EMBRYONIC CHILDREN, DOUBLE EFFECTS, AND THE REGULATION OF REPRODUCTIVE TECHNOLOGIES

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INTRODUCTION

Reproductive technologies have become commonplace in the United States, though such techniques remain largely unregulated.[1] That status quo has been disrupted. In February of 2024, a majority of the Alabama Supreme Court held that human embryos are children under the state's Wrongful Death of a Minor

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[1] Jamie Ducharme, *IVF Changed America. But Its Future is Under Threat*, TIME (Aug. 7, 2024, at 12:24 ET), https://time.com/7005892/ivf-under-attack-fetal-personhood/ [https://perma.cc/CW7G-8ZCQ].

Act,[2] marking the first time a supreme court has ever granted such legal status to embryos. The fallout was immediate. Within days, several Alabama clinics providing in vitro fertilization ("IVF") services suspended operations entirely while others ceased discarding unused embryos.[3] The political response was also uncommonly swift. Just weeks after the decision was handed down, the Alabama legislature passed and the governor signed emergency legislation providing both civil and criminal immunity to those providing IVF services.[4]

The measure was effective insofar as certain clinics resumed operations in Alabama, but even the governor admitted that the law was a "short-term measure,"[5] and at least one clinic has indicated that it will stop providing IVF services.[6] The law itself does not

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[2] LePage v. Ctr. for Reprod. Med., P.C., 403 So. 3d 747 (Ala. 2024). The term "embryo" is used throughout the *LePage* decision. In other court opinions, such as *Davis v. Davis* from Tennessee, the term "pre-embryo" is used when referring to the stage of development from fertilization until successful implantation takes place (roughly two weeks later). Davis v. Davis, 842 S.W.2d 588, 593 (Tenn. 1992). For the sake of consistency, and because not all agree that using different terminology advances the discussion, the term "embryo" will be used herein to encompass all stages of pre-implantation development. *See* Jonathan F. Will, *Beyond Abortion: Why the Personhood Movement Implicates Reproductive Choice*, 39 AM. J.L. & MED. 573, 581 n.55 (2013) [hereinafter *Will*, *Beyond Abortion*] (identifying debates over terminology).

[3] *See, e.g.*, Aria Bendix, *Three Alabama Clinics Pause IVF Services After Court Rules That Embryos Are Children*, NBC NEWS (Feb. 21, 2024, at 17:00 CT), https://www.nbcnews.com/health/health-news/university-alabama-pauses-ivf-services-court-rules-embryos-are-childre-rcna139846 [https://perma.cc/MA86-MFSX]. By December of 2024 each of the original lawsuits filed were voluntarily dismissed. *See Couple Drops Lawsuit That Led to Alabama Frozen Embryo Ruling*, ASSOCIATED PRESS: U.S. NEWS (Dec. 17, 2024, at 17:26 CT), https://apnews.com/article/alabama-ivf-frozen-embryos-court-ruling-e3ecf87dad09686858b89c20ad216247 [https://perma.cc/EC6L-9W5V]. Although the reasons for dismissal were not given, a confidential settlement is the most likely explanation. *See* Dov Fox & Mary Ziegler, *America's Grand Bargain on Reproductive Medicine: The History and Future of IVF Regulation After Roe*, 126 COLUM. L. REV. (forthcoming 2025) (manuscript at 41) (on file with authors) (discussing a similar outcome when clinics in California and Ohio were sued after the loss of frozen embryos).

[4] S.B. 159, 2024 Gen. Assemb., Reg. Sess. (Ala. 2024). The law also provides criminal immunity to manufacturers of goods used to facility IVF services but is silent on any immunity afforded to those utilizing IVF services.

[5] Adam Edelman, *Alabama Governor Signs Bill to Protect IVF Treatments into Law*, NBC NEWS (Mar. 6, 2024, at 21:46 CT), https://www.nbcnews.com/politics/alabama-lawmakers-ivf-protection-bill-vote-rcna141710 [https://perma.cc/FA6J-BEZW].

[6] Sara Moniuszko, *Alabama Hospital to Stop IVF Services at End of the Year Due to "Litigation Concerns,"* CBS NEWS: HEALTHWATCH (Apr. 4, 2024, at 12:26 ET), https://www.cbsnews.com/news/alabama-hospital-to-stop-ivf-embryos-mobile-infirmary/ [https://perma.cc/98Z9-7GHZ].

define legal personhood (nor when life begins), and questions remain about whether, and to what extent, reproductive technologies will need to be regulated if embryos are legally recognized as children.

In an election year, the Alabama judgment also garnered national attention. Joe Biden and eventual winner Donald Trump were quick to comment on the decision, with both openly condemning the negative impact the ruling could have on IVF.[7] The topic then became a focal point during the debate between Trump and Kamala Harris, where Trump claimed to be a "leader" on IVF.[8] Trump has even suggested that IVF services ought to be covered by health insurance or subsidized with federal funds, though such a plan does not necessarily enjoy wide support within the Republican Party.[9] That Trump would criticize the Alabama decision and openly support IVF after fulfilling his campaign promise to overturn *Roe v. Wade* highlights tension within the pro-life movement.[10]

After all, the majority opinion in *LePage v. Center for Reproductive Medicine* directly confronted the legal status of ex-utero human embryos as compared to human fetuses during pregnancy and determined that each such preborn person ought to have the same legal standing.[11] Of course, Alabama, like many Republican-controlled states, outlawed or severely restricted abortion once *Dobbs* overturned *Roe*.[12] And for the majority of the

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[7] Daniel Strauss & Brian Rokus, *Trump Expresses Support for IVF as He Calls on Alabama to Find Solution to Issue That Has GOP Scrambling*, CNN (Feb. 23, 2024, at 21:31 ET), https://www.cnn.com/2024/02/23/politics/trump-alabama-ivf-ruling/index.html [https://perma.cc/PU4Z-7Z4D].

[8] Alice Miranda Ollstein & Megan Messerly, *Trump Sells Himself as a 'Leader' on IVF, Angering Some Republicans*, POLITICO (Sep. 12, 2024, at 05:00 ET), https://www.politico.com/news/2024/09/12/trump-ivf-gop-roe-abortion-00178760 [https://perma.cc/5RCE-7UNG].

[9] Sahil Kapur & Dasha Burns, *Donald Trump's Call to Mandate Free IVF Coverage Baffles Republicans in Congress*, NBC NEWS (Sep. 10, 2024, at 14:45 CT), https://www.nbcnews.com/politics/2024-election/donald-trump-plan-mandate-free-ivf-republicans-congress-opposition-rcna170327 [https://perma.cc/N8YN-JV9C].

[10] *See generally* Roe v. Wade, 410 U.S. 113 (1973).

[11] LePage v. Ctr. for Reprod. Med., P.C., 403 So. 3d 747, 757 (Ala. 2024).

[12] *See State Bans on Abortion Throughout Pregnancy*, GUTTMACHER INST. (May 28, 2025), https://www.guttmacher.org/state-policy/explore/state-policies-abortion-bans [https://perma.cc/GVV8-MLGA]; *see generally* Dobbs v. Jackson Women's Health Org., 597 U.S. 215 (2022).

Alabama Supreme Court, it naturally followed that if fetuses are considered legal persons, so too should embryos; why would location within or without the womb impact such legal status? Since *Dobbs,* there has been an increase in proposed personhood bills across the country.[13]

This type of reasoning is not new, and the implications beyond abortion come as no surprise.[14] Within days of *Roe* being decided, there was a resolution attempting to amend the United States Constitution to grant the unborn a right to life.[15] More recently, the national Personhood Movement started targeting state-level initiatives to define when legal personhood begins.[16] Though initially promoted as anti-abortion measures, it is obvious that defining legal personhood to include embryos implicates any activity that could lead to the harm or destruction of such embryonic persons.[17] And while individuals may be comfortable referring to "life at conception" in the context of their anti-abortion views, evidence suggests that they are less sure about what that ought to mean for reproductive technologies.[18] A study performed shortly after the Alabama decision highlights that IVF has broad support throughout the country and across ideological lines.[19]

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[13] Adam Edelman, *An Uptick in State Personhood Bills Fuels Growing Fears Over IVF Restrictions*, NBC NEWS (Feb. 23, 2024, at 17:48 CT), https://www.nbcnews.com/politics/personhood-bills-ivf-restrictions-alabama-rcna140228 [https://perma.cc/A4KF-GG7T].

[14] *See, e.g.*, *infra* Part I: The Aftermath of Roe; Will, *Beyond Abortion*, *supra* note 2 (discussing the potential impact of personhood measures on reproductive rights outside the abortion context).

[15] Jonathan F. Will, I. Glenn Cohen & Eli Y. Adashi, *Personhood Seeking New Life with Republican Control*, 93 IND. L.J. 499, 502 (2018) (citing H.R.J. Res. 261, 93d Cong. (1973)).

[16] *See* Will, *Beyond Abortion*, *supra* note 2, at 578-86 (discussing the history of the state-level Personhood Movement).

[17] *Id.* at 594-614.

[18] *Id.* at 586-93. Embryonic personhood would also implicate any form of birth control with a mechanism of operation that is effective after fertilization takes place. *See id.*

[19] Gabriel Borelli, *Americans Overwhelmingly Say Access to IVF Is a Good Thing*, PEW RSCH. CTR. (May 13, 2024), https://www.pewresearch.org/short-reads/2024/05/13/americans-overwhelmingly-say-access-to-ivf-is-a-good-thing/ [https://perma.cc/AWU6-VE4U]. The study also found that one third of Americans believe that life begins at conception, but fifty-nine percent of that group still say that access to IVF is a good thing. *Id.*

Even still, with *Roe* out of the way, state legislatures and courts are emboldened to write laws and hand down decisions defining when legal personhood begins.[20] What is more, although the Republican Party's Project 2025 does not expressly call for restrictions on IVF, the document includes a stated goal of protecting life "from the moment of conception" and promotes a "Life Agenda" calling for the Department of Health and Human Services to be renamed the "Department of Life" with the purpose of "furthering the health and well-being of all Americans 'from conception to natural death.'"[21] All of which portends that, if lawmakers are serious about considering embryos to be children, regulation of reproductive technologies is soon to follow, and legislatures will have to grapple with this tension.

In short, the Alabama Supreme Court's decision was inevitable to anyone paying attention and has likely broken the seal on the regulatory vacuum within which reproductive technologies have historically been practiced. While Alabama's emergency measure gave some comfort, which allowed IVF providers to resume operations in the near term, the future is unclear.[22] If embryos are legally considered to be children, their lives would presumably be entitled to protection as such. Given the inherent risks associated with IVF, some have argued that the practice would need to be heavily restricted or perhaps even outlawed.[23] Alabama Representative Ernie Yarbrough opposed the State's emergency measure, likening the destruction of embryos in IVF to a "silent

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[20] Fox & Ziegler, *supra* note 3, at 35-36.

[21] PROJECT 2025, MANDATE FOR LEADERSHIP: THE CONSERVATIVE PROMISE 450, 489 (Paul Dans & Steven Groves eds., 2023), https://www.documentcloud.org/documents/24088042-project-2025s-mandate-for-leadership-the-conservative-promise/ [https://perma.cc/48ZN-EPYB].

[22] Alander Rocha, *Alabama Passed a New IVF Law. But Questions Remain.*, ALA. REFLECTOR (Mar. 11, 2024, at 07:01 CT), https://alabamareflector.com/2024/03/11/alabama-passed-a-new-ivf-law-but-questions-remain/ [https://perma.cc/Z35C-Q72L].

[23] *See infra* Part I: The Aftermath of Roe.

holocaust going on in our state."[24] The measure has since been challenged as a violation of the rights of embryos.[25]

But as lawmakers move beyond emergency measures to assess the implications of embryonic personhood for future regulation, they should not be hasty in their judgments. Foreseeing that an activity creates a risk of death does not necessarily render such action impermissible where a proportionate good is sought to be achieved. For instance, the Doctrine of Double Effect (DDE)[26] has served as a tool for assessing complicated moral dilemmas for centuries and was referenced favorably by the United States Supreme Court when justifying the provision of palliative care to patients (the good), notwithstanding that death (the bad) may be a foreseen but unintended consequence.[27] Lawmakers in states that adopt personhood frameworks may similarly turn to the DDE when assessing the permissibility of IVF and certain activities that take place within the process in light of the risk of loss of embryonic life. This article offers guidance on how that evaluation might unfold.

Part I establishes the relationship between anti-abortion measures and the broader efforts to define legal personhood at the earliest stages of biological development that paved the way for the *LePage* decision in Alabama. Part II provides background on the DDE and common examples of where it is used to justify actions that create a foreseeable risk of harm to human life. Finally, Part III highlights the risks to embryonic lives associated with IVF and why some level of regulation is likely inevitable in jurisdictions adopting an embryonic personhood framework. Part III then

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[24] Melissa Quinn, *Alabama Legislature Approves Bills to Protect IVF After State Supreme Court Ruling*, CBS NEWS (Mar. 1, 2024, at 10:13 ET), https://www.cbsnews.com/news/alabama-ivf-bill-house-to-protect-ivf/ [https://perma.cc/7T5Y-754S].

[25] Emily Cochrane, *Alabama's I.V.F. Shield Law Now Faces a Constitutional Challenge*, N.Y. TIMES (June 14, 2024), https://www.nytimes.com/2024/06/14/us/politics/alabamas-ivf-shield-law.html [https://perma.cc/VZ4Y-SYMR].

[26] Scholars variably refer to the "Doctrine" or "Principle" of Double Effect when discussing the concept. *See, e.g.*, Joseph T. Mangan, *An Historical Analysis of the Principle of Double Effect*, 10 THEOLOGICAL STUD. 41, 49 (1949); Warren S. Quinn, *Actions, Intentions, and Consequences: The Doctrine of Double Effect*, 18 PHIL. & PUB. AFFS. 334, 334-35 (1989). This article will use the term "Doctrine" or "DDE."

[27] *See infra* Part II: Vacco v. Quill (discussing the Court's reliance on DDE in *Vacco v. Quill*).

applies the DDE to explore how lawmakers might utilize the doctrine when considering the permissibility of certain activities within the IVF process that create foreseen but unintended risk of loss of embryonic life.

Lawmakers will face challenges trying to determine whether the foreseen risk is proportionate to the good sought. Though IVF should not necessarily be outlawed, certain restrictions may be deemed necessary to minimize or mitigate the risk of harm to embryonic life.

I. PREBORN PERSONHOOD FROM *ROE* TO *LEPAGE*

A. The Aftermath of Roe

In *Roe v. Wade* the Supreme Court considered a Texas statute that outlawed abortion except when necessary to save the woman's life.[28] Texas argued that the law was justified because the state's "determination to recognize and protect prenatal life from and after conception constitute[d] a compelling state interest."[29] Nevertheless, the Court struck down the law while establishing a woman's fundamental right to choose to terminate her pregnancy. But in so doing, the Court also pointed out that states, including Texas, have not been consistent in their treatment of preborn lives in other contexts (e.g., criminal, tort, or estate law) and that "the unborn have never been recognized in the law as persons in the whole sense."[30]

Ultimately, this inconsistent treatment weighed against Texas's argument that it had a sufficiently compelling interest in protecting preborn life that would justify infringing on a woman's right to terminate a pregnancy.[31] Thus, while the anti-abortion measure was clearly intended to protect preborn lives, a major stumbling block for Texas was the fact that the preborn were not similarly protected in other areas of the law.[32]

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[28] Roe v. Wade, 410 U.S. 113, 118 (1973).

[29] *Id.* at 156.

[30] *Id.* at 162.

[31] *Id.*

[32] *See* Alec Walen, *The Constitutionality of States Extending Personhood to the Unborn*, 22 CONST. COMMENT. 161, 168 (2005). Since *Roe*, the Court has been more explicit about this consistency problem when applying strict scrutiny review. In *City of*

In response, efforts were made at both the federal and state levels to draft constitutional amendments and laws seeking to provide protection to preborn human lives. As mentioned, only days after the *Roe* decision, an unsuccessful effort was made to amend the federal Constitution,[33] and there were repeated (also unsuccessful) attempts over the following decades.[34] On the legislative side, there have been numerous attempts to pass a federal law that would acknowledge the right to life of human beings at the earliest stages of biological development.[35]

These broad federal endeavors were ultimately more symbolic than effective in granting rights to the preborn, but many states were successful in adopting more targeted laws that punished activities harming fetuses independent of any separate harm caused to pregnant women.[36] Such laws, which are different in kind from those restricting abortion itself, cover instances of abuse to pregnant women, vehicular accidents involving pregnant women, or even punishing pregnant women for their own actions (such as drug use) that cause harm to the fetus.[37] The point of these laws was not to directly attack abortion but to shore up a claim that the state has an interest in protecting fetal life more consistently.

Yet another approach was for states to assert broad policy statements about the rights and protections afforded to preborn lives. Missouri was one of the earliest examples when, in the late

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Hialeah, the Court stated, "[i]t is established in our strict scrutiny jurisprudence that 'a law cannot be regarded as protecting an interest "of the highest order" . . . when it leaves appreciable damage to that supposedly vital interest unprohibited.'" Church of the Lukumi Babalu Aye, Inc. v. City of Hialeah, 508 U.S. 520, 546-47 (1993) (citation omitted) (quoting Florida Star v. B.J.F., 491 U.S. 524, 541-42 (1989) (Scalia, J., concurring in part and concurring in judgment)).

[33] *See* H.R.J. Res. 261, 93d Cong. (1973).

[34] The National Committee for a Human Life Amendment documented over 300 such proposals to Congress between 1973 and 2003. *See* Will et al., *supra* note 15, at 502.

[35] *See, e.g.*, Life at Conception Act, H.R. 1011, 117th Cong. (2021); Sanctity of Life Act of 2020, H.R. 6042, 116th Cong. (2020); Sanctity of Human Life Act, H.R. 586, 115th Cong. (2017); Sanctity of Human Life Act, H.R. 23, 113th Cong. (2013).

[36] *See, e.g.*, Marka B. Fleming, *Feticide Laws: Contemporary Legal Applications and Constitutional Inquiries*, 29 PACE L. REV. 43, 49-61 (2008); Sandra L. Smith, Note, *Fetal Homicide: Woman or Fetus as Victim? A Survey of Current State Approaches and Recommendations for Future State Application*, 41 WM. & MARY L. REV. 1845, 1851-69 (2000) (each discussing the development and application of feticide laws across the country).

[37] *See* Fleming, *supra* note 36; Smith, *supra* note 36.

1980s, the legislature adopted a statute regulating abortion that included expansive preamble language providing that life begins at conception and that the laws of the state are to be interpreted to acknowledge the protectable interests of the unborn.[38] The statute also requires that all Missouri laws be interpreted to provide unborn children with the same rights enjoyed by other persons, subject to the Federal Constitution and Supreme Court precedents.[39]

The "subject to" language is notable in that the preamble expressly subordinates itself to federal law consistent with the Supremacy Clause.[40] Put plainly, the preamble acknowledged that the law's ability to protect the unborn was necessarily limited by the existence of *Roe*. However, by using general language, the

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[38] The full text of the preamble reads:

> 1. The general assembly of this state finds that:
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> (1) The life of each human being begins at conception;
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> (2) Unborn children have protectable interests in life, health, and well-being;
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> (3) The natural parents of unborn children have protectable interests in the life, health, and well-being of their unborn child.
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> 2. Effective January 1, 1988, the laws of this state shall be interpreted and construed to acknowledge on behalf of the unborn child at every stage of development, all the rights, privileges, and immunities available to other persons, citizens, and residents of this state, subject only to the Constitution of the United States, and decisional interpretations thereof by the United States Supreme Court and specific provisions to the contrary in the statutes and constitution of this state.
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> 3. As used in this section, the term "unborn children" or "unborn child" shall include all unborn child or children or the offspring of human beings from the moment of conception until birth at every stage of biological development.
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> 4. Nothing in this section shall be interpreted as creating a cause of action against a woman for indirectly harming her unborn child by failing to properly care for herself or by failing to follow any particular program of prenatal care.

MO. ANN. STAT. § 1.205 (West 2024).
The expansive language in the preamble calls to mind the policy considerations included in Project 2025. *See supra* notes 20-21 and accompanying text.

[39] MO. ANN. STAT. § 1.205 (West 2024).

[40] *See* U.S. CONST. art. VI, cl. 2.

preamble would not need to be amended if such Supreme Court precedent changed.

Nonetheless, the constitutionality of the Missouri preamble was challenged. Before reaching the Supreme Court,[41] the Court of Appeals for the Eighth Circuit cited to dicta from *Akron v. Akron Center for Reproductive Health, Inc.* and determined that "Missouri's declaration that life begins at conception was 'simply an impermissible state adoption of a theory of when life begins to justify its abortion regulations.'"[42] Beyond abortion, and relevant here, the plaintiffs[43] challenged the preamble language due to concerns about its impact on other statutory provisions. For instance, "the preamble's definition of life [had the potential to] prevent physicians in public hospitals from dispensing certain forms of contraceptives, such as the intrauterine device."[44] Certain *amici* also argued that the preamble could impact the provision of IVF services.[45]

But the Supreme Court ultimately determined that it did not need to pass on the constitutionality of the statute's preamble,[46] and it disagreed with the Court of Appeal's interpretation of the *Akron* dicta.[47] Given that the language of the preamble explicitly subordinates itself to Supreme Court precedent, including *Roe*, the statute could not serve as an attempt to outlaw all abortions. The Court "emphasized that *Roe v. Wade* 'implies no limitation on the

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[41] *See generally* Webster v. Reprod. Health Servs., 492 U.S. 490 (1989).

[42] *Id.* at 503 (quoting Webster v. Reprod. Health Servs., 851 F.2d 1071, 1076 (8th Cir. 1988) (citing Akron v. Akron Ctr. for Reprod. Health, Inc., 462 U.S. 416, 444 (1983))).

[43] *Id.* at 501-02 (The named plaintiffs included "five health professionals employed by the State and two nonprofit corporations," who brought the action "on their own behalf and on behalf of the entire class consisting of facilities and Missouri licensed physicians or other health care professionals offering abortion services or pregnancy counseling and on behalf of the entire class of pregnant females seeking abortion services or pregnancy counseling within the State of Missouri.").

[44] *Id.* at 505-06. In 2012, the Missouri House of Representatives approved a bill that would have allowed employers or insurers to deny coverage for contraception based on religious objections, but the governor vetoed it. *See* Kevin Murphy, *Missouri Law to Deny Birth Control Coverage Vetoed*, REUTERS (July 12, 2012, at 18:06 CT), http://www.reuters.com/article/2012/07/12/us-usa-contraception-missouri-idUSBRE86B1B620120712.

[45] *Webster*, 492 U.S. at 522 (O'Connor, J., concurring in part and concurring in judgment).

[46] *Id.* at 507.

[47] *Id.* at 506.

authority of a State to make a value judgment favoring childbirth over abortion.'"[48]

Because the language at issue did not, on its face, restrict abortion in violation of *Roe*, and it had yet to otherwise restrict the plaintiffs' activities in any concrete way, the Court felt that the plaintiffs' speculative concerns (for instance regarding birth control or IVF) were not ripe for judicial review.[49] As such, the Court was able to interpret the language of the preamble as a permissible state expression of value judgment.[50] The Court did not address the suggestion made by Judge Arnold in his dissent to the Eighth Circuit opinion that the preamble language could be found invalid as it pertained to abortion, yet valid "insofar as it relates to subjects other than abortion."[51]

To date, birth control and reproductive technologies[52] have not been restricted in Missouri, so the Court has been able to avoid assessing the constitutionality of any use of the preamble (or language like it) to restrict such reproductive choices. However, Missouri's preamble makes it clear that the relationship between embryonic personhood and IVF is not new. What is more, with *Roe* as an obstacle, broad pronouncements about protecting human life from conception were not effective in restricting abortion. This is because *Roe's* trimester framework prevented states from

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[48] *Id.*

[49] *Id.* The Court compared the instant case to the circumstances presented in *Alabama State Federation of Labor v. McAdory*, where the Court stated that "[w]e are thus invited to pass upon the constitutional validity of a state statute which has not yet been applied or threatened to be applied by the state courts to petitioners or others in the manner anticipated. Lacking any authoritative construction of the statute by the state courts, without which no constitutional question arises, and lacking the authority to give such a controlling construction ourselves, and with a record which presents no concrete set of facts to which the statute is to be applied, the case is plainly not one to be disposed of by the declaratory judgment procedure." *Id.* (quoting Ala. State Fed'n of Lab. v. McAdory, 325 U.S. 450, 460 (1945)).

[50] *Webster*, 492 U.S. at 506.

[51] *Id.* at 505 n.5 (quoting *Webster*, 851 F.2d at 1085 (Arnold, J., dissenting)).

[52] The Missouri Supreme Court used the preamble to determine that a nonviable fetus is a person for purposes of a wrongful death statute when it allowed a man to bring the action as the "father of an unborn child" after the pregnant woman (who was not his wife) was killed while four months pregnant. Connor v. Monkem Co., Inc., 898 S.W.2d 89, 90-93 (Mo. 1995) (en banc).

regulating abortion in the first trimester,[53] which is when ninety percent of the procedures take place.[54]

But things changed after *Planned Parenthood v. Casey* where the Supreme Court rejected the trimester framework and acknowledged that "the State has legitimate interests from the outset of pregnancy in protecting the health of the woman and the life of the fetus that may become a child."[55] With the door opened, states began passing laws directly targeting providers of abortion services.[56] Americans United for Life adopted this approach to chip away at abortion access through so-called TRAP laws (targeted regulation of abortion providers),[57] which were enacted by the hundreds across the country.[58] These laws were effective in making abortions more difficult to obtain by, for instance, imposing mandatory counseling and waiting periods.[59] But the Court's subsequent decision in *Whole Woman's Health* called into question the continuing vitality of this approach.

As typically drafted, TRAP laws purport to be about protecting women's health. The Texas law at issue in *Whole Woman's Health* required abortion providers to obtain admitting privileges at nearby hospitals and abortion clinics to meet the regulatory requirements of ambulatory surgical centers.[60] The stated justifications for such provisions were that admitting privileges provide continuity of care for women experiencing complications

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[53] Roe v. Wade, 410 U.S. 113, 164-65 (1973).

[54] *See Abortion in the United States*, GUTTMACHER INST. (June 2024), https://www.guttmacher.org/fact-sheet/induced-abortion-united-states [https://perma.cc/82EC-QL2V].

[55] Planned Parenthood of Se. Pa. v. Casey, 505 U.S. 833, 846 (1992).

[56] *See generally* MARY ZIEGLER, AFTER ROE: THE LOST HISTORY OF THE ABORTION DEBATE (2015) (providing a detailed analysis of the history of abortion restrictions).

[57] Linda Greenhouse & Reva B. Siegel, *The Difference a Whole Woman Makes: Protection for the Abortion Right After* Whole Woman's Health, 126 YALE L.J.F. 149, 151-56 (2016).

[58] *See* Elizabeth Nash et al., *Policy Trends in the States: 2016*, GUTTMACHER INST. (Jan. 3, 2017), https://www.guttmacher.org/article/2017/01/policy-trends-states-2016 [https://perma.cc/RP9F-DTH8]. The Guttmacher Institute reported the enactment of over 300 such statutes between 2010 and 2016 alone. *Id.*

[59] *See generally* Greenhouse & Siegel, *supra* note 59 (discussing examples of TRAP laws).

[60] Whole Woman's Health v. Hellerstedt, 579 U.S. 582, 590-91 (2016).

during an abortion procedure, and clinics meeting the more stringent surgical center requirements would be safer.[61]

The Supreme Court struck down the law. Writing for the majority, Justice Breyer pointed out the "virtual absence of any health benefit" provided by the provisions when compared to the burdens imposed.[62] This language from *Whole Woman's Health* invited lower courts to take a more exacting look at TRAP laws to discern their true purpose, which would make it easier to find such laws unconstitutional and, by extension, the TRAP strategy less attractive.[63]

But even prior to *Whole Woman's Health*, the incrementalist strategy was not favored by all. While TRAP laws made abortion more difficult to access, difficult does not mean impossible—a fact that bothered the staunchest abortion opponents. The state-level Personhood Movement was born of this discontentment. Daniel Becker, the founder of the National Personhood Alliance, opposes abortion restrictions that provide any exceptions (including for rape) on the view that such laws "identif[y] a class of human beings that we may kill with impunity."[64]

For personhood proponents, the only answer is to "recogniz[e] all human beings as persons who are 'created in the image of God' from the beginning of their biological development, without exceptions."[65] And given the repeated failures to amend the Federal Constitution to do so,[66] efforts turned to individual states.

B. Personhood and State Constitutions

In 2008, a voter-initiated measure was proposed to amend the Colorado constitution to define the terms "person" and "persons" to

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[61] *Id.* at 610-17.

[62] *Id.* at 614. A similar law in Mississippi would have caused the only abortion clinic in the state to close. *See* Jackson Women's Health Org. v. Currier, 760 F.3d 448, 449 (5th Cir. 2014).

[63] Will et al., *supra* note 15, at 505.

[64] Miranda Blue, *The Personhood Movement: Regrouping After Defeat: Part 4*, PEOPLE FOR THE AM. WAY: RIGHT WING WATCH (Jan. 28, 2015), http://www.rightwingwatch.org/content/personhood-movement-infighting-anti-choice-ranks-part-4.

[65] *See About Us*, PERSONHOOD USA, http://www.personhoodusa.com/about-us (last visited July 4, 2025).

[66] *See supra* notes 33-36 and accompanying text.

"include any human being from the moment of fertilization."[67] Although the amendment failed (with 73% of voters rejecting it), the effort launched a movement; Personhood USA was founded the following day.[68] The next attempt in Colorado came just two years later with a modest change to remove the term "fertilization" in favor of the broader concept "beginning of biological development."[69] The modification was intended to pick up asexual forms of reproduction, such as cloning, that would not involve fertilization,[70] but this initiative also failed.[71]

The language of these measures excludes the word abortion, but personhood proponents identified a goal of filling the "Blackmun Hole" from *Roe* itself.[72] The "Hole" is a reference to Justice Blackmun's statement that "[i]f this suggestion of [fetal] personhood is established, the appellant's case [arguing in favor of women's choice], of course, collapses, for the fetus' right to life would then be guaranteed specifically by the [Fourteenth] Amendment."[73] While granting Fourteenth Amendment rights to a fetus alone would not resolve the abortion question,[74] it would change the nature of the inquiry, given that the fetus's rights would need to be weighed against any asserted competing interests.[75] Granting rights to a human embryo would have the same effect.

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[67] Colo. Initiative 36 (2008) (proposed amendment to COLO. CONST. art. II, § 23), http://www.sos.state.co.us/pubs/elections/Initiatives/titleBoard/filings/2007-2008/Final36-0708.pdf.

[68] Abigail Pesta, *Behind 'Personhood' Leader Keith Mason's Anti-Abortion Crusade*, NEWSWEEK (June 25, 2012, at 01:00 ET), http://www.thedailybeast.com/newsweek/2012/06/24/personhood-usa-s-keith-mason-eyes-election-day-2012.html.

[69] Colo. Initiative 25 (2010) (proposed amendment to COLO. CONST. art II, § 23), http://www.sos.state.co.us/pubs//elections/Initiatives/titleBoard/filings/2009-2010/25Final.pdf.

[70] Leslie Jorgensen, *Personhood Amendment Revised and Revived*, COLORADO STATESMAN (July 3, 2009), http://www.coloradostatesman.com/content/991130-personhood-amendment-revised-and-revived.

[71] Electa Draper, *"Personhood" Amendment Fails by 3-1 Margin*, THE DENVER POST (May 5, 2016, at 12:23 GMT), http://www.denverpost.com/election2010/ci_16506253.

[72] *See What Is Personhood?*, PERSONHOOD USA, http://www.personhoodusa.com/what-is-personhood (last visited July 4, 2025).

[73] Roe v. Wade, 410 U.S. 113, 156-57 (1973).

[74] Will, *Beyond Abortion*, *supra* note 2, at 578 n.30; *see also supra* text accompanying note 2.

[75] *See, e.g.*, Judith Jarvis Thomson, *A Defense of Abortion*, 1 PHIL. & PUB. AFFS. 47 (1971); Donald H. Regan, *Rewriting* Roe v. Wade, 77 MICH. L. REV. 1569 (1979) (each

Indeed, Colorado voters expressed concern over the impact the proposed amendments would have had on things like contraception and fertility treatments.[76] For instance, any form of contraception that is effective in preventing pregnancy after fertilization takes place would seem problematic.[77] Certain aspects of the IVF process would also raise concerns—such as discarding unused embryos, the risk of destruction associated with thawing frozen embryos, and the reality that IVF has limited success rates with any unsuccessful rounds resulting in the loss of the embryos transferred.[78]

Without responding directly to such concerns, Personhood USA turned its attention to Mississippi. And unlike Colorado, where pre-election polling predicted defeat in both 2008[79] and 2010,[80] Mississippi voters initially favored the proposed constitutional amendment, Measure 26, that would have defined "person" to "include every human being from the moment of fertilization, cloning, or the functional equivalent thereof."[81] Given that Measure 26 was promoted as an anti-abortion provision,[82] it was not surprising that early polling showed more than 80% of the Mississippi electorate ready to approve it.[83] When the amendment failed, Personhood USA had to take note of the reasons.

Exit polling indicated that it was the potential non-abortion impacts of defining "person" to include human beings at the earliest stage of development that gave voters pause. The two most common

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arguing that at least certain abortions would be permissible notwithstanding fetal personhood).

[76] Draper, *supra* note 71.

[77] *See* Will, *Beyond Abortion*, *supra* note 2, at 595-601.

[78] *Id.* at 601-14. See *infra* Part III, IVF and Its Risks, for assessment of these activities under the DDE.

[79] Bente Birkeland, *'Personhood' Amendment on Colorado Ballot*, NPR (Oct. 31, 2008, at 00:10 ET), http://www.npr.org/templates/story/story.php?storyId=96167092.

[80] Steven Ertelt, *Second Poll: Colorado Personhood Amendment Likely to Lose*, LIFENEWS.COM (Oct. 25, 2010, at 20:15 GMT), http://www.lifenews.com/2010/10/25/state-5601/.

[81] Miss. Initiative 26 (2011) (proposed amendment to MISS. CONST. art. III, § 33), http://www.sos.ms.gov/initiatives/Definition%20of%20Person-PW%20Revised.pdf.

[82] For a detailed discussion of the personhood efforts in Mississippi, see generally Will, *Beyond Abortion*, *supra* note 2; Jonathan F. Will, *Measure 26: Fear Mongering, Self-Execution & Potential Implications for Birth Control*, 81 MISS. L.J. SUPRA 63 (2011).

[83] Peter Roff, *Mississippi Voters May Change Abortion Debate*, U.S. NEWS (Oct. 14, 2011, at 14:15 CT), http://www.usnews.com/opinion/blogs/peter-roff/2011/10/14/mississippi-voters-may-change-abortion-debate.

reasons provided for voting against Measure 26 were implications for the treatment of pregnant women (28%) and the availability of IVF (31%).[84]

The events in Mississippi taught an important lesson. It should not be assumed that politicians or voters have a sufficient understanding of human reproductive physiology to grasp the far-reaching implications of defining legal personhood to include pre-implantation embryos. When pressed, proponents of Measure 26 had vastly different positions regarding whether the amendment would (or should) have impacted IVF.[85] One advocate openly discussed his own two children conceived via IVF and was adamant that the measure would not ban IVF.[86]

For its part, Personhood USA initially decried any suggestion of personhood impacts on IVF as scare tactics and fear-mongering.[87] However, in the wake of Measure 26's defeat, the organization became more transparent. The organization's founder, Keith Mason, acknowledged that the movement intends to regulate IVF,[88] and future measures introduced by Personhood USA were amended to include language that "only in vitro fertilization and assisted reproduction that kills a person" are to be impacted.[89]

A slightly different approach was taken in Alabama years before *LePage* when, in 2018, citizens successfully voted to amend their constitution.[90] Unlike personhood amendments that avoid the

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[84] Keith Ashley, *New Poll Reveals Real Reason Behind Mississippi Personhood Loss*, PERSONHOOD USA (Nov. 22, 2011, at 17:19 CT), http://cm.personhoodusa.com/press-release/new-poll-reveals-real-reason-behind-mississippi-personhood-loss.

[85] *See* Will, *Beyond Abortion*, *supra* note 2, at 592-93.

[86] Irin Carmon, *The Next Front in the Abortion Wars: Birth Control*, SALON (Oct. 26, 2011, at 11:00 ET), http://www.salon.com/2011/10/26/the_next_front_in_the_abortion_wars_birth_control/.

[87] Caitlin E. Borgmann, *What the Mississippi Personhood Amendment Tells Us About "Life,"* 81 MISS. L.J. SUPRA 115, 117 (2011).

[88] John Keilman & Melissa Jenco, *'Personhood' Becomes Ground for Debate in Naperville*, CHI. TRIB. (Apr. 5, 2012), http://articles.chicagotribune.com/2012-04-05/news/ct-met-naperville-fertilty-clinic-follo-20120405_1_ralph-kazer-ivf-fertilization.

[89] Colo. Initiative 46 (2011) (proposed amendment to COLO. CONST. art. II, § 32), http://www.sos.state.co.us/pubs/elections/Initiatives/titleBoard/filings/2011-2012/46Final.pdf.

[90] ALA. CONST. art. I, § 36.06 (amendment passed with sixty-one percent of the vote); Jessica Ravitz, *Two States Passed Abortion Amendments to Their Constitutions in the Midterm. What Does that Mean?*, CNN: HEALTH (Nov. 7, 2018, at 17:25 ET), https://www.cnn.com/2018/11/07/health/abortion-ballot-measures-amendments/index.html [https://perma.cc/RY7Q-Q3FK].

word abortion and instead attempt to define the term "person," the Alabama amendment reads as more of a policy statement akin to the statutory preamble in Missouri. Alabama's Amendment 2 signifies that "[n]othing in this constitution secures or protects a right to abortion," and that "it is the public policy of this state to recognize and support the sanctity of unborn life and the rights of unborn children, including the right to life."[91]

Again, the amendment does not define legal personhood or when such rights would attach prebirth. Still, it does indicate that "it is the public policy of this state to ensure the protection of the rights of the unborn child in all manners and measures lawful and appropriate."[92] Of course, using this language to outlaw abortion in 2018 would have been unlawful under *Roe*. For that, Alabama had to wait until *Dobbs* was decided four years later. But given the immediate fallout from *LePage*, those who voted in favor of Amendment 2 may have been unpleasantly surprised when the Alabama Supreme Court relied heavily on the amendment's language to determine that embryos are children.[93]

If nothing else, the debates surrounding the definition of legal personhood highlight that an individual's views regarding the termination of human life associated with abortion may not be the same as their views regarding the permissibility of IVF. Although abortion has been hotly debated for decades, and some attention was generated by the *potential* impacts on IVF raised by failed personhood efforts, the Alabama Supreme Court's definitive holding that embryos are children has forced the public to confront these issues head-on. For their part, scholars, courts, and at least some politicians have been discussing the status of human embryos for decades.

C. Embryo Status, LePage*, and Open Questions*

A human egg was artificially fertilized in 1944, but the first successful round of IVF was achieved in 1978 with the birth of Louise Brown.[94] It is beyond the scope of this article to engage with

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[91] ALA. CONST. art. I, § 36.06.

[92] *Id.*

[93] LePage v. Ctr. for Reprod. Med., P.C., 403 So. 3d 747, 754-56 (Ala. 2024).

[94] Naomi Cahn & Dena Sharp, *The Fertility Industry is Poorly Regulated – and Would-Be Parents Can Lose Out on Having Children as a Result*, THE CONVERSATION

the thousands of pages that have been written since, but suffice it to say that shortly after IVF became a reality, entire books, let alone articles, were being written considering the proper status attributable to human embryos and what parameters ought to be imposed on reproductive technologies.[95]

Notwithstanding the impressive body of scholarship that exists, reproductive technologies are largely unregulated in the United States, where we remain in the figurative "wild west."[96] History suggests that this vacuum may itself be a compromise resulting from an inability to reach consensus regarding how reproductive technologies ought to be regulated.[97] Even before Louise Brown's birth, Jimmy Carter's administration explored the creation of an Ethics Advisory Board ("EAB") to consider federal regulation of IVF, and the EAB was formally convened just months after she was born in 1978.[98] The EAB brought together an impressive and diverse group to discuss reproductive technologies in both private and public meetings, but "[t]he nuances that surfaced during debates about IVF seemingly convinced the government to prefer inaction[.]"[99]

(Aug. 23, 2021, at 14:37 ET), https://theconversation.com/the-fertility-industry-is-poorly-regulated-and-would-be-parents-can-lose-out-on-having-children-as-a-result-163792 [https://perma.cc/W4TR-6GMK].

[95] John Robertson and Bonnie Steinbock were early contributors to this space. *See generally* JOHN ROBERTSON, CHILDREN OF CHOICE: FREEDOM AND THE NEW REPRODUCTIVE TECHNOLOGIES (1994); BONNIE STEINBOCK, LIFE BEFORE BIRTH: THE MORAL AND LEGAL STATUS OF EMBRYOS AND FETUSES (2d ed. 2011).

[96] For examples of authors comparing this lack of regulation to the "wild west" abound, see generally Emma Waters, *Taming IVF's Wild West*, HERITAGE FOUND. (May 13, 2024), https://www.heritage.org/marriage-and-family/commentary/taming-ivfs-wild-west [https://perma.cc/4NPY-TEF5]; Morgen L. Barroso, Comment, *Governing the Wild West: Diagnosing & Treating the Lack of Regulations Surrounding Assisted Reproductive Technologies*, 21 CONN. PUB. INT. L.J. 108 (2022); Catherine Wheatley, *Arizona's* Torres v. Terrell *and Section 318.03: The Wild West of Pre-Embryo Disposition*, Note, 95 IND. L.J. 299 (2020); Judith Daar, *Federalizing Embryo Transfers: Taming the Wild West of Reproductive Medicine?*, 23 COLUM. J. GENDER & L. 257 (2012); Debora L. Spar, *Fertility Industry Is a Wild West*, N.Y. TIMES (Sep. 13, 2011), https://www.nytimes.com/roomfordebate/2011/09/13/making-laws-about-making-babies/fertility-industry-is-a-wild-west [https://perma.cc/SLG5-T73F].

[97] *See generally* Fox & Ziegler, *supra* note 3 (exploring early attempts to develop legal guidelines for reproductive technologies).

[98] *Id.* at 9.

[99] *Id.* at 18.

In effect, those in favor of expanding access and funding research for IVF backed off, while those against IVF refrained from pushing for prohibitions or restrictions.[100] Although the federal government ultimately imposed certain reporting requirements on IVF clinics, and various organizations publish recommended guidelines,[101] the dearth of guidance from state and federal legislatures leave judges reeling.

One of the earliest cases, which is taught in law schools to this day,[102] involved the disposition of seven frozen embryos following a divorce.[103] At the time the case reached the Tennessee Supreme Court, Mary Sue Davis wanted the ability to donate the embryos to a childless couple, but her ex-husband (Junior Davis) wanted them discarded.[104] Junior's position was untenable to the trial judge. Calling to mind the decision in *LePage* coming decades later, the *Davis* trial judge determined that the embryos were "children in vitro," and "held that it was 'in the best interest of the children' to be born rather than destroyed.'"[105] Both the Tennessee Court of Appeals and Tennessee Supreme Court rejected this holding,[106] with the supreme court's discussion being particularly helpful in understanding the path to *LePage* and its impact on IVF in Alabama.

First, the supreme court noted that the embryos in question could not be considered persons under existing state or federal law. With respect to state law, the court referred to Tennessee's Wrongful Death Statute, which "does not allow a wrongful death for a viable fetus that is not first born alive[,]" and thus, a "fetus is not a 'person' within the meaning of the statute."[107]

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[100] Interestingly, those against IVF due to the loss of embryonic life associated therewith were concerned that advocating for prohibitions on IVF might harm their efforts to restrict access to abortion, an issue on which there was more consensus. *Id.* at 16-19.

[101] *See infra* Part III: IVF and Its Risks.

[102] *See, e.g.*, BRIETTA R. CLARK ET AL., HEALTH LAW: CASES, MATERIALS AND PROBLEMS (9th ed. 2022).

[103] Davis v. Davis, 842 S.W.2d 588, 589 (Tenn. 1992).

[104] *Id.* at 590.

[105] *Id.* at 594.

[106] *Id.* at 594-97.

[107] *Id.* at 594. Of course, in *LePage* the Alabama Supreme Court came to the opposite conclusion about the personhood of embryos under Alabama's Wrongful Death of a Minor Act, and it relied heavily on the recently approved Amendment 2 in doing so. LePage v.

For federal purposes, the Tennessee court cited to *Roe v. Wade* where the United States Supreme Court "concluded that 'the unborn have never been recognized in the law as persons in the whole sense.'"[108] It is worth noting that *Davis* was decided in 1992, the same year as *Casey*. Recall that *Casey* rejected *Roe's* trimester framework and acknowledged that states have a legitimate interest in preborn life "from the outset of pregnancy[.]"[109] The Court's attention in *Casey* was focused on abortion, so it is unclear whether the Court circa 1992 would have recognized a state interest in protecting embryos pre-implantation. Regardless, *Roe* was a clear barrier to the Tennessee courts finding that pre-implantation embryos are legal persons—a barrier subsequently removed by *Dobbs*.

To be sure, in writing the *Dobbs* majority, Justice Alito did not define the term "person" to include the unborn for purposes of the federal Constitution. In fact, he explicitly stated "[o]ur opinion is not based on any view about if and when prenatal life is entitled to any of the rights enjoyed after birth."[110] Nevertheless, the Court opened the door for states to create their own definitions by eliminating the woman's fundamental right to terminate her pregnancy. Simply put, *Roe* restricted the ability of states to protect the unborn because a woman's right to terminate a pregnancy necessarily harms the fetus. With *Roe* overturned, states are emboldened to offer protections to the unborn.

It is beyond the scope of this article, but there is a very important caveat that demands exploration in future work. The ability of a state to afford the rights and protections of legal personhood to humans at various stages of development (or to corporations for that matter), will necessarily be constrained by the extent to which such newly ascribed rights impact the existing constitutionally recognized rights of others.[111] For example, while *Dobbs* eliminated the federal constitutional right of a woman to

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Ctr. for Reprod. Med., P.C., 403 So. 3d 747, 754 (Ala. 2024). Alabama's Amendment 2 expressly speaks to the rights and protection of the unborn.

[108] *Davis*, 842 S.W.2d at 595 (citing Roe v. Wade, 410 U.S. 113, 162 (1973)).

[109] *See* Planned Parenthood of Se. Pa. v. Casey, 505 U.S. 833, 846 (1992).

[110] Dobbs v. Jackson Women's Health Org., 597 U.S. 215, 263 (2022).

[111] Caitlin E. Borgmann, *The Meaning of "Life": Belief and Reason in the Abortion Debate*, 18 COLUM. J. GENDER & L. 551, 576 (2008).

terminate a pregnancy, it said nothing of the woman's recognized right to avoid procreation through use of contraception.[112]

More relevant here, *Dobbs* also said nothing directly about the strength of any rights individuals have *to* procreate, for instance, via the use of reproductive technologies.[113] In short, the constitutionality of any future state regulations on reproductive technologies that are justified via an interest in protecting unborn lives will depend on the strength of competing rights of progenitors to procreate via whatever means.

Consider the second important lesson from *Davis*, which involves how the Tennessee Supreme Court dealt with the impact embryonic personhood might have on IVF. Without any explanation as to why, the court stated that the trial judge affording "preembryos the legal status of 'persons' . . . would doubtless have had the effect of outlawing IVF programs in the state of Tennessee."[114]

But the court also cited to the American Fertility Society (AFS), whose understanding of the implications of embryonic personhood were not quite as dire. The ethical standards of the AFS suggest that if embryos are considered human subjects, it would entail "an obligation to provide an opportunity for implantation to occur and tends to ban any action before transfer that might harm the preembryo or that is not immediately therapeutic."[115]

Ensuring that existing embryos are available for implantation is the position taken in Louisiana where embryos have been considered juridical persons with the capacity to sue or be sued since 1986.[116] Juridical persons are not quite constitutional persons, but in Louisiana embryos cannot be discarded,[117] and if the original progenitors decide that they no longer want unused embryos, their rights and responsibilities for the embryos must be

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[112] *See, e.g.*, Carey v. Population Servs. Int'l, 431 U.S. 679, 678 (1977); Eisenstadt v. Baird, 405 U.S. 438, 446-47 (1972); Griswold v. Connecticut, 381 U.S. 479, 482 (1965).

[113] *See generally* Carter J. Dillard, *Rethinking the Procreative Right*, 10 YALE HUM. RTS. & DEV. L.J. 1 (2007); John A. Robertson, *Assisting Reproduction, Choosing Genes, and the Scope of Reproductive Freedom*, 76 GEO. WASH. L. REV. 1490 (2008) (each examining the nature of a right "to" procreate and its limits).

[114] Davis v. Davis, 842 S.W.2d 588, 595 (Tenn. 1992).

[115] *Id.* at 596.

[116] LA. STAT. ANN. § 9:123 (2025).

[117] LA. STAT. ANN. § 9:129 (2025).

"legally transferred to a new intended parent or parents."[118] While intentional destruction is never permitted, disputes arising between parties regarding the embryos are to be resolved in accordance with any agreement between the parties or, if no agreement exists, determined by a court based on the best interests of the embryo.[119] To be sure, as a civil law jurisdiction, Louisiana is uncommon in having specific statutory provisions addressing IVF at all.[120]

But given that Louisiana has considered embryos to be juridical persons for decades, it is interesting that Alabama's *LePage* decision made IVF providers anxious in Louisiana as well. In fact, Representative Paula Davis almost immediately introduced amendments to the relevant statutory provisions in Louisiana to provide protection for IVF services.[121] Amendments were ultimately passed in August of 2025 to clarify that authorized providers of IVF services will not be subject to criminal prosecution except in cases of criminal negligence, and any civil liability will be handled in accordance with existing provisions governing the appropriate standard of care.[122] What then is so special about *LePage*?

By all accounts, the facts were unfortunate if not tragic. An unauthorized individual gained access to a storage unit containing frozen embryos from three different couples leading to the destruction of five embryos the couples hoped to use to become parents through IVF.[123] The events call to mind two separate

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[118] LA. STAT. ANN. § 9:130 (2025). The statute does not describe what happens if no new intended parent is identified to whom such rights and responsibilities can be transferred. Because the embryos cannot be intentionally destroyed, presumably either the original progenitors or the clinic itself would retain responsibility.

[119] LA. STAT. ANN. § 9:131 (2025).

[120] The push for juridical personhood in Louisiana was led by Senator Tom Casey who learned of a couple who died leaving behind frozen embryos stored in Australia. Scholars in Australia determined that the embryos should be destroyed, and Casey was appalled by the result. *See* Fox & Ziegler, *supra* note 3, at 18.

[121] Julie O'Donoghue, *Louisiana Lawmaker Shelves IVF Protection Bill, Leaving Questions About Legal Challenges*, LA. ILLUMINATOR (May 29, 2024, at 13:18 CT), https://lailluminator.com/2024/05/29/louisiana-lawmaker-shelves-ivf-protection-bill-leaving-questions-about-legal-challenges/ [https://perma.cc/Y8S4-WYNX].

[122] LA. STAT. ANN. § 9:131 (2025).

[123] LePage v. Ctr. for Reprod. Med., P.C., 403 So. 3d 747, 749-50 (Ala. 2024).

incidents in California and Ohio where catastrophic failure of cooling units led to the loss of thousands of embryos.[124]

In each case, lawsuits soon followed with litigants and courts struggling to identify the appropriate legal theories and remedies.[125] Indeed, due to the lack of regulation, it opens the door for novel legal theories to be raised, such as the notion that the embryos in question ought to be treated as legal persons, the death of which is covered by wrongful death statutes.[126] Similar to *LePage*, at least one couple from Ohio asserted the legal personhood of their lost embryos, but that case settled out of court and was subject to a nondisclosure agreement.[127]

LePage stands unique in that a state's highest court held that embryos are to be considered children under the state's Wrongful Death of a Minor Act ("WDMA").[128] In fact, the court noted that "[a]ll parties to these cases, like all members of this Court, agree that an unborn child is a genetically unique human being whose life begins at fertilization and ends at death."[129] The majority placed great weight on the recent passage of Amendment 2 to the state constitution, which it felt required the court to interpret "child," for purposes of the WDMA, to include embryos.[130] The court held that Amendment 2's statement, that "it is the public policy of this state to ensure the protection of the rights of the unborn child in all manners and measures lawful and appropriate," serves as a cannon of construction when interpreting the state's statutes.[131] Thus, any perceived statutory ambiguity had to be read in a way that protects unborn lives.

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[124] Azeen Ghorayshi & Sarah Kliff, *Accidents, Lax Rules and Abortion Laws Now Imperil Fertility Industry*, N.Y. TIMES (Feb. 24, 2024), https://www.nytimes.com/2024/02/22/health/fertility-clinics-embryos-alabama.html [https://perma.cc/97M3-P3UR].

[125] *See generally* Dov Fox, *Reproductive Negligence*, 117 COLUM. L. REV. 149 (2017) (discussing the lack of regulation of reproductive technologies, how wrongs often go unchecked, and proposing a framework for addressing harms caused).

[126] Ghorayshi & Kliff, *supra* note 124.

[127] *Id.*; *see also* Fox & Ziegler, *supra* note 3, at 41.

[128] *LePage*, 403 So. 3d at 749.

[129] *Id.* at 751.

[130] *Id.* at 754.

[131] *Id.* Not all members of the court agreed that Amendment 2 was relevant to the inquiry. Justice Sellers was "puzzled by the majority and concurring opinions' references to" the constitutional provision. *Id.* at 775 (Sellers, J., concurring in the result in part and dissenting in part).

The practical result of the ruling was that the plaintiffs were permitted to move forward with their claim against the IVF clinic under the WDMA. This was attractive, no doubt, given the expanded remedies (including punitive damages) now available.[132] The clear message that IVF clinics could be sued for punitive damages may alone have been enough to get them to halt their services. But even the civil and criminal immunity provided by the legislature's emergency measure does not resolve the myriad open questions.

For instance, a clinic allowing avoidable, unauthorized access to freezing units seems to be egregious behavior that ought to provide redress to progenitors. Why should the clinics have immunity in all cases?[133] Notwithstanding such immunity, there are also important questions about the permissibility of certain activities that take place during the IVF process. As is the case in Louisiana, presumably clinics would not be permitted to discard unused embryos or donate them for research, each of which would intentionally lead to the death of the embryonic children involved.

And what about other aspects of IVF that do not intentionally lead to destruction, but nonetheless create a known risk of loss of embryonic life? The freezing and thawing process, removal of cells to test for genetic abnormalities, even transferring embryos for hopeful implantation create a significant risk that the embryos involved will not survive.[134] In states that adopt embryonic personhood frameworks, these issues can no longer be silenced in the regulatory vacuum. Something must guide lawmakers as they move beyond emergency measures to protect these newly recognized children.

A central purpose of this paper is to push back against the notion that embryonic personhood would require IVF to be outlawed (as suggested by the Tennessee Supreme Court). However, if embryos are children, it changes the nature of the

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[132] *Id.* at 774 (Sellers, J., concurring in the result in part and dissenting in part). Justice Sellers made his point plainly when he wrote "[t]hese cases are not about when life begins [or] nuances of statutory construction . . . these cases concern nothing more than an attempt to design a method of obtaining punitive damages[.]" *Id.*

[133] *See* Fox & Ziegler, *supra* note 3, at 41-42 (discussing a licensing, monitoring, and compliance framework for reproductive technologies to prevent so-called "never events" from occurring).

[134] *See infra* Part III: IVF and Its Risks.

inquiry as to what activities will be deemed permissible. And as human lives are put at risk, lawmakers may turn to the Doctrine of Double Effect to justify IVF as an activity with a positive goal (born children) that carries with it a known, but unintended negative consequence (embryonic death).

II. THE DOCTRINE OF DOUBLE EFFECT

A. Vacco v. Quill

Historically attributable to Thomas Aquinas[135] and recognized as a device for considering religious or philosophical quandaries, the Doctrine of Double Effect ("DDE") was famously[136] or infamously[137] invoked by the United States Supreme Court in *Vacco v. Quill*.[138] The quandary in *Vacco* was whether there is a sufficiently meaningful difference between the refusal of life-saving medical treatment and "physician-assisted suicide" that would justify New York law permitting the former activity while criminalizing the latter so as to avoid violating the Equal Protection Clause of the United States Constitution.[139]

Respondents in *Vacco* were three physicians who wanted the ability to prescribe lethal doses of medication to competent, terminally-ill patients but who were deterred from doing so by a New York law that generally criminalizes assisting suicide.[140] The physicians argued that because patients are legally permitted to refuse life-saving medical treatment, it violates Equal Protection to

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[135] *See generally* Mangan, *supra* note 26, at 43; Thomas A. Cavanaugh, *Aquinas's Account of Double Effect*, 61 THE THOMIST 107, 107 (1997) (discussing the history and development of the DDE).

[136] *See* Edward C. Lyons, *In Incognito – the Principle of Double Effect in American Constitutional Law*, 57 FLA. L. REV. 469, 543-63 (2005) (defending the Court's use of the DDE in *Quill*).

[137] *See, e.g.*, BEN A. RICH, STRANGE BEDFELLOWS: HOW MEDICAL JURISPRUDENCE HAS INFLUENCED MEDICAL ETHICS AND MEDICAL PRACTICE 142 (2001); Norman L. Cantor & George C. Thomas III, *The Legal Bounds of Physician Conduct Hastening Death*, 48 BUFF. L. REV. 83, 113-14 (2000) (each critiquing the Court's reliance on the DDE).

[138] Vacco v. Quill, 521 U.S. 793, 807 n.11 (1997).

[139] *Id.* at 796-98. Although "physician-assisted suicide" is the phrase used in *Vacco*, given the negative connotations associated with the word suicide, scholars today frequently refer to "physician" or "medical" aid in dying. *See, e.g.*, TOM L. BEAUCHAMP & JAMES F. CHILDRESS, PRINCIPLES OF BIOMEDICAL ETHICS 180-85 (6th ed. 2009).

[140] *Vacco*, 521 U.S. at 797.

prohibit physicians from aiding patients by prescribing a lethal dose of medication since, in each case, death would be the result.[141] Before reaching the Supreme Court, the Second Circuit identified the dilemma slightly differently.

For the Second Circuit, the relevant corollary to prescribing a lethal dose of medication was a patient directing medical professionals to withdraw life-sustaining medical treatment that had already begun, which is perfectly legal.[142] In that sense, the Second Circuit felt that in either case, a physician was aiding the patient's death (via withdrawal of treatment or prescription), and thus, both should be permissible.[143] The Supreme Court ultimately reversed the Second Circuit stating that "the distinction between assisting suicide and withdrawing life-sustaining treatment, a distinction widely recognized and endorsed in the medical profession and in our legal traditions, is both important and logical; it is certainly rational."[144]

As justification, the Court went on to say that this "distinction comports with fundamental legal principles of causation and intent."[145] First, when treatment is refused or withdrawn, it is the patient's underlying pathology that leads to death, whereas prescribing a lethal dose of medication would be the cause of death if permitted. Second, when physicians withdraw unwanted treatment, their intent is to honor the treatment decision of their patient. If a physician prescribes a lethal dose of medication, the intent is to kill the patient.[146]

But what about a situation where a physician administers a dose of pain medication to relieve suffering knowing that it could hasten the patient's death[147]—is there a sufficiently meaningful

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[141] *Id.* at 798.

[142] *Id.* at 798-99.

[143] *Id.*

[144] *Id.* at 800-01 (footnote omitted).

[145] *Id.* at 801.

[146] *Id.*

[147] Some argue that it is a myth that palliative care can hasten death because when properly administered, opioid analgesics would rarely suppress respiration. *See generally* Susan A. Fohr, *The Double Effect of Pain Medication: Separating Myth from Reality*, 1 J. PALLIAT. MED. 315 (1998). Even still, it is unremarkable to note that respiratory suppression is a known side effect of opioids like fentanyl and morphine commonly administered in palliative care. *See, e.g.*, Philip A. Reed, *Opioids, Double Effect, and the Prospects of Hastening Death*, 46 J. MED. & PHIL. 505, 507-08 (2021)

distinction between that activity and the direct prescription of a lethal dose of medication that the patient self-administers? Palliative (or terminal) sedation presents another dilemma. Here, the patient is medically rendered unconscious to relieve suffering and then artificial nutrition and hydration is either withdrawn or it is not begun, which leads to the patient's death.[148]

In addressing these alternative scenarios, the Court again focused on intent. It is permissible for the physician to administer medication or induce unconsciousness to relieve the patient's suffering with knowledge that death may occur, but it is not permissible to prescribe a lethal dose of medication to the patient. In the latter situation, the physician must only intend death.[149] To bolster this position, the Court turned to the DDE by stating, albeit in a footnote, that "[j]ust as a State may prohibit assisting suicide while permitting patients to refuse unwanted lifesaving treatment, it may permit palliative care related to that refusal, which may have the foreseen but unintended 'double effect' of hastening the patient's death."[150]

Although the only explicit reference to the DDE was in a footnote, the Court's emphasis throughout the opinion on intent versus mere knowledge of death is a hallmark of the doctrine.[151] Given that no other court had invoked the doctrine before, a common critique of *Vacco*'s use of the DDE is that the Court did not provide any background on the doctrine or why it was appropriate to reference it.[152] Nonetheless, the Court's apparent comfort utilizing the doctrine when dealing with situations involving life

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(discussing the mechanisms of operation and side effects of synthetic and natural opioids).

[148] *See Palliative Sedation*, COMPASSION & CHOICES, https://compassionandchoices.org/our-issues/palliative-sedation/ [https://perma.cc/C8JE-M6J6] (last visited July 4, 2025); *Vacco*, 521 U.S. at 807 n.11. The physicians in *Vacco* argued that there was no meaningful distinction between physician aid in dying and terminal sedation as well. *Id.*

[149] *Vacco*, 521 U.S. at 802.

[150] *Id.* at 807 n.11.

[151] *Id.*; *see also id.* at 802 ("The . . . common law of homicide often distinguishes . . . between a person who knows that another person will be killed as the result of his conduct and a person who acts with the specific purpose of taking another's life." (citing Morissette v. United States, 342 U.S. 246, 250 (1952))).

[152] *See* Lyons, *supra* note 136, at 471-72 (noting that *Vacco* was the first time in American law that a court relied explicitly on the "principle of double effect" though the court offered little argument for its use).

and death decisions suggests it may be used again. After all, the doctrine has distinctively Catholic roots,[153] and six current members of the Supreme Court are Catholic.[154]

Importantly, and independent of the Supreme Court, lawmakers in states that adopt embryonic personhood frameworks may prospectively take the doctrine into consideration when crafting laws that regulate IVF. That said, since the Court did not provide much insight in *Vacco*, before the DDE can be applied to the various activities associated with IVF, some background on the doctrine (and critiques thereof) are in order.

B. The Doctrine – Origins, Uses, and Critiques

The DDE is classically attributed to Thomas Aquinas's justification for the use of lethal force in self-defense as set forth in the *Summa Theologica*.[155] As a Catholic theologian, Aquinas approached ethical problems from an absolutist (as opposed to utilitarian or consequentialist) perspective.[156] Rather than assessing the permissibility of actions based on their overall utility, Aquinas was bound by the rule that killing a human being is *prima facie* evil.[157] The DDE offers justification for certain actions that

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[153] Peter J. Cataldo, *The Principle of the Double Effect as Preserving Integral Goodness: A Brief Historical Overview*, 30 HEALTH CARE ETHICS USA 3, 3 (2022).

[154] Frank Newport, *The Religion of the Supreme Court Justices*, GALLUP (Apr. 8, 2022), https://news.gallup.com/opinion/polling-matters/391649/religion-supreme-court-justices.aspx [https://perma.cc/5ATT-HZYF] (indicating that Chief Justice Roberts along with Justices Thomas, Alito, Kavanaugh, and Barrett (each Republican appointees) as well as Justice Sotomayor (a Democratic appointee) are all Catholic). If you count Justice Gorsuch, another Republican appointee who was raised Catholic, seven of the nine justices have a Catholic background. Sarah McCammon & Domenico Montanaro, *Religion, the Supreme Court and Why It Matters*, NPR: L. (July 7, 2018), https://www.npr.org/2018/07/07/626711777/religion-the-supreme-court-and-why-it-matters [https://perma.cc/8QFP-BZJM].

[155] *See, e.g.*, Lyons, *supra* note 136, at 478; Stephen R. Latham, *Aquinas and Morphine: Notes on Double Effect at the End of Life*, 1 DEPAUL J. HEALTH CARE L. 625, 630-31 (1997) (each citing THOMAS AQUINAS, SUMMA THEOLOGIAE, II-II, quest. 64, art. 7). That said, Aquinas's views are grounded in natural law theory dating back to Aristotle. Cataldo, *supra* note 153, at 3.

[156] Latham, *supra* note 155, at 627. Indeed, consequentialists would not need to invoke the DDE to justify actions assuming overall utility is maximized. Joseph Boyle, *Who is Entitled to Double Effect?*, 16 J. MED. & PHIL. 475, 476 (1991).

[157] Daniel Westberg, *Good and Evil in Human Acts (Ia IIae, qq. 18-21)*, *in* THE ETHICS OF AQUINAS 90, 91-92 (Stephen J. Pope ed., 2002).

cause bad effects without violating the rule in question. In writing about self-defense, Aquinas stated:

> One act may have two effects only one of which is intended and the other outside of our intention. Moral acts are classified on the basis of what is intended, not on what happens outside of our intention since that is incidental to it, as explained above. The action of defending oneself may produce two effects—one, saving one's life, and the other, killing the attacker. Now an action of this kind intended to save one's own life cannot be characterized as illicit since it is natural for anyone to maintain himself in existence if he can. An act that is prompted by a good intention can become illicit if it is not proportionate to the end intended. This is why it is not allowed to use more force than necessary to defend one's life . . . . It is not required for salvation that a man not carry out actions of proportionate self-defense in order to avoid killing another person, for a man is more obliged to provide for his own life than for that of another. However because killing is only allowed by action of public authority for the common good, it is not lawful for someone who is acting in self-defense to intend to kill another man . . . .[158]

From this language derives the basic concept; namely, it is sometimes permissible to cause a foreseen, but unintended bad consequence (killing a human being), as a side (or "double") effect of bringing about a good consequence (preserving one's own life), even though it would not be permissible to directly bring about that bad consequence intentionally.[159] That said, the bad act must be proportionate to the good insofar as no more harm should be created than necessary, and the bad must never be intended as the means of achieving the good.

The DDE is commonly considered to have four conditions or criteria:

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[158] Latham, *supra* note 155, at 632 (citing Thomas Aquinas, SUMMA THEOLOGIAE, II-II, quest. 64, art. 7, *in* ST. THOMAS AQUINAS ON POLITICS AND ETHICS 70, 70-71 (Paul E. Sigmund ed. & trans., 1988).

[159] Latham, *supra* note 155, at 627.

> (1) that the action in itself from its very object be good or at least indifferent;
> (2) that the good effect and not the evil effect be intended;
> (3) that the good effect not be produced by means of the evil effect; and
> (4) that there be a proportionately grave reason for permitting the evil effect.[160]

As applied to the lethal use of force in self-defense, preserving one's own life is considered the good. But the agent must not intend to kill the assailant as the means of achieving this good, and the agent should use no more force than is necessary. Imagine a scenario where an agent is aware that a person will attack the next day. It would not be permissible for the agent to prospectively kill the would-be assailant today in order to prevent the attack from happening tomorrow.[161] This would violate criteria two and three.

On the other hand, it would be permissible for the agent to strike the assailant in the head during an attack notwithstanding the foreseeability that such a strike might be fatal to the assailant. And, indeed, the assailant's death from the strike (the evil, "double effect") would be justified. Of course, if the assailant was rendered unconscious from the strike—thus no longer a threat—the agent could not take further action to end the assailant's life, as such would be creating more harm than necessary to achieve the good.

In addition to self-defense and palliative care, three other common scenarios that are used to illustrate the DDE include the trolley problem, strategic versus terror bombing, and certain abortions to save the life of the woman.[162] The trolley problem

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[160] Mangan, *supra* note 26, at 43. Although there are various iterations of the conditions of the DDE, the four identified by Mangan are widely cited. *See, e.g.*, Cataldo, *supra* note 153, at 3-4; Lyons, *supra* note 136, at 482; Latham, *supra* note 155, at 630; Thomas S. Hibbs, *Interpretations of Aquinas's Ethics Since Vatican II*, *in* THE ETHICS OF AQUINAS 412, 413 (Stephen J. Pope ed., 2002); Alison McIntyre, *Doctrine of Double Effect*, STAN. ENCYC. OF PHIL. (July 17, 2023) [hereinafter McIntyre, *Doctrine of Double Effect*], https://plato.stanford.edu/entries/double-effect/ [https://perma.cc/EWK7-44S8] (each citing Mangan's formulation of the conditions of the doctrine).

[161] Alison McIntyre, *Doing Away with Double Effect*, 111 ETHICS 219, 220 (2001) [hereinafter McIntyre, *Doing Away*].

[162] *See generally* Sherry F. Colb, *A New and Improved Doctrine of Double Effect: Not Just for Trolleys*, 55 CONN. L. REV. 533, 538-55 (2023) (discussing application of the DDE to these common scenarios).

presents a classic philosophical conundrum.[163] A trolley runs uncontrollably toward five people standing on a track who will be killed. Would it be permissible for an agent to throw a lever diverting the trolley to a different track on which a single person stands, thus killing one to save five? The DDE offers a possible justification for the agent's intended, good action (saving the five) notwithstanding the foreseen bad (double effect) of killing the one.

Here, the agent intends only the good and does not intend the bad to occur. Further, the death of the one (the bad) is not the means of achieving the good; rather, the means is throwing the lever to divert the trolley. Even if other moral justifications might exist, the DDE would not condone a common variation on the trolley problem whereby the agent pushes a bystander off a bridge to stop the trolley from killing the five. This situation violates criteria two and three given that the bad (killing the one via push over the bridge) is intended as the means of achieving the good (saving the five).[164] The agent intends that the bystander's contact with the trolley (the bad) is what will do the saving (as opposed to the throwing of a track-switching lever).

The DDE is also invoked to justify the use of strategic bombing of a munitions location versus terror bombing, even if the intent of both is to end a war and the number of civilian deaths is anticipated to be the same.[165] While the good (ending the war) may be the same, terror bombing uses the bad (civilian deaths) as the intentional means of achieving the good (thus violating criteria two and three) whereas the civilian deaths are a foreseen but unintended double effect in the context of the strategic bombing. That said, under criterion four, the ultimate permissibility of the strategic bombing may hinge on the steps taken to minimize the risk of loss of civilian lives.

Finally, and most closely related to this project, the DDE has been used by opponents of abortion to accept the death of the fetus in certain circumstances.[166] Compare two scenarios. In the first, a pregnant woman is diagnosed with cervical cancer requiring a

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[163] *See id.* at 551-55 (describing the trolley problem famously outlined in Judith Jarvis Thomson, Comment, *The Trolley Problem*, 94 YALE L.J. 1395 (1985)).

[164] *See* McIntyre, *Doing Away*, *supra* note 161, at 220.

[165] *See* Lyons, *supra* note 136, at 483-84.

[166] *See, e.g.*, BEAUCHAMP & CHILDRESS, *supra* note 139, at 163.

hysterectomy. In the second, a woman is in difficult labor, and the physician must perform a craniotomy (crushing the fetus's skull) to save the woman's life. Application of the DDE could be considered to permit the fetal death in scenario one while not justifying the craniotomy in scenario two.

In scenario one, the means of saving the woman's life (the good) is removal of her cervix, uterus, and ovaries with the foreseen, but unintended, double effect that the fetus would die as a result. In scenario two, the means of saving the woman's life is the intentional killing of the fetus via crushed skull. Similarly, if a woman was diagnosed with cervical cancer at a point in pregnancy when the fetus was viable, the DDE would not condone killing the fetus after the uterus was removed. Such action would cause more harm than necessary to achieve the good.

For some, a proper understanding of the DDE can be reduced to intent and proportionality.[167] The act will not be permissible if the agent intended the double effect (as opposed to merely foreseeing it), and there must be proportion between the benefit sought and the harm risked.[168] The fourth criterion listed by Mangan indicates that there be a sufficiently grave reason for permitting the evil act.[169] A superficial understanding of proportionality might suggest that this criterion amounts to a consequentialist weighing of the benefits of the good against the costs of the bad.[170] After all, while the DDE may support certain forms of palliative care, it could not provide a justification for the provision of a potentially lethal dose of an opioid to relieve the temporary (albeit significant) suffering associated with a kidney stone.[171]

Scholars continue to debate the proper understanding and role of proportionality within the DDE, particularly given that "the language of maximizing and weighing does not figure prominently in Aquinas."[172] Recall that Aquinas was an absolutist, not a

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[167] *Id*. at 163 n.29 (citing Boyle, *supra* note 156).

[168] *See* Colb, *supra* note 162, at 541 n.26 (citing Quinn, *supra* note 26, at 334 n.3 ("[T]he good end must be proportionate to the bad upshot . . . .").

[169] Mangan, *supra* note 28; *see also supra* text accompanying note 160.

[170] *See* McIntyre, *Doing Away*, *supra* note 161, at 233 (arguing that this boiling down to a cost/benefit analysis renders the DDE superfluous).

[171] *See* McIntyre, *Doctrine of Double Effect*, *supra* note 160.

[172] Hibbs, *supra* note 160, at 413.

consequentialist. For purposes here, it is sufficient to note that proportionality within the DDE does require that no more harm than necessary be inflicted to achieve the good.[173]

Some conclude that the DDE includes a responsibility to eliminate "any unnecessary harm involved in attaining one's intended end."[174] Said another way, no more harm should be risked than is necessary to achieve the good, and lawmakers drafting IVF regulations would likely take the responsibility to eliminate (or reduce) risk seriously.[175]

But the DDE is not without critics. Boyle suggests that the doctrine is only useful to those of an absolutist ethical persuasion.[176] It serves no meaningful role to those starting from a consequentialist perspective (such as utilitarians), who "have an all-encompassing test for determining whether a given harm can be brought about in a certain way: it can be brought about in that way just in case doing so will maximize overall utility."[177]

Others argue that the DDE has wide application even "within various ethical theories that do not include exceptionless norms."[178] Regardless of the underlying moral or ethical theory, the DDE can offer useful insights in situations where agents operate within a system that imposes absolutist duties against causing harm.[179] For example, physicians serve in a fiduciary capacity and are prohibited from causing harm to patients,[180] and criminal law certainly proscribes the killing of others.[181]

Apart from the doctrine's general utility, a common critique of the DDE is that there is no morally significant difference between intending an outcome and foreseeing that it will occur.[182] If an agent is aware that a grievous harm may occur, but acts nonetheless in order to bring about some good, does the agent not

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[173] *See supra* notes 160-161 and accompanying text.

[174] Lyons, *supra* note 136, at 488. Lyons, a defender of the DDE, agrees with McIntyre, a critic, on this point; *see supra* notes 160-161 and accompanying text.

[175] *See infra* Part III: IVF and Its Risks.

[176] *See* Boyle, *supra* note 156, at 475-76.

[177] *See* Latham, *supra* note 155, at 626-27.

[178] *Id.* at 628.

[179] *Id.* at 629.

[180] *Id.*

[181] Thus the need to discuss the DDE in *Vacco*. *See supra* notes 138-152 and accompanying text.

[182] *See* McIntyre, *Doing Away*, *supra* note 161, at 220.

intend the bad outcome as well? It seems unsatisfying that someone could escape moral responsibility by simply claiming to only intend the good.[183] And Professors Cantor and Thomas highlight that, in criminal law, knowledge alone (without specific intent) can be sufficient to find an individual culpable for harm caused.[184]

Another challenge related to intent, known as the problem of "closeness," involves distinguishing between means and side effects.[185] Recall that the bad (double) effect cannot be the means of achieving the good. The bad must be an unintended side effect. But what about situations where the bad effect is so close to the means of achieving the good that the bad appears to be part of the intended plan for achieving the good and, as such, the bad is less of a side effect and more accurately an impermissible part of the means? In short, there must be a "legitimate basis for distinguishing what constitutes the 'means to the good effect' from 'the evil effect' itself."[186] Scholars concede the difficulty in resolving this problem,[187] perhaps highlighted best by the real case involving the separation of conjoined twins Jodie and Mary.

Jodie and Mary were joined in such a way that neither would survive if they remained together, but only Jodie would survive if separated.[188] For purposes of the DDE, saving Jodie's life is the intended good, and Mary's death is clearly the unintended but foreseen bad effect. No one would legitimately argue that anyone wanted Mary to die. However, a lack of desire for the bad, although necessary, is insufficient to satisfy the conditions of the DDE. The bad cannot be the means of achieving the good. The crux of the closeness problem in Jodie and Mary's situation is that the twins shared a heart and lungs located in Jodie's chest cavity, and physicians knew that once the circulatory pathways to Mary's body were severed, Mary would die.[189] In this situation, was Mary's

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[183] Such arguments have been made against the DDE since at least the seventeenth century. *See* Lyons, *supra* note 136, at 484.

[184] *See* Cantor & Thomas, *supra* note 137, at 131 (citing MODEL PENAL CODE § 210.2).

[185] McIntyre, *Doctrine of Double Effect*, *supra* note 160.

[186] Lyons, *supra* note 136, at 553.

[187] *See, e.g.*, *id.* at 554; McIntyre, *Doctrine of Double Effect*, *supra* note 160 (citing Dana K. Nelkin & Samuel C. Rickless, *Three Cheers for Double Effect*, 89 PHIL. & PHENOMENOL. RSCH. 125 (2014) (providing a summary of proposals)).

[188] Lyons, *supra* note 136, at 553-54.

[189] *Id.*

death the means of saving Jodie's life or simply an unintended but foreseen side effect?

It is beyond the scope of this paper to resolve the centuries of debate surrounding the DDE or to disentangle the "true" nature of intent.[190] Even still, it is worth noting that the law does not always equate knowledge with intent. There are nuanced frameworks of culpability that take seriously the difference between negligent, reckless, and intentional acts.[191] For their part, proponents of the DDE emphasize that the doctrine cannot be understood by focusing on intent in isolation. Rather, each condition is an integral part of the whole and must be considered together.[192] For instance, in many situations the criterion of proportionality (causing no more harm than is necessary and minimizing the risk) goes a long way toward smoking out what the agent intends versus that which is foreseen but unintended. Efforts to minimize the risk of harm can be strong evidence that the bad is neither intended nor the means of bringing about the good.

And even if the DDE cannot resolve all complicated moral dilemmas, it has proven to be a useful tool over the centuries in assessing the permissibility of actions that carry with them a grave risk of causing harm.[193] As Professor Colb points out, the DDE:

> [S]harpens our understanding of what we are doing when we make choices in the face of risk or even certain harms. It helps [us] determine the conduct we wish to encourage, independent of anyone's mental state. Far from the marginal phenomenon that some believe it to be, DDE is a common fixture in our law and morality, and it is tremendously useful to clear thinking.[194]

What remains is to consider how the DDE might inform lawmakers regulating against the risk IVF poses to embryonic children.

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[190] Hibbs, *supra* note 160, at 413 (stating that "[d]ebate still rages over the meaning and appropriate application of the principle of double effect–and even over whether Thomas ever articulated such an idea").

[191] Lyons, *supra* note 136, at 509-16 (discussing levels of culpability in criminal and tort law).

[192] Cataldo, *supra* note 153.

[193] Reed, *supra* note 147, at 513.

[194] Colb, *supra* note 162, at 6.

III. IVF, RISKS TO EMBRYONIC CHILDREN, AND DOUBLE EFFECT

A. IVF and Its Risks

In order to determine how the DDE might be utilized to assess the permissibility of IVF,[195] it is necessary to understand the various activities that take place within the process. And if legal personhood is viewed to begin from the moment of fertilization,[196] the risks are immediate.

IVF requires that mature ova be retrieved from a woman's ovaries so that they may be introduced to sperm ex-corporally (in vitro).[197] Because the techniques used to hyper-stimulate the ovaries to produce mature eggs are expensive and unpleasant, IVF providers attempt to retrieve as many oocytes as possible.[198] What is more, because the freezing of unfertilized eggs has historically been less successful than freezing after fertilization takes place, technicians typically fertilize all ova that have been retrieved.[199]

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[195] It is worth noting that the Catholic Church itself is officially opposed to IVF. In the Catholic Medical Association's journal, a priest who is also a physician writes that "[t]he Church is against IVF because it involves the massive destruction of human life, distorts the meaning of the sexual act between husband and wife, and treats the child like a manufacturing product, not as a gift." James McTavish, *Why the Church Says "Yes" to Life and "No" to IVF*, 89 LINACRE Q. 450, 450 (2022). While the DDE may be capable of addressing the bad associated with the loss of embryonic life, it would not be effective in justifying the perceived harm associated with separating procreation from the conjugal act between husband and wife. This is because the bad (procreation without marital sex) would be the means of achieving the good (born child). But because the DDE as a tool is not limited to Catholics, and because not all who believe in embryonic personhood also assign such sanctity to the relationship between sex and procreation, Catholic views on IVF are not dispositive for purposes here.

[196] While using the term "fertilization" is intended to designate the very earliest stage of development, ambiguity remains. *See* Will, *Beyond Abortion*, *supra* note 2, at 594-95. Fertilization itself is a process pursuant to which the joining of the genetic material of the sperm and egg is thought to take forty-eight to seventy-two hours to complete. *See generally* Philip G. Peters, Jr., *The Ambiguous Meaning of Human Conception*, 40 U.C. DAVIS L. REV. 199, 205-15 (2009) (discussing the science of early reproductive physiology).

[197] Bridget M. Fuselier, *The Trouble with Putting All of Your Eggs in One Basket: Using a Property Rights Model to Resolve Disputes Over Cryopreserved Pre-Embryos*, 14 TEX. J. C.L. & C.R. 143, 146-47 (2009).

[198] *Id.*

[199] *Id.* at 147. There have been recent advances in egg-freezing technology leading to greater success. Due to the water content of eggs, flash freezing (vitrification) creates less risk of damaging ice crystal formation that was associated with slower freezing techniques used in the past. LUCY VAN DE WIEL, FREEZING FERTILITY: OOCYTE

Fertilization occurs by mixing individual ova with a preparation of sperm in a culture dish, or the egg may be directly fertilized via intra-cytoplasmic sperm injection.[200] In either case, once the genetic information from the sperm has successfully entered the egg, personhood proponents would say that a legal person exists and that the patients undergoing IVF are now parents.[201] And because more eggs are retrieved and fertilized than could be used in a given IVF cycle, multiple embryonic children now exist. Any risks to which these embryos are exposed would be considered risks to legal persons, each of whom possess the rights associated therewith. And again, these new embryonic persons face risks in the IVF process immediately.

For instance, it is possible that while the first cellular divisions will begin within the Petrie dish, they then stop.[202] At that point, the embryo is no longer viable and cannot be used in an IVF cycle.[203] Even if cellular divisions continue, clinicians will evaluate the morphology (structure and form) of the embryos to determine those most suitable for implantation.[204] The "best" embryos are typically used immediately (fresh),[205] and those considered to have poor morphology would not be selected and would thus be discarded or donated for research.[206]

CRYOPRESERVATION AND THE GENDER POLITICS OF AGING 3 (2020). Egg freezing is becoming more common, but it still not as frequent as embryo freezing in the typical IVF process. *See id.* at 7. For discussion of the implications for embryo freezing, see *infra* notes 251-55 and accompanying text.

[200] Paula J. Manning, *Baby Needs a New Set of Rules: Using Adoption Doctrine to Regulate Embryo Donation*, 5 GEO. J. GENDER & L. 677, 682-83 (2004).

[201] *See, e.g.*, LePage v. Ctr. for Reprod. Med., P.C., 403 So. 3d 747, 749 (Ala. 2024) (describing the plaintiffs as "the parents of several embryonic children . . . kept alive in a cryogenic nursery").

[202] Fuselier, *supra* note 197, at 144.

[203] In Louisiana, nonviable embryos are no longer considered to be juridical persons. LA. STAT. ANN. § 9:123(A)(1) (2025). The statute defines "nonviable" to mean "an in vitro fertilized human embryo that fails to meet necessary developmental milestones, except when the embryo is in a state of cryopreservation," and goes on to state that "[a]n embryo shall not be deemed nonviable before seventy-two hours from fertilization. Viability of an in vitro fertilized human embryo is presumed unless it is deemed nonviable." LA. STAT. ANN. § 9:121(3) (2025).

[204] Meredith A. Reynolds et al., *Risk of Multiple Birth Associated with In Vitro Fertilization Using Donor Eggs*, 154 AM. J. EPIDEMIOL. 1043, 1044 (2001).

[205] Maureen Wood, *Embryo Freezing: Is it Safe?*, IVF.NET (Sep. 13, 2004), http://www.ivf.net/ivf/embryo-freezing-is-it-safe-o335.html.

[206] Peters, *supra* note 196, at 217.

Individuals undergoing IVF may also have concerns about markers for certain genetic conditions that they wish to avoid. Preimplantation genetic screening ("PGS") is a process whereby, after roughly seventy-two hours of development, one or two cells are removed from the embryo to test for certain conditions.[207] The tested cells are destroyed in the process, which alone could be considered problematic given that each cell in a four to eight-cell embryo is toti-potent and could potentially develop into a unique human being.[208]

But, if all goes well (other than for the tested cells), the embryonic children that pass PGS testing would be available for IVF cycles. Of course, all may not go well. The testing could confirm a genetic condition the parents hoped to avoid, in which case the embryonic child would typically be discarded or donated for research.[209] The process of PGS itself could also damage the embryo rendering it no longer suitable for implantation or it could lead to future birth defects in a born child.[210] In theory, the use of PGS to identify embryos lacking genetic abnormalities might indicate that such embryos are more suitable for implantation; however, certain studies suggest that embryos implanted after undergoing PGS are less likely to result in a live birth.[211]

After inspection, a certain number of fresh embryos will be used for the initial IVF cycle. As recently as 2012, 75.2% of IVF transfer cycles involved multiple embryos, but by 2021, the rate had fallen to 17.1%.[212] Multi-embryo transfers are more common as women age; however, when using euploid embryos (those with the best prognosis), the American Society for Reproductive Medicine ("ASRM") currently recommends singleton transfers regardless of the age of the woman.[213]

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[207] Jaime King, *Predicting Probability: Regulating the Future of Preimplantation Genetic Screening*, 8 YALE J. HEALTH POL'Y L. & ETHICS 283, 290 (2008).

[208] Peters, *supra* note 196, at 216.

[209] King, *supra* note 207, at 291.

[210] *Id.* at 287-88.

[211] *Id.* at 307.

[212] *See 2021 Assisted Reproductive Technology: Fertility Clinic and National Summary Report*, CTRS. FOR DISEASE CONTROL & PREVENTION (2021) [hereinafter *2021 ART Report*], https://www.cdc.gov/art/reports/2021/index.html [https://perma.cc/BU2Z-3LH6].

[213] *See*, American Society for Reproductive Medicine, *Guidance on the Limits to the Number of Embryos to Transfer: A Committee Opinion (2021)*, 116 FERTIL. & STERIL. 651,

Any embryos with acceptable morphology that are not transferred in the first IVF cycle would be frozen for use in future rounds.[214] Although twenty years ago the freezing and thawing process posed a significant risk to the embryonic children involved,[215] today, Johns Hopkins reports that 95% of embryos survive the thawing process, and that the success rates for IVF are most associated with the quality of the embryos used (rather than whether the embryos were frozen).[216] Of course, the very act of freezing and thawing can impact the quality of the embryo (even if it survives the process). A recent study by Icahn School of Medicine at Mount Sinai found that embryos receiving a post-thawed reproductive potential score that was lower than their pre-freezing score were less likely to result in a live birth than those receiving the same or better post-thawing score.[217] In fact, regardless of whether embryos are frozen, there is significant risk of loss inherent in the transfer process itself.

IVF is not a perfect science (or anywhere near it), and in any unsuccessful round of IVF embryonic children are dying.[218] To be

652-53 (2021) [hereinafter *ASRM Guidance*], https://www.asrm.org/practice-guidance/practice-committee-documents/guidance-on-the-limits-to-the-number-of-embryos-to-transfer-a—-committee-opinion-2021/ [https://perma.cc/8JD4-2NUF].

[214] Freezing excess embryos is a common party of the IVF process, and there are estimated to be over 1.5 million frozen embryos in existence. Gerard Letterie & Dov Fox, *Legal Personhood and Frozen Embryos: Implications for Fertility Patients and Providers in Post-*Roe *America*, 10 J.L. & BIOSCI. 1, 5 (2023).

[215] Survival rates varied from clinic to clinic, but anywhere from twenty to forty percent of embryos would not survive the freezing and thawing process. Wood, *supra* note 205.

[216] *See Freezing Embryos*, JOHNS HOPKINS MED., https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/freezing-embryos [https://perma.cc/H5Q6-D73Q] (last visited July 4, 2025). Other clinics are not as optimistic. The website for Park Avenue Fertility, operating out of Connecticut, states that "[a]bout 70-80% of high-quality embryos are expected to survive the thawing process." *See Patients Who Have Extra Embryos Available After an In Vitro Fertilization (IVF) Cycle Can Choose to Freeze Any Extra Embryos*, PARK AVE. FERTILITY, https://parkavefertility.com/in-vitro-fertilization/frozen-embryo-transfers/ [https://perma.cc/NH5A-HRDZ] (last visited Aug. 5, 2024).

[217] Ellen Kurek, *Embryo Quality Grading Predicts Transfer Success After Thawing*, ENDOCRINOLOGY ADVISOR (Apr. 25, 2024), https://www.endocrinologyadvisor.com/news/embryo-quality-grading-predicts-transfer-success-after-thawing/ [https://perma.cc/2DFB-VM28].

[218] For reference, in 2021 there were 91,906 live births from a total of 202,121 embryo transfers equating to an overall success rate of 45.47%. *See 2021 ART Report*, *supra* note 212.

sure, even natural, coital reproduction can be risky business. By some estimates, greater than 50% of fertilized ova are expelled from a woman's body before she would have reason to know that fertilization took place.[219]

While it could be argued that those serious about embryonic personhood should call for regulation of natural reproduction (not just IVF) due to this risk,[220] the analogy is unhelpful for at least two reasons. First, it would be nearly impossible to measure the level of risk for any given sexual encounter across populations to craft meaningful regulation. And, in fact, the likelihood of fertilization per sexual encounter across populations would be extremely low.

Sexually active individuals may be beyond reproductive age or using birth control with a greater than 95% effective rate,[221] suggesting that the risk of embryonic death generated by such individuals approaches zero. Additionally, unless unprotected sex occurs with a woman of reproductive age within approximately a five-day window during her menstrual cycle (from roughly ten to fifteen days after the start of her last menstrual cycle), it would be very unlikely for fertilization to occur.[222]

Second, any law that attempted to intervene in the sexual behavior of individuals in their homes would face a steep constitutional challenge.[223] Imagine a law that prohibited

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[219] Michael J. Sandel, *Embryo Ethics — The Moral Logic of Stem-Cell Research*, 351 NEJM 207, 208 (2004). Some studies suggest that 75% to 80% percent of embryos are lost in early pregnancy. CYNTHIA B. COHEN, RENEWING THE STUFF OF LIFE: STEM CELLS, ETHICS, AND PUBLIC POLICY 65 (2007).

[220] Timothy F. Murphy, *Double-Effect Reasoning and the Conception of Human Embryos*, 39 J. MED. ETHICS 529, 530-31 (2013) (discussing this argument).

[221] *See Contraceptive Use in the United States*, GUTTMACHER INST. (Apr. 2020), https://www.guttmacher.org/fact-sheet/contraceptive-effectiveness-united-states [https://perma.cc/95CC-CQPG] (reporting that IUDs and perfect-use hormonal contraception (the "pill") have failure rates of less than one percent). The pill has a typical-use failure rate of seven percent whereas condoms have a perfect-use failure rate of two percent and typical-use failure rate of thirteen percent. *Id.*

[222] *See, e.g.*, Mary Marnach, *What Ovulation Signs Can I Watch for if I Want to Get Pregnant*, MAYO CLINIC (July 9, 2024), https://www.mayoclinic.org/healthy-lifestyle/getting-pregnant/expert-answers/ovulation-signs/faq-20058000 [https://perma.cc/GX4F-KRG5] (noting that, in the average twenty-eight-day menstrual cycle, ovulation occurs fourteen days before the start of a woman's next menstrual period).

[223] *See* Lawrence v. Texas, 539 U.S. 558, 558 (2003) (striking down a Texas statute that criminalized certain sexual activity between members of the same sex as violating the Due Process Clause).

unprotected sexual activity in one's home but only in the context of heterosexual women during a five-day window in their menstrual cycle. Even the current makeup of the Supreme Court would likely strike down that law.

But IVF is different. It takes place not in one's home but in a clinic, which removes the spatial privacy concern, as discussed in *Lawrence v. Texas*, associated with the state monitoring people's behavior in their bedrooms.[224] At least as importantly, the level of risk associated with a given round of IVF is more easily quantifiable; the Center for Disease Control and Protection ("CDC")[225] and the Society for Assisted Reproductive Technology ("SART") [226] have been keeping statistics for decades.[227] That said, the level of risk within IVF is not the same for all. Individuals have different reasons for accessing reproductive technologies, and some enter the process with a greater chance of success than others.

For instance, according to SART data, the percentage of IVF cycles leading to a live birth in women over the age of forty-two using their own eggs was just 3.2%.[228] This would place the risk of embryonic death at 96.8%—significantly greater than even the fifty percent figure used in the context of natural reproduction. For others, the chance of success is better. During 2021, the highest percentage of embryo transfers resulting in a live birth (50%) involved women aged thirty-two using a donor egg or embryo.[229]

That said, a successful round of IVF only indicates that a live birth resulted. The figure includes cycles involving the transfer of

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[224] *Id.* at 566-67.

[225] *See generally Assisted Reproductive Technology (ART)*, CTRS. FOR DISEASE CONTROL & PREVENTION (Dec. 10, 2024), https://www.cdc.gov/art/about/index.html [https://perma.cc/K7EY-H8AQ].

[226] *See generally Final National Summary Report for 2022*, SART (2022) [hereinafter *SART 2022 Report*], https://sartcorsonline.com/Csr/Public?ClinicPKID=0&reportingYear=2022&newReport=True#patient-cumulative [https://perma.cc/2RD5-YC7S].

[227] In 1992, Congress passed legislation requiring clinics to report on success rates, but the law "had no clear enforcement mechanism, and physicians could still practice reproductive medicine without complying with it." Fox & Ziegler, *supra* note 3, at 20.

[228] *SART 2022 Report*, *supra* note 226.

[229] *2021 ART Report*, *supra* note 212. The CDC's Report makes clear that the biggest factor related to success is the age of the woman who produced the egg. Women aged forty-two and older using donor eggs still saw success rates approaching forty percent.

multiple embryos, assuming at least one live birth.[230] In that sense, the good, one live birth, would still come at the expense of any additional embryonic children that were lost when transferred in the cycle. Though, as noted above, the rate of multiple embryo transfers has declined dramatically over the last decade, particularly for younger women.[231]

The foregoing paints a rather dire set of circumstances and may be why some suggest that if embryos truly are considered children, then IVF must be outlawed. How could so much death and risk of death be tolerated? The DDE offers a tool for assessing the permissibility of the various, risky activities involved with IVF and whether (and what) any restrictions might look like. Though to say the DDE is a useful tool is not to suggest that its application is easy or without controversy. Additional nuance and complexity become apparent when applied.

B. Applying the Doctrine and Informing Lawmakers

On first glance, the DDE seems to offer a straightforward justification for IVF.[232] The good to be achieved is born children. The double effect of losing embryonic children through the process is foreseen, but the parents and IVF providers do not intend that the embryos be lost.

Additionally, the lost embryos are not the means by which the born children are produced; it is not the death of some embryos that

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[230] *Id*. SART similarly reports success in terms of live births regardless of the number of embryos transferred. *See SART 2022 Report*, *supra* note 226.

[231] *See supra* note 213 and accompanying text.

[232] Murphy, *supra* note 220, at 530-32. Murphy also suggests that the DDE offers justification for natural reproduction because although the agents might foresee that a sexual encounter creates a risk of embryonic loss (the bad), they do not intend for such loss; the loss of an embryo would not be the means of achieving a pregnancy (the good intended); and there is a proportionately grave reason for permitting the risk (after all, intercourse is the natural way babies are made and is essential to propagation of the species). *Id*. at 530. Then again, a more nuanced application of the DDE might suggest that not all sexual encounters are justified. If the agents have a responsibility to create no more harm than is necessary, that would indicate that sexual activity should be avoided in situations where the probability of fertilization is high, but pregnancy is low. For instance, a non-hormonal intro-uterine device (IUD) does not prevent fertilization from taking place but is an effective contraception due to prevention of implantation. Thaddeus M. Pope, *Legal Briefing: Conscience Clauses and Conscientious Refusal*, J. CLIN. ETHICS, 163, 166 (2010). Use of a non-hormonal IUD may thus violate the fourth criterion of the DDE.

leads to successful birth of others. Finally, allowing couples the opportunity to have children seems to be a proportionately grave reason to permit the risk. After all, as one commentator suggests, "if anything can be counted as proportionate to the loss of human life, it would seem to be the new generation of new human life."[233]

But proponents of embryonic personhood may not agree with this assessment. As a threshold matter, why is a born child preferable to an embryonic child? Those in favor of assigning legal personhood at the earliest stages of development are adopting a "thin," biological conception of personhood.[234] They are asserting an unqualified interest in protecting human life whereby membership in the species *Homo sapiens* is the sole criterion necessary to entitle the individual to protection against destruction.[235]

Even prior to *Dobbs*, the Supreme Court teed up the ability of states to assert an unqualified interest in protecting human life. In *Cruzan v. Director, Missouri Department of Health,* Chief Justice Rehnquist indicated that states "may properly decline to make judgments about the 'quality' of life that a particular person may enjoy and may simply assert an unqualified interest in the preservation of human life."[236]

Of relevance here, *Cruzan* involved a young woman in a persistent vegetative state, lacking conscious experience, and nonetheless the state asserted an interest in preserving her life in the face of requests to withdraw medical treatment that would lead to her death.[237] Requiring a certain level of cognitive function to trigger state protection is not a position likely to be endorsed by personhood proponents.[238]

If the embryonic person already has all moral and legal worth it[239] will ever possess, it is not readily apparent why a born

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[233] Murphy, *supra* note 220, at 530.

[234] *See generally* Borgmann, *supra* note 111 (discussing "thin" (biological) versus "thick" (conscious experience/moral agency/rationality, etc.) conception of life).

[235] Jonathan F. Will, *Membership Has Its Privileges? Life, Personhood, and Potential in Discussions About Reproductive Choice*, 43 J.L. MED. & ETHICS 358, 360 (2015) [hereinafter Will, *Membership*].

[236] Cruzan v. Dir. Mo. Dep't of Health, 497 U.S. 261, 282 (1990).

[237] *Id.*

[238] Will, *Membership*, *supra* note 235, at 361.

[239] It would not be accurate to claim that an early embryo is a "he" or "she." While either a Y or X chromosome is contributed by the sperm that fertilizes the egg, biological sex (in the sense of development of genitalia) is determined later. The Y chromosome

existence would be worth the risk of death. Indeed, to suggest that a conscious existence is preferable to an embryonic existence, or that a certain level of cognitive function is required for protection, may betray the view that membership in the species alone is what matters.[240] Recall Alabama Representative Ernie Yarbrough likening IVF to a "silent holocaust."[241]

Even still, lawmakers may determine that the benefit of experiencing what life has to offer is a proportionately grave reason to expose embryonic children to a risk of death. This may be particularly true during a time of population decline. After all, states have an interest in ensuring that there are productive members of society,[242] and productivity (however defined) requires some level of cognitive capacity. That said, the state interest in protecting embryonic persons (and the DDE) would suggest that regulations be imposed to mitigate the risk of loss.

As an alternative, one might argue that the "good" associated with IVF is not simply the creation of new life; rather, it is to provide those needing fertility assistance the opportunity to become parents. And not just to become parents of embryos, to be parents of sentient beings with all the joys and tribulations associated with raising born children. But here too there is room for discussion.

Adoption provides a means by which individuals can raise born children without the need to expose embryonic children to risk of loss of life. To permit IVF nonetheless could be viewed as violating

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ordinarily carries the SRY gene that, in turn, contains the testis-determining factor that triggers the development of male gonads. Differentiation does not begin to occur until the seventh week of development, and if the Y chromosome lacks the SRY gene, an XY embryo will develop into a fetus with ovaries. The formation of ovaries then leads to the development of female external genitalia. Indeed, sexual differentiation is a process that continues through puberty, and there are various disorders of sexual development (DSD) that can occur. *See* Ryan T. Anderson, *Neither Androgyny Nor Stereotypes: Sex Differences and the Differences They Make*, 24 TEX. REV. L. & POL. 211, 218-28 (2019). Controversy during the 2024 Paris Olympics put a spotlight on DSD. *See* Kinsey Crowley, *Fact Check on Algerian Fighter Imane Khelif, DSDs, Biology and Olympic Boxing*, USA TODAY (Aug. 2, 2024, at 13:07 ET), https://www.usatoday.com/story/sports/olympics/2024/08/02/imane-khelif-fact-check-olympic-boxer/74645341007/ [https://perma.cc/8XPB-DR7L].

[240] Will, *Membership*, *supra* note 235, at 361.

[241] *See* Quinn, *supra* note 24.

[242] Dov Fox, *Interest Creep*, 82 GEO. WASH. L. REV. 273, 312-13 (2014) (distinguishing "social effects" state interest in population from a more generalized interest in "potential life").

the fourth condition of the DDE, whereby no more risk than is necessary be undertaken to achieve the good. Relevant to this assessment would be whether there are enough children available for adoption to satisfy the demand of those wishing to be parents.[243] Adopting a newborn could take years in the United States, though a couple willing to adopt an older child or one with special needs would likely have a shorter wait.[244] Additional restrictions or prohibitions on abortion in the wake of *Dobbs* could increase the availability of newborns for adoption as well.[245]

Lawmakers would also need to evaluate the importance of individuals sharing a genetic relationship with their offspring.[246] Unlike adoption, IVF may create an opportunity for that genetic tie, but it depends on the circumstances. Some intended parents utilize donor sperm and eggs, in which case there would be no genetic relationship with the offspring in any event.[247] For same-sex couples, typically only one of the intended parents will share a genetic relationship with the child through utilization of sperm or an egg from one of the individuals.[248]

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[243] Murphy, *supra* note 220, at 530.

[244] STEINBOCK, *supra* note 95, at 209.

[245] Kate Plummer, *Adoption Agencies Under Pressure 18 Months After Roe v Wade Overturned*, NEWSWEEK (Dec. 24, 2023, at 03:00 ET), https://www.newsweek.com/roe-wade-abortion-dobbs-adoption-1853724 [https://perma.cc/7B3N-KL2S]. Then again, children born due to abortion restrictions who are not adopted as infants may well end up in foster care. *See* Jacqueline Mitchell, *Abortion Restrictions May Be Linked to Rise in Children Entering Foster Care*, HARV. MED. SCH.: NEWS & RSCH. (Nov. 16, 2023), https://hms.harvard.edu/news/abortion-restrictions-may-be-linked-rise-children-entering-foster-care [https://perma.cc/EY2V-87HN].

[246] *See generally* STEINBOCK, *supra* note 95; ROBERTSON, *supra* note 95; I. Glenn Cohen, *The Constitution and the Rights Not to Procreate*, 60 STAN. L. REV. 1135 (2008) (each discussing the value of various aspects of procreative liberty).

[247] The *Buzzanca* case from California involved five different individuals: the intended parents, a sperm donor, an egg donor, and a gestational surrogate. Buzzanca v. Buzzanca, 72 Cal. Rptr. 2d 280, 282 (Cal. Ct. App. 1998).

[248] It is possible for an embryo to be created using genetic material from two women when one provides the nuclear DNA and another mitochondrial DNA. Hallie A. Hamilton, *Three-Parent Babies and FDA Jurisdiction: The Case for Regulating Three-Party In Vitro Fertilization as a Drug and Biologic*, 53 CREIGHTON L. REV. 427, 432-34 (2020). What is more, a novel technique known as in vitro gametogenesis that is currently being tested on animals would allow scientists to reprogram any cell to become a functional sperm or egg that could be used in fertilization, thus allowing the cell provider to have a genetic tie to resulting offspring. *See* Waters, *supra* note 96.

If an intended female parent uses a donor egg, but her own uterus, the "good" would more specifically seem to be associated with experiencing gestational pregnancy, since there would be no genetic relationship and raising a child could potentially be achieved through adoption. In that sense, the question is whether the experience of gestational pregnancy available through IVF (the good) is proportionate to the risk of loss of embryonic life (the bad).

If nothing else, this discussion highlights the challenge for lawmakers in assigning relative importance to familial versus genetic parentage when identifying the goals that ought to be promoted by IVF regulations.[249] This could lead to regulations that disparately impact certain individuals. For instance, if a genetic relationship between both intended parents is considered necessary for the "good" of IVF to be proportionate to the risk, then regulations may attempt to preclude same-sex couples from utilizing IVF services, particularly in conservative states. If Project 2025 is any indication, conservatives are unlikely to promote laws that support same-sex access to IVF services.[250]

Even conceding that (a) the overarching good associated with IVF is helping individuals to become parents of born children, (b) that the availability of adoption is not disqualifying under the DDE, and (c) that the good of born children is proportionate to the risk, work remains in assessing the permissibility of various aspects of the IVF process. Specifically, would application of the DDE justify embryo freezing, PGS, or multiple embryo transfers?

As discussed, the frequency of embryo freezing is attributable to the fact that more embryos are typically created than can be utilized in a given IVF cycle. It is less physically burdensome (and cheaper) to harvest and fertilize as many eggs as possible compared to the alternative of requiring women to undergo repeated rounds

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[249] John Robertson is known for his expansive view of procreational liberty, though in his writings he was not operating from the perspective of embryonic personhood. *See, e.g.*, John A. Robertson, *In the Beginning: The Legal Status of Early Embryos*, 76 VA. L. REV. 437, 446-48 (1990).

[250] *See* PROJECT 2025, *supra* note 21, at 584 (expressly calling for the President to "direct agencies to rescind regulations interpreting sex discrimination provisions as prohibiting discrimination on the basis of sexual orientation, gender identity, transgender status, sex characteristics, etc.").

of ovary hyper-stimulation. But convenience[251] and necessity are not the same thing.

Applying the DDE may suggest that the risk associated with embryo freezing is not proportionate to the good sought to be achieved. Or, that the risk of embryo loss associated with IVF more globally could be mitigated by the elimination of embryo freezing from the process. It is worth noting that Italy expressly prohibits freezing embryos as an "offence against the respect due to human beings,"[252] and Germany essentially prohibits the activity, given that it is a crime to fertilize more ova than may be transferred in one cycle.[253]

On the other hand, the risks associated with embryo freezing are getting lower,[254] and the availability of cryopreservation may lessen the pressure to transfer multiple embryos, which thereby reduces the risk of a pregnancy involving multiples[255] (more fully discussed below). Moreover, prohibiting embryo freezing could increase the cost of IVF in the short term, though it may also lead to increased research into (and utilization of) egg freezing, which does not create risks for post-fertilization embryonic children.

PGS creates another assessment dilemma for the DDE but also makes clear that a one-size-fits-all approach to IVF regulation is likely too simplistic. While a common purpose for utilizing PGS is to identify severe genetic disorders, some of which could be

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[251] Reducing the number of egg-retrieval processes a woman must undergo would also decrease the risk of the woman experiencing ovarian hyperstimulation syndrome. *See Ovarian Hyperstimulation Syndrome*, MAYO CLINIC (Nov. 9, 2021), https://www.mayoclinic.org/diseases-conditions/ovarian-hyperstimulation-syndrome-ohss/symptoms-causes/syc-20354697 [https://perma.cc/HZG2-SDBD].

[252] Rachel Anne Fenton, *Catholic Doctrine Versus Women's Rights: The New Italian Law on Assisted Reproduction*, 14 MED. L. REV. 73, 98 (2006). The Catholic Church has not taken a position on what ought to be done with currently frozen embryos. Its most recent pronouncement from 2008 (*Dignitas Personae*) identifies the existence of frozen embryos as "a situation of injustice which in fact cannot be resolved." *See* McTavish, *supra* note 195, at 452.

[253] Gesetz zum Schutz von Embryonen [ESchG] [The Embryo Protection Act], Dec. 13, 1990, BUNDESGESETZBLATT, Teil I [BGBL I] at 2746, as amended (Ger.), https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/Gesetze_und_Verordnungen/GuV/E/ESchG_EN_Fassung_Stand_10Dez2014_01.pdf [https://perma.cc/45ES-6ZWV].

[254] Though the live-birth success rate for post-thawed, non-expanded embryos was only twenty-four percent in the recent Mt. Sinai study. Kurek, *supra* note 217.

[255] Fuselier, *supra* note 197, at 147.

fatal,[256] it is not the only reason patients seek it out. Some clinics have assisted couples in using PGS because such individuals are only willing to raise children with conditions such as deafness or dwarfism.[257] PGS could also be used to identify an embryo that would be a donor match for an already born child[258] or to allow parents to select from amongst otherwise viable embryos only those that possess certain desirable traits.[259] As technology such as CRISPR-Cas9[260] develops, embryos may one day be capable of being modified to achieve designer babies.[261]

The DDE provides a lens through which the permissibility of such activities may be evaluated, and the reasons matter. Again, if the embryo is already considered to be a legal person, there needs to be a sufficiently grave reason for exposing such an embryonic child to the risk of harm created by PGS itself. It could be the case that a given embryo, although experiencing initial cellular divisions, carries genetic markers suggesting a very low probability of successful implantation and live birth. One might question whether such an embryo ought to be considered viable, or a legal person at all, and the availability of PGS would prevent the anguish and expense of a failed round of IVF using such an embryo.

Further, if such an embryo is considered a legal person, the DDE would likely condemn attempted implantation. Sitting in vitro, the embryonic child would be considered a legal person (albeit carrying markers for a genetic condition) and would be entitled to protection as such. An attempted transfer would create a certain risk of death if unsuccessful. Therefore, perhaps such embryos ought to be frozen until technology such as CRISPR-Cas9 allows

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[256] King, *supra* note 207, at 295-96.

[257] Kirsten Rabe Smolensky, *Creating Children with Disabilities: Parental Tort Liability for Preimplantation Genetic Interventions*, 60 HASTINGS L.J. 299, 332-33 (2008).

[258] King, *supra* note 207, at 296.

[259] *See generally* Michael J. Malinowski, *Choosing the Genetic Makeup of Children: Our Eugenics Past–Present, and Future?*, 36 CONN. L. REV. 125 (2003) (noting that history of eugenic behavior ought to inform regulation of reproductive technologies).

[260] CRISPR-Cas9 is a technology for genetic editing that allows scientists to modify DNA. It stands for "clustered regularly interspaced short palindromic repeats," and Cas-9 is a reference to "CRISPR-associated protein 9." *See, e.g.*, Noah C. Chauvin, *Custom-Edited DNA: Legal Limits on the Patentability of CRISPR-Cas9's Therapeutic Applications*, 60 WM. & MARY L. REV. 297, 299-300 (2018).

[261] Tara R. Melillo, Note, *Gene Editing and the Rise of Designer Babies*, 50 VAND. J. TRANSNAT'L L. 757, 760 (2017).

scientists to correct the given defect. Regardless, the risk associated with PGS to determine suitability for transfer in such situations may be proportionate to the good of protecting the embryonic child overall.

Consider, for instance, individuals of Ashkenazi Jewish descent who request PGS to rule out embryos carrying the genetic markers for Tay-Sachs disease. This hereditary disorder attacks the central nervous system with symptoms such as "blindness, seizures, [and] profound mental retardation" developing in the first six months after birth.[262] It is usually fatal within three to four years,[263] meaning that the child will experience a short and debilitating life. Putting to one side the question of whether a life with Tay-Sachs is worth living,[264] lawmakers would need to assess whether the risk of damage to the embryo inherent in PGS itself is proportionate to the good of trying to avoid the severe condition.

Under an embryonic personhood framework, those embryos found to carry Tay-Sachs likely could not be discarded (as they historically would be). But rather than be implanted, such embryonic children could be frozen and remain that way until curative technology advances. This is an important distinction. Some countries, like Austria, Germany, Italy, and Switzerland, historically prohibited PGS, and still heavily restrict its use.[265] Germany now permits PGS, but only where parents have a high risk of passing along a serious genetic disease or where the embryo is thought to have a defect likely to lead to miscarriage or stillbirth.[266] Prohibitions or severe restrictions on PGS may

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[262] Paul J. Edelson, *The Tay-Sachs Disease Screening Program in the U.S. as a Model for the Control of Genetic Disease: An Historical View*, 7 HEALTH MATRIX 125, 125 (1997).

[263] *Id.*

[264] STEINBOCK, *supra* note 95, at 220. A separate, but related (and equally complicated) question is whether knowingly having a child with Tay-Sachs disease causes compensable harm to the child. *See id.* at 139-41; Will, *Beyond Abortion*, *supra* note 2, at 609; Smolensky, *supra* note 257, at 332-33; I. Glenn Cohen, *Intentional Diminishment, the Non-Identity Problem, and Legal Liability*, 60 HASTINGS L.J. 347, 352-53 (2008).

[265] Margaret E.C. Ginoza & Rosario Isasi, *Regulating Preimplantation Genetic Testing Across the World: A Comparison of International Policy and Ethical Perspective*, 10 COLD SPRING HARBOR PERSPS. MED., May 2020, at 1, 6, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7197420/pdf/cshperspectmed-GEN-a036681.pdf [https://perma.cc/3Z3H-54C2].

[266] Will, *Beyond Abortion*, *supra* note 2, at 609.

actually expose embryonic children to greater risk of death (or severe disability) than allowing the practice.

But other reasons for using PGS may not come out favorably under the DDE. Even if the screened but unselected embryos are never permitted to be destroyed (instead being made available for use by other couples or frozen), lawmakers may not consider there to be a sufficiently grave reason to expose the embryonic child to the risk of PGS itself. Preferring a born child with deafness or dwarfism or desiring a born child to have certain hair or eye color would not seem proportionate to the risk posed by PGS, and such risk of damage to or destruction of the embryo could be avoided by simply not performing PGS.

There are no studies suggesting that the chance of successful birth is increased for embryos likely to develop blue eyes or deafness, so PGS in that context is not assisting to bring about the good and instead can only cause harm (damage or destruction of the embryo). Indeed, the good (born child) must not be the good in this context at all. Rather, the good would be a born child with certain desirable traits, and the potential damage to the embryo due to PGS would be the foreseen, but unintended bad. Further, the risk of damage created by PGS (the bad) is the means by which the good (identification of desired traits) is achieved, which is a further violation of the DDE. Such uses of PGS may well be restricted or prohibited under an embryonic personhood framework.

Lawmakers will also need to consider whether there ought to be restrictions on the number of embryos transferred in each cycle. As mentioned, twenty years ago multiple-embryo transfers were common on the view that it increased the chances of a successful live birth. But it also increases the risk of a pregnancy involving multiples, which is dangerous for both the woman and the fetuses being gestated.[267] Indeed, due to these dangers, when multiple embryos implant, a procedure may be performed to reduce the number. So-called selective reductions involve a needle being inserted through the woman's abdomen and into the chest of the fetus to administer potassium chloride and stop the given fetus's heart.[268]

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[267] Judith F. Daar, *Selective Reduction of Multiple Pregnancy: Lifeboat Ethics in the Womb*, 25 U.C. DAVIS L. REV. 773, 777-82 (1992).

[268] *Id.*

Because the goal of a selective reduction is to increase the chance of a successful overall pregnancy (by reducing the number of fetuses being gestated), some argue that the procedure ought to be considered different in kind than abortion.[269] It is possible that certain abortion opponents would agree, particularly if the woman's life was threatened, but it is unlikely that selective reduction could be justified by the DDE. While protecting the life of the woman and increasing the chances of successful live birth are certainly good, the problem is that the foreseen bad (terminated fetuses) is the means of the achieving such good. Beyond this, the process of selective reduction could also jeopardize the entire pregnancy,[270] and the risk of multiples could be reduced by prohibiting multiple embryo transfers at the outset, though there would always be the possibility of a single embryo splitting to create identical twins.

While there are still no current laws in the United States restricting the number of embryos that may be transferred (who can forget Octomom),[271] today ASRM guidelines encourage the use of single-embryo transfers in most situations.[272] Most, but not all. Perhaps ironically (at least from the standpoint of an embryonic personhood framework), ASRM blesses the use of multiple embryos for women over the age of thirty-eight if anything other than euploid embryos (those with the best prognosis) are being transferred.[273] ASRM thus recommends using more embryos (though never more than five), as the chances of successful pregnancy decrease. Simply put, the more likely that embryos will be lost, the more are permitted to be transferred.

The tension is readily apparent. As mentioned, the lowest chance for achieving a successful live birth involved in IVF transfer cycles (less than 4%) would be for women over the age of forty-two

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[269] *Id.* at 783; Stacey Pinchuk, *A Difficult Choice in a Different Voice: Multiple Births, Selective Reduction and Abortion*, 7 DUKE J. GENDER L. & POL'Y 29, 34-36 (2000).

[270] Kathleen Lee, *In Support of a Gender-Neutral Framework for Resolving Selective Reduction Disputes*, 44 FAM. L.Q. 135, 140 (2010).

[271] *See* Jessica Sager, *Where Is 'Octomom' Now? All About Nadya Suleman's Life After Welcoming Octuplets in 2009*, PEOPLE (Mar. 5, 2025, at 14:04 ET), https://people.com/where-is-octomom-now-nadya-suleman-8622332 [https://perma.cc/25U2-ZARC].

[272] *ASRM Guidance*, *supra* note 213.

[273] *Id.*

using embryos created from their own eggs.[274] In this situation, multiple embryonic children[275] would likely be transferred and would face a significant risk of death. And recall that success is defined by a single live birth, regardless of the number of embryos transferred. This suggests that any given embryo being transferred in this context is facing a greater than 96% risk of death; significantly higher than even the commonly used 50% statistic from coital reproduction. Of course, this would be the only way for such women to have a genetic relationship with any resulting born child.

If genetic parenthood is not considered a proportionately grave reason to permit the risk of loss, or if the proportionality aspect of the DDE is viewed to include a duty to mitigate or minimize the risk of the harm involved, then lawmakers utilizing the doctrine may question the permissibility of allowing certain individuals to undergo IVF (at least while using their own eggs). There may also be a ban on the future creation of embryos from eggs that are over a certain age. Such a law could lead to women having their eggs frozen at a younger age for later use, which may increase their chances of a live birth in any event.

For any existing frozen embryos already created from older eggs, a decision may be made that such embryos must remain frozen until technology improves due to the significant risk of death currently associated with such transfers. Then again, such age-based restrictions may trigger heightened constitutional scrutiny as well.[276]

CONCLUSION

The fallout from the Alabama Supreme Court's decision in *LePage* was both immediate and expected. Since *Roe*, efforts have been made to extend the rights associated with legal personhood to the earliest stages of biological development. In the wake of *Dobbs*,

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[274] *See SART 2022 Report*, *supra* note 226.

[275] *Id.* Perhaps this suggests that because the age of the egg used is intimately associated with the likelihood of success of a given round of IVF, it may not be appropriate to assign legal personhood to all embryos.

[276] *See* I. Glenn Cohen, *Regulating Reproduction: The Problem with Best Interests*, 96 MINN. L. REV. 423, 514 (2011); Radhika Rao, *Equal Liberty: Assisted Reproductive Technology and Reproductive Equality*, 76 GEO. WASH. L. REV. 1457, 1474-88 (2008).

Alabama's highest court became the first to say that embryos are considered children for purposes of state law. The decision cast new light on traditionally unregulated reproductive technologies.

Now that the dust has settled from the initial clinic closures and emergency legislation, lawmakers ought to carefully consider what, if any, regulations they will impose on IVF if embryos truly are considered to be children. The DDE offers a lens through which to make such assessments and does not lead to the conclusion that IVF needs to be outlawed. Even still, certain aspects of IVF may be viewed to create risks to embryonic life that are not proportionate to the good sought to be achieved, particularly given alternative means of becoming a parent. It will be up to the citizens and lawmakers of a given state to determine where such lines should be drawn. After all, a certain amount of embryonic loss is a cost of doing reproductive business.