ABORTION EVOLUTION: HOW ROE V. WADE HAS COME TO SUPPORT A PRO-LIFE & PRO-CHOICE POSITION

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I. WHAT ROE DECIDED

In 1973, facing a lack of consensus on when human life begins, the United States Supreme Court decided in Roe v. Wade1 that before viability, where there is a right to privacy for the woman on one side, and there is no established right to life on the other side, the woman’s right to privacy—and abortion—must be protected.2 Before viability, the woman’s choice controls.3

Decades after the decision, fixed abortion rights and Roe v. Wade now seem nearly synonymous. However, the truth is more nuanced. Attentive reading reveals conditionality and even latent humility within the decision which are seemingly forgotten.

The Court conceded that if the fetus is a person under the Fourteenth Amendment, there would be no right to obtain an abortion because the right to abortion would be superseded by the person’s right to life. In the words of the Court, “[i]f this suggestion of personhood is established, the appellant’s case, of course, collapses, for the fetus’ right to life would then be guaranteed specifically by the Amendment.”4

However, while the Court could not conclude that a fetus is a person under the Fourteenth Amendment,5 the Court inserted a fascinating point, almost a disclaimer. The Court acknowledged that its

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3. See Roe, 410 U.S. at 162-64.
4. Id. at 156-57.
5. Id. at 158; but see Joshua J. Craddock, Protecting Prenatal Persons: Does the Fourteenth Amendment Prohibit Abortion?, 40 HARV. J.L. & PUB. POL ’Y 539 (2017) (providing a compelling argument based on then-existing language and law that the word “person” in the Fourteenth Amendment was understood to include all human beings, including human beings in the womb).
opinion was the product of a specific moment in time, subject to possible “development” or evolution. The Court explained:

We need not resolve the difficult question of when life begins. When those trained in the respective disciplines of medicine, philosophy, and theology are unable to arrive at any consensus, the judiciary, at this point in the development of man’s knowledge, is not in a position to speculate as to the answer.  

In a fact- and time-sensitive move, the Court left open the possibility that if a sufficient consensus about the beginning of human life emerged, the parameters of abortion rights would have to shift with this consensus to protect human life in the womb.

In 1992, the Supreme Court further developed this assessment of abortion law through its ruling in Planned Parenthood of Southeastern Pennsylvania v. Casey. The plurality opinion acknowledged that a “change in Roe’s factual underpinning” or a change in the “understanding of [the relevant] facts,” could render “[Roe v. Wade’s] central holding obsolete.” However, the opinion concluded that neither of those changes had occurred. In reaching this conclusion, the Court engaged in a very limited review, noting only the factual developments that “advances in maternal health care allow for abortions safe to the mother later in pregnancy than was true in 1973 . . . and

6. Roe, 410 U.S. at 159 (emphasis added).
7. The Court similarly looks to “national consensus” in its analysis under the Eighth Amendment to determine whether certain punishments applied to certain categories of people are considered “cruel and unusual,” and therefore, unconstitutional. Roper v. Simmons, 543 U.S. 551, 559-60, 564-68 (2005) (finding national consensus against imposition of the death penalty for juvenile offenders under the age of eighteen and concluding that the practice violated the Eighth Amendment); Atkins v. Virginia, 536 U.S. 304, 316, 321 (2002) (finding “national consensus ha[d] developed against” the imposition of death penalty for “mentally retarded offenders” and concluding that the practice violated the Eighth Amendment). After discerning whether there is a national consensus, the Court engages in its own analysis to determine whether the punishment “accord[s] with the dignity of man” or is excessive and violates that dignity. Gregg v. Georgia, 428 U.S. 153, 173 (1976). Both steps are relevant to a consensus analysis under Roe; the relevance of such cases and analysis is discussed below in the application section. See infra notes 235-240 and accompanying text.
9. Casey, 505 U.S. at 860; see also id. at 864 (explaining “changed circumstances may impose new obligations”).
10. See id. at 862-63 (citing Brown v. Bd. of Educ., 347 U.S. 483 (1954) (illustrating a change in the understanding of segregation and the ramifications of this change evidenced in Brown v. Board of Education); see also id. at 864 (explaining “changed circumstances may impose new obligations”).
11. Id. at 860. The plurality opinion also conceded that if the relevant factual landscape changed, or assessment of the factual landscape changed, the strength of the state interest in protecting the developing embryo or fetus could increase. Id. at 858. With a sufficient increase then, the strength of that state interest could rise to the level of a compelling governmental interest in protecting new human life, supporting restriction of abortion. See id. at 858.
12. Id. at 864.
advances in neonatal care have advanced viability to a point somewhat earlier.”13 The Court thus reiterated the dependence of the parameters of abortion rights on factual development and our understanding of the relevant facts. Yet at the same time, the Court still held to the shifting moment of viability as the moment when the government may restrict (nontherapeutic) abortion. The unexplored developments in the decades since Roe and since Casey now merit attention.

Roe was decided in January 1973, almost five decades ago. Following the Court’s reasoning, if greater consensus develops that human life begins by a certain point during pregnancy, the right to privacy and to abortion after that point would be curtailed by the rights of the new human life. Science and law have developed significantly since Roe. The question begged attention—how have science and law progressed in the past four and a half decades? I began exploring whether any greater consensus had developed since 1973 on the issue of when human life begins. The search proved surprisingly rewarding. The results merit attention.

To structure the analysis, this Article describes and explores support for the following positions: (1) the view that human life begins at conception; (2) the view that human life begins just after implantation; (3) the view that human life begins with the coming of the heartbeat; and (4) the view that human life begins when brain development has reached a critical point. The article addresses developments in state law, federal law, and international law. The article also notes scientific developments, including technological development of the sonogram, accepted definitions of death, and the debunking of a persistent scientific myth that has complicated embryological understanding.

Finally, noting the arbitrariness suggested by Justice Blackman in attributing significance to the moment of viability,14 this Article applies the reasoning of Roe to the new factual and legal landscape. Up-to-date application of Roe’s legal reasoning to current scientific knowledge and legal precedent yields a groundbreaking conclusion about abortion rights. We are failing in our fidelity to Roe. We are no longer abiding by the Supreme Court’s reasoning in Roe.

13. Id. at 860. Ironically, while the Casey plurality opinion focused on the importance of stare decisis, it departed somewhat from Roe by emphasizing an “undue burden” standard—in place of Roe’s trimester framework—which allows for more significant regulation of abortion practices, even before viability. Id. at 874.
14. See infra note 198 and accompanying text.
II. SCIENCE AND LAW SINCE ROE

A. FOUR POSITIONS ON THE BEGINNING OF HUMAN LIFE

To begin, we will explore developing support for four science-related positions on when (valuable/sacred/protectable) human life begins: a genetic view; an embryological or individuation view; a view based on the fetal heartbeat; and a neurological view (or views).16

This Article addresses when people conclude morally or philosophically valuable, dignity-bearing, protectable human life begins, something along the lines of personhood. Questions regarding when

15. While this article focuses on science, law, and consensus, rather than directly on philosophy, it is worth noting that scientists and others often do concede, properly, that they rely on philosophical arguments to reach their specific conclusions about personhood and protectable human life. See Scott F. Gilbert, When Does Human Life Begin?, in DEV BIO: A COMPANION TO DEVELOPMENTAL BIOLOGY (8th ed. 2006) (available at http://science.jburroughs.org/mbahe/BioEthics/Articles/Whendoeshumanlifebegin.pdf) (noting that “[o]ne of the most popular positions among philosophers is the perspective that life begins at the point of gastrulation—that point at which the zygote is an ontological individual and can no longer become two individuals” and emphasizing philosophy in approaching the question from a neurological viewpoint); HAROLD J. MOROWITZ & JAMES S. TREFIL, THE FACTS OF LIFE: SCIENCE AND THE ABORTION CONTROVERSY 17 (1992) (“The connection between the definition [of humanness], whatever it is, and policy can come only from arguments that are outside science itself.”). Distinguishing between science and philosophy or religion, scientists and philosophers sometimes concede that human life (or membership in the species Homo sapiens) begins at conception, but distinguish the concept of personhood from human life, proposing that personhood could come later. See MOROWITZ & TREFIL at 16, 152 (“In biology, an entity is a human being if it is a member of the species Homo sapiens . . . . For our purposes, we will say that a human being is someone who has recognizably human DNA . . . . In this context, one can say that a human being exists from conception on, but it does not follow that that a human being is a person or has a soul.”). Philosophy is important in understanding personhood, humanness, and human value, if not basic individual biological/genetic human life, but as we will see later, there may be problems with relying too heavily on philosophy to positively separate personhood and sacred or protectable human life from biological human life. See infra note 210. A precautionary principle may be useful in avoiding such a problem.

16. For one source which describes these positions, see Gilbert, supra note 15. See also Gilbert, When “Personhood” Begins in the Embryo: Avoiding a Syllabus of Errors, 84 BIRTH DEFECTS RES. (PART C) 164, 168 (2008) (addressing some of the same views, but only addressing the latter neurological viewpoint). Gilbert subsequently stated in a talk (sponsored by Planned Parenthood and other organizations) that “I really can’t tell you when personhood begins, but I can say with absolute certainty that there’s no consensus among scientists.” Scott Gilbert, When Does Personhood Begin?, SWARThMORE COLLEGE, https://www.swarthmore.edu/news-events/when-does-personhood-begin (last visited Oct. 28, 2019) (emphasis added). However, Gilbert asserts this simply based on the existence of multiple views, i.e. the observation that different scientists conclude that personhood begins at different points during pregnancy/development (such as at fertilization, at implantation or gastrulation, or with certain brain development), but he does not address the natural follow up question: what percentage of scientists adopt each position/conclusion? Likewise, he fails to consider how, as human development progresses to these various significant stages or markers, the number and percentage of individuals who can agree upon when personhood has begun may increase. In other words, he fails to consider that at a certain stage in human development, a consensus may be reached. This article addresses such unasked and unanswered questions.
philosophically-defined life, or personhood, begins may be distinct from the question of when biologically-defined human life begins. About the latter question, there is clear and overwhelming consensus among scientists that new individual biological human life begins upon fertilization. In addressing the more difficult ethical/philosophical/legal question, the views are briefly described at the outset. Then we explore scientific and legal support for each view.

Under the genetic view, human life is understood to begin at fertilization or conception, the unification of the genetic material of the egg and the sperm. The egg and the sperm each has half the genetic material that makes up a human being. Their unification at fertilization creates a new, unique (distinct from the mother and father), and complete human combination of genetic material that serves as the blueprint for development of the new, growing organism.

In the embryological (or individuation or implantation) view, human life is considered to begin around fourteen days after fertilization. By this time, the embryo is implanted in the uterus, gastrulation is occurring, and the “primitive streak” has formed, the beginning of the central nervous system. At this point, the embryo generally can no longer split to form twins.

In another view, the beginning of the fetal heartbeat marks the compelling point of development, and death can be detected from this point. The heart begins to beat regularly by week four or five of development.

17. See, e.g., Steven Andrew Jacobs, Biologists’ Consensus on ‘When Life Begins’ 1 (Univ. of Chi., Div. of Soc. Scis., Dept of Comparative Human Dev. Working Paper, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3211703 (surveying 5,502 biologists and noting that 95% of them affirm the view that biological human life begins at fertilization); Michael S. Gazzaniga, ‘The Ethical Brain,’ N.Y. TIMES, June 19, 2005 (stating “[i]t is a given that a fertilized egg is the beginning of the life of an individual” but then questioning whether it is “right to attribute the same moral status to that human embryo that one attributes to a newborn baby or, for that matter, to any living human”).


19. See id.; see also Thomas A. Shannon & Allan B. Wolter, Reflections on the Moral Status of the Pre-Embryo, 51 THEOLOGICAL STUD. 603, 608-10, 623-25 (1990) (suggesting that personhood begins either at ontological individuation resulting from implantation and gastrulation during the third week or in the eighth gestational week when neurons have begun forming, reflexes occur, and the “biological presuppositions which enable [a rational] potency to exist” are in place). Another embryological view posits that human life begins around three weeks of development. See David B. Hershenov, Olson’s Embryo Problem, 80 AUSTRALASIAN J. PHIL. 502 (2002) (leaning toward a biological account of identity rather than a psychological account of identity and suggesting that “it is at the end of the third week that the operation of a primitive heart and circulatory system indicates the systematic interaction characteristic of an organism”).


Finally, there are varying versions of the neurological view, in which the beginning of human life depends on brain development and activity.22 According to the early neurological view, human life begins during week23 six or by week seven or week eight24 of development, when the early nervous system is in place, the brainstem is forming, electrical brainstem activity has been recorded, and spontaneous movement and reflexes to stimuli occur.25 Brainstem activity is dist-

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22. See Gilbert, supra note 15. For a helpful discussion of fetal brain development, as well as a provocatively poignant image of a embryo/fetus at Carnegie Stage 23, the end of the embryonic period (GW8), see Joan Stiles & Terry L. Jernigan, The Basics of Brain Development, 20 Neuropsychology Rev. 4, 327-48 (2010).

23. In this article, the age of the fetus is measured in weeks from conception, i.e. in developmental age. To convert to gestational age, two weeks are added to the developmental age. Likewise, to convert gestational age to developmental age, subtract two weeks. Gestational age generally is calculated from the first day of the last menstrual cycle, which is considered to occur about two weeks prior to conception.

24. Kirsten Rabe Smolensky, Defining Life from the Perspective of Death: An Introduction to the Forced Symmetry Approach, 2006 U. ChI. LEGAL F. 41, 70 (2006) (stating that “most researchers agree that the first electroencephalogram (‘EEG’) activity usually occurs in the brainstem approximately ten weeks after conception”—but then stating that this is ten weeks gestation—while acknowledging earlier finding of brain activity by another researcher) (citing R.M. Bergstrom and Lea Bergstrom, Prenatal Development of Stretch Reflex Functions and Brainstem Activity in the Human, 52 ANNALES CHIRURGIAE ET GYNAECOLOGIAE FENNIAE SUPP 1-21S (1963)). See note 25 below for sources identifying EEG activity during week six or by week seven of development.

25. See id.; see also Katrina Furth, Fetal EEGs: Signals from the Dawn of Life, CHARLOTTEx Lozier INST. (Nov. 27, 2018), https://lozierinstitute.org/fetal-eege-signals-from-the-dawn-of-life/ (describing the historic research detecting brain activity through EEGs at 45 days or 6.5 weeks of development and concluding that human life, and death, are detectable at this stage); K. E. Himma, A Dualist Analysis of Abortion: Personhood and the Concept of Self Qua Experimental Subject, 31 J. Med. Ethics 48 (2005) (arguing that under a dualist view, soul and body cannot interact in any causal way until brain activity begins, concluding that moral considerations may dictate prohibiting abortion after ten weeks gestational age (eight weeks developmental age) when activity in the brainstem usually begins); Rolf Ahlers, Biotech and Theodicy: What Can and What Ought We to Do in Procreative Technology?, 65 Alb. L. Rev. 679, 692-93 (2002); R. Joseph, Fetal Brain Behavior and Cognitive Development, 20 Developmental Rev. 81 (2000) (describing significant markers in the development and functioning of the brainstem but not reaching conclusions concerning personhood, etc.); John M. Goldenring, The Brain-Life Theory: Towards a Consistent Biological Definition of Humanness, 11 J. Med. Ethics 198, 199-200 (1985) (concluding that after eight weeks gestation, a fetus is a human life based on brain activity); Michael J. Flower, Neuromaturation of the Human Fetus, 10 J. Med. & PHL. 237, 245 (1985) (reporting electrical brain activity arising from the brainstem at 6.5 weeks); Carol Tauer, Personhood and Human Embryos and Fetuses, 10 J. Med. & Pml. 253, 255, 262-63 (1985) (identifying the beginning of personhood at about 6.5 weeks developmental age at which point electrical brainstem activity has been detected, citing Flower, supra, at 245 (Tauer incorrectly refers to gestational age, where Flower apparently was referring to developmental age—see his footnote 1), and stating, “I suggest that the human fetus attains significant personhood by the second half of the first trimester, and that from this time on, it ought to be given full moral status”); Thomasine Kushner, Having a Life
cernable by EEG at this point. 26 Another perspective suggests that the defining moment occurs at approximately week eighteen or nineteen, when the thalamus region of the brain is forming and unifying the nervous system27 (possibly coinciding with pain sensation28). Another neurological perspective proposes that the defining moment occurs during week twenty-two or twenty-three because at this point brain activity shows up on an electroencephalogram (EEG) in sustained patterns like those of a mature human brain.29

1. Genetic View

From a genetic standpoint, at all points after conception the fertilized embryo is alive, is human, and is its own organism, genetically distinct from the mother and father.30 Through the process of conception or fertilization, the embryo inherits twenty-three chromosomes from the mother and twenty-three chromosomes from the father, creating a genetically unique new human composition. Further, the new

Versus Being Alive, 10 J. Med. Ethics 5, 5-6 (1984) (arguing "that the initiation of brain activity is the most reasonable time at which to fix the start of life, not because there is some empirical argument that establishes it as such, but because (a) it is among the options that are available and (b) because of the connection of brain activity with the possibility of consciousness and the connection of this with what we take to be valuable about the notion of 'life'."); BARUCH BRODY, ABORTION AND THE SANCTITY OF HUMAN LIFE 100-116 (approving the brain life theory and arguing it successfully establishes that human life must begin by at least sometime between the sixth and twelfth week of development, i.e. after conception).

26. Smolensky, supra note 24; Furth, supra note 25; Goldenring, supra note 25; Flower, supra note 25; Tauer, supra note 25. See also The Endowment for Human Development, Prenatal Form and Function: The Making of an Earth Suit, Unit 7: 6-7 Weeks (available at https://www.ehd.org/dev_article_unit7.php#brainwaves) (stating that “[i]ndividualized brainwaves recorded via electroencephalogram (e-lek'tro-en-sef'a-lo-gram), or EEG, have been reported as early as 6 weeks, 2 days”).

27. See Gilbert, supra note 15 (identifying this as one possible view based on neurological development). Note that Gilbert generally uses gestational age rather than developmental age from conception; for consistency and clarity, I refer to developmental age in the present article, unless otherwise noted. See also Flower, supra note 25, at 244-46.

28. Whether or when there may be a fetal experience of pain, as opposed to responses to pain, is a matter of some controversy. Eleanor A. Drey et al., Fetal “Pain”—A Look at the Evidence, 13 AM. PAIN SOC’Y BULL. (2003). At least twenty-one states have prohibited abortions after twenty weeks based on the possibility of fetal pain. See Why is the House planning to vote on a 20-week abortion ban?, THINK PROGRESS (Oct. 2, 2017), https://thinkprogress.org/20-week-abortion-ban-99ec47852bba/; see also Teresa S. Collett, Previability Abortion and the Pain of the Unborn, 71 WASH. & LEE L. REV. 1211, n.8 (2014) (listing thirteen states and stating that the prohibition is “generally after nineteen weeks gestation” but focusing on twenty weeks gestation in the article’s conclusion). Several of these laws have been subject to legal challenge. Some have been struck down or preliminary injunctions have been granted based upon the application of Roe and Casey or state constitutional law.

29. See Gilbert, supra note 15; see also Morowitz & Trefil, supra note 15, at 152.

human organism will naturally develop into a mature member of the species, barring abnormal conditions. Therefore, the genetic view holds that a new human life exists – a life valuable and worthy of protection.

a. The Unborn Victims of Violence Act and Fetal Homicide Laws

Significantly, United States law now states that human life begins at conception, or at least by implantation, depending on how the law is interpreted. The Unborn Victims of Violence Act of 2004 ("UVVA" or "Laci and Connor’s Law") imposes criminal penalties on anyone convicted of causing the death of, or bodily injury to, an unborn child “at any stage of development” in the course of committing any of over sixty enumerated federal crimes. The UVVA defines “unborn child” as “a member of the species homo sapiens, at any stage of development, who is carried in the womb.” Unsurprisingly, the act contains an exception to preserve abortion rights, thereby avoiding constitutional challenge. Notwithstanding that exception, the penalty imposed for harming the unborn child is the same as would apply if the death or injury were that of the mother. Thus, the UVVA treats the unborn child as a full human being in terms of the penalty imposed for its harm. If the unborn child is not a human life at some early stage of development, then defendants are being punished unfairly. But if the unborn child is a human life, then the degree of punishment is justified.

Consistent with this federal law, a majority of states have also enacted fetal homicide laws or similar laws to protect developing human beings in the womb throughout pregnancy. Currently, thirty states protect the unborn through such laws from either the point of conception (twenty-eight states) or implantation (two states). This

32. 18 U.S.C. § 1841(a), (b), (d).
33. 18 U.S.C. § 1841(d).
34. For this and a medical treatment exception, see 18 U.S.C. § 1841(c).
36. See Tara Kole & Laura Kadetsky, Recent Developments: The Unborn Victims of Violence Act, 39 HARV. J. ON LEGIS. 215, 235 (2002) ("While the Act disclaims its power to affect abortion rights, the substance of the UVV appears to contradict the fundamental premises of abortion law—that the Fifth and Fourteenth Amendments do not include fetuses in the definition of 'person'—by punishing violence against fetuses by third parties as harshly as violence against human beings."); infra notes 183, 190. See infra notes 174-187 and 190 for a further discussion of the UVAA.
37. See infra notes 131-147, 174-195 and accompanying text.
38. See State Laws on Fetal Homicide and Penalty-enhancement for Crimes Against Women, NAT’L CONFERENCE OF STATE LEGISLATURES (May 1, 2018), http://
is a key, consensus-indicating development discussed more extensively in its own section of this Article below. Significantly, Roe v. Wade specifically relied on the fact that criminal law, apart from the issue of abortion, had “been reluctant to endorse any theory that life, as we recognize it, begins before live birth or to accord legal rights to the unborn except in narrowly defined situations and except when the rights are contingent upon live birth.”

Now, a clear majority of states protect human life in the womb by means of criminal law throughout pregnancy.

b. Popular Opinion

Over the decades, popular opinion appeared to indicate increasing agreement that human life begins quite early in development, even as early as conception. However, popular opinion may not be the precise type of consensus referred to by the Supreme Court in the context of constitutional decisions regarding human life and abortion. Indeed, the Court has relied more on state legislative enactments and other “objective indicia of consensus” in other contexts, such as identifying cruel and unusual punishment under the Eighth Amendment. Nevertheless, the polls still may be informative. A June 2000 Los Angeles...
Times poll found that 53% of Americans believe human life begins at conception.43 A 2003 Fox News poll found that 55% of Americans believe that human life begins at conception.44 Additionally, an August 2008 Zogby International poll found that 59% of Americans believe human life begins at conception.45 These numbers show a noticeable increase over the 1973 Gallup poll which found that only 43% of Americans believed human life begins at conception.46 Even more strikingly, the 2000 Los Angeles Times poll found that 57% of Americans believe that abortion is murder.47 This, likewise, is a significant increase from a 1970 Harris poll, which found that only 41% of Americans believed abortion to be murder.48 Finally, a 1990 Gallup survey found that 77% of Americans believed that abortion, if not murder, is at least the taking of a human life.49 This development perhaps is surprising, given the fact that abortion is the law-of-the-land and given the normal teaching function of the law.

However, in the last couple of years, polling indicates that the percentage of Americans who believe human life begins at conception has again dipped below 50%. In January 2014, the Marist poll found that 53% of Americans believed human life begins at conception.50 In January 2015, the percentage was 51%.51 Then, in December 2017, the percentage dipped to 44%, and in January 2018, it increased to

46. Judith Blake, The Supreme Court’s Abortion Decisions and Public Opinion in the United States, 3 POPULATION & DEV. REV. 45, 54 (1977). In fact, the table provided in Blake’s article shows only the percentage of female respondents who believed that human life begins at conception (36%), the percentage of male respondents who believed the same (50%), the number of female respondents (735), the number of male respondents (773), and a total of 1508 respondents. Id. From these numbers, though, simple math yields the overall percentage of respondents (43%) who held this belief. See id. But note that because the poll included more male respondents than female respondents, the overall percentage produced by respondents in this poll is likely skewed slightly higher than it would be in the U.S. population as a whole based on distribution of males and females. Interestingly, in the same 1973 poll, 55% of men polled, and 73% of women, believed that human life begins by at least quickening. See id.
51. Id.
47%.\footnote{52} Subsequently, in January 2019, the percentage was at 42%,\footnote{53} followed by June 2019 where the percentage was at 38%.\footnote{54} (Unlike the previous Marist polls, this last poll separately broke out those who believed human life begins within the first eight weeks of pregnancy or gestation, i.e. approximately the first six weeks of development.)\footnote{55} However, when combined with respondents who believed that human life begins in the first three months of pregnancy or gestation—i.e. approximately the first ten weeks of development—a majority of poll-takers, in every poll, believed that human life begins within the first three months of pregnancy.\footnote{56} While most states have passed fetal homicide laws that define and protect human life from conception onward (as detailed further below),\footnote{57} polls over the last two years complicate any simple narrative that majority-level consensus holds that protectable human life begins at conception.

These polls refer to “human life.” One might argue that the respondents’ understanding and use of the term may have differed somewhat from the sense in which it was used by the Supreme Court in \textit{Roe v. Wade},\footnote{58} where reference to philosophy and theology (as well as medicine) added a moral aspect to the term and possibly imbued it with a meaning more akin to philosophical personhood. However, the results of an online poll conducted by ReligiousTolerance.org in 1999 offers some indication that the respondents’ use of the term “human life,” in the context of the previously cited abortion polls, also was close to the concept of personhood.\footnote{59} The Religious Tolerance poll of 1,951 individuals found that 51% of respondents concluded personhood begins at conception.\footnote{60} This 51% concluding that personhood begins at conception closely tracks the results of the roughly contemporaneous \textit{Los Angeles Times} poll from 2000, which found that 53% of respondents believed that human life begins at conception.\footnote{61} Interestingly, in the same Religious Tolerance poll, a total of 62% of respon-
dents concluded that personhood begins at least by the time the heart begins to beat, which occurs around week four or five of development.62

There are other reasons to believe that those polled, when employing the term “human life,” attached moral and philosophical significance to the term as well, and not just biological and genetic meaning. If the respondents were only thinking about science, one would expect that a far higher, almost unanimous, percentage would have indicated that human life begins at conception, given that fertilization produces a new genetic human identity, distinct from the mother and the father. Further, the correlation in the 2000 Los Angeles Times poll between the numbers concluding that human life begins at conception and the numbers concluding that abortion is murder also suggest that respondents were using the term human life generally synonymously with person.

c. International Law and Human Rights Instruments63

A brief excursus in recent international human rights law may also prove rewarding. Perhaps unexpectedly, a measure of support for the genetic view of the beginning of human life can be detected in recent international human rights declarations and conventions, which point to the dignity of human life before birth. In 1997, the General Conference of the United Nations Educational, Scientific and Cultural Organization (“UNESCO”) unanimously recognized the significance of the genetic basis of individual life in its Universal Declaration on the Human Genome and Human Rights (the “Declaration”).64 Article 1 states, “The human genome underlies the fundamental unity of all members of the human family, as well as the recognition of their inherent dignity and diversity.”65 The United Nations General Assembly endorsed the Declaration in 1998.66

Under a straightforward reading, the Declaration locates the foundation of a human being’s inherent dignity and uniqueness, at least in part, in the human genome, with its variation from person to

62. See supra note 59. Regarding advent of the heartbeat, see infra note 115 for a Department of Health and Human Services regulation defining “dead fetus” to require absence of a heartbeat.

63. A comparison of U.S. law on abortion rights to that of other countries around the world is provided in Section II.A.4 infra, showing that the U.S is an outlier and deviates from consensus in permitting unrestricted abortion all the way until viability, or around week twenty-four.

64. See G.A. Res. 53/152, Declaration on the Human Genome and Human Rights (Dec. 9, 1998).

65. Id.

66. Id.
By doing so, the Declaration appears to place foundational value on the potential and uniqueness of the human genetic code, the design which makes possible human ability and achievement, and not merely on the later abilities that develop from the code. A positive result of such an approach is that human beings are then considered inherently equal in value. The Declaration thus arguably stands in opposition to any argument that differences in cognitive abilities lead to differences in the moral value of individuals. As history reminds us, such dehumanizing arguments have fueled, again and again, the most unspeakable crimes.

Pushed to the beginning point of individual human life, the Declaration suggests that the newly-conceived human being is of equal inherent value to other human beings, even before his or her unique, genetically-planned neurological abilities develop. One could argue that the Declaration need only be read to say that the human genome simply makes possible the dignity of the individual and of humanity, a dignity which arises at some point in development. However, the overall content of the Declaration reveals a commitment to the principle that the human genome itself, individually and collectively, is valuable and to be protected, logically and arguably giving rise at its individual inception to some individual human dignity.

67. See, e.g., Nora O’Callaghan, Human Origins and Human Rights in the Genome Age, 5 Ave Maria L. Rev. 123, 134 (interpreting the Declaration as an effort “to give formal legal recognition to the view that it is the material human genome itself that is the basis for human rights and equality”); Federico Mayor, The Universal Declaration on the Human Genome and Human Rights, 326 Comptes Rendus Biologies 1121, 1122 (2003) (emphasizing the uniqueness of the human genome and of the human being, stating, “The essential mutability and uniqueness of the genome were considered as characteristics leading to the right of non violation of the genome. I consider that uniqueness is particularly relevant not only as a scientific concept, but as a social concept because each human being is unique, not only biologically, in permanent evolution, but also from a social and cultural point of view. And these are the capacities that underlie a unique capacity of creativity, of thinking, of designing.”). The comment offered by the Vatican during the drafting process responded with constructive criticism to Article 1: “as formulated, the text would seem to mean that the genome is the foundation of the human being’s dignity. In reality, it is human dignity and the unity of the human family which confer value upon the human genome and require that it be protected in a special way.” See O’Callaghan, supra, at 135.

68. If so, does human dignity admit of degrees, with some individuals bearing more and some less? No—is the traditional answer in human rights law, and with reason, given the importance of the principle of human equality. An “important consequence of the meaning that ‘human dignity’ bears in international law is that basic rights are equal for all.” Roberto Andorno, Human Dignity and Human Rights as a Common Ground for a Global Bioethics, 34 J. Med. & Phil. 223, 229 (2009) (emphasis in original); see also Andorno, The Paradoxical Notion of Human Dignity, 78 Rivista Internazionale di Filosofia del Diritto 151 (2001) (“The references to human dignity in legal and ethical instruments concern an intrinsic and universal perspective: all individuals, by the mere fact of being ‘members of the human family’, are entitled to such a dignity.
Meanwhile, in the Western Hemisphere, the American Convention on Human Rights (the “Convention”) adopted after Roe, provides more explicit language protecting developing human life before birth. Article 4 of the Convention states: “Every person has the right to have his life respected. This right shall be protected by law and, in general, from the moment of conception. No one shall be arbitrarily deprived of his life.”69 The Convention entered into force for ratifying states in 1978.70 The United States signed the Convention in 1977.71 However, the U.S. has not ratified the treaty.72 Taking note of the concept of human dignity, so prevalent in human rights law, the Supreme Court has invoked “the dignity of human life” in its 2007 decision upholding the federal Partial-Birth Abortion Ban Act of 200373 in Gonzales v. Carhart.74

One other recent international development may be worth noting here. One country—Ireland—moved away from defining conception as the moment from which human life should be protected. In 2018, Ireland passed, by referendum, a constitutional amendment to allow the legislature to legalize abortion early in pregnancy. Previously, the Irish Constitution (as interpreted in judicial opinion and codified in law) had prohibited abortion except in cases where the mother’s life was in danger.75 However, the since-enacted legislation, which was initially proposed along with the constitutional amendment, did not allow for unrestricted abortion all the way up to viability (around week twenty-four), like United States law provides for under Roe.76 Rather, Irish law only allows abortion without restriction up to the end of week twelve of pregnancy/gestation, or approximately week ten of development.77 (This is more in line with European and other in-

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69. 1144 U.N.T.S. 17955.
70. See id. (showing date of entry into force, signatories, and ratifications).
71. Id.
72. Id.
74. 550 U.S. 124, 157 (2007). It is also worth noting that the opinion refers to “the life within the woman,” “the life of the fetus,” and “respect for life, including life of the unborn,” rather than merely to “potential life.” Id. at 157-58.
77. Id. Regarding the 12 week limit, Dr. Elizabeth Dunn, in the Citizens’ Assembly Report in advance of the referendum, noted that by week twelve, most women know they are pregnant and, further, up to week twelve, abortions can be effected through medication rather than surgery. Papers Provided to Members as Part of the Deliberative Process, in 2 PAPERS AND PRESENTATIONS FROM CITIZENS’ ASSEMBLY SPEAKERS 934 (2017), https://www.citizensassembly.ie/en/The-Eighth-Amendment-of-the-Constitu-
ternational legislation than with U.S. law, which is something of an outlier.) The law allows abortion beyond that point only where there is risk to the life of or of serious harm to the health of the pregnant woman, or when the fetus will die before birth or within twenty-eight days after birth. Notably, the law also protects rights of conscientious objection of medical practitioners, protecting those who have a conscientious objection from being coerced into participating in an abortion against their will and conscience.

Summary

While this excursus in international human rights law may illuminate human dignity and raise the possibility of additional support for the genetic view of the beginning of human life, ultimately United States developments are most relevant and controlling for United States constitutional law. In particular, the federal Unborn Victims of Violence Act and similar state laws enacted in a majority of states signal a growing adherence to the genetic view of the beginning of human life. Popular opinion, however, while it had hovered around and above 50% in favor of this view, presently seems to be below that 50% level.

Summarizing the position that human life, or human beingness, begins at conception, the Subcommittee on Separation of the Judiciary Committee of the United States Senate wrote in 1981:

[C]ontemporary scientific evidence points to a clear conclusion: the life of a human being begins at conception. . . . Physicians, biologists, and other scientists agree that conception marks the beginning of the life of a human being. . . . There is

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78. See infra notes 123-127 and accompanying text.


80. Id.

81. The term “life of a human being” in the quote above appears to be used synonymously with “human life.” On this point, see infra note 82. Further, the subcommittee report seems to be suggesting that it would be unreasonable and injudicious to decisively separate human life (or personhood) from inception of the human being. For a brief consideration of the attempt to positively separate initiation of “human life” or of “human beingness” from initiation of personhood, see infra note 210 and accompanying text.
overwhelming agreement on this point in countless medical, biological, and scientific writings.\textsuperscript{82}

Similarly, a pro-choice feminist author acknowledged in 1995 that “the death of a fetus is a real death,” and that the “humanity of the fetus” is also real and deserves recognition.\textsuperscript{83}

2. Embryological or Individuation View

Some legal and institutional pronouncements have added weight to the embryological view as well. For example, in the United Kingdom, the Human Fertilisation and Embryology Act of 1990 \textsuperscript{84} prohibits the use or keeping of embryos for research, or any other purposes, beyond fourteen days after fertilization or conception. Also, in the United States, the \textit{Guidelines for Human Embryonic Stem Cell Research} (2005) developed by National Academies forbids research on embryos beyond fourteen days or formation of the “primitive streak,” whichever occurs first.\textsuperscript{85} While these ethical injunctions do not di-

\begin{itemize}
  \item \textsuperscript{83} Naomi Wolf, \textit{Our Bodies, Our Souls: Rethinking Pro-Choice Rhetoric}, \textit{New Republic}, Oct. 16, 1995, at 26. But note that with respect to her own experience taking the morning-after pill, the author uses words like “possible baby,” “potential baby,” “a possible someone else,” and “the being that might have been,” to describe the life which might have been conceived or which had just been conceived. \textit{Id.} Wolf also comments perceptively on developments in science since \textit{Roe}:
  \begin{quote}
    Since abortion became legal nearly a quarter-century ago, the fields of embryology and perinatology have been revolutionized—but the pro-choice view of the contested fetus has remained static. This has led to a bizarre bifurcation in the way we who are pro-choice tend to think about wanted as opposed to unwanted fetuses.
  \end{quote}
  \textit{Id.} Other women who were pro-choice at one time have stated their conclusion about human life more strongly: “Do you understand that I killed a life? . . . Abortion is murder, regardless of what they say.” Walter Thorpe, \textit{I Married You} 131 (1971). Murder may be too strong a term, though, generally speaking, because \textit{simultaneously} there could exist both reasonable doubt that personhood has begun \textit{and} consensus or likelihood that protectable human life or personhood has begun. Should you consult this last quote, take a look at the context to appreciate the note of grace and the compelling, human narrative.
  \item \textsuperscript{84} Human Fertilisation and Embryology Act 1990 c. 37, § 3(UK).
  \item \textsuperscript{85} \textit{Inst. of Med. & Nat’l Research Council, Guidelines for Human Embryonic Stem Cell Research} 8, 51, 55, 57, 99 (2005), \textit{see also The Inst. of Med. & Nat’l Research Council, Final Report of the National Academies’ Embryonic Stem Cell Research Advisory Committee and 2010 Amendments to the National Academies’}
rectly address abortion, inhering in them is the conviction that there is something more human, sacred, or worthy of protection about the individual human embryo after two weeks than before. Reflecting and contributing to this conviction is the perception that, as Gilbert writes, “One of the most popular positions among philosophers is the perspective that life begins at the point of gastrulation—that point at which the zygote is an ontological individual and can no longer become two individuals.”86 In terms of popular opinion, a 2003 Newsweek poll found that 58% of those surveyed believed that human life at least begins by implantation (which actually takes place a few days prior to day fourteen).87

So what is the rationale behind the embryological or individuation view? One idea is that, according to a certain perspective, if the embryo can still divide to form twins, a rights-bearing individual human life or person is not present.88 But after implantation and gastrulation have occurred, according to this view, individual human life clearly exists because the embryo can no longer divide to form twins.

This reasoning raises a question. I consider myself to be a human being and a person, yet it is possible that I could be cloned, forming a genetically identical human being. However, this possibility does not negate my current status as a human being or eliminate my personhood.89 Why think differently about an embryo? Of course, if the logic of the embryological view fails, presumably one would fall back on the genetic view.

Guidelines for Human Embryonic Stem Cell Research 23 (2010) (providing that research on embryonic stem cells should not extend beyond fourteen days’ development).

86. Gilbert, supra note 15.

87. The Editor’s Desk, Newsweek (June 9, 2003), https://www.newsweek.com/editors-desk-98979. The same poll found that 56% of Americans believed that separate murder charges should be brought against someone who causes the death of a fetus in the womb, whether pre- or post-viability. Id. At the same time, in a Fox News/Opinion Dynamics/Roper Center for Public Opinion Research poll, 70% of respondents believed that an attacker who causes the death of a three-month-old fetus should be treated the same as one who causes the death of an eight-month-old fetus. See Ramsey, infra note 179 at n.33.

88. See, e.g., The President’s Council on Bioethics, Human Cloning and Human Dignity: An Ethical Inquiry 136 (2002) (arguing that the possibility that “twinning” may occur supports a conclusion that before implantation embryos are less than human beings or persons).

3. “When Thy Heart Begins to Beat”

Some conclude that human life is present when the heart begins to beat at about week four of development. In one international online survey from 2008, 24% of respondents believed that human life begins with the fetal heartbeat; and together with the respondents who believed that human life begins earlier in development, approximately 74% of all respondents believed that human life begins at least by the beginning of the fetal heartbeat.

There is some legal significance attached to the fetal heartbeat. First, it is interesting to note the definition of the term “quickening” provided in Roe v. Wade: “the first recognizable movement of the fetus in utero,” signaling the presence of a living fetus. Prior to Roe, aborting a quick fetus was generally illegal, either under American common law or under various state statutes. (However, Roe contends that English common law, as opposed to American common law, was not settled in viewing abortion of a quick fetus as a crime.) William Blackstone, in his revered “Commentaries on the Laws of England,” wrote that “[l]ife is the immediate gift of God, a right inherent by nature in every individual; and it begins in contemplation of law as soon as an infant is able to stir in the mother’s womb.”

In the past,
according to Roe, quickening was considered to occur between the sixteenth and eighteenth week of pregnancy, when the mother could feel the movements of the fetus in the womb.98 According to other sources, though, “occasionally women feel movement as early as 12 weeks.”99 Moreover, given advances in modern technology, such as development of the fetal ultrasound,100 detection of the fetal heartbeat (or cardiac activity) and fetal movement now takes place much sooner. According to one study, “[t]he embryonic heart rate usually is identifiable by transvaginal sonography at 6 weeks' gestational age” or four weeks’ developmental age.101 This detection may represent quickening in the modern world.

Second, apart from the definition of quickening, the fetal heartbeat may have legal significance because of the connection of the end of the heartbeat with death. According to the Uniform Determination of Death Act of 1980102 (“UDDA”), death may be determined by observing “irreversible cessation of circulatory and respiratory functions.”103 Once the heartbeat begins and is detectable, then it may follow that the death of the new human life may then be determined by detecting irreversible cessation of the heartbeat and the circulatory function. Consistent with this perspective, a Department of Health and Human Services regulation provides the following definition for “dead fetus”: “Dead fetus means a fetus that exhibits neither heartbeat, spontaneous respiratory activity, spontaneous movement of voluntary muscles, nor pulsation of the umbilical cord.”104 The definition

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98. Roe, 410 U.S. at 132.
99. Quickening, Sex and Other Pregnancy Things: When Can You Feel the Baby move?, WebMD, https://www.webmd.com/baby/features/when-feel-baby-move (last visited Nov. 8, 2019) (though not specifying gestational or developmental age); see also Fetal Movement: Quickening, AM. PREGNANCY ASS'N, https://americanpregnancy.org/while-pregnant/first-fetal-movement/ (last visited Nov. 8, 2019) (stating that “[s]ome moms can feel their babies move as early as 13-16 weeks from the start of their last period and thus measuring in gestational age, which would be as early as 11-14 weeks developmental age) (emphasis in original). As noted, most women do not feel fetal movement quite this early. Nevertheless, quickening, in this sense, can occur this early.
100. See infra note 161 (discussing invention of 3D fetal ultrasound/sonogram as a Time invention of the year in 2000).
103. Id. § 1.
refers to “fetus,” so one might guess that it would not apply until an “embryo” develops enough to be referred to as a “fetus,” which in common discussion, comes at the end of week seven or eight of development. However, that would be an incorrect assumption. The regulation defines “fetus” as “the product of conception from implantation until delivery.” Thus, under this definition, the cessation of the heartbeat would signal death, and the heartbeat itself, life.

Finally, consistent with the general biological definition of life, a human life may be defined as a human organism with “the ability to function as a coordinated organism rather than merely as a group of living human cells.” This ability to function as a coordinated organism arises prior to the fetal heartbeat; however, the beginning of the fetal heartbeat is compelling to people, in part because it provides clear evidence of such ability.

4. Neurological Views

Several forms of the neurological view have been proposed: one holds that human life has begun by week seven or eight with the beginning of brainstem activity; a second marks the beginning of human life around week eighteen or nineteen; a third marks human life at around week twenty-two or twenty-three with more mature neural activity. Recent legal development may direct support to the earliest of the neurological views.

As the definition of “brain death” crystallized, many came to conclude that the arbitrariness of a viability view is unsustainable and that human life has begun by at least the beginning of brainstem activity. Those who hold the neurological view often reason from the

105. Id. § 46.202(c).
107. See id. (“From the earliest stages of development, human embryos clearly function as organisms. Embryos are not merely collections of human cells, but living creatures with all the properties that define any organism as distinct from a group of cells.”).
108. See Gilbert, supra note 15 (noting this view though preferring to extend protection only upon more mature development of the brain); see also Kirsten Rabe Smolensky, Defining Life from the Perspective of Death: An Introduction to the Forced Symmetry Approach, 2006 U. CHI. LEGAL F. 41, 72 (2006) (concluding that acceptance of the whole brain death definition, contained in the UDDA, leads to acceptance of initiation of brain activity as the beginning of human life, and stating “if absence of electrical activity in the brain stem means that a person is legally dead for the purposes of organ donation, then the forced symmetry approach dictates that brain birth I [i.e., the beginning of brainstem activity] should be the legal definition of life.”); Ahlers, supra note 25, at 692-93 (“The redefinition of death had consequences for specifying a human being at birth . . . .”); Gary B. Gertler, Brain Birth: A Proposal for Defining When a Fetus is Entitled to Human Life Status, 59 S. CAL. L. REV. 1061, 1071 (1986) (arguing that “[t]he logical corollary to brain death as the functional equivalent of death is brain birth,” but
definition of brain death for a human.\(^{109}\) The idea is that human death can be identified when the (whole) brain ceases to function, and similarly, until an embryo’s brain begins to function it is not human.\(^{110}\) Once brain activity or function begins, if the brain irreversibly ceases to function, science and law recognize a human’s death. This particular measure of death provided by the Uniform Determination of Death Act (“UDDA”) (the UDDA also recognizes death upon irreversible cessation of the earlier-arising circulatory and respiratory functions, as mentioned above) would, in considering the neurological view, support the early version of the view. Alternatively, as we will see, the UDDA could instead further support the genetic view.

The UDDA identifies brain death as the “irreversible cessation of all functions of the entire brain, including the brainstem.”\(^{111}\) Note that the damage must be irreversible, and the entire brain must cease activity, not just a part of the brain. Using these criteria to identify the beginning of human life, under the neurological view, human life may be present by the end of week six, about when initial brainstem function begins,\(^{112}\) or by week eight of development according to other

\(^{109}\) See id.  

\(^{110}\) See id.  

\(^{111}\) UNIF. DETERMINATION OF DEATH ACT, supra note 102.  

\(^{112}\) See Gilbert, supra note 15; Flower, supra note 25, at 240-41, 245-46, 248; Tauer, supra note 25, at 258, 262-63 (“[H]owever, it would seem appropriate, in view of the current paucity of empirical knowledge, to remain on the safe side by accepting any evidence of brain activity as an operational standard for psychic personhood, thus set-
researchers.113 Electrical brain activity arising from the brainstem has been recorded at six-and-one-half weeks, while whole body reflex responses facilitated by the brainstem occur at eight weeks.114

After brainstem activity begins, the UDDA criteria for the absence of human life would not be present because: (1) part of the embryonic brain appears to be functioning, and (2) no irreversible brain damage to the new embryonic life has occurred. From that point, under the UDDA, death may be measured,115 and life is present. The precise moment specific brainstem development occurs may be subject to discussion, but logically the UDDA supports the early neurological view.

However, the UDDA may in fact support the genetic view. Arguably, the principle behind the act’s requirement of irreversible cessation of all brain functions is that as long as brain function may return or arise in the future, the human being is alive and must be protected. Under this reading, it would not be necessary that the brain had already begun functioning; it would be sufficient that brain function was on its way. Applying this standard in contemplating the beginning of human life, one would conclude that if the individual Homo sapiens in the womb will develop brain activity in the future, he or she is not dead or nonhuman, but rather is a human life, because the UDDA’s “irreversible cessation” requirement has not been met.

Either way, support for the UDDA is nearly universal.116 It was approved by the American Medical Association in 1980 and by the American Bar Association in 1981.117 The UDDA definition has been adopted in most states. According to the National Conference of Commissioners on Uniform State Laws (or “Uniform Law Commission”),

114. Furth, supra note 25; Flower, supra note 25, at 245.
115. Department of Health and Human Services regulations provide an alternative definition for death of a fetus: “Dead fetus means a fetus that exhibits neither heartbeat, spontaneous respiratory activity, spontaneous movement of voluntary muscles, nor pulsation of the umbilical cord.” 45 C.F.R. § 46.202(a). Under this definition, death may be measured even earlier in development, as some of the functions referred to in the regulation are present before brain activity appears. As stated before, the heart is beating regularly by at least week four or five of development. See supra note 91.
117. UNIF. DETERMINATION OF DEATH ACT, supra note 102.
thirty-seven states have adopted the act, as well as the District of Columbia and the U.S. Virgin Islands.\textsuperscript{118} The first state to adopt a brain death standard, Kansas, did so in 1970.\textsuperscript{119} By 1981, the Indiana Supreme Court stated this “concept of ‘brain death’ has gained virtually universal acceptance in the medical profession.”\textsuperscript{120}

The widespread adoption of the UDDA implies major support for the view that human life has at least begun by early neurological development—by approximately week seven or week eight when brainstem activity has been recorded by various researchers.\textsuperscript{121}

Worldwide consensus also seems to disfavor adoption of a late neurological view. Other countries prohibit or limit abortions earlier in pregnancy/development than the United States does.\textsuperscript{122} Only seventeen of 199 countries, counted by the Center for Reproductive Rights, permit abortion without any restriction as to reason beyond week ten (twelve weeks gestational age).\textsuperscript{123} This amounts to only about 8.5% of the world’s nations, and one of the seventeen counted by

\begin{footnotesize}
\begin{enumerate}
\item[118.] See Determination of Death Act, UNIF. LAW COM'N, https://www.uniformlaws.org/committees/community-home?CommunityKey=155faf5d-03c2-4027-99ba-eec99019d04 (last visited Nov. 8, 2019) (listing jurisdictions which have adopted the UDDA). Aside from D.C. and the U.S. Virgin Islands, this includes Alabama, Alaska, Arkansas, California, Colorado, Delaware, Georgia, Idaho, Indiana, Kansas, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Vermont, West Virginia, Wisconsin, Wyoming. Id.
\item[119.] Smolenksy, supra note 108, at 46.
\item[120.] Swafford v. State, 421 N.E.2d 596, 598 (Ind. 1981).
\item[121.] See supra notes 25, 108, and 112 and accompanying text.
\item[122.] The Supreme Court “has referred to the laws of other countries and to international authorities” in the process of determining “cruel and unusual punishment” under the Eighth Amendment. See, e.g., Roper v. Simmons, 543 U.S. 551, 575 (2005). Similarly, when the Court in Roe v. Wade referred to consensus in “medicine, philosophy, and theology,” all of which are academic disciplines transcending prosaic political and territorial boundaries, it may have invited a broad analysis referencing the laws of other countries and international authorities. See generally Roe v. Wade, 410 U.S. 113, 159 (1973).
\item[123.] See The World’s Abortion Laws, CTR. FOR REPROD. RIGHTS (July 2014), http://www.reproductiverights.org/sites/crr.civicactions.net/files/documents/AbortionMap2014.PDF. The Center for Reproductive Rights (the “Center”) refers, in its fact sheet, to gestational age. According to its fact sheet, “[g]estational limits are calculated from the first day of the last menstrual period, which is considered to occur two weeks prior to conception.” In analyzing the data in the text above, I have instead referred to age from conception. The number of nations deciding the issue, reflected in the data from the Center, represents useful guidance. While it does not show the popular will of the world’s people, it is important to remember that even attempting to factor in the population of the respective countries could not do so either because many countries are not democracies—and therefore political decisions may or may not reflect the will of the people—and even in those that are, the decision may not be made democratically, as in the United States, where the decision was rendered initially by the Supreme Court. Instead, the numbers cited represent the number of times deliberative entities have reached one conclusion rather than another, an important consideration.
\end{enumerate}
\end{footnotesize}
the Center for Reproductive Rights is Puerto Rico, a territory of the United States.124 Not counting Puerto Rico, 8.1% of nations allow abortion without restrictions beyond week ten. Further, only nine of 199 countries permit abortion without restriction as to reason beyond week twelve (gestational age of fourteen weeks).125 This figure again includes Puerto Rico, adhering as it does to U.S. law.126 That amounts to only 4.5% of the world’s nations, or 4.0%, not counting Puerto Rico. This places the United States among nations such as China, North Korea, and Vietnam.127 Two of these countries, China and Vietnam, are communist countries which limit reproductive freedom. Another, North Korea, is a communist dictatorship not known as a haven of human rights. Besides those countries and the United States, the only others that allow abortion without any restrictions up to the point of viability, are the Netherlands, Canada, France, and Singapore (the last of which actually imposes some restrictions at twenty four weeks gestational age or week twenty-two of development, which may precede viability).

B. ADDITIONAL DEVELOPMENTS IN SCIENCE AND LAW

1. Protecting Life Before Viability

Additional developments in science and law seem to reinforce and sometimes reflect the growing consensus that protectable human life begins well before viability. In 2004, as indicated earlier, the federal Unborn Victims of Violence Act128 (“UVVA”) was passed by fairly wide

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124. CTR. FOR REPROD. RIGHTS, supra note 123.
125. See id. The percentage of countries permitting abortion on demand, without restriction as to reason, beyond week six, according to the Center for Reproductive Rights, is 28%. Id. Thus, 72% of the world’s countries either prohibit abortion after week six entirely or permit abortions after that point only based on specific, limited justification(s).
126. Id.

Most of the nations that join the United States in permitting such unrestricted late-term abortions make for dubious company. Communist China’s efforts toward population control clash with the theory of reproductive rights underlying the Supreme Court’s abortion jurisprudence, and have led to coerced abortions in parts of that country. With respect to the other two Communist regimes on the list, Vietnam also places legal limits on family size, and North Korea is not viewed as a leader in human rights. The medical culture of the Netherlands appears to be generally less protective of fetal life than other nations, quite apart from the abortion issue. For instance, doctors in that country are much less willing than their European neighbors to provide life sustaining treatment to premature but potentially viable infants.
Id. (footnotes omitted).
ABORTION EVOLUTION

margins. The UVVA protects children before birth by imposing criminal penalties on someone who causes the death of, or bodily injury to, a child in the womb at any stage of development.

Even more importantly, a significant majority of states have also extended protection to unborn children through their murder, manslaughter, and wrongful death statutes or through other statutes which provide an interpretive gloss on murder statutes and other statutes. In fact, most of these state laws specifically extend the protection of criminal law to an unborn child at any stage of development in the womb.


132. See State Laws on Fetal Homicide and Penalty-Enhancement for Crimes Against Pregnant Women, NAT'L CONFERENCE OF STATE LEGISLATURES (May 1, 2018), http://www.ncsl.org/IssuesResearch/Health/FetalHomicideLaws/tabid/14386/De-fault.aspx. This includes ALABAMA (defining “person” with respect to victims of criminal homicide or assault to include “a human being, including an unborn child in utero at any stage of development, regardless of viability”—Ala. Code § 13A-6-1(a)(3)); ALASKA (defining “unborn child” to mean “a member of the species Homo sapiens, at any stage of development, who is carried in the womb”—Alaska Stat. § 11.81.900(b)(65)); ARIZONA (applying law to “an unborn child in the womb at any stage in its development” Ariz. Rev. Stat. Ann. §§ 13-1102, 13-1103, 13-1104, 13-1105); ARKANSAS (defining “person” for relevant offenses to include “an unborn child in utero at any stage of development” and “unborn child” to mean “offspring of human beings from conception until birth”—Ark. Stat. Ann. § 5-1-102(13)); FLORIDA (defining “unborn child” to mean “a member of the species Homo sapiens, at any stage of development, who is carried in the womb”—Fla. Stat. Ann. § 775.021(3)(e)); GEORGIA (defining “unborn child” for crime of feticide to mean “a member of the species homo sapiens at any stage of development who is carried in the womb” Ga. Code Ann. §§16-5-80(a), 52-7-12.3(a)); IDAHO (stating a human being, as a victim of murder or manslaughter, includes “a human embryo or fetus”, and “embryo” or “fetus” is defined to mean “any human in utero”—Idaho Code §§ 18-4001, 18-4006, 18-4016); ILLINOIS (defining “unborn child” to mean “any individual of the human species from the implantation of an embryo until birth”—Ill. Rev. Stat. ch. 720 §§ 5/9-1.2, 5/9-2.1, 5/9-3.2); INDIANA (protects a fetus “in any stage of development”—Ind. Senate Enrolled Act 203, Ind. Code Ann. §§ 35-42-1-1, 35-42-1-3, 35-42-1-4); KANSAS (defining “person” and “human being” to include “unborn child” which is defined as “a living individual organism of the species homo sapiens, in utero, at any stage of gestation from fertilization to birth”—Kan. Stat. Ann. § 21-5419); KENTUCKY (defining “unborn child” to mean “a member of the species homo sapiens in utero from conception onward, without regard to age, health, or condition of dependency”—Ky. Rev. Stat. § 507A.010); LOUISIANA (defining “person” to include “a human being from the moment of fertilization and implantation and also includes a body of persons, whether incorporated or not” and defining “unborn child” as “any individual of the human species from fertilization and implantation until birth”—La. Rev. Stat. Ann. § 14:27, (11)); MICHIGAN (extending protection of criminal law to an “embryo or fetus”—Mich. Comp. Laws Ann. § 750.90a et seq.); MINNESOTA (defining “unborn child” to mean “the unborn offspring of a human being conceived, but not yet born”—Minn. Stat. § 609.266); MISSISSIPPI (defining “human being” to include “an unborn child at every stage of gestation from conception until live birth” and defining “unborn child” to mean “a member of the species homo sapiens, at any stage of development, who is carried in the womb”—Miss. Code Ann.
These laws are important to highlight. In identifying a lack of consensus about the beginning of human life, the Court in *Roe v. Wade* specifically relied on the fact that criminal law, apart from the issue of abortion, had “been reluctant to endorse any theory that life, as we recognize it, begins before live birth or to accord legal rights to the unborn except in narrowly defined situations and except when the rights are contingent upon live birth.” 133 That is no longer the case,

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as the federal UVVA and state law demonstrate. Such state laws are cataloged in the American Law Reports article, “Homicide Based on Killing of Unborn Child.”134

California law, for example, specifies that “the unlawful killing of a human being, or a fetus, with malice aforethought” is murder.135 Thus, according to the California Supreme Court, a person may be found guilty of murder, in the case of an unborn child, once the “fetus has progressed beyond the embryonic stage of seven to eight weeks.”136

Similarly, Missouri law states that “[t]he life of each human being begins at conception,” and further, that “[u]nborn children have protectable interests in life, health, and well-being.”137 Accordingly, the Missouri Supreme Court has held that unborn children are persons from conception for the purposes of the state’s involuntary manslaughter and wrongful death statutes.138 Also, Missouri’s Court of Appeals for the Western District has held that unborn children are persons from conception for purposes of the state’s first degree murder statute.139

Likewise, Pennsylvania law protects unborn children, from conception to birth, by imposing penalties of first degree murder, second degree murder, third degree murder, voluntary manslaughter, and aggravated assault for killing or assaulting an unborn child.140 The Pennsylvania Supreme Court upheld its law in 2006 in the face of constitutional challenge.141

The National Right to Life Committee (the “Committee”) tallies thirty states with fetal homicide laws protecting unborn children throughout pregnancy.142 The Committee’s list identifies eight addi-

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134. Wasserstrom, supra note 131; see also Nat’l Conference of State Legislatures, supra note 132.
138. Conor v. Monkm Co., 898 S.W.2d 89 (Mo. 1995) (en banc) (discussing Missouri’s wrongful death statute); State v. Knapp, 843 S.W.2d 345 (Mo. 1992) (en banc) (discussing Missouri’s involuntary manslaughter statute).
142. State Homicide Laws that Recognize Unborn Victims, Nat’l Right to Life Comm’n (May 3, 2018), http://www.nrlc.org/federal/unbornvictims/statehomicide-laws092302 (listing thirty states, but possibly miscategorizing Virginia which criminalizes the killing of a fetus—this could be interpreted as applying throughout pregnancy or only after the embryonic stage of up to about week eight, though its separate defini-
tional states which protect unborn children through such laws for part of pre-natal development. Six of those eight states extend their protection of unborn children prior to viability. Thus, a total of thirty-six states—almost three-quarters of all states (72%)—protect unborn children through fetal homicide laws prior to viability.

These laws tend to answer the question which Roe declined to answer: when does an embryo or fetus actually become a person or a human life? The laws generally assert, explicitly or implicitly, that human life begins at conception (as in Missouri, Pennsylvania, other states, and the federal UVVA), or at least by week seven (as, for example, under California legal precedent). In this area of law, determining the beginning of human life is foundational. Severe penalties reserved for murder are only warranted if the unborn victim is indeed a human life. If the interests being protected are merely those of the mother and father in having a child and not losing an opportunity for childbearing, rather than protecting (and vindicating the loss of) an existing human life, the penalties imposed by these laws should be less severe than murder penalties. The testimony of these laws is a strong body of evidence concerning widespread understanding of the beginning of human life and the value of human life.

2. Beyond Misunderstanding

The history of science has not been without myth. While the intertwining of myth with science concerning embryology has deterred
understanding and consensus, the removal of myth should logically facilitate understanding and consensus. As recently as 2000, Stephen Jay Gould, in the context of evolution debate, found himself writing again to explain the widespread distortion promoted a century earlier by the German naturalist Ernst Haeckel. Haeckel, according to Gould, was:

the chief architect and propagandist for a famous argument that science disproved long ago but that popular culture has never fully abandoned, if only because the standard description sounds so wonderfully arcane and mellifluous: “ontogeny recapitulates phylogeny,” otherwise known as the theory of recapitulation or, roughly, the claim that organisms retrace their evolutionary history (or “climb their own family tree,” to cite an old catchphrase) during their embryological development.

Haeckel claimed, and people believed, that embryos/fetuses physically mirrored different animals during development in the womb, repeating the progress of evolution. Only toward the end of development was the final animal stage of the parent species reached. Thus, according to Haeckel, a human embryo/fetus would progress through various fish, reptilian, mammalian, and other animal stages before becoming a human baby. Haeckel even supported his theory with inaccurate and possibly manipulated drawings intended to show that embryological development of the human precisely matched stages of development of other organisms. Again,

them, even to the point of neglecting refutations, whereas the critical attitude is one of readiness to change them—to test them; to refute them; to falsify them, if possible.” Id. Science, then, maintains a critical attitude to knowledge, not a dogmatic one. Popper stressed that science and scientists must engage in relentless testing and self-criticism of that which comes to be called science, as well as that which is on the frontiers of science. “We are not interested in establishing scientific theories as secure, or certain, or probable . . . we are only interested in criticizing them and testing them, hoping to find out where we are mistaken.” Id. at 310.


See also Susan A. Greenfield, The Human Brain: A Guided Tour 96-97 (1997) (“At no time does a human fetal brain resemble, for example, that of a snake, where the regions associated with smell (olfactory tubercle) are particularly well developed. Rather, each brain has evolved for the individual lifestyle of a particular species.”).

150. Gould, supra note 149.

151. Id.; Tatjana Buklijas and Nick Hopwood, Making Visible Embryos: Forgery Charges, http://www.hps.cam.ac.uk/visibleembryos/s4_2.html (last updated 2014); see also Stephen Jay Gould, Ontogeny and Phylogeny 76-85 (1977) (outlining Haeckel’s argument “that evolutionary change occurs by the successive addition of stages to the end of an unaltered, ancestral ontogeny”).

152. Gould, supra note 149.

153. Id.

quoting Gould, “Haeckel had exaggerated the similarities by idealizations and omissions. He also, in some cases—in a procedure that can only be called fraudulent—simply copied the same figure over and over again.”

For the present discussion, the important point about Haeckel’s mistaken theory is that if it were true, then abortion would presumably be valid until late in development when the fetus reached membership in the human species. Haeckel’s theory merits discussion here because many have believed it, hindering understanding and agreement regarding the beginning of human life. As the theory dies out, former believers can reach more informed conclusions thereby possibly facilitating a more informed consensus on when human life begins.

The extent to which Haeckel’s theory misled people may be surprising. Gould stated that “we have the right to be both astonished and ashamed by the century of mindless recycling that has led to the persistence of these drawings in a large number, if not a majority, of modern textbooks!”

A letter to Gould from Professor Michael Richardson in 1999 lamented, “I know of at least fifty recent biology texts which use the drawings uncritically.” The fraudulent nature of Haeckel’s drawings and the theory behind the drawings was newsworthy enough in 1997 to warrant coverage in the *Science* magazine article: “Haeckel’s Embryos: Fraud Rediscovered.”

Even after such publicity, Christopher Hitchens surprisingly regurgitated the recapitulation fallacy in his book *God is not Great*. In the critical years leading up to the *Roe* decision, one indication of the widespread reach of the recapitulation theory is its matter-of-fact inclusion in the 1968 edition of Dr. Spock’s bestseller, *Baby and Child Care*:

Each child as he develops is retracing the whole history of mankind, physically and spiritually, step by step. A baby starts off in the womb as a single tiny cell, just the way the

155. Gould, supra note 149.
156. Id.
157. Id.
159. CHRISTOPHER HITCHENS, *GOD IS NOT GREAT: HOW RELIGION POISONS EVERYTHING* 221 (2007). Reflecting gross misunderstanding and insufficient fact checking, Hitchens writes, “As with evolution in general, therefore, in utero we see a microcosm of nature and evolution itself. In the first place we begin as tiny forms that are amphibian, before gradually developing lungs and brains (and growing and shedding that now useless coat of fur) and then struggling out and breathing fresh air after a somewhat difficult transition.” *Id.* Had he understood the biology correctly, it is likely his ultimate conclusion on when abortion could be justified and when it ought to be prohibited would have adjusted accordingly.
first living thing appeared in the ocean. Weeks later, as he lies in amniotic fluid in the womb, he has gills like a fish.  

With misunderstanding like this permeating the culture, it is unsurprising there could be no great consensus in 1973 on when human life begins.

3. Development of the Sonogram

Finally, another new development pushing its way into the discussion of prenatal development was the 3D ultrasound or sonogram, allowing three dimensional and real-time viewing of individuals before birth. *Time* magazine named this one of the inventions of the year in 2000.  

Unborn children entered our increasingly image-based culture as living, moving participants, no longer out of sight. As Carolyn Ramsey notes:

> The personhood (or at least the human status) of the fetus has grown more difficult to deny due to the advent of medical technology that essentially renders the contents of the womb visible and audible. The heartbeat usually can be detected by the sixth week of pregnancy [fourth week of development], and Web commerce now makes fetal heartbeat monitors available to expectant parents over the Internet.

Likewise, Christopher Hitchens similarly observed,

> As a materialist, I think it has been demonstrated that an embryo is a separate body and entity, and not merely (as some really did used to argue) a growth on or in the female body. There used to be feminists who would say that it was more like an appendix or even—this was seriously maintained—a tumor. That nonsense seems to have stopped. Of the considerations that have stopped it, one is the fascinating and moving view provided by the sonogram.

One thinks too of the Pacific Life commercial, in which the song of humpback whales is played in the background, while a narrator dramatically states the impact of such recordings: “In 1968, as whaling continued worldwide, the first recordings of humpback songs were released. Public reaction led to international bans, and whale populations began to recover. At Pacific Life, the whale symbolizes what is possible when people stop and think about the future.”

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161. *See* Josh Tyrangiel, What Will They Think of Next?, *Time*, Dec. 4, 2000 (describing the invention of the 3D real-time sonogram by Volumetrics Medical Imaging, Inc.).

162. Ramsey, *supra* note 179, at 749 (internal footnotes omitted).


surprisingly, could be happening with respect to the impact of the ultrasound/sonogram on public recognition of and concern for children before birth. One woman remembers:

I didn’t want to see it, but at the same time I didn’t think it would matter. . . . But once I saw it was a moving person with a heartbeat, I couldn’t do it. . . . I couldn’t even think about abortion again. I never realized how advanced they were so early. . . . They give you information in school and stuff, but never enough.165

In a culture as visually inclined as ours, seeing the living, moving fetus likely increases awareness and consideration of the existence and status of the unborn child.

III. APPLYING ROE TODAY

A. INTRODUCTION

As described above, developments in science and law indicate significant and increasing agreement that (protectable) human life and dignity begins early in human development. The federal Unborn Victims of Violence Act (“UVVA”),166 state fetal homicide laws and similar laws adopted in most states, prohibitions on using embryos for research after two weeks, the definition of “dead fetus” provided by the Department of Health and Human Services,167 and illumination of the definition of life provided by the Uniform Determination of Death Act (“UDDA”)168 all flow from and contribute to this conclusion. Particularly striking evidence comes from the UVVA and the strong majority of states which have passed fetal homicide laws and other similar laws to protect the lives of the unborn throughout pregnancy. This is important to recognize because the Supreme Court, in Roe v. Wade, specifically relied on the absence of such legal protection for the unborn in finding a lack of consensus on the issue of when human life begins.169

168. UNIF. DETERMINATION OF DEATH ACT, supra note 117.
169. See Roe v. Wade, 410 U.S. 113, 161(1973) (stating, “[i]n areas other than criminal abortion, the law has been reluctant to endorse any theory that life, as we recognize it, begins before live birth or to accord legal rights to the unborn except in narrowly defined situations and except when the rights are contingent upon live birth”); see also Doe v. Bolton, 410 U.S. 179, 218 (1973) (Douglas, J., concurring) (quoting former Justice Clark, stating that “[n]o prosecutor has ever returned a murder indictment charging the taking of the life of a fetus. This would not be the case if the fetus constituted human life”; Justice Clark’s factual assertion is, now, wholly obsolete).
Others have remarked on some of these developments. Christopher Hitchens commented on the evolution in abortion debate in his inimitable way in 2007 in his book *God is Not Great*, noting that the embryo is demonstrably a separate and distinct body and entity. Naomi Wolf provided this conclusion: “since abortion became legal nearly a quarter-century ago, the fields of embryology and perinatology have been revolutionized—but the pro-choice view of the contested fetus has remained static.” Even the Supreme Court has begun to use different language when referring to the unborn. Where it previously referred to “potential life,” it has begun referring to “the life within the woman,” “the life of the fetus,” and “respect for life, including life of the unborn.”

But is this growing consensus sufficient consensus, under *Roe*, to identify and protect new human life? The remainder of Part III will consider and question the significance of fetal homicide laws, explore the arbitrariness admitted by Justice Blackmun in the choice of viability as decisive, and finally apply the legal reasoning of *Roe* to the present factual context. This application of *Roe’s* legal reasoning will first employ a majority level consensus, followed by a heightened consensus standard. Further, in applying *Roe*, the article will consider the nature of the consensus standard, provide an analogy to Eighth Amendment consensus analysis, and respond to two potential objections to the conclusion drawn.

### B. Significance of Fetal Homicide Laws

As noted above, a majority of states have enacted fetal homicide laws, wrongful death statutes or other similar laws protecting the unborn from the point of conception onward. These states almost invariably identify “person” or “unborn child” as encompassing any

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170. *See* Hitchens, *supra* note 159, at 220-21, stating:
   As a materialist, I think it has been demonstrated that an embryo is a separate body and entity, and not merely (as some really did used to argue) a growth on or in the female body. There used to be feminists who would say that it was more like an appendix or even—this was seriously maintained—a tumor. That nonsense seems to have stopped. Of the considerations that have stopped it, one is the fascinating and moving view provided by the sonogram, and another is the survival of ‘premature’ babies of featherlike weight, who have achieved ‘viability’ outside the womb. This is yet another way in which science can make common cause with humanism. Just as no human being of average moral capacity could be indifferent to the sight of a woman being kicked in the stomach, so nobody could fail to be far more outraged if the woman in question were pregnant. Embryology confirms morality. The words ‘unborn child,’ even when used in a politicized manner, describes a material reality.


172. *Roe*, at 150, 154, 156, 159, 162.


174. *See supra* notes 131-145 and accompanying text.
member of the species *homo sapiens* at any stage of development in the womb, or some variation thereof. In 2004, the Unborn Victims of Violence Act ("UVVA") followed this trend on the national level. Enactment of these laws fundamentally changed the facts which had been relied on in *Roe*. The Supreme Court, in *Roe*, specifically relied on the absence of any such protection for the unborn in establishing a right to abortion extending late in pregnancy, until viability. With the passage of such fetal homicide laws, now present in a supermajority of state jurisdictions (as well as nationally), support for the ultimate conclusion in *Roe* regarding the parameters of abortion rights has eroded. Rather, these laws support a much earlier limit on abortion rights, as they generally protect and identify human life early in development—typically at conception.

Some may still argue that criminalizing intentional, knowing, reckless, or negligent harm to the unborn is not necessarily inconsistent with *Roe*. That may be partially true. The interests of the

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175. *See supra* note 132 (listing and quoting state laws).


177. *See* *Roe v. Wade*, 410 U.S. 113, 161 (1976) (stating, "[i]n areas other than criminal abortion, the law has been reluctant to endorse any theory that life, as we recognize it, begins before live birth or to accord legal rights to the unborn except in narrowly defined situations and except when the rights are contingent upon live birth"); *see also* *Doe v. Bolton*, 410 U.S. 179, 218 (1973) (Douglas, J., concurring) (quoting former Justice Clark, stating that "[n]o prosecutor has ever returned a murder indictment charging the taking of the life of a fetus. This would not be the case if the fetus constituted human life"); Justice Clark’s factual assertion is, now, wholly obsolete).

178. In addition to the twenty-eight states which specify conception or any stage of development, two states refer to implantation. *Supra* note 132. Two states begin protection after week seven or eight. *Supra* notes 142, 144. Two states begin protection with quickening. *Id.* One state begins protection after week twenty. *Id.* And a few begin protection at viability. Other than the majority of states which have enacted such fetal homicide laws, a few have enacted penalty enhancement legislation for offenses causing termination of pregnancy. *See supra* note 142. Often, these states provide significant protection throughout pregnancy.

179. *See*, e.g., Carolyn B. Ramsey, *Restructuring the Debate over Fetal Homicide Laws*, 67 OHIO ST. L.J. 721 (2006). Ramsey’s attempt to reconcile the UVVA with abortion rights is essentially to assert that even if an unborn child is a person, a woman is justified in taking its life, should she choose. *See id.* at 743-44, 760-61, 765 ("No matter what legal status the fetus attains, the decision whether or not to prevent its birth is still best made by its mother. . . .") More starkly, Ramsey quotes Eileen McDonagh, "[e]ven if the fetus is a person, a woman is justified in killing it because of what it does to her when it imposes wrongful pregnancy, whatever might be her personal reasons for doing so."). Indeed, Professor Ramsey concedes the "popular, legislative, and judicial support for the view that a fetus is a human life capable of being wrongfully terminated." *Id.* at 765. But, in her (Orwellian) vision, the woman’s autonomy trumps all other considerations, including the life of the new human. That would prove too much, for “autonomy” as a sacred value could be used to try to justify all kinds of horrible things. The next step in her slippery slope would be to condone the killing of older, dependent adults, when they are deemed to suck resources from others and limit autonomy. It should be noted that pregnancy-related constraints on a woman have arguably decreased since *Roe v. Wade*. The Pregnancy Discrimination Act of 1978 prohibits cer-
mother and father in having a son or daughter should be protected, and violence should not be condoned. But this analysis, while valid as far as it goes, is incomplete. As noted, most states specifically identify “person” or “unborn child” as encompassing any member of the species *homo sapiens* at any stage of development in the womb, or some variation thereof.\(^{180}\) For this reason, they provide for punishment of those who harm or kill unborn human life. For example, Texas law defines an “individual” as “a human being who is alive, including an unborn child at every stage of gestation from fertilization until birth,” and it defines homicide as “intentionally, knowingly, recklessly, or with criminal negligence caus[ing] the death of an individual.”\(^{181}\) Likewise, Missouri law states that “[t]he life of each human being begins at conception,” that “[u]nborn children have protectable interests in life, health, and well-being” and that unborn children exist “from the moment of conception until birth at every stage of biological development.”\(^{182}\)

Further, it must be remembered that many of the laws protecting unborn children impose the same penalties for harm to the unborn as are imposed for harm to born persons. The UVVA, for example, provides that the punishment for injuring or killing an unborn child is the same as the punishment for injuring or killing the unborn child’s mother.\(^{183}\) The only exception, other than the necessary abortion exception, is that the death penalty is not imposed.\(^{184}\) To take another example, Minnesota law provides that anyone who commits first degree murder of an unborn child “must be sentenced to imprisonment 

\(^{180}\) See supra note 132 (listing and quoting state laws).


\(^{182}\) See supra note 137 (providing citations to Missouri code).

\(^{183}\) See 18 U.S.C. § 1841(a)(2)(A) (2004). Amanda Bruchs notes that “[t]his is a significant change from the previous punishment scheme, which added only six months to the sentence for the crimes(s) committed against the mother as calculated under the Federal Sentencing Guidelines.” Amanda K. Bruchs, *Note, Clash of Competing Interests: Can the Unborn Victims of Violence Act and Over Thirty Years of Settled Abortion Law Co-exist Peacefully?*, 55 Syracuse L. Rev. 133, 140 (2004).

for life.”

185. Minn. Stat. Ann. § 609.2661 (West 2019). Further, someone guilty of second degree murder of an unborn child may be sentenced to imprisonment for up to forty years, and someone guilty of third degree murder of an unborn child may be sentenced to imprisonment for up to twenty-five years. Id. §§ 609.2662-609.2663.

186. The relevant penalty for first degree murder provided for in the U.S. Code would be imprisonment for life. 18 U.S.C. § 1111(b) (2018); see also 18 U.S.C. § 1841(a)(2)(C) (2018) (referencing § 1111). The penalty for voluntary manslaughter can reach fifteen years' imprisonment, and the penalty for involuntary manslaughter can reach eight years' imprisonment. 18 U.S.C. § 1112(b) (2018); see also 18 U.S.C. § 1841(a)(2)(C) (referencing § 1112). The courts would have an option of a lesser penalty for manslaughter, however, as § 1112 allows for a fine as a penalty, either in addition to, or instead of, imprisonment. See also State v. Merrill, 450 N.W. 2d 318 (Minn. 1990) (Wahl, J., dissenting) (arguing the state statute violates substantive due process based on conflict with Roe).

187. Kole & Kadetsky, supra note 36, at 235. For this and other reasons, the authors suggest that the UVVA may “further compromise the right to abortion.” See id. at 228.

188. Legislative Analysis of the Unborn Victims of Violence Act, ACLU (Feb. 18, 2000), https://www.aclu.org/other/legislative-analysis-unborn-victims-violence-act (analyzing S. 1673/H.R. 2436 “The Unborn Victims Of Violence Act,” a version of the UVVA prior to the Congress in which it was ultimately enacted).

189. Id.

190. See, e.g., Jon O. Shimabukuro, Cong. Research Serv., RS 21550, The Unborn Victims of Violence Act of 2003 2-3 (2004) (noting that “[i]f personhood could be established for a fetus or embryo, such entities’ right to life under the Fourteenth Amendment would seem to be guaranteed”); Bruchs, supra note 183, at 133, 141, 148, 151 (stating that “as written, the Unborn Victims of Violence Act is in direct contradiction with over thirty years of settled law (since the Supreme Court’s ruling in Roe v. Wade) because it expressly grants legal personhood to both pre-viable and viable fetuses,” and further arguing that “the interests sought to be protected under ‘Laci and
Finally, to more fully appreciate the significance of the UVVA, it is important to note that Congress specifically rejected an amendment to the Act—the “Lofgren substitute”—which would have redefined the offense against the “unborn child” as simply another offense against the woman. Under the Lofgren substitute, an offense would have been established for violent action causing “an interruption in the normal course of the pregnancy resulting in prenatal injury (including termination of the pregnancy).” However, Congress deliberately chose to pass the UVVA—thus specifically protecting the “unborn child” or “child in utero” “at any stage of development”—rather than the alternative Lofgren amendment. Support for such legislation, enacted on both the federal and state levels, is revealing. As one writer commented about the UVVA specifically, “[t]he bill appears to contradict an important premise behind the constitutional right to seek an abortion: prenatal entities are not persons.”

C. ARBITRARINESS IN ROE V. WADE’S CONCLUSION

Had Roe v. Wade been decided just a decade later, and had the Supreme Court been cognizant of the early developments noted above, such as the adoption of the Uniform Determination of Death Act (“UDDA”) in the 1970s and early 1980s, it is reasonable to believe that the Court would have drawn the line on unrestricted abortion much earlier in pregnancy, if it established unrestricted abortion rights at all. Indeed, Justice Blackmun’s first draft of the Roe opinion simply found the Texas law void for vagueness and did not recognize any right to abortion. Later, Justice Blackmun wrote in a memorandum accompanying his second draft of the opinion in November, 1972: “You will observe that I have concluded that the end of the first trimester is critical. This is arbitrary, but perhaps any other selected

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192. Id.


196. UNIF. DETERMINATION OF DEATH ACT, supra note 102.

197. Memorandum from Justice Blackmun to United States Supreme Court (May 18, 1972) (on file with the Library of Congress).
point, such as quickening or viability, is equally arbitrary."198 In the end, in the final opinion, Blackmun placed the "critical" moment three months later, at viability, around the end of the second trimester. It was incautious and unfortunate that the Court went as far as it did, not just striking down the Texas law for vagueness as initially contemplated, but establishing an unlimited right to abortion for about six months of pregnancy, up until the last trimester. Justice Blackmun was not the only person who thought that viability was an essentially arbitrary moment, and the selection of viability as pivotal has been widely criticized, as when the Eighth Circuit recently opined that "the Court’s viability standard has proven unsatisfactory."199

Had the decision in Roe come only a decade later after the adoption of the UDDA, the justices who joined the majority opinion could have found a more logical, less arbitrary marker earlier in pregnancy—if they were determined to locate such a marker during the course of development to establish some right to abortion. Additionally, developments subsequent to the UDDA could have led the justices to a still more up-to-date decision. Yet moving beyond what could have been, courts must apply the legal reasoning of Roe v. Wade to the information, consensus, and legal context present today.

D. Applying Roe v. Wade’s Reasoning to Today’s Facts

1. Consensus Standard

The United States Supreme Court, in Roe v. Wade200, did not explicitly state what level of consensus would be sufficient on this issue.201 The word "consensus" can mean simple majority-level

198. Memorandum from Justice Blackmun to United States Supreme Court (Nov. 21, 1972) (on file with the Library of Congress). Interestingly, while Justice Powell’s memorandum of November 29, 1972, to Justice Blackmun suggests drawing the line at viability, stating that might “be more defensible in logic and biologically than perhaps any other time,” Justice Powell provides no support for that proposition. Memorandum from Justice Powell to Justice Blackmun (Nov. 29, 1972) (on file with the Library of Congress). Instead, the substance of his memorandum involves the assertion that making viability the critical moment would probably be more "generally accepted" and "generally understood" while other cutoff dates might be "more difficult to justify." Id. Given the discussion above regarding beliefs and consensus on the beginning of human life, viability has become a less and less plausible marker, if in fact it ever enjoyed acceptance at all. In response, Justice Douglas, who ultimately joined the majority opinion in Roe, gave a short one-sentence memorandum reply to Justice Blackmun when the idea of viability was floated: "I favor the first trimester, rather than viability." Memorandum from Justice Douglas to Justice Blackmun (Dec. 11, 1972) (replying to Dec. 11, 1972 memorandum from Justice Blackmun) (on file with the Library of Congress).


agreement.\textsuperscript{202} The word can also sometimes mean essentially universal agreement.\textsuperscript{203} Or it might refer to some supermajority agreement when so specified. It is highly unlikely the Court meant universal agreement, as such agreement almost never exists, nor is expected to exist, in politics or even in constitutional law. Rather, the Court referred to “any consensus,”\textsuperscript{204} as in “any agreement,” suggesting it meant simply majority-level consensus.

This seems to parallel the Court’s Eighth Amendment identification of consensus about “cruel and unusual punishment,” as that jurisprudence appears to rely on simple majority-level consensus. For example, in \textit{Atkins v. Virginia},\textsuperscript{205} the Court found “a national consensus against the death penalty for the mentally retarded,” where “30 States prohibited the death penalty” for such individuals; this included “12 that had abandoned the death penalty altogether, and 18 that maintained it but excluded the mentally retarded from its reach.”\textsuperscript{206} Likewise, in \textit{Roper v. Simmons}, the Court found a national consensus against the death penalty for juveniles under eighteen where the number of states prohibiting and allowing the death penalty for the category in question was the same as in \textit{Atkins}.\textsuperscript{207} Thirty states makes a majority but not a supermajority.\textsuperscript{208} Particularly where a severe, life-or-death outcome is at stake, a majority consensus apparently is enough to preclude such an irreversible penalty.

For additional (related) reasons, arguably a modest, majority consensus should be determinative on the issue of when human life begins, rather than a more extraordinary level of consensus. This determination is consistent with the fabric of American law as well as


\textsuperscript{203} See Consensus, Merriam-Webster Online, supra note 202 (definition 1(a) “general agreement : UNANIMITY”).

\textsuperscript{204} Roe, 410 U.S. at 159.

\textsuperscript{205} 536 U.S. 304 (2002).


\textsuperscript{207} Id.

\textsuperscript{208} Likewise, in \textit{Lawrence v. Texas}, a simple majority of states was considered sufficient to identify a national consensus against sodomy laws, or at least the absence of a consensus in favor of such laws. See Lawrence v. Texas, 539 U.S. 558 (2003) (stating that at the time \textit{Bowers v. Hardwick} was decided, a minority of states—“24 States and the District of Columbia had sodomy laws”—and concluding that “\textit{Bowers was not correct when it was decided, and it is not correct today}”).
international law. American legal precedent reflects a fundamental and deferential respect for human life, and if we were to permit destruction of a new life where most conclude that human life is present, this fundamental respect and value would be violently upended. In American criminal law, we know that a person cannot be found guilty, and certainly one cannot be sentenced to death, unless we—represented by the jury—are sure beyond a reasonable doubt that the person is guilty. In criminal law reasonable doubt is thus enough to save the accused. Similarly, the Declaration of Independence, the Bill of Rights, the Thirteenth Amendment, and the Fourteenth Amendment, teach about our respect for human life. As noted earlier, the Fifth and Fourteenth Amendments protect against government-sponsored taking of life without due process. Further, the Fourteenth Amendment adopts an equality principle which holds that one human life or “person” (in constitutional terms) is as valuable as another human life or person. To overcome this fundamental respect for and

See G.A. Res. 53/152, supra note 64, (“The human genome underlies the fundamental unity of all members of the human family, as well as the recognition of their inherent dignity and diversity.”); International Covenant on Civil and Political Rights, Mar. 23, 1976, 999 U.N.T.S. 14668 (“[R]ecognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world . . .”); G.A. Res. 1386 (XIV), Declaration of the Rights of the Child (Nov. 20, 1959) (“[T]he child, by reason of his physical and mental immaturity, needs special safeguards and care, including appropriate legal protection, before as well as after birth . . .”); G.A. Res. 45/25, International Convention on the Rights of the Child (Nov. 20, 1989) (“[E]very child has the inherent right to life.”).

209. See supra Sections II.A.1 and II.A.2. Arguably, the Establishment Clause would prohibit the adoption of such premises by a court. In fact, reliance on a strictly materialist or utilitarian philosophy may contradict the philosophy of the Constitution and Declaration of Independence. See, e.g., Jon Meacham, American Gospel: God, the Founding Fathers, and the Making of a Nation 19-27, 72-75 (2007); see also Andorno, supra note 68, at 34:

The reductionism of person to simple matter leads to the denial of its intrinsic dignity. . . . In fact, if we do not recognize any kind of spiritual element in the configuration of each individual, it seems extremely difficult, if not impossible, to support the idea of human dignity.
protection of human life there would have to be a majority (or supermajority?) position concluding that human life does not begin at conception.

Finally, federal preliminary injunction analysis arguably provides helpful guidance regarding the level of consensus that should be considered probative. Preliminary injunctions are designed to prevent irreparable harm and to render an initial order based on initial evidence and argument, permitting a considered opinion to be issued after a full trial on the merits. Providing an eloquent and precise explanation of the analysis whether to grant a preliminary injunction, Judge Posner has articulated the weighing process mathematically:

\[
\text{[G]rant the preliminary injunction if but only if } P \times Hp > (1 - P) \times Hd,\]

where \(P\) equals the probability that the plaintiff will succeed on the merits, \(1 - P\) equals the probability that the defendant will succeed on the merits, \(Hp\) equals the probable harm to the plaintiff, and \(Hd\) equals the probable harm to the defendant.\(^\text{211}\)

If we apply this formula to the question of prohibiting an abortion, we see that because of the catastrophic likely harm to the fetus and the lesser (though real) harm to the woman, the probability that human life is present need not be great. A mere 50% probability of success on the merits, that human life is present, would suffice to tip the scale in favor of preventing the abortion and protecting the probable new human life or person. Even some probability less than 50% would suffice where the disparity in the comparative likely harms is so great, total destruction versus diminished liberty. Thus, the guidance provided by preliminary injunction analysis leads to the conclusion that the only consensus that should be required by the reasoning in \textit{Roe} is simple majority consensus rather than some more overwhelming or extraordinary degree of consensus. The preliminary injunction analysis is particularly relevant here because of the limits of

Though the First Amendment prohibits actions respecting an establishment of religion, it could be, as some have argued, that the value for and protection of human life and equality in the Constitution are based upon a religious premise, the conviction that God (or the Creator) made humans equal, with certain inalienable rights, such that those rights precede government. That may be a paradoxical characteristic of American constitutional identity as understood by contemporaries of the Founding. The Declaration of Independence states that people “are endowed by their Creator with certain unalienable Rights” and “to secure these rights, Governments are instituted among Men.” \textit{The Declaration of Independence} para. 2 (U.S. 1776). Likewise, Abraham Lincoln underscored the importance of these values in stating that the United States is “conceived in Liberty, and dedicated to the proposition that all men are created equal.” Abraham Lincoln, \textit{The Gettysburg Address} (Nov. 19, 1863) (transcript of copy on file with Cornell University). See \textit{Scott Douglas Gerber, To Secure These Rights: The Declaration of Independence and Constitutional Interpretation} (1995), for a relevant discussion of the relationship between the Declaration of Independence and the Constitution.

human knowledge, the inherent ingredient of some uncertainty, regarding the beginning of human life or personhood. Though we know much, and there is developing knowledge and consensus on this issue, any so-called “final decision” on the matter will partake in some measure of the quality of a preliminary injunction decision due to the inherent limitations of knowledge in science, philosophy, and religion.

2. Finding Consensus

Applying Roe, majority consensus arguably exists that human life begins by implantation (or soon after) or by the beginning of the fetal heartbeat (or fetal cardiac activity), if not by fertilization. The federal Unborn Victims of Violence Act (“UVVA”)\(^\text{212}\) protects new human life throughout pregnancy, defining “unborn child” to include an embryo or fetus carried in the womb at any stage of development, and imposing the same penalties for harm to the unborn child as for harm to the mother.\(^\text{213}\) This degree of punishment is justified only if the unborn child is a human life; otherwise, the punishment is too severe. Even more significantly, a majority of states have adopted fetal homicide laws protecting unborn children from criminal violence, with thirty states protecting the unborn from the point of conception (twenty-eight states) or implantation (two states).\(^\text{214}\) Almost invariably, these states identify “person” or “unborn child” as encompassing any member of the species homo sapiens at any stage of development in the womb, or some variation thereof.\(^\text{215}\) Implantation, however, seems to be the earliest point at which these criminal laws would have effect or application. As the National Right to Life Committee has explained, with reference to the federal Unborn Victims of Violence Act,

In order to win a conviction under the law, it would be necessary for the prosecution to (1) prove beyond a reasonable doubt that a member of the species homo sapiens existed and was ‘carried in the womb,’ which would be utterly impossible until after the embryo had implanted in the womb and sent out the chemical signals that announce his or her presence (i.e., after implantation) . . . .\(^\text{216}\)


\(^{214}\) See Nat’l Right to Life Comm., supra note 38; see also Nat’l Conference of State Legislatures, supra note 38 (but not counting Virginia as extending protection throughout pregnancy—the law refers to the killing of a fetus, which could be interpreted to apply only after the embryonic stage of week seven or eight, though its definition of “fetal death” applies “regardless of the duration of pregnancy”). Illinois and Louisiana law refer to implantation.

\(^{215}\) See supra note 132 (listing and quoting state laws).

In other words, it would have to be proven that the woman was pregnant, and such knowledge generally does not come before implantation. Thus, if one focuses on when these laws would have effect in terms of penalty, implantation would be a relevant marker. On the other hand, if one focuses on the definitions of “person,” “unborn child,” and “human being” contained in a majority of these laws, conception or fertilization would be the relevant marker.\footnote{217}{It could be argued that these laws have effect after implantation (rather than conception) simply because they are criminal laws with the corresponding burden of proof—beyond a reasonable doubt. The intent of these laws, it could be argued, is to recognize and protect human life from conception onward. Indeed, as noted before, most of these laws specifically identify “person” or “unborn child” as encompassing any member of the species \textit{homo sapiens} at any stage of development in the womb, or some variation thereof. \textit{See supra} note 132.}

In addition, as further support for finding consensus that human life begins by or just after implantation, biologist Scott Gilbert has written, “[o]ne of the most popular positions among philosophers is the perspective that life begins at the point of gastrulation—that point at which the zygote is an ontological individual and can no longer become two individuals.”\footnote{218}{\textit{See supra} note 15.} Further, a 2003 \textit{Newsweek} poll found that 58% of those surveyed believed that human life at least begins by implantation.\footnote{219}{\textit{See supra} note 87; \textit{but see supra} note 54 (indicating in a 2019 poll a cumulative total of 46% of respondents believed that human life begins within the first eight weeks’ gestational age or six weeks’ developmental age). This 2019 poll may have been somewhat of an aberration—as recently as 2015, a majority of poll takers opined that human life begins at conception. \textit{See supra} notes 50-51, and accompanying text.} Though, admittedly, poll numbers can fluctuate over time and depending on framing of a question. (Also, most polls on the issue do not list implantation as one of the options to select.)

Even greater consensus exists that human life begins with the beginning of the fetal heartbeat or cardiac activity. Under the definition of death provided by the Uniform Determination of Death Act (“\textit{UDDA}”) the heartbeat (or cardiac activity) arguably signals life under the law. The \textit{UDDA}, enacted by a supermajority of states, provides that death can be determined by the “irreversible cessation of circulatory and respiratory functions,” indicating the presence of life before that point.\footnote{220}{\textit{See supra} notes 102-103.} Even more clearly, federal regulation issued by the Department of Health and Human Services defines “dead fetus” as “a fetus that exhibits neither heartbeat, spontaneous respiratory activity, spontaneous movement of voluntary muscles, nor pulsation of the umbilical cord,” with the term “fetus” defined to include “the product of conception from implantation until delivery.”\footnote{221}{\textit{See supra} notes 104-105.} Thus, the cessation of the fetal heartbeat, or cardiac activity, clearly constitutes
death under this regulation, indicating—to many—that once death may be determined, human life has begun.

If a majority consensus is not enough, arguably a supermajority consensus holds that human life has begun, at least, by the beginning of brain formation and brainstem activity. The UDDA makes clear that the irreversible cessation of the function of the entire brain (not just the later-developing cerebral cortex) constitutes death, so that life is considered present with the beginning of brainstem activity, under this test.\textsuperscript{222} Thus, by this point, under multiple UDDA criteria or tests, the fetus has (human) life, and death may be determined.\textsuperscript{223} Again, a supermajority of states have adopted the UDDA.\textsuperscript{224} Further, a supermajority of states—thirty-six—have adopted fetal homicide laws that protect new human beings before viability, and a strong majority of states—thirty-two—have adopted such laws protecting new human beings by at least the end of week seven or beginning of week eight of development.\textsuperscript{225}

Given the consensus described above, abiding by \textit{Roe}, a court probably would have to conclude that because of such consensus that human life begins early in pregnancy, a right to abortion has been superseded by the fundamental right of the new human to have its life protected. A simple majority consensus may warrant protection by implantation or by the beginning of the fetal heartbeat (or cardiac activity) if not at fertilization. A higher level of consensus warrants protection of new human life by the beginning of brain formation and brainstem activity, by approximately week seven or eight, depending on the studies relied on. At the very least, an even clearer supermajority believes that abortion itself should be limited to the first trimester. According to a 2018 Gallup poll, only 28\% of Americans (and only 26\% of women) believed that abortion should be generally legal after the first trimester.\textsuperscript{226} And according to a January 2019 Marist poll, 75\% of Americans believed abortion should be limited to, at most, the first trimester.\textsuperscript{227} This supermajority position is

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\textsuperscript{222} See supra note 111.
\textsuperscript{223} See id. This includes the irreversible cessation of the respiratory and circulatory functions and irreversible cessation of the functions of the entire brain, including the brainstem.
\textsuperscript{224} See supra note 118 and accompanying text.
\textsuperscript{225} See supra notes 142-145 and accompanying text. This includes even California. See supra notes 135-136.
\textsuperscript{226} Lydia Saad, Trimesters Still Key to U.S. Abortion Views, Gallup (June 13, 2018), https://news.gallup.com/poll/235469/trimesters-key-abortion-views.aspx.
\textsuperscript{227} See Marist Poll Finds 3 in 4 Americans Support Substantial Abortion Restrictions, KNIGHTS OF COLUMBUS (Jan. 15, 2019), http://www.kofc.org/en/news/polls/abortion-restrictions-supported.html (including in this percentage some who believe that abortions should be illegal by that stage but permissible in cases of rape, incest, or to save the life of the mother).
further supported by the supermajority of states which protect new human life in the womb through criminal law before viability. As noted before, thirty-two states protect new human life in this way by approximately week seven at least,228 and two more (i.e. thirty-four total) provide such protection by quickening,229 which can occur as early as week twelve, or the end of the first trimester.230 Thus, the current viability standard, which locates the critical moment at the end of the second trimester, is undoubtedly now an obsolete and anti-consensus position.

Interestingly, a state supreme court concurring opinion has already reached a conclusion concerning consensus along the lines of the analysis described above. In Hamilton v. Scott,231 a 2012 case before the Alabama Supreme Court, Justice Parker’s concurring opinion affirmed that “unborn children are protected by Alabama’s wrongful-death statute, regardless of viability.”232 Justice Parker wrote:

Since Roe was decided in 1973, advances in medical and scientific technology have greatly expanded our knowledge of prenatal life. The development of ultrasound technology has enhanced medical and public understanding, allowing us to watch the growth and development of the unborn child in a way previous generations could never have imagined. Similarly, advances in genetics and related fields make clear that a new and unique human being is formed at the moment of conception, when two cells, incapable of independent life, merge to form a single, individual human entity. Of course, that new life is not yet mature—growth and development are necessary before that life can survive independently—but it is nonetheless human life. And there has been a broad legal consensus in America, even before Roe, that the life of a human being begins at conception. An unborn child is a unique and individual human being from conception, and, therefore, he or she is entitled to the full protection of law at every stage of development.233

Though unnecessary in reaching the specific holding of the case, the Alabama concurring opinion of four justices nicely summarizes

228. See Nat’l Right to Life Comm., supra note 38; Nat’l Conference of State Legislatures, supra note 38.
229. See id. The two states which provide such protection starting at quickening are Nevada and Washington. See id.
230. WebMD, supra note 99; see also Am. Pregnancy Ass’n, supra note 99 (stating that “[s]ome moms can feel their babies move as early as 13-16 weeks from the start of their last period” and thus measuring in gestational age, which would be as early as 11-14 weeks developmental age) (emphasis in original).
231. 97 So. 3d 728 (Ala. 2012) (Parker, J., concurring specially).
233. Hamilton, 97 So. 3d at 746-47 (footnotes omitted).
and reinforces the conclusion that sufficient agreement exists that human life begins at early in development, superseding or terminating a right to privacy or abortion. Similarly, the United States Court of Appeals for the Eighth Circuit recently called on the United States Supreme Court to reevaluate its jurisprudence on abortion, noting that “the facts underlying Roe and Casey may have changed” and “the Court’s viability standard has proven unsatisfactory.”234

Admittedly, a court might be reluctant to provide maximal protection for human life before birth, extending back to implantation or conception. After all, the Supreme Court’s adoption of a somewhat aberrant, outlying, or maximal (as explained above) viability rule in Roe ultimately contributed to political discord in the U.S. However, shifting from an arbitrary and outdated viability rule to one protecting human life based on a more consensus-based, biologically significant moment of development—the beginning of brain development—would be a moderate, well-supported decision. This level of protection, at a minimum, appears to be ultimately mandated by the reasoning of Roe itself, given the significant consensus detailed above. At the least, if a court did not directly identify a right to life at this moment of development, a court ought to conclude that states have a compelling governmental interest in protecting new human life from this point, thus enabling states to legislate appropriate protections in accordance with voters’ consensus. Further, one could imagine a court finding sufficient consensus to protect new human life by the beginning of brain activity (thus precluding nontherapeutic abortion after that point), while also recognizing a compelling governmental interest in protecting likely human life earlier as well. In other words, a court could conceivably bifurcate the identification of a compelling governmental interest in protecting probable persons and the identification of agreed upon new human life so that a compelling governmental interest arises even earlier in development. In this way, it would leave to legislatures the choice of protecting likely human life earlier in pregnancy, before the beginning of brainstem activity. Clearly, many states would choose to allow the maximum length of time possible for a woman to obtain an abortion in this scenario, while others might choose to protect probable persons earlier.

234. MKB Mgmt, Corp. v. Stenehjem, 795 F.3d 768, 773-76 (8th Cir. 2015), cert. denied, 136 S. Ct. 981 (2016). Despite this questioning of the reasonableness or justice of extending abortion rights up until viability, the panel felt bound by the Supreme Court’s precedent to affirm the lower court’s decision finding unconstitutional a state law banning abortion after the fetal heartbeat begins. Nevertheless, in light of the consensus documented in this article, arguably a court would be bound by the Constitution and by the reasoning of Roe to identify and protect the fundamental right to life of a new human being when that life exists, as Roe explicitly left open the question of when human life begins.
3. Protecting Human Dignity

Even apart from this consensus analysis, independent consideration of the human dignity of the fetus reinforces this conclusion that new human life must be protected early in development. Under the Supreme Court’s Eighth Amendment jurisprudence, after considering national consensus, the Court engages in its own assessment to protect a convicted person from excessive punishment that would violate human dignity.235 Here, basic protection of human dignity requires that the Court protect agreed-upon human life. (Of course, the life of the mother must be protected as well under this analysis, and there is undoubtedly consensus that abortion is permissible if necessary to protect the life of the mother.) A new, unique, individual, and irreplaceable human being exists following conception, and after implantation and gastrulation it cannot divide to form twins. The Universal Declaration on the Human Genome and Human Rights has rightly identified human dignity in the unique individual expression of the human genome possessed by every individual human being.236 Further, with the beginning of brain formation, neural development, and brainstem activity, the new individual human being is doubly unique and archetypically human. Not only does it possess its own unique genetic identity, it also is developing its own unique neural identity and capacity. Moreover, once brainstem activity begins, brain death as we define it can be discerned. Simply put, under the Constitution and the Supreme Court’s case law, human dignity requires the protection of agreed-upon human life.

Given the consensus described above and the requirement to prevent destruction of human life and dignity, it is incumbent on courts to apply Roe to protect agreed upon human life. Thus, by analogy, we see that state or lower courts have acted to preclude the death penalty even when it has been recommended by a jury and imposed by a judge. For example, in Roper v. Simmons, before arriving at the Supreme Court, the Missouri Supreme Court had set aside the death sentence of a seventeen-year-old juvenile, even where the Supreme Court had not yet overturned Stanford v. Kentucky237 to rule that application of the death sentence to juvenile offenders violates the Eighth and Four-


236. See supra note 65.

237. 492 U.S. 361 (1989) (holding that application of the death penalty to sixteen- or seventeen-year-olds was not contrary to consensus, or cruel and unusual, and did not violate the Eighth Amendment).
teenth Amendments. The Missouri Supreme Court concluded that “a national consensus has developed against the execution of juvenile offenders” and, pursuant to Supreme Court case law, it set aside the death sentence. The Supreme Court affirmed. Similarly, in the event that state or lower courts identify consensus, under Roe, that human life begins earlier than viability it will be incumbent on them to protect that new human life.

4. A Pro-Life and Pro-Choice Conclusion

Note that the conclusion above—particularly the analysis finding clear (likely supermajority) consensus at the beginning of brainstem activity (and undoubtedly by the end of the first trimester)—is a pro-choice conclusion as well as one that is pro-life. It would protect agreed-upon human life, as required by Roe. (Though arguably there is sufficient, though not as sizeable, consensus that human life has begun by implantation or by the beginning of the heartbeat or cardiac activity.) Yet, even given this conclusion, most abortions would continue. Approximately 65.4% of abortions occur before or during week six of development or week eight of gestation. Further, approximately 91% of abortions occur during the first trimester. Thus, it would be inaccurate to characterize this position as anti-abortion rather than pro-life (and pro-choice). Advocating for unrestricted abortion in the face of such national consensus would essentially be anti-consensus, and it might be anti-life as well.

5. Responding to Potential Objections

At this point, someone may object, noting that dicta in City of Akron v. Akron Center for Reproductive Health, Inc., described the decision in Roe as holding “that a State may not adopt one theory of

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239. Id. (quoting State ex rel. Simmons v. Roper, 112 S.W.3d at 399).
240. Id.
241. Tara C. Jatlaoui et al., Abortion Surveillance – United States, 2015, 67 Surveillance Summaries 1, CTRS. FOR DISEASE CONTROL & PREVENTION (2018) (referring to gestational age rather than developmental age and finding that approximately 65.4% of abortions in the United States were performed before or during week six of development, eight of gestation, and 91.1% before or during week 11 of development, 13 of gestation). The numbers do not include abortions performed in California, Maryland, or New Hampshire. Id.
242. See id.; but see Saad, supra note 226 (stating that 89% of abortions occur during the first trimester).
when life begins to justify its regulation of abortions.”244 However, this description of Roe is not entirely accurate in that it neglects context and articulates a broader rule than that articulated in Roe. The Roe decision explained that, because of the contemporaneous lack of consensus on when human life begins and the absence of any legal protection for rights of the unborn at the time, Texas could not at that time adopt a theory of when human life begins that could supersede the rights of the pregnant woman that were at stake.245 Given greater consensus and current legal protection of unborn children, this language in Roe no longer holds true. Further, while a state may not unilaterally adopt a position contradicting federal constitutional law, federal constitutional law may, and is obligated to, adopt protection for new human beings.

In addition, even if one believed that a court or legislature should not protect human life from abortion based on one theory of the beginning of human life, one must realize that from early in embryological development multiple theories of the beginning of human life support protection of human life from abortion. By week seven or eight, at least four theories of human life conclude that protectable human life is present: (1) the genetic view holds that human life begins at conception because of the unique, human genetic identity of the new life, and because the new life will naturally develop into a mature human being; (2) a two-week embryological view holds that human life has begun at two weeks development because the primitive streak has formed, the beginning of the central nervous system, and because by that time implantation has occurred and the embryo generally can no longer divide to form twins; (3) a three- or four-week embryological view connected to heart function holds that human life begins around week three or four of development because “the operation of a primitive heart and circulatory system indicates the systematic interaction characteristic of an organism;”246 and (4) the early neurological view


245. Roe, 410 U.S. at 162 (“In view of [the lack of consensus on when human life begins as well as the absence of legal protection for fetal rights at that point], we do not agree that, by adopting one theory of life, Texas may override the rights of the pregnant woman that are at stake.”).

246. See Hershenov, supra note 19, at n.18 (leaning toward a biological account of identity rather than a psychological account of identity and suggesting that “it is at the end of the third week that the operation of a primitive heart and circulatory system indicates the systematic interaction characteristic of an organism”); see also 45 C.F.R. § 46.202(a), supra note 104 (“Dead fetus means a fetus that exhibits neither heartbeat, spontaneous respiratory activity, spontaneous movement of voluntary muscles, nor pulsation of the umbilical cord.”); but see Condic, supra note 106, at 52 (stating that a human embryo functions as an organism “[f]rom the earliest stages of development”).
holds that human life begins at about week six or seven when brain-stem formation and activity have begun.

Moreover, in the face of legal and scientific developments since 1973, to choose viability as the moment human life becomes protectable, seems more like an unreasonable adoption of one theory of the beginning of human life. Protecting human life only at viability corresponds basically to a very late neurological view of when human life begins. Endorsing a late theory, coinciding with viability or birth, would unreasonably, unethically, unjustly, and non-progressively prop up a diminishing minority view on the issue, in conflict with the decisive majority favoring much earlier positions on when human life begins.

Finally, someone might argue that when Roe was decided a majority of states had adopted laws prohibiting abortion except in narrow circumstances, and therefore this indicates that, contrary to Roe’s express proviso regarding consensus and personhood, no amount of state legislative consensus could protect new human life. However, such an argument would be deeply unreasonable, cynical, contrary to Roe’s express statement or proviso, and incompatible with other Supreme Court precedent regarding consensus, particularly its jurisprudence concerning identification of cruel and unusual punishment. Further, in Roe, the Court specifically explained why it did not treat the then-existing anti-abortion laws as proof of national consensus that human life begins at conception. First, it noted that one motivation behind the then-existing abortion restrictions may have been simply to regulate and limit certain undesired sexual behavior perceived as immoral, though Texas did not advance that as a reason. Second, the Court emphasized that many of the laws were likely motivated by a desire to protect the health of the woman, as abortion, particularly later abortions, involve health risks. The Court added that “[t]he few state courts called upon to interpret their laws in the late 19th and early 20th centuries did focus on the State’s interest in protecting the woman’s health, rather than in preserving the embryo and fetus.” Thus, nothing in Roe precludes identification of consensus based on a consensus in state legislation, similar to the Court’s analysis identifying excessive categories of punishment under the Eighth Amendment. Rather, Roe invites this analysis. Further, these two

247. Roe, 410 U.S. at 118, 129, 139.
248. Id. at 147-52.
249. Id. at 148.
250. Id. at 148-50.
251. Id. at 151.
252. See, e.g., id. at 159 (providing a disclaimer by stressing that “[w]hen those trained in the respective disciplines of medicine, philosophy, and theology are unable to
asserted rationales are not at issue with respect to either the UDDA, which is about determining death, or federal and state fetal homicide laws, which are not necessary to protect the woman. The separate and severe penalties assigned by these laws are only warranted if the new human life is just that, a new human life.

IV. CONCLUSION

As one prominent writer has argued, “[u]nless Roe v. Wade is overturned, politics will never get better.”253 I will leave political implications for others to discuss. However, as we have seen, protection of new human life would not require overturning Roe v. Wade254 in light of the consensus that now exists.

Almost five decades of development later, as we return to the reasoning in Roe, and reconsider the beginning of human life, we find surprising agreement that an unborn child is a new human life earlier in development than viability, entitled to protection and dignity. Abiding by Roe, a court probably would have to conclude that because of such agreement that human life begins early in pregnancy, a right to abortion has been superseded by the fundamental right of the new human to have its life protected. Possibly following implantation or the beginning of the fetal heartbeat (or cardiac activity), and with more certainty by the end of week seven or eight with the beginning of brainstem activity, the Fifth and Fourteenth Amendments to the Constitution cannot sanction abortion. Significantly, most states have adopted fetal homicide laws protecting unborn children, with thirty states protecting the unborn throughout pregnancy.255 Further, the federal Unborn Victims of Violence Act (“UVVA”)256 defines any embryo or fetus in the womb as an “unborn child,” and imposes the same penalties for harm to the unborn child as for harm to the mother.257 This degree of punishment is justified only if the unborn child is a human life from conception; otherwise, the punishment is too severe. Finally, the widely accepted Uniform Determination of Death Act (“UDDA”)258 provides that death can be determined upon irreversible

arrive at any consensus, the judiciary, at this point in the development of man’s knowledge, is not in a position to speculate as to the answer”) (emphasis added).


255. See supra notes 142-143, 214. Or possibly twenty-nine states provide such protection throughout pregnancy, if Virginia law only applies after the embryonic stage. See id.


258. UNIF. DETERMINATION OF DEATH ACT, supra note 102.
cessation of—and life by the presence of—the heartbeat or brainstem activity early in development. Similarly, under a Department of Health and Human Services regulation providing a definition for “dead fetus,” the cessation of the “heartbeat” can signal death, indicating it can also signal life.259 At the least, the State now would appear to have a compelling governmental interest in protecting probable persons from implantation or the beginning of cardiac activity or, at the latest, from week seven or eight of development with the beginning of brainstem activity.260 As Roe made clear, one person’s interest in liberty does not override another person’s interest in life.261

Even if a court or legislature desired to rely on a heightened level of consensus, such heightened consensus could be found in the sum of those adhering to the genetic view, those adhering to the embryological or individuation view, those adhering to the view that human life begins when the heartbeat begins, and those adhering to the early neurological view. Thus, even applying a heightened consensus standard under the Roe analysis, by the beginning of brain formation and brainstem activity, it appears the right to abortion has been superseded by the right to life of the new human, not to mention a compelling governmental interest262 in protecting human life. Following that point, abortion presumably would be justified only to protect the life of the mother.

Consistent with this degree of consensus related to the early neurological timeframe, and with worldwide consensus, public opinion appears to increasingly support restriction of abortion earlier in pregnancy while still appropriately allowing abortion to protect the life of the mother. According to a 2003 Gallup poll, 68% of Americans

259. 45 C.F.R. § 46.202(a). Note that the term “fetus” is defined to apply even to the embryonic stage, beginning with implantation. Id. § 46.202(c).

260. The Supreme Court, in Planned Parenthood v. Casey, also conceded that changed facts or assessment of the facts could lead to a compelling governmental interest in protecting the embryo or fetus and preventing abortion. 505 U.S. 833, 860, 864 (1992); see supra note 11 and accompanying text.

261. See Roe v. Wade, 410 U.S. 113, 156-57 (1973) (“If this suggestion of personhood is established, the appellant’s case, of course, collapses, for the fetus’ right to life would then be guaranteed specifically by the Amendment.”). If this is true with respect to “persons” it would also be true with respect to “human life” understood or communicated as akin to personhood. See also supra note 210 and accompanying text (discussing human life versus personhood).

262. If, as Roe held, the state has a compelling interest in protecting potential human life when it is “viable”—i.e., when the fetus can live outside the womb—then it follows that the state has an even more compelling interest in protecting the fetus that is understood to be actual human life. See id. at 163-64 (finding a compelling governmental interest in protecting “potential” human life at viability). In other words, if the government can prevent abortion once the fetus reaches viability to ensure completion of the last few months of pregnancy, then certainly it can do so earlier if it is now agreed that the fetus is a human life at that point. See Webster, 492 U.S. at 517-20 (1989) (plurality opinion); see also Planned Parenthood of Se. Pa. v. Casey, 505 U.S. 833 (1992).
believed that abortion should be generally limited to the first trimester or week twelve of development.\textsuperscript{263} Similarly, in a 2018 Gallup poll, only 28% of Americans believed that abortion should be generally legal after the first trimester.\textsuperscript{264} And according to a January 2019 Marist poll, 75% of Americans believed abortion should be limited to, at most, the first trimester.\textsuperscript{265}

Note that if consensus is found to exist by the beginning of brain-stem development and activity, this would still be a pro-choice, as well as pro-life result. Most abortions—65.4%—occur before the end of week six of development.\textsuperscript{266} Thus, in multiple senses, this consensus would be both pro-choice and pro-life. It is moderate, consensus-driven, and consensus-enabling. Being pro-choice need not mean being pro-abortion or anti-life.\textsuperscript{267} Each year in the United States, more than 638,169 abortions are performed (as reported to the CDC, not counting California, Maryland, or New Hampshire; or 926,200, as reported by the Guttmacher Institute), with approximately 34.6% of those performed after week six of development (week eight of gestation), after the heartbeat begins, and after brain development and activity is beginning, as described above.\textsuperscript{268} Up-to-date application of Roe generally would limit abortion by at least week seven or eight of development (while permitting those necessary to protect the life of the mother, of course). This would significantly reduce the number of unjust abortions—saving new lives (as society has concluded), reducing potential guilt, and increasing social justice and freedom. Clear explication of Roe will lead to behavior modification, e.g., increased use of contraception, increased joining of sex and marriage, increased valuing of parenting, courageous decisions not to abort. This change


\textsuperscript{264} Saad, supra note 226

\textsuperscript{265} See KNIGHTS OF COLUMBUS, supra note 227 (including in this percentage some who believe that abortions should be illegal by that stage but permissible in cases of rape, incest, or to save the life of the mother).

\textsuperscript{266} See supra note 241.

\textsuperscript{267} In fact, in the Marist poll cited above, 61% of those who identified as pro-choice believed that abortion either should be limited to the first trimester or should be available only in cases of rape, incest, or to protect the life of the mother; and only 39% who identified as pro-choice believed that abortion should be permitted either during both the first and second trimester or for all of pregnancy. See supra note 265 and accompanying text.

\textsuperscript{268} Jatlaoui et al., supra note 241 (referring to gestational age rather than developmental age). These totals do not include abortions performed in California, Maryland, or New Hampshire. Id. According to this report, approximately 65.4% of abortions in the United States were performed before or during week six of development, eight of gestation, and 91.1% before or during week 11 of development, 13 of gestation. Id. According to the most recent information published by the Guttmacher Institute, there are approximately 926,200 abortions each year in the U.S. Induced Abortion in the United States, GUTTMACHER INST. (Sept. 2019), https://www.guttmacher.org/sites/default/files/factsheet/fb_induced-abortion.pdf.
will occur because most people do strive to obey the law and act morally, especially on matters of such consequence. For those whom society considers unique and vulnerable new humans, whose lives are ending (as defined legally and scientifically by the UDDA) as we permit an obsolete status quo to persist, and for their relatives, the change cannot come soon enough. Those tempted to object to consistently protecting human life, as recognized by growing consensus, based on challenges faced by young or poor women, should instead focus their efforts on addressing those challenges rather than opposing just, life-protecting law.

Developments in science and law in the past four-and-one-half decades and greater appreciation of this progress indicate growing consensus that human life begins early in pregnancy. Roe, because of this rising consensus, now teaches that protection is constitutionally warranted for unborn children for most of pregnancy. If a supermajority level of consensus is required under Roe, this protection should apply by approximately week seven or eight of development, when a heartbeat has begun, the brain is developing, and neural activity has been detected via EEG. However, if a lower level of consensus (e.g., a majority level consensus) is adequate under Roe, then the contemplated right to life may arise immediately following implantation or the beginning of the fetal heartbeat (or cardiac activity). It is increasingly agreed that we are regularly killing our fellow human beings, the most defenseless members of the human family. If we permit old abortion policy to persist, given available knowledge, we risk severely damaging our conscience269 as well. It is past time to acknowledge this shift in abortion rights to protect new human life. At a minimum, to begin with, our public conversation (particularly in the media) needs to be informed and take into account these developments in science and law.

269. Cf. Wolf, supra note 83, at 28 (arguing that “[w]ith the pro-choice rhetoric we use now, we incur three destructive consequences—two ethical, one strategic: hardness of heart, lying and political failure”).