significant right. Although they are not fundamental, significant rights may be those that are “substantial enough to warrant careful review of the law’s rationality,” perhaps because the rights are very important or “quasi-fundamental.”¹⁹⁴

In *Plyler v. Doe*, the Court held that, although education is not a fundamental right, the interest is important enough to warrant a more searching review of the statute’s rationality.¹⁹⁵ Holoszyz-Pimentel’s article identifies several rational basis with bite cases where the Court did not specifically address the rights at stake, but where each involved “important personal interests pertaining to the home and association.”¹⁹⁶ For example, in *Lindsey v. Normet*, the Court found that a double-bond and other burdensome requirements for an appeal of

193. *Watkins*, 875 F.2d at 726.

194. Holoszyz-Pimentel, *supra* note 180, at 2089.

195. *See Plyler*, 457 U.S. at 221–24.

196. Holoszyz-Pimentel, *supra* note 180, at 2092.

eviction cases violated the equal protection clause because it bore “no reasonable relationship to any valid state objective.”¹⁹⁷ The Court stated that while it did not “denigrate the importance of decent, safe, and sanitary housing . . . the Constitution does not provide judicial remedies for every social and economic ill.”¹⁹⁸ There, the interest was important, but not fundamental such that it warranted strict scrutiny. In cases involving substantial, but not fundamental, rights, the Court can “avoid establishing or enlarging a fundamental right with potentially far-reaching consequences” by applying a heightened rational basis review to a specific case.¹⁹⁹

Ectogenesis implicates the fundamental right to procreate, but it also implicates the important or substantial right to utilize technology to improve health outcomes. The Court has not yet rendered a decision about whether certain reproductive technologies, such as in vitro fertilization, are protected as fundamental or quasi-fundamental rights. However, fundamental or not, it is improbable that the Court would fail to identify the important interest of prospective mothers in using ectogenetic technology to avoid the substantial physical risks inherent to traditional gestation. The Court might also find the economic and social hardships borne by gestating women substantial enough to warrant a more searching review of the rationality of a ban on ectogenesis. Ectogenesis implicates immutable characteristics and substantial or important rights. Therefore, if the Court chose to apply the rational basis test, that test should bite. This might look like shifting the burden to the government, requiring greater justification for the legitimate government interest, or seeking more convincing evidence that the ban is rationally related to the state interest articulated.

VIII. CONCLUSION

As tools from far-future science fiction converge with our reality, we are challenged to engage with each innovation so as to maximize human welfare. Partial ectogenesis is here and the advent of full ectogenesis is imminent. The Fourteenth Amendment’s equal protection clause provides ample avenues for protecting access to ectogenetic technology. Whether the Court applies intermediate scrutiny, strict scrutiny, rational basis, or rational basis with bite, there

197. *Lindsey v. Normet*, 405 U.S. 56, 75–77 (1972).

198. *Id.* at 74.

199. *Holoszyc-Pimentel*, *supra* note 180, at 2089.

are strong arguments to be made in support of a challenger's equal protection rights to use ectogenesis for reproductive purposes.

The best of conservatism strikes a balance between preserving what is precious while simultaneously holding the truth that humanity must constantly adapt or die out. In every neonatal intensive care unit, a suite of once-unimaginable ectogenetic technologies supports the most delicate members of humankind. As these technologies continue to develop, we will become empowered to save countless infants born too young, too frail, or too small to survive without assistance. Mothers will be saved from nerve damage, incontinence, hemorrhaging, and death. Prospective parents, once unable to procreate, will access supportive technologies that help them create a family. That twenty-four-week-old infant saved by ectogenesis could be the next Maya Angelou, Jennifer Doudna, or Luigi Boccherini.

That is the essence of what ectogenesis is about: the flourishing of human life. And that is the essence of what the Constitution and equal protection clause are about: the flourishing of human life. They are simply tools to reach that goal.

