Defining Life from the Perspective of Death: An Introduction to the Forced Symmetry Approach

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Defining Life from the Perspective of Death: An Introduction to the Forced Symmetry Approach

Kirsten Rabe Smolensky

I. INTRODUCTION

Legal definitions of life and death currently highlight important inconsistencies in legal thought. Ironically, there is significant disagreement about the appropriate legal definition of life, but relatively little conflict, at least currently, about the legal definition of death. This may mean that Americans care more about life in its infancy and less about life at its end when the future seems bleak. But whatever the reason for this apparent disjunction, it is reflected in the law. Further, current legal definitions of life and death are not exclusive: a person may be legally alive for one purpose and yet legally dead (or nonexistent) for another. While these inconsistencies may not trouble every reader, they do beg the question of what the legal distinction between life and death should be.

This Article suggests a new approach for thinking about the legal definition of life. First, this Article argues that legal definitions of life and death should be defined as moments in time. While biologists and theologians often define life and death as ongoing processes and not as moments in time, the law must be more precise in its definition of life and death because important legal consequences flow from both definitions. Second, this Article explores the historical and current legal definitions of life and death. Currently, the legal definition of death is less controversial and fairly consistent, whereas the legal definitions of life are extremely controversial and varied. Third, the Article

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1 Associate Professor of Law, University of Arizona, James E. Rogers College of Law. Many thanks to the faculty and fellows at the MacLean Center for Clinical Medical Ethics at the University of Chicago, Dave Fagundes, and Darian Ibrahim for their insightful commentary. Thank you to Cristie Cole for her helpful research assistance.

1 While the Terry Schiavo case may suggest that people care greatly about certain end-of-life situations, that case had little to do with the legal definition of death. Terry Schiavo was legally alive and the debate centered on her right to die in accordance with her true wishes. The Schiavos and Terry's husband simply disagreed about what Terry's wishes were.
uses a symmetrical understanding of life and death, what I call the forced symmetry approach,\textsuperscript{2} to lend a new perspective to the abortion debate. Logic appears to dictate that if someone is declared dead because that person has lost some sort of functioning, such as brain functioning, then perhaps the emergence of this functioning in a person should define the beginning of life. In other words, if the loss of X makes a person legally dead, then the emergence of X should make a person legally alive. Because legal definitions of life and death are more usefully defined as moments in time, life and death under this approach are mutually exclusive.

Ultimately, the forced symmetry approach suggests some interesting, yet not conclusive, answers about when legal life should begin.\textsuperscript{3} First, it suggests that conception, quickening, and viability may not be particularly good legal definitions of life. Second, it suggests that a brain birth I or brain birth II definition of life might be the best legal definition of life in a world where the law is an imperfect, but necessary, tool for setting minimally acceptable moral standards.\textsuperscript{4}

II. THE LEGAL DEFINITION OF LIFE AS A MOMENT IN TIME

Life and death should be defined legally as moments in time because process-based definitions would create unnecessary confusion and because the legal consequences of life or death are immense. But before it is possible to choose which moment in time should define legal life, it is necessary to understand the conflict between legal definitions of life and medical definitions of life and explore why a process-based medical definition of life is not ideal in the legal setting.

Many disciplines, particularly the sciences, see life and death as interrelated processes. "Death commences with the very

\textsuperscript{2} The forced symmetry approach is an approach that I created for systematically applying a symmetrical understanding of life and death to legal definitions. It is similar to, and inspired by, the approach Dr. John M. Goldenring takes when considering medical definitions of life and death in John M. Goldenring, Correspondence, Development of the Fetal Brain, 307 New Eng J Med 564 (1982) and John M. Goldering, The Brain-Life Theory: Towards a Consistent Biological Definition of Humanness, 11 J Med Ethics 198 (Dec 1985).

\textsuperscript{3} The Article's conclusions are tentative because the primary purpose of the Article is to introduce the forced symmetry approach to the legal community. Much more could, and should, be written on this topic.

\textsuperscript{4} Of course this is not the only purpose of the law. By this statement, I only mean to suggest that where there is a great moral divide in a pluralistic society, the law is charged with setting standards that, in part, prescribe the minimal moral conduct that is acceptable to a majority of the population.
beginnings of life as the body constantly sloughs off and replaces dead cellular material.\textsuperscript{5} As people age, various organs begin to weaken and eventually, if a person is not killed by accident or disease, certain organs will cease to function.\textsuperscript{6} While transplantation or mechanical substitutes can replace some organs, nothing can stop the mechanisms of death itself. On the other hand, even cardiopulmonary death and brain death cannot prevent the continuation of biological life. Some cells, particularly those with a slower metabolic rates, may continue to live for minutes, hours or even days after someone has been declared dead.\textsuperscript{7} From a biological perspective, therefore, the boundaries of life and death are not clear.

The quandary, therefore, is how life and death should be defined in the law, where certainty is often prized.\textsuperscript{8} The essential problem is that defining life, or for that matter death, as a single point in time means picking a point along a continuum of seemingly reasonable choices. If a person chooses a point at the beginning of the continuum, such as conception, as the definition of life, then that person must counter arguments that sperm and ova should be protected as life either because they are

\textsuperscript{5} Ronald M. Green, \textit{Toward a Copernican Revolution in Our Thinking About Life's Beginning and Life's End}, 66 Soundings 152, 162 (1983). See also Hans C. Lou, \textit{Developmental Neurology} 5 (Raven 1982) (noting that "[c]ell death is in fact an important regulatory mechanism during early [fetal] development: it is estimated that for every neuron which survives, six may die").


\textsuperscript{7} Kenneth V. Iserson, \textit{Death to Dust} 17 (2d ed. 2001) ("Even though a person may be dead because his heart stops working, some muscle, skin, and bone cells may live on for many days . . . The amount of time these cells and tissues live depends on their ability to survive without oxygen and other nutrients and with the increasing amount of metabolic waste products building up within them."). See also Kathryn L. McCance & Sue E. Huether, \textit{Pathophysiology} 49-51 (3d ed 1998). Normally cells use oxygen to produce ATP (adenosine triphosphate), the breakdown of which powers several important cell functions necessary for cellular life. Id at 50. When a person experiences cardiopulmonary death, the body stops circulating oxygen to its cells. Id. Eventually each cell uses up its remaining oxygen and switches to anaerobic metabolism, a process by which the cell creates ATP from glycogen. Id at 51. Only when the cell's glycogen storage is depleted does the process of necrosis, cellular dissolution, begin. Id at 69. Necrosis includes multiple cellular changes, including autolysis (cellular self-digestion). Id. Postmortem autolysis does not manifest itself until twenty-four to forty-eight hours after cardiopulmonary death. Id at 78. Even then, biological functions of the human body have not ceased because autolysis requires "enzymes [to] continue to work after death, destroying tissues." Iserson, \textit{Death to Dust} at 384 (cited in note 7).

biologically alive or because of their potential to become genetically complete homo sapiens. If a person chooses a point later on the continuum, such as birth, as the definition of life, then that person must counter arguments that life does not begin until an infant is conscious of his or her surroundings. In other words, any point along the continuum, no matter where it falls, is always subject to some moral or logical attack. There simply is no "right" answer, and science, often considered a neutral arbitrator in these matters, is incapable of providing one.

Since science cannot provide a satisfactory and conclusive answer as to which moment in time defines life, one might think that any acceptable legal definition of life should be process-based. But a process-based definition of life, which recognizes that people may sometimes be more alive and sometimes less alive, is inadequate in a legal system where uncertainty is costly. Physicians, who do their best to predict a disease's course or the length of time someone has until his or her heart stops beating, are often inaccurate. It is nearly impossible to determine where a person is along the continuum of life. A bilinear classification of life and death, therefore, is preferable.

Life and death also need to be clearly defined as instants in time because the transition into or out of these states significantly changes a person's legal status. For example, at death, life insurance policies become due, questions about the distribution of the decedent's property arise, and estate taxes are calculated based on the valuation of the decedent's assets as of the date of death. Death also ends certain parental and marital obligations, signals the moment when organs can be donated, and gives family members quasi-property rights in the decedent's body. Similarly, the emergence of life creates legally binding parental responsibilities, allows for the creation of bank accounts in the infant's name, and in some states, may make the difference between a successful and unsuccessful charge of murder. Defining life to occur days, hours, or even minutes sooner or later can not only have a great impact on the individual being born, but it can also have significant legal consequences for others. Perhaps this is why the legislature and

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9 In fact, one review found that "[d]octors' predictions for terminally ill cancer patients (a population very close to death with a median survival of approximately four weeks) were inaccurate—they were correct to within a week in only 25% of cases and off by more than four weeks in a similar number." Paul Glare, et al, A Systematic Review of Physicians' Survival Predictions in Terminally Ill Cancer Patients, 327 BMJ 195, 198 (2003).
courts have consistently sought a moment-in-time definition of life and death even though scientific evidence that shows life and death are biological processes.\textsuperscript{10}

III. CURRENT AND HISTORICAL DEFINITIONS OF LIFE AND DEATH

While life and death are mutually exclusive moments in time, their legal definitions have developed independently. As a result, legal definitions of life have no apparent relation to legal definitions of death. This section explores historical and current legal definitions of life and death, including the development of the Uniform Determination of Death Act ("UDDA").\textsuperscript{11} It concludes that the legal definition of death is relatively uniform and uncontroversial. In contrast, however, the legal definition of life seems to be in constant flux. The definition of life not only varies depending upon the particular legal situation, but it is continually retooled within each particular situation.

A. The Legal Definition of Death

While the current brain death standard was controversial when it came into existence in the late 1960s, it is widely accepted today.\textsuperscript{12} The brain death standard emerged in response to new medical technologies, primarily the development of the ventilator and organ transplant technology.\textsuperscript{13} Soon after its development, the brain death standard was widely recognized with the adoption of the UDDA in all states. Although some states allow slight variations from the UDDA for religious reasons,\textsuperscript{14} it is fairly universal and uncontroversial today.\textsuperscript{15}

\textsuperscript{10} "While it may be said that persons who are alive at the same time are living simultaneously, death occurs precisely when life ceases and does not occur until the heart stops beating and respiration ends. Death is not a continuing event and is an event that takes place at a precise time." \textit{Thomas v Anderson}, 215 P2d 478, 482 (Cal D Ct App 1950).

\textsuperscript{11} Uniform Determination of Death Act §1 (1980), 12A ULA 593 (1996) (defining death as "irreversible cessation of circulatory and respiratory functions" or "irreversible cessation of all functions of the entire brain, including the brain stem").

\textsuperscript{12} See \textit{Swafford v State}, 421 NE2d 596, 598 (Ind 1981) ("In tandem with the development of the mechanical capacity to sustain heartbeat and respiration, the concept of 'brain death' has gained virtually universal acceptance in the medical profession.").


\textsuperscript{14} NJSA 26:6A(5) (1996) ("The death of an individual shall not be declared... when the licensed physician authorized to declare death, has reason to believe, on the basis of information in the individual's available medical records, or information provided by a member of the individual's family... that such a declaration would violate the personal beliefs of the individual."); 10 New York Rules and Regulations (NYRR)
Historically, there was concern about the medical definition of death, which centered on science’s inability to accurately diagnose death. The traditional legal definition of death was the cessation of cardio-pulmonary function. It seems as if there was little controversy over this definition of death because cardiopulmonary death was the best definition that medical science could provide.

As technology developed, particularly transplantation technology, the need to define death more accurately intensified. During the late 1960’s and early 1970’s, a debate raged about the proper definition of death in light of advanced technological capabilities that allowed successful organ transplants. Kansas was the first state to adopt the brain death standard by statute in 1970. In 1980, a committee acting for the National Conference of Commissioners on Uniform State Law drafted the UDDA. Under the UDDA, "[a]n individual who has sustained
either (1) irreversible cessation of circulatory and respiratory functions, or (2) irreversible cessation of all functions of the entire brain, including the brain stem, is dead."21 Death was to be determined in accordance with acceptable medical standards,22 meaning that the medical criteria for death were determined by physicians, not lawyers.23 The UDDA has since been adopted in all fifty states,24 although in certain states it has been adopted in a modified form.

While the adoption of a brain death standard is now considered fairly uncontroversial, two states, New York and New Jersey, provide relief from the brain death standard when religious beliefs collide with the UDDA definition of death.25 New Jersey law provides that:

[t]he death of an individual shall not be declared upon the basis of neurological criteria . . . when the licensed physician authorized to declare death, has reason to believe, on the basis of the information in the individual's available medical records, or information provided by a member of the individual's family or any other person knowledgeable about the individual's personal religious beliefs that such a declaration would violate the personal religious beliefs of the individual. In these cases, death shall be declared . . . solely upon the basis of cardio-respiratory criteria . . . .26

22 Id.
23 For example, in adopting the UDDA, the Washington Supreme Court explained this distinction as follows:

Death is both a legal and medical question. Traditionally, the law has regarded the question of at what moment a person died as a question of fact to be determined by expert medical testimony. However, recognizing that the law has independent interests in defining death which may be lost when deference to medicine is complete, courts have established standards which, although based on medical knowledge, define death as a matter of law. Thus, the law has adopted standards of death but has turned to physicians for the criteria by which a particular standard is met.

In re Welfare of Bowman, 617 P2d 731, 734 (Wash 1980) (citation omitted).
24 Some states adopted the UDDA by statute and others adopted it via case law.
25 New Jersey and New York probably allow these religious accommodations in part because they have large Jewish populations. Some members of the Jewish community only believe in a cardio-pulmonary definition of death. See Michael A. Grodin, Religious Exemptions: Brain Death and Jewish Law, 36 J Church & State 357, 368-70 (1994).
New Jersey state courts have not yet addressed the interpretation of this statute in a published opinion.

New York regulatory law also allows for religious accommodation in the determination of death.\textsuperscript{27} The New York regulation is similar to the UDDA in that it provides for alternate definitions of death—both cardiopulmonary death and total brain death. It is unique in that it makes exceptions for people who have religious objections to declarations of death by neurological criteria.\textsuperscript{28} The regulation requires that each hospital “establish and implement a written policy regarding determination of death” that includes, in part, “[a] procedure for the reasonable accommodation of the individual’s religious or moral objection to the determination as expressed by the individual or by the next of kin or other person closest to the individual.”\textsuperscript{29} There are only two cases that mention this provision, one that addressed the constitutionally of the regulations but was ultimately dismissed as moot,\textsuperscript{30} and one that held that, while the hospital’s written policy failed to provide for a reasonable religious accommodation as required by the regulation, it did “afford the baby’s parents with ‘reasonable accommodation’ in light of their religious and moral beliefs.”\textsuperscript{31}

\textsuperscript{27} 10 NYRR §400.16(e)(3)(2006).
\textsuperscript{28} Id.
\textsuperscript{29} Id.
\textsuperscript{30} In \textit{Alvarado v New York City Health & Hosp Corp}, 547 NYS2d 190 (NY Sup Ct 1989), vacated and appeal dismissed as academic by \textit{Alvarado v City of New York, et al}, 550 NYS2d 353 (NY App Div 1990), a newborn boy was diagnosed as brain dead two days after birth, but his family, Spanish-speaking Jehovah’s Witnesses, insisted on keeping him on life support. Approximately two weeks later the diagnosis was confirmed as irreversible and the hospital informed the parents that it would remove the baby’s respirator in accordance with New York law unless the parents could obtain a court order. Id. The Alvarados immediately petitioned the court for an order requiring the hospital to maintain life support, arguing that the relevant New York regulation was unconstitutional because it infringed on the baby’s right to live and because the regulation failed to put a process in place for challenges to the hospital’s determination of brain death. Id at 197. The court found that §400.16 was constitutional and determined that the hospital had complied with it because “the Alvarados were notified before a determination was made, were given an opportunity to obtain an independent medical evaluation, and were offered a chance to have the matter discussed with religious leaders and friends.” Id at 198. The court extended the order restraining the hospital from discontinuing life support systems for seven days, giving the family time to find another facility to take the child. Id. The decision was appealed, but before the court considered the appeal the parties entered into a consent order that vacated the original decision because the hospital had determined, based on new medical evidence, that the child was not dead. See \textit{Alvarado v City of New York, et al}, 550 NYS2d 353 (NY App Div 1990).
\textsuperscript{31} In \textit{In the Matter of Long Island Jewish Med Center}, 641 NYS2d 989 (NY Sup Ct 1996), the hospital wanted to remove life support after a five-month-old baby was declared brain dead. The parents, an anesthesiologist and an attorney, argued that the hospital failed to comply with §400.16 because the hospital did not have a written policy
Laws which require religious accommodations, while sensitive to religious beliefs, are not the best way to proceed in determinations of death. While all of the reported cases dealing with religious accommodations involve infants, it is easy to imagine the religious accommodation being used for devious purposes when an adult life is at issue. For example, family members might use the religious accommodation to keep a loved one on a ventilator through the end of a particular tax year or to keep an insured person alive while finishing out a waiting period on a life insurance policy. Gaming of such a system could be rampant and the moral hazards associated with such a legal rule could be expensive. While it might be nice to recognize religious beliefs in determining both life and death, the law cannot accept inconsistent definitions of death or uncertainty in the law.

So far this paper has discussed the legal definition of death primarily for the purposes of declaring someone dead and filling out a death certificate. But the legal definition of death is implicated in other situations as well. For example, several criminal defendants charged with murder have argued that they should be absolved of the crime because while they may have injured a victim by rendering him brain dead, the removal of the

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32 The estate tax is set to expire in 2009 and attorneys practicing trusts and estates often joke that 2009 may be the year to die.

33 Some life insurance policies have a waiting period before the benefits become available. For example, if someone is brain dead because of a suicide attempt and the policy has a provision that does not cover death by suicide within two years of the policy's purchase, it may make sense for the family to keep the loved one on a ventilator even though they have been declared brain dead.

34 Furrow, Health Law at §16-9, 680 (cited in note 20) (opining that “[j]ust as we do not allow individuals to decide to choose their age by counting from either the moment of birth or the moment of conception, whichever is most consistent with their own religious views, we ought not allow them to choose the time of their death based on the application of alternative definitions of death”).
victim from life support was the actual cause of death. While it is true that many brain dead patients indefinitely retain cardio-pulmonary functioning with the assistance of life support, courts have uniformly dismissed such arguments.\textsuperscript{35} In fact, such an argument has never been successful.\textsuperscript{36} The brain death definition of death as used in the criminal context is similarly applied in wrongful death cases.\textsuperscript{37} Furthermore, personal injury suits brought on behalf of brain dead decedents with cardio-pulmonary functioning have been rejected because personal injury suits must be filed before a decedent's death.\textsuperscript{38} All of these legal understandings of death comport with the UDDA. And for the most part, except for a few rare instances such as the prolonged

\begin{footnotesize}
\begin{enumerate}
\item See, for example, People v Eulo, 472 NE2d 286 (NY App Ct 1994) (ruling that the defendant's conduct caused the victim's death and that the organ transplant procedures after the victim's entire brain had irreversibly ceased to function were not superseding causes of death); State v Watson, 467 A2d 590 (NJ Super Ct App Div 1983) (ruling that death was not caused by turning off the respirator, but from defendant's acts); State v Meints, 322 NW2d 809 (Neb 1982) (ruling that proof of brain death is sufficient as proof of the victim’s death in a homicide case); Swafford v State, 421 NE2d 596 (Ind 1981) (ruling that for purposes of homicide law, proof of the death of the victim was established by proof of the irreversible cessation of the victim's brain functions); State v Inger, 292 NW2d 119 (Iowa 1980) (rejecting a defendant's claim that the state must prove beyond a reasonable doubt that the victim was dead within the meaning of a state brain-death statute when an artificial means of support was removed); State v Pierro, 603 P2d 74 (Ariz 1979) (ruling that gunshot wounds, not removal of the support systems, were the proximate cause of death); State v Holsclaw, 257 SE2d 650 (NC App Ct 1979) (upholding a jury conviction upon finding defendant's act was a contributing factor that proximately caused the victim's death, even if the doctor was negligent); State v Johnson, 381 NE2d 637 (Ohio 1978) (ruling that one who inflicts injury upon another is criminally responsible for that person's death, regardless of whether a different doctor would not have removed the life support systems); Cranmore v State, 271 NW2d 402 (Wis 1978) (affirming that the jury could reasonably be convinced that death occurred before the physician conducted a nephrectomy, according to either a blood circulation and pulmonary activity definition or a brain death definition); Commonwealth v Golston, 366 NE2d 744 (Mass 1977), cert denied 434 US 1039 (1978) (ruling that the trial judge had correctly accepted the medical definition of brain death, and that in any case such error was harmless beyond a reasonable doubt).


\item While there do not appear to be cases where the defendants tried to dismiss wrongful death claims on the basis that the brain dead decedent could have been kept alive indefinitely on life support, there are several cases allowing wrongful death claims to go forward even though the decedent was withdrawn from life support by his or her family. See, for example, Mineroff v Silber, 710 NYS2d 623 (NY App Div 2000) (denying summary judgment to defendants in an action brought by decedent's estate to recover damages for decedent's conscious pain and suffering and wrongful death due to medical malpractice); Seippel-Cress v Lackamp, 23 SW3d 660 (Mo App Ct 2000) (overturning a directed verdict for plaintiff's failure to adequately define the legal standard of care and remanding for determination of whether wrongful death had occurred).

\item See, for example, Bassie v Obstetrics & Gynecology Assoc of NW Alabama, 828 S2d 280, 283 (Ala 2002) (affirming the trial court's dismissal of the decedent's personal injury claims because she was legally brain dead before her claims were filed even though her respiratory and cardiac functioning were being successfully maintained by life support).
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absence of a person and civil death, death is defined uniformly throughout the law in a relatively uncontentious manner.

B. The Legal Definition of Life

Legally defining life in the United States has always been complicated. In addition to focusing on the few cases and statutes that clearly define life, this section explores how courts define life implicitly. For example, courts often define human beings and persons in the context of homicide and wrongful death statutes. While the legal definition of a human being or a person may seem, at first, to have little to do with legally defining life, using these terms in the context of a wrongful death claim or a homicide statute necessarily implies that the person or human being is alive. Because many of the cases discussed throughout this section focus on the early developmental stages of life, it necessarily follows that every time something—a fertilized human egg, an embryo, a fetus, or a newborn—is defined as a person, that person has also been defined as living (or else another person could not be tried for homicide, etc).

39 A missing person is presumed to be alive until seven years have passed since the person was last seen or heard from. After seven years, the presumption of life ceases and the presumption of death arises. The person is considered to have legally died as of the date of the presumption of death. Donovan v Major, 97 NE 231, 232 (Ill 1911). This common law principle is the same in all states unless modified by statute. 25A CJS Death §8 (2002). For an example of a state modifying the common law presumptions see NY Estates, Powers and Trusts Law §2-1.7 (McKinney 1998) (allowing for a presumption of death after a person has been missing continuously for three years).

40 Civil death occurs when a “person is not actually dead, but is adjudged so by the law, as when a person is banished or abjures the realm, or enters into a monastery.” Henry Campbell Black, A Dictionary of Law 335 (West 1st ed 1891). See also Special Projects: Civil Disabilities, 23 Vand L Rev 931, 1083-86 (1969-70) (noting that some early state laws considered prisoners sentenced to life to be civilly dead).

41 Even Black’s Law Dictionary does not clearly define life. For example, the first edition of Black’s Law Dictionary, published in 1891, gives two definitions of life. Life is first defined as “[t]hat state of animals and plants, or of an organized being, in which its natural functions and motions are performed, or in which its organs are capable of performing their functions.” Henry Campbell Black, A Dictionary of Law 720 (West 1st ed 1891). See also Black’s Law Dictionary 727 (2d ed 1910). Second, life is defined as “[t]he sum of the forces by which death is resisted.” Henry Campbell Black, A Dictionary of Law 720 (West 1st ed 1891). See also Black’s Law Dictionary 727 (2d ed 1910). Neither of these definitions clearly defines when life begins. The first definition focuses on the “natural functions and motions” of an “organized being,” perhaps suggesting that life begins at quickening. The second definition of life simply defines it as the absence of death, thereby recognizing that life and death are mutually exclusive.

42 There are some apparent exceptions to this broad generalization. For example, feticide is a distinct crime from homicide that involves the killing of a fetus. Because feticide statutes are explicit that the killing of a fetus is the criminal act involved, there is an implicit understanding that the killing of a fetus is not the killing of a person. In this way, feticide is akin to crimes that punish the killing of non-humans, such as animals,
Exploring the explicit and implicit definitions of life highlights both how difficult defining life can be and how inconsistent and controversial legal definitions of life are. Following is a brief overview of fetuses' legal status throughout American history, focusing in particular on how life is legally defined in the context of legal recordkeeping, wrongful death cases, homicide statutes, and abortion.


Statutes concerning vital records, such as birth and death certificates, are one of the few places where life is explicitly defined by law. For example, in Arizona “birth” or “live birth” means “the complete expulsion or extraction of a product of human conception from its mother, irrespective of the duration of the pregnancy, that shows evidence of life . . . such as breathing, heartbeat, umbilical cord pulsation or definite voluntary muscle movement after expulsion or extraction . . . .”\(^4\)\(^3\) Alabama adopts similar definitions of life, but notes that “[h]eartbeats are to be distinguished from transient cardiac contractions; respirations are to be distinguished from fleeting respiratory efforts or gasps.”\(^4\)\(^4\) While these statutes do not necessarily preclude legal life prior to birth, they do explicitly distinguish between life and death at the instant of birth in a way that significantly differs from the legal definition of death. These statutes do not consider the brain functioning of the newborn. Instead, the definition of live birth focuses on older notions of life such as breathing and cardiac rhythm.

In some ways, these definitions of life harken back to an era where children had to be born alive to be vested with certain important legal rights, such as the right to bring a wrongful death suit for injury sustained in utero.\(^4\)\(^5\) The vital statistics definition of live birth is also significant because it marks an endpoint in legal thinking. While some philosophers have argued that full moral status should not attach to newborns who lack self-awareness,\(^4\)\(^6\) there does not appear to be any Anglo-Saxon

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\(^4\)\(^5\) See note 54 and accompanying text.

\(^4\)\(^6\) Peter Singer, *Practical Ethics* 122-23 (Cambridge 1979).
legal definition of life that denies that an infant born with a heart beat and respiratory function is legally alive.\footnote{Unless, of course, the infant is determined after a series of tests to be brain dead.}

2. Wrongful Death.

The treatment of fetuses in wrongful death cases varies dramatically from state to state and over the course of time. Traditionally common law did not allow wrongful death recovery for an injury that occurred in the womb.\footnote{See \textit{Dietrich v Inhabitants of Northampton}, 138 Mass 14, 15 (1884) (overruled) (holding that a fetus that was injured in the womb but survived birth for ten to fifteen minutes could not be the subject of a wrongful death suit). In deciding this case Judge Holmes noted the English rule (which eventually took hold in the United States): "if a woman is quick with child, and takes a potion, or if a man beats her, and the child is born alive and dies of the potion or battery, this is murder." Id.} This rule applied even if the fetus lived for a short period of time after its birth, but died as a result of its prenatal injuries.\footnote{Id at 15. See also \textit{Buel v United Rys Co of St Louis}, 154 SW 71, 73 (Mo 1913) (reversed).} The rationale for the common law approach might be two-fold.\footnote{Consider Mamta K. Shah, Note, \textit{Inconsistencies in the Legal Status of an Unborn Child: Recognition of a Fetus as Potential Life}, 29 Hofstra L Rev 931, 936-938 (Spring 2001).} First, the rule served primarily an evidentiary function. For example, prior to advent of modern medicine, it was difficult to determine whether the harm to the fetus was the result of an alleged injury or a natural occurrence.\footnote{See Frank A. Manning, \textit{Fetal Medicine: Principles and Practice} (Appleton & Lange 1995) (noting that "[p]rior to the era of modern fetal medicine ushered in by the new ability to visualize the fetus and its activities using high-resolution dynamic ultrasound imaging methods, assessment of fetal condition was highly limited, being restricted to those few fetal biophysical variables that could be assessed from the maternal subjective reports, by observation of the maternal abdomen, or by listening to the fetal heart"). X-ray pelvimetry was first used to diagnosis difficult obstetric cases in 1898 and was not in general use until the 1930s. Judith Walzer Leavitt, \textit{Brought to Bed: Childbearing in America 1750 to 1950} 267 (Oxford 1986). A laboratory test for determining pregnancy was not even reported in the literature until 1926. Id at 268.} Second, the child was often regarded as part of the mother and not an independent being.\footnote{See \textit{AlHaire v St Luke's Hospital}, 76 Ill 441, 450 (Ill App 1898) (overruled) (stating that the doctrine that "an unborn child may be regarded as in esse for some purposes when for its benefit, is a mere legal fiction, which . . . has not been indulged in by the courts of common law to the extent of allowing an action by an infant for injuries occasioned before its birth"). \textit{In esse} means "[i]n being. Actually existing. Distinguished from \textit{in posse}, which means 'that which is not, but may be.' A child before birth is \textit{in posse}; after birth, \textit{in esse."} \textit{Black's Law Dictionary} 535 (West abridged 6th ed 1991).} Today, there are three common approaches to fetal wrongful death cases.\footnote{See Shah, 29 Hofstra L Rev at 939-51 (cited in note 50) ("Three major approaches have developed in the attempt to define the term 'person' when applying a wrongful death}
wrongful death of a fetus may be allowed (1) if the child is born alive,\(^\text{54}\) (2) if the fetus is viable at its death,\(^\text{55}\) or (3) for the death of any unborn fetus, including pre-viable fetuses.\(^\text{56}\)

Of these three approaches, the majority position allows recovery for the wrongful death of a viable fetus.\(^\text{57}\) States taking this position generally define viability as the ability of the fetus to live independently of its mother.\(^\text{58}\) Minnesota, the first state to

statute to a fetus: a fetus that is born alive; a viable fetus; and a non-viable unborn fetus.\(^\text{54}\)). Some, however, suggest that there are at least four different approaches to considering fetal life in construing wrongful death statutes. See Bolin v Wingert, 764 NE2d 201, 205 n 6 (Ind 2002) (distinguishing Georgia from the other pre-viability states because of its quickening requirement). For a general discussion of wrongful death cases involving fetuses, consider Sheldon R. Shapiro, Right to Maintain Action or to Recover Damages for Death of Unborn Child, 84 ALR 3d 411 (1978 & Supp 2001); Daniel S. Meade, Wrongful Death and the Unborn Child: Should Viability Be a Prerequisite for a Cause of Action?, 14 J Contemp Health L & Pol'y 421, 426-44 (1998).

\(^\text{54}\) Approximately ten states follow the born alive rule. Bolin v Wingert, 764 NE2d 201, 205 n 4 (Ind 2002). See, for example, Sosebee v Hillcrest Baptist Med Ctr, 8 SW3d 427 (Tex Ct App 1999) (noting that “[t]he Supreme Court of Texas has uniformly held for almost thirty years that an unborn child has no cause of action for prenatal injuries unless the child is born alive”); Hernandez v Garwood, 390 S2d 357 (Fla 1980) (noting that no cause of action could be maintained for the death of an unborn child); Endress v Friedberg, 248 NE2d 901 (NY 1969) (stating that the Court of Appeals of New York had already decided that “a wrongful death action may not be maintained for the death of an unborn child”).

\(^\text{55}\) The majority of states only allow recovery where the fetus is viable at death. Sarah Loquist, Note, The Wrongful Death of a Fetus: Erasing the Barrier Between Viability and Nonviability, 36 Washburn L J 259, 287 (1997).

\(^\text{56}\) A minority of states allow wrongful death actions to be brought for the death of any fetus, viable or non-viable. See, for example, Wiersma v Maple Leaf Farms, 543 NW2d 787, 792 (SD 1996) ("Parents may seek redress regardless of whether their unborn child was viable."; Connor v Monkm Co, 898 SW2d 89, 93 (Mo 1995) ("[W]e hold that a wrongful death claim may be stated for a nonviable unborn child . . . ."); Farley v Sartin, 466 SE2d 522, 534 (W Va 1995) (holding that West Virginia's wrongful death statute applies to non-viable fetuses). But see Shirley v Bacon, 267 SE2d 809, 810 (Ga App Ct 1980) ("In Georgia an action for the wrongful death of an unborn child may be maintained if the child was 'quick' at its death . . . ."). Also, there do appear to be limits as to what counts as a non-viable fetus under some wrongful death laws. See Jeter v Mayo Clinic Arizona, 121 P3d 1256, 1261 (Ariz App Div 2005) (holding that a "cryopreserved, three-day-old eight-cell pre-embryo is not a 'person' for whose loss or destruction the Jeters can recover under Arizona's wrongful death statutes" and refusing to "interpret the term 'person' under the wrongful death statutes to conception outside a woman's womb").

\(^\text{57}\) Wrongful Death of Fetus §1 19 Am Jur Proof of Facts 3d 107, 113 (2004) (stating that at least thirty-six states allow for wrongful death claims to proceed if the fetus is viable when injured and dies as a result of these injuries).

\(^\text{58}\) See, for example, Summerfield v Superior Court In and For Maricopa County, 698 P2d 712, 722 (Ariz 1985) (stating that "the common law now recognizes that it is the ability of the fetus to sustain life independently of the mother's body that should determine when tort law should recognize it as a 'person' whose loss is compensable to the survivors"); Mitchell v Couch, 285 SW2d 901, 905 (Ky 1955) ("[T]he expression 'viable fetus' means the child has reached such a state of development that it can presently live outside the female body as well as within it. A fetus generally becomes a viable child between the sixth and seventh month of its existence . . . ."). But other states define viability more specifically. See, for example, Britt v Sears, 277 NE2d 20, 26 (Ind App Ct
allow recovery for the wrongful death of a viable fetus, exemplifies this focus on fetal independence:

[A fetus] has, if viable, its own bodily form and members, manifests all of the anatomical characteristics of individuality, possesses its own circulatory, vascular and excretory systems and is capable now of being ushered into the visible world.

The absence of precedent should afford no refuge to those who by their wrongful act, if such be proved, have invaded the right of an individual.59

While most states, like Minnesota, recognize fetal independence at viability, the states still following the born alive rule recognize fetal independence at birth.60 One distinction between these differing views of fetal independence is that the live birth rule requires actual, physical independence while the viability rule requires only a likelihood of independence.61 The preference for viability in the wrongful death cases, as opposed to the preference for the live birth rule in criminal cases, suggests that the legal system is less likely to impose criminal liability when the likelihood of the fetus's natural outcome is still uncertain. Additionally, prosecution under a homicide statute suggests that the victim has a right not to be killed while the filing of a wrongful death claim by the decedent's heirs suggests that the heirs have a right to be compensated for their loss.62

59 Verkennes v Cornies, 38 NW2d 838, 840-41 (Minn 1949) (citing Bonbrest v Kotz, 65 F Supp 138, 140-42 (D DC 1946)).

60 Compare Duncan v Flynn, 342 S2d 123, 125 (Fla 1977) (noting that a fetus does not have an independent existence from its mother until it has been completely expelled from the mother's body) with Summerfield, 698 P2d at 722 (stating that "it is the ability of the fetus to sustain life independently of the mother's body that should determine when tort law should recognize it as a 'person' whose loss is compensable to the survivors") (emphasis added).

61 Viability does not guarantee that the fetus will be capable of living independently of its mother. Rather, it is simply the stage in fetal development when a fetus has a likelihood of surviving birth with the assistance of medical technology.

62 Wrongful death claims are claims brought by the decedent's heirs for the loss of
A few states are beginning to allow recovery for the wrongful death of a pre-viable fetus. Some of these states allow recovery regardless of the fetus's developmental stage; the rationale for this rule is often that life begins at conception. Other states that allow wrongful death claims for the death of a pre-viability fetus focus on whether the fetus was "quick." Historically, quickening occurred when the mother felt the child move. Some states, however, have redefined quickening. Georgia courts, for example, have held that the mother need not actually feel fetal movement in order to establish quickening. In *Citron v Ghaffari*, a mother brought a wrongful death suit arguing that she should recover for the loss of her eight-week-old fetus even though the only movement detected from the fetus was a heartbeat detected by a sonogram. The Georgia Court of Appeals rejected her claim, holding that quickening meant the sort of movement made by the fetus's arm or leg:

To hold otherwise would make the concept meaningless. Presumably, with the right equipment, movement resulting simply from the biological process of fetal development could be detected from the very onset of pregnancy. Therefore, were we to adopt the Ghaffaris' argument that a heartbeat demonstrates quickening because it can be seen on a sonogram, we would effectively be recognizing a cause of action for wrongful death at any point during pregnancy. This would be a marked shift in the treatment of unborn children under Georgia law and may more properly be the subject of legislative action.

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the decedent while survival claims are claims brought on behalf of the decedent for his or her injuries while alive. There do not appear to be any cases distinguishing between wrongful death and survival claims where the death of a viable fetus is concerned. It appears, therefore, that if a viable fetus constitutes a person for the purposes of a wrongful death claim, he or she might also constitute a person for the purposes of a survival action. This result, however, seems troubling. Perhaps wrongful death claims should be allowed for the death of a viable fetus, but survival claims should not.

63 See note 56 and accompanying text.
64 Id.
65 See for example, *Evans v People*, 49 NY 86, 90 (NY 1872) ("Although there may be life before quickening, all the authorities agree that a child is not 'quick' until the mother has felt the child alive within her.").
66 *Shirley v Bacon*, 267 SE2d 809, 811 (Ga App 1980).
67 542 SE2d 555 (Ga App 2000).
68 Id at 555.
69 Id at 557.
While not specifically defining when quickening occurs, the court rejected the idea that quickening could begin before the eighth week of gestation. This rule recognizes “that advances in technology allow a physician to detect an unborn child’s movement before a mother may actually recognize it,” and yet requires evidence that the fetus is at least capable of limb movement.\(^70\) If it is not clear whether the fetus was “quick” at the time of its death, this becomes a question of fact for the jury.\(^71\)

In the wrongful death context, conception, quickening, viability, and live birth are all potential definitions of life. How life is defined for this single legal cause of action varies widely between jurisdictions and across time.

3. Homicide and Feticide.

There is also disagreement among jurisdictions as to what counts as life for the purpose of homicide and feticide statutes. At common law, a person could not be criminally convicted for killing a child in utero unless the child was born alive and then died shortly thereafter.\(^72\) To prove a live birth the child must have attained independent circulation and existence from its mother.\(^73\) The child, then considered an independent being, was capable of receiving legal protection under the homicide statutes. Implicit in the born alive rule is an understanding that an unborn fetus is not legally alive.

The born alive rule in homicide cases functions in the same way that the born alive rule works in most wrongful death cases, and it is not without its practical explanations. First, the born alive rule serves to alleviate evidentiary difficulties.\(^74\) Second, fetuses were not viewed as independent beings until they were physically and physiologically independent.\(^75\) While some wrongful death cases consider quickening or viability to be the moment of fetal independence, the stakes are much higher when

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\(^70\) Id (discussing Shirley v Bacon, 267 SE2d 809).
\(^71\) Citron, 542 SE2d at 557.
\(^72\) See Shah, 29 Hofstra L Rev at 936-38 (cited in note 50). See also Canfield v State, 56 Ind 168, 170 (Ind 1877) (“To support an indictment for infanticide, at common law, it must be clearly proved that the child was wholly born, and was born alive, having an independent circulation, and existence.”) (citing John Wilder May, 3 Greenleaf on Evidence §136 (Little, Brown 13th ed 1876)).
\(^73\) State v Winthrop, 43 Iowa 519, 520-21 (Iowa 1876).
\(^74\) See notes 48-54 and accompanying text.
\(^75\) Id.
criminal conviction is possible because the alleged perpetrator might be facing jail time or death. Perhaps this is why courts tended to favor the more stringent born alive rule in homicide cases.

While the common law born alive rule is still law in many jurisdictions,\textsuperscript{76} it is not the rule everywhere. Some states have brought prosecutions for the killing of an unborn fetus under state homicide statutes by recognizing the fetus as a person.\textsuperscript{77} Other states have refused to recognize an unborn fetus as a person under the state’s homicide statute and have instead enacted feticide statutes that make it a crime to kill an unborn human fetus.\textsuperscript{78} Feticide, the killing of a human fetus,\textsuperscript{79} is significantly different from homicide where the court recognizes

\textsuperscript{76} Shah, 29 Hofstra L Rev at 951-59 (cited in note 50) (explaining that "[c]ourts have advocated continued acceptance of the Born Alive Rule when interpreting murder statutes, despite advances in medical technology that have weakened the rationale underlying the common law approach"). One court has disallowed a manslaughter charge even where the baby was born alive. See \textit{State v Aiwohi}, 123 P3d 1210, 1225 (Haw 2005) (reversing a mother’s conviction for manslaughter after she recklessly smoked crystal methamphetamine at full term causing her son’s death two days after his birth because a fetus is not a person within the state’s manslaughter statute and the harm of the methamphetamine was imposed on the fetus and not the baby). \textit{Aiwohi} is an unusual case because most homicide cases follow the born alive rule, which allows a person to be convicted of homicide if the fetus is born alive even if the fetus dies shortly after birth. See, for example, \textit{People v Hal}, 557 NYS2d 879 (NY App Div 1990) (holding the defendant guilty of second degree manslaughter when he shot the victim’s mother, causing premature delivery, and there was evidence the victim was born alive); \textit{Ranger v State}, 290 SE2d 63, 66 (Ga 1982) (holding the defendant guilty of felony murder when he shot the victim’s mother, causing premature delivery, and the victim was born alive and died twelve hours after delivery). It appears that there may be a series of cases that do not apply the murder or abortion statutes to mothers who cause death to their fetus even if the fetus is born alive before it dies. See for example, \textit{State v Ashley}, 701 S2d 338 (Fla 1997) (holding that the state could not prosecute a teenage woman who shot herself in the abdomen during the third trimester of pregnancy because the state homicide and abortion statutes did not abrogate the common law doctrine of immunity for pregnant women causing injury or death to their fetuses).

\textsuperscript{77} See, for example, \textit{Commonwealth v Morris}, 142 SW3d 654, 660 (Ky 2004) (overruling a 1983 case maintaining the born alive rule and holding that a “viable fetus” is a “human being” under Kentucky’s homicide statutes); \textit{State v Holcomb}, 956 SW2d 286, 289-90 (Mo Ct App 1997) (holding that an “unborn child,” whether viable or not, is a “person” under the state’s first degree murder statute); \textit{Hughes v State}, 868 P2d 730, 731 (Okla Crim App 1994) (holding that an “unborn viable fetus” is a “human being” under Oklahoma’s homicide statute); \textit{Commonwealth v Cass}, 467 NE2d 1324, 1326 (Mass 1984) (holding that a viable fetus is a person for purposes of the state vehicular homicide statute); \textit{State v Horne}, 319 SE2d 703, 704 (SC 1984) (holding that a fetus is a person for the purposes of criminal law).

\textsuperscript{78} See 40 CJS Homicide §44 (2005) (noting that the killing of a fetus is a “specifically designated type of murder” under some statutes, included in the definition of murder in some statutes, and “excluded from the reach of” some statutes).

\textsuperscript{79} Feticide is defined as “[t]he act or an instance of killing a fetus, usually by assaulting and battering the mother; an intentionally induced miscarriage.” \textit{Black’s Law Dictionary} 636 (West 7th ed 1999).
the fetus as a person because feticide statutes implicitly recognize that fetuses have a lesser moral standing than persons.\textsuperscript{60}

Generally there are two types of feticide statutes, those allowing conviction for pre-viability death and those allowing conviction only for post-viability death.\textsuperscript{61} Most feticide statutes require that the fetus be viable. The effect of a viability requirement is that the battery of a pregnant woman resulting in the death of her eighteen-week-old fetus, which is not yet viable, results in a charge of battery upon the woman and not battery and feticide.

There may be a trend to allow prosecution for feticide anytime after conception. At least one state, Minnesota, has allowed prosecutors to bring homicide charges for the death of a non-viable fetus.\textsuperscript{62} California has held that viability is not necessary for prosecution under its feticide statute, and instead requires that the prosecution be able to prove that the fetus has progressed beyond the embryonic state of seven to eight weeks when most of the major structures of the fetus are outlined.\textsuperscript{83}

In sum, the feticide and homicide statutes vary widely with respect to their definition of life. Some states still adhere to the common law born alive rule, while other states use quickening,

\textsuperscript{60} Fetuses were found to be persons for the purpose of wrongful death statutes at approximately the same time feticide statutes appeared. Recovery under a wrongful death statute was first allowed for an unborn fetus in 1949. Verkennes v Corniea, 38 NW2d 838 (Minn 1949). And feticide statutes came into being around 1950.

In some ways, feticide is more similar to a theoretical statute prohibiting the unlawful killing of an animal than it is to homicide. Persons who commit feticide are recognized as committing a lesser crime, with a substantially lighter penalty. See Shah, 29 Hofstra L Rev at 964-65 (cited in note 50) (noting that “because feticide statutes are intended to protect an unborn child as a ‘potential life,’ they do not provide a fetus the same protection afforded to a person under criminal law”). In the same way, the unlawful killing of an animal may be punished as wrong, but not as severely as the unlawful killing of a human being because the animal’s moral status is seen as significant, but not significant enough to warrant the same punishment as homicide.

Feticide statutes change the debate in which I am engaging because while they define “life” in some abstract sense there is an explicit recognition that the life they are defining and protecting is distinct from the life of a human being with full legal status. This distinction, however, is not made in other areas of the law discussed in this section of the paper.

\textsuperscript{61} Compare State v Merrill, 450 NW2d 318, 324 (Minn 1990) (allowing one man to be prosecuted under Minnesota’s feticide statute for the death of a pre-viable fetus where the man killed the mother), with People v Shum, 512 NE2d 1183, 1198-99 (Ill 1987) (recognizing that Illinois’ feticide statute requires a finding of fetal viability).

\textsuperscript{62} Merrill, 450 NW2d at 324. The perpetrator in this case was prosecuted under Minnesota’s feticide statute.

\textsuperscript{83} People v Davis, 872 P2d 591, 599 (Cal 1994) (recognizing that life at seven to eight weeks is unique because it falls in between the traditionally recognized beginnings of life, conception and quickening or between conception and viability).
viability, the outlining of fetal structures, or conception as the point at which the state protects fetal life in the criminal context.

4. Abortion Standards.

In the early 1800s, American abortion practices were governed by English common law; abortions, to the extent they were prosecuted at all, were punishable as misdemeanors prior to quickening. The common law rule, therefore, suggested that legal life began at quickening. By 1900, almost every state had a law forbidding abortion at any stage of pregnancy. While exceptions were made when the mother’s health was at risk, determinations as to when an abortion was warranted were left to physicians’ discretion. This transformation suggests that the definition of legal life implicitly began to focus on conception as the moment when life emerges. From 1900 to 1959, there was little public debate about the indications necessary for a legal abortion or the legality of abortions being performed.

Beginning in 1959, there was a movement to legalize the abortions that were being performed under the guise of medical judgment. Colorado was the first state to pass such reform, followed closely by North Carolina and California. In 1967, for example, California passed the Therapeutic Abortion Act, which “permit[ted] termination of pregnancy when there [wa]s substantial risk that its continuation would gravely impair the physical or mental health of the mother, or when the pregnancy ha[d] resulted from rape or incest.” The act explicitly left the determination of whether an abortion should be available to the

84 Kristin Luker, Abortion and the Politics of Motherhood 14 (Univ Cal 1985).
85 Id at 15.
86 Id at 40.
87 Id at 24-27. One of Luker’s main assertions is that physicians were the impetus behind the “right-to-life” movement, and that this movement, while said to be premised on new scientific technology, was actually an attempt to gain respect for the profession while marginalizing non-physician medical practitioners. Luker, Abortion and the Politics of Motherhood at 14-39 (cited in note 84).
88 Id at 40-65 (referring to 1900-1960 as “The Century of Silence”). Doctors during this time were allowing all sorts of abortions on the basis of “medical judgment,” even if a strict construction of the abortion laws would have prohibited the abortions. Id at 68-69.
89 A strict constructionist view of California’s abortion law at the time prohibited abortions performed because of fetal injury, rape, mental harm to the mother, and socioeconomic harms. Id at 68. See also Zad Leavy and Alan F. Charles, California’s New Therapeutic Abortion Act: An Analysis and Guide to Medical and Legal Procedure, 15 UCLA L Rev 1, 2 (1967-68) (citing the LA Daily Journal as reporting that abortion reform bills were introduced into 28 states in 1967).
91 Id at 2.
physician in cases of "extreme medical need and great hardship." 92

When Roe v Wade 93 was decided in 1973, twenty-eight states allowed abortion only if it was necessary to save the life of the mother. 94 Eighteen states allowed abortions to save the life of the mother and under other circumstances. 95 The trend was toward more lenient statutes, meaning that abortions could be performed in the case of rape, incest, fetal abnormality, or a substantial risk to the physical or mental health of the mother. 96 What the wide range of abortion laws meant for the legal definition of life prior to Roe v Wade is not entirely clear. 97 It is

92 Id.
94 Id at 118 n 2 (listing thirty states with laws that, like the Texas law at issue, made it a crime to obtain an abortion unless the abortion was necessary to save the life of the mother).
95 Id at 139-41. The law in the remaining states was unclear. Id. A majority of the states allowing abortions more liberally adopted laws similar to §230.3 of the American Law Institute Model Penal Code. Roe, 410 US 113. Section 230.3 of the American Law Institute Penal Code provided that:

[a] licensed physician is justified in terminating a pregnancy if he believes there is substantial risk that continuance of the pregnancy would gravely impair the physical or mental health of the mother or that the child would be born with grave physical or mental defect, or that the pregnancy resulted from rape, incest, or other felonious intercourse. All illicit intercourse with a girl below the age of 16 shall be deemed felonious for purposes of this subsection. Justifiable abortions shall be performed only in a licensed hospital except in case of emergency when hospital facilities are unavailable....

No abortion shall be performed unless two physicians, one of whom may be the person performing the abortion, shall have certified in writing the circumstances which they believe to justify the abortion. Such certificate shall be submitted before the abortion to the hospital where it is to be performed and, in the case of abortion following felonious intercourse, to the prosecuting attorney or the police. Failure to comply with any of the requirements of this Subsection gives rise to a presumption that the abortion was unjustified.

ALI MPC §§230.3(2) & 230.3(3) (1980).
96 Roe, 410 US at 139-40.
97 The patchwork of abortion laws could be analyzed in at least two ways. One possible view is that all states at the time of Roe v Wade defined legal life as beginning at conception, but some states considered the abortion of fetuses lawful if the mother's life was at risk. Such an allowance could be justified on the basis of criminal defenses, such as self-defense or necessity. For such an argument see Karen L. Bell, Toward a New Analysis of the Abortion Debate, 33 Ariz L Rev 907 (1991). Other states considered the termination of fetuses lawful under a broader range of circumstances. In essence, these states recognized a greater number of justifications for abortion. A second interpretation is that abortion laws recognized birth as the legal definition of life, but wanted to afford some protection to fetuses nonetheless. These laws recognized potential life as something lesser than full human life, yet just as worthy of legal protection. Just as the law protects animals against unlawful killings, the law could be seen in some states prior to Roe as protecting fetuses.
clear, however, that there was a revolution of sorts taking place, both morally and legally.

At the time of *Roe v Wade*, the wrongful death laws were similarly confused, although the courts were beginning to focus on viability as an important moment in fetal development.98 In *Roe v Wade*, the Supreme Court ultimately adopted viability as the "compelling point" in a pregnancy when the state has an "important and legitimate interest in potential life," thereby allowing the state to regulate or proscribe abortion after viability "except when it is necessary to preserve the life or health of the mother."99 While the *Roe* Court explicitly refused to adopt a definition of life,100 it did so implicitly.

In later cases, the Supreme Court pulled back from *Roe*’s trimester approach,101 but maintained that "whether viability occurs at approximately 28 weeks, as was usual at the time of *Roe*, at 23 to 24 weeks, as it sometimes does today, or at some moment even slightly earlier in pregnancy, as it may if fetal respiratory capacity can somehow be enhanced in the future[,]. . . . the attainment of viability may continue to serve as the critical fact . . . ."102 While the Supreme Court refused to explicitly define life in *Roe*, the effect of its decision and later decisions was to implicitly define legal life as beginning at viability as determined by medical judgment, at least for the purpose of abortions.

IV. THE FORCED SYMMETRY APPROACH: A NEW WAY TO DISCUSS LEGAL DEFINITIONS OF LIFE AND DEATH

Current legal definitions of life and death highlight two interesting facts. First, the legal definitions of life are extremely

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98 "The question of allowing an action under state wrongful death statutes to the personal representative of a viable fetus who died in utero as a result of tortuous conduct has left courts sharply divided. In the jurisdictions that have ruled on the question prior to the instant case, fifteen have allowed the action and twelve have denied it." William D. Brejcha, *Torts—The Illinois Wrongful Death Act Held Inapplicable to a Viable Fetus*, 3 Loy U Chi L J 402, 409 (1972).
100 "Texas urges that, apart from the Fourteenth Amendment, life begins at conception and is present throughout pregnancy, and that, therefore, the State has a compelling interest in protecting that life from and after conception. 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." Id at 159.
controversial and varied, while the legal definition of death is much less controversial and fairly consistent. Second, the legal definitions of life and death seem to have developed independently of each other. Each definition has its own unique history, and each definition developed to serve specific purposes. This is particularly true with the definition of life; different definitions of life are used depending upon the particular circumstances.

The forced symmetry approach provides a new framework for exploring the strengths and weaknesses of the differing legal definitions of life. This section explains the forced symmetry approach. In particular, it explores various potential definitions of legal life such as conception, brain birth I, quickening, viability, brain birth II, cardiac birth, and live birth, and their end-of-life corollaries. This section also posits tentative conclusions of the forced symmetry approach.

A. The Forced Symmetry Approach

Dr. John M. Goldenring made the first attempt to create symmetry between the definitions of life and death in a letter to the New England Journal of Medicine in 1982. Dr. Goldenring argued:

[T]here is a logical, medical equivalence between an eight-week-old fetus whose respiratory function is maintained extracorporeally by a placenta and an eighty-year-old with a positive electroencephalogram whose oxygenation is facilitated by a mechanical ventilator. No physician would doubt that the eighty-year-old was a living human being, even if comatose. I contend that the fetus cannot be shown to be anything but a living human being at eight weeks if our definitions are applied consistently.

While the letter was designed to address the medical definition of life, and not the more controversial legal definition of life, the

103 The forced symmetry approach is particularly helpful for anyone who thinks that a particular legal definition should be consistent across all areas of the law. While this Article does not argue that the law should have consistent or symmetrical legal definitions of life and death for all legal claims and purposes, it does argue that the forced symmetry approach provides some useful insights into the current legal definitions of life and death.


105 Id.
letter still challenges current legal thinking about the medical
definitions of life and death.

Three years later, Dr. Goldenring wrote an article in the
*Journal of Medical Ethics* that proposed the “brain-life theory”
for determining when a fetus becomes a human being.\(^\text{106}\)
Goldenring’s article argued that there is a logical medical
definition of life that is attained somewhere between conception
and viability.\(^\text{107}\) He carefully distinguished medical definitions of
what he called “humanness” from ethical decisions about
whether abortions should be allowed, and if allowed, at what
point abortion was ethically acceptable.\(^\text{108}\) After distancing
himself from the abortion debate, Dr. Goldenring relied on logic
to medically define life. His insight was quite simple: logic
dictates that if the absence of something—brain functioning as
evidenced by electroencephalogram—makes a patient dead then
the emergence of that same thing—brain functioning as
evidenced by electroencephalogram—should make the patient
alive.\(^\text{109}\)

Dr. Goldenring’s article was received with both
enthusiasm\(^\text{110}\) and suspicion.\(^\text{111}\) Some bioethicists suggested an
adjustment to Goldenring’s brain birth\(^\text{112}\) analysis because it
failed to recognize that there are two types of brain death, higher
brain death and whole brain death.\(^\text{113}\) Because there are two
types of brain death, some bioethicists argued that there should
be two types of brain birth, brain birth I and brain birth II.\(^\text{114}\)

\(^\text{107}\) Id (emphasis added).
\(^\text{108}\) Id at 200-01.
\(^\text{109}\) Id at 200.
(arguing that brain birth is a good criterion for life from a medical and moral perspective
because it reflects what is valuable about life).
\(^\text{111}\) Green, 66 Soundings at 152 (cited in note 5); D. Gareth Jones, *The Problematic
that the definitions of death are not applicable to life because the processes of
development and degeneration are not interchangeable).
\(^\text{112}\) While later scholars use the term “brain birth,” Dr. Goldenring’s initial article
\(^\text{113}\) Jones, 24 J Med Ethics at 237-42 (cited in note 111). Higher brain death is the loss
of cortical functioning; but the brain stem remains intact and allows the lungs to breathe
and the heart to beat. Higher brain death is often associated with persons in a persistent
vegetative state. Whole brain death is the death of the whole brain, including the brain
stem. People in this state are unable to breathe for themselves and they must be kept on
a ventilator indefinitely or their cardio-pulmonary functioning will cease.
\(^\text{114}\) Id. The bioethicist recognizing this distinction ultimately argued that the
delineation between brain birth I and brain birth II had no ethical significance, even
though it is generally accepted that there is a significant ethical distinction between
Under this proposal, brain birth I is likened to whole brain death, which is defined as the loss of all major brain regions including the brain stem.\textsuperscript{115} Brain birth I occurs when the brain stem begins to function, at approximately six to eight weeks gestation.\textsuperscript{116} Brain birth II is likened to higher brain death, which happens when there is a lack of the cortical functioning associated with self-consciousness. Under this definition, brain birth II occurs at the beginning of consciousness, estimated to begin at twenty-four to thirty-six weeks gestation.\textsuperscript{117}

Other scholars discussing Dr. Goldenring's proposal focus primarily on the medical definition of life and its ethical implications for the abortion debate, organ transplantation, and new reproductive technologies.\textsuperscript{118} But no one has proposed applying a symmetrical approach\textsuperscript{119} to legal definitions of life and death.\textsuperscript{120} This paper explores the implications of the forced symmetry approach in this context. Before doing so, it is important to iterate some of the basic assumptions of the forced symmetry approach.

First, for the reasons discussed in Part II, both life and death should be defined as moments in time, and process-based definitions should not be considered. This means that persons whole brain death and high brain death. Id at 240-41. Jones rejects the ethical significance of the brain birth theory because he feels that the development and degeneration of life are not interchangeable. Id. In particular he argues that (1) in a developmental sequence, brain birth I always precedes brain birth II, but the at the end of life higher brain death does not always precede whole brain death, (2) there is too much scientific ambiguity about what constitutes brain birth I and brain birth II to lend the categories any moral significance, and (3) the potential development in fetuses differs significantly from the memories contained in the brain at the end of life further highlighting the asymmetrical nature of life and death. Jones, 24 J Med Ethics at 240-41 (cited in note 111).

Whether or not one agrees with these criticisms, they do not affect the validity of this paper's assertions. At issue in this paper is not the moral significance of any particular developmental step, but rather the value of approaching debates concerning the legal definition of life from a symmetrical approach.

\textsuperscript{115} Id at 240.
\textsuperscript{116} Id.
\textsuperscript{117} Id.
\textsuperscript{118} See, for example, Kushner, 10 J Med Ethics 5 (cited in note 110).
\textsuperscript{119} Dr. Goldenring does not call his approach the forced symmetry approach. This is a term of art I created to summarize the approach when it is applied systematically to various definitions of life and death.
\textsuperscript{120} Robert Veatch does have an interesting book chapter that discusses whether the definitions of life and death should be consistent in a "moral, legal, and political" sense. Robert M. Veatch, 
Definitions of Life and Death: Should There Be Consistency?, in Margery W. Shaw & A. Edward Doudera, eds, Defining Human Life: Medical, Ethical and Legal Considerations 99, 99-113 (1983). Veatch, however, does not explicitly mention Dr. Goldenring's article, nor does he clearly separate out the legal implications of defining life from the moral or political implications.
employing the forced symmetry approach must start by selecting a single definition of life that lies on a continuum of seemingly reasonable choices.\textsuperscript{121} Second, the forced symmetry approach assumes that uniformity among legal definitions of life and legal definitions of death is preferable to a common law approach for creating legal definitions. The approach is both logical\textsuperscript{122} and alleviates concerns about the inconsistency between abortion laws and homicide laws.\textsuperscript{123} Third, the forced symmetry approach assumes that the legal definitions of life and death should be connected to one another in some meaningful way. In other words, if the loss of $X$—perhaps cardiac functioning—makes a person legally dead, then perhaps the emergence of $X$—cardiac functioning—should make a person legally alive. Fourth, legal definitions of life and legal definitions of death must be mutually exclusive. A person either has cardiac functioning or he does not. Engaging in this exercise highlights the logic, or illogic, of particular arguments being made in the abortion debate.

Of course, the law can create legal definitions that do not comport with this symmetry, and in fact, there may be a persuasive argument that life and death cannot be compared to one another in such a simplistic way.\textsuperscript{124} But the forced symmetry

\textsuperscript{121} The user of the forced symmetry approach could also start by choosing a single definition of death.

\textsuperscript{122} Veatch explains this logic in the following way:

Some feature is a necessary and sufficient condition for an entity to be included in the category of members in full standing in the human community, although it is conceivable that the feature that brings one into the community would not be the same as that which ushers one out. This would be the case, for instance, if there were two or more features, each of which was sufficient for standing but no one of which was necessary, and these features came and departed in a different time sequence. It is hard to imagine, however, that these conditions would ever be met. It seems that the obvious, most straightforward position is the one favoring consistency: if there is some essential feature that gives individuals moral or legal claims comparable to other members of the human community, loss of that feature implies that one no longer relates to the community in the same way. We can safely begin an examination of the definition-of-death debate with a strong presumption in favor of consistency.

Veatch, \textit{Definitions of Life and Death} at 104 (cited in note 120).

\textsuperscript{123} For example, if the law in a particular state punishes pre-viability homicide as murder and yet recognizes the woman's right to abortion, a logical inconsistency is created. In one instance the court is recognizing a pre-viable fetus as alive and worthy of legal protection, yet in the abortion context it is not. This does not necessarily mean that there cannot be good arguments made about the merits of such inconsistencies. In fact, the forced symmetry approach forces the user to see these inconsistencies and either develop good reasons for why they exist or admit that the legal definition is of either limited or no value.

\textsuperscript{124} Jones, 24 J Med Ethics at 237-42 (cited in note 111). But see Veatch, \textit{Definitions of Life and Death} at 104 (cited in note 120) (arguing that there is a "strong presumption of
approach can still be informative. It exposes the weaknesses and strengths of a particular legal definition of life by illuminating the end-of-life implications for the definition. Furthermore, the forced symmetry approach encourages a holistic view of what it means to be alive within the eyes of the law, meaning that a consistent use of the approach may encourage the use of feticide laws as opposed to homicide laws that define fetuses as persons, and ultimately may increase the consistency and transparency of the law. Additionally, the approach may help isolate the disagreements among the pro-life and pro-choice movements, and perhaps lead people to reconsider what life and death really mean, or should mean, in the legal system.

B. Revelations of the Forced Symmetry Approach

This section considers seven possible definitions of legal life and analyzes them under the forced symmetry approach. The arguments are addressed in the same order as fetal development, beginning with conception and ending with live birth.\footnote{The examples given in this section are not meant to be exhaustive. Furthermore cardiac birth is placed toward the end of this section because of its connection to cardiopulmonary functioning even though cardiac functioning begins twenty-one days after conception.}

1. Conception and the last living cell.

Many pro-life advocates suggest conception should be the legal definition of life.\footnote{Luker, *Abortion and the Politics of Motherhood* at 128 (cited in note 84).} Under this view abortion should be prohibited because life begins at fertilization, or when a sperm and an egg combine into a single cell that contains a full set of genetic material.\footnote{Fertilization is defined as "[t]he process beginning with penetration of the secondary oocyte by the spermatozoon and completed by fusion of the male and female pronuclei." *Stedman's Medical Dictionary* 657 (Lippincott Williams & Wilkins 27th ed 2000).} This single cell, the conceptus, is seen as a human being.\footnote{"Essentially [the conception theory] says that a single cell is in fact a human being." Goldenring, 11 J Med Ethics at 200-01 (cited in note 2).} Therefore, the destruction of that single cell, or anything that it might become as it divides into multiple cells, is murder.

There are two slight, but related, variations of the conception theory. One view sees the conceptus, a single-cell containing a unique set of DNA, as a person because it has a
unique and determined genetic code.\textsuperscript{129} Another, more complete view sees the conceptus, a single-cell with a unique set of DNA, as a person because of its potential to develop into a living, breathing human being.

Under the first view, the forced symmetry approach dictates that legal life ends when a person’s last living cell dies. Each cell in a person’s body has a complete set of genes identical, in most instances,\textsuperscript{130} to the genes contained in the conceptus.\textsuperscript{131} Since a person’s cells might survive for hours or even days after cardiac death, this definition of death is impractical.\textsuperscript{132} Accurate scientific tests for determining when a person’s last living cell has died would have to be developed.\textsuperscript{133} Organ donations would have to be from living donors because waiting for a dead donor’s organs would render the organs useless.\textsuperscript{134} Furthermore, defining life and death as turning on the existence of a genetic code alone would hamper basic scientific research.\textsuperscript{135} In fact, no one has proposed such a definition of death.\textsuperscript{136}

The second view of the conception theory becomes more complicated under the forced symmetry approach because it focuses on potentiality, for which there is no corollary at the end of life. Yet new technology, such as cloning, may one day transform a single cell into a person, theoretically erasing the

\textsuperscript{129} “It is widely held that the critical feature that gives a fetus standing is the development of a fixed genetic code.” Veatch, \textit{Definitions of Life and Death} at 104-05 (cited at note 120). This view of conception may have been widely held in 1983 when Veatch was writing, but the real possibility of cloning technology seems to have shifted the focus of pro-life arguments to potentiality.

\textsuperscript{130} There have been examples of naturally occurring chimeras whose cells may or may not contain the original set of DNA.

\textsuperscript{131} Goldenring, 11 J Med Ethics at 201 (cited in note 2).

\textsuperscript{132} See note 7 and accompanying text.

\textsuperscript{133} One might alleviate these practical problems by defining death as the moment when putrefaction occurs. Putrefaction is “[d]ecomposition or rotting” and is “characterized usually by the presence of toxic or malodorous products.” \textit{Stedman’s Medical Dictionary} at 1488 (cited in note 127). Putrefaction, though, may present its own problems. First, there may still be living cells in the body when putrefaction occurs. Second, while putrefaction was used as the standard of death in the seventeenth century to ward off worries about premature burial, it would be viewed as distasteful today. Martin S. Pernick, \textit{Back From the Grave: Recurring Controversies Over Defining and Diagnosing Death in History}, in Richard M. Zaner, ed, \textit{Death: Beyond Whole-Brain Criteria} 17, 20-21 (Kluwer 1988).

\textsuperscript{134} By the time a person’s last cell died, the person’s organs would be rotting.

\textsuperscript{135} For example, it is difficult to argue that the existence of a human genetic code alone makes cells in a Petri dish legally alive human beings. To do so would require the conclusion that we kill human beings thousands of times each day in basic laboratory experiments.

\textsuperscript{136} See Veatch, \textit{Definitions of Life and Death} at 105 (cited at note 120) (“It is obvious that many people are pronounced dead (by any definition of death) when their genetic patterns are sill intact.”).
power of the potentiality argument. Scientists have theorized that cloning techniques, primarily the ability to prompt a person's cell, perhaps even a differentiated skin cell, to divide in the same way a fertilized egg divides, might someday mean that all cells could be potential human beings.

Assuming that technology makes it possible to create a live human being from a single skin cell, defining conception (or the creation of a single cell with the potential to become a newborn) as the beginning of life could have interesting consequences for the definition of death. The forced symmetry approach would demand that death be defined as the demise of a person's final cell that has the potential to become a human. Defining death in this way raises the same practical problems discussed above: the difficulty of developing accurate scientific tests to find a person's last living cell, the need to use live organ donors, and the inability to do significant amounts of research. As a result, conception does not seem like a viable definition of life without some additional reasons for departing from the results of the forced symmetry approach.


The beginning of electrical activity in the brain, which signals the functioning of the brain stem, was proposed as the appropriate medical definition of life by Dr. Goldenring.

Approximately eight weeks after conception, the brain stem
begins to function and electrical activity in the fetus's brain will show up on an electroencephalogram.\textsuperscript{142} This stage in development has been called brain birth I and has been compared to whole brain death at the end of life using the symmetry proposed by Dr. Goldenring.\textsuperscript{143}

Currently, whole brain death is the standard legal definition of death in the United States. As discussed above, this legal definition of death, while controversial at its inception,\textsuperscript{144} is relatively uncontroversial today.\textsuperscript{145} Many scholars, however, have debated the moral significance of whole brain death, particularly in comparison to higher brain death.\textsuperscript{146} But few articles have discussed what a whole brain death standard would mean for the beginning of life within a rubric like the forced symmetry approach.\textsuperscript{147}

From the viewpoint of someone who favors symmetrical legal definitions of life and death, using brain birth I as the legal definition of life seems like a reasonable option. While at least one researcher has reported finding brain activity as early as seven weeks into pregnancy,\textsuperscript{148} most researchers agree that the first electroencephalogram ("EEG") activity usually occurs in the brainstem approximately ten weeks after conception.\textsuperscript{149} Determining fetal electroencephalogram ("FEEG") activity seems

\textsuperscript{142} Id at 199-200.

\textsuperscript{143} Jones, 24 J Med Ethics at 237-42 (cited in note 111).

\textsuperscript{144} Capron and Kass, 121 U Pa L Rev at 87 (cited in note 19) (noting some of the controversy and proposing that there be a statutory definition of death).

\textsuperscript{145} This does not mean that the concept of brain death is not debated in academic circles, but rather that there is limited public debate on the topic and there have been, to my knowledge, no serious attempts to redefine death legally. See, for example, Winston Chiong, \textit{Brain Death without Definitions}, 35 Hastings Ctr Rpt 20 (2005) (suggesting that the brain death criteria are, and should be, controversial).

\textsuperscript{146} See, for example, Robert Veatch, \textit{The Death of Whole-Brain Death: The Plague of the Disaggregators, Somaticists, and Mentalists}, 30 J Med & Phil 353 (2005) (arguing "for equating death with the irreversible loss of . . . integration of bodily and mental function"); David Randall Smith, \textit{Legal Recognition of Neocortical Death}, 71 Cornell L Rev 850 (1986) (arguing that "neocortical death should be considered the death of the person for legal purposes").

\textsuperscript{147} See, for example, Jones, 24 J Med Ethics at 237-42 (cited in note 111) (arguing that a brain birth theory of life is problematic, partially because the concept of brain birth is elusive). Jones' assertion that brain birth is difficult to define can be overcome if one focuses on the very beginning of electrical activity in the brain, no matter how slight or infrequent.


relatively simple, and it has been done in many studies.\textsuperscript{150} The test is relatively inexpensive.\textsuperscript{151} If brain birth I were chosen as the legal definition of life, it would not follow that tests would be done frequently. Not every fetus would be tested for EEG activity. Most pregnancies would proceed as they do now and only in rare circumstances would an FEEG be necessary. The same can be said of testing for brain death. Of the approximately 2.4 million people who die in the United States each year, fewer than one percent are declared brain dead.\textsuperscript{152} Brain birth I, therefore, seems like it might be a relatively cost-effective definition of life.

Adopting brain birth I as the legal definition of life, however, may have some unwanted consequences.\textsuperscript{153} If brain birth I becomes the legal definition of life in all contexts, including abortion, homicide, and wrongful death, then ending a fetus's life after ten weeks of gestation would constitute homicide. This would not necessarily mean that all abortions performed after the tenth week of gestation would be prohibited. Instead, it would mean that abortions performed after ten weeks would have to be justified. The justification could take many forms. If the life of the mother were at risk, then an abortion would probably be legally justifiable on constitutional grounds or based on an argument of self-defense, necessity, or duress.\textsuperscript{154} A brain

\textsuperscript{150} See, for example, C. Weller, et al, \textit{Fetal Electroencephalography Using a New, Flexible Electrode}, 88 British J Obstetrics & Gynecology 983 (Oct. 1981). It is not clear from the literature whether this is a routine clinical practice.

\textsuperscript{151} While it was difficult to find the costs of a FEEG, the average cost for an EEG for a Medicare outpatient in 2004 was $344 and the average Medicare payment was $312. American Hospital Directory, \textit{Summary of Outpatient Medicare Claims} (2006), available at <http://www.ahd.com/sample_outpatient.html> (last visited Sept 18, 2006).

\textsuperscript{152} In 2003 and 2004 approximately 2.4 million people died in the United States. \textit{Births, Marriages, Divorces and Deaths: Provisional Data for 2004}, Nat'l Vital Statistics Rpt, Vol 53, No 21, 1 (June 28, 2005), available at <http://www.cdc.gov/nchs/data/nvsr/nvsr53/nvsr53_21.pdf> (last visited Sept 18, 2006). While the number of people tested each year for brain death is difficult to calculate, one organ donation organization estimates that 15,000 to 20,000 people are declared brain dead each year. The Donate Life Coalition on Donation and the Musculoskeletal Transplant Foundation, \textit{The Gift of a Lifetime: Understanding Death Before Donation}, available at <http://www.organtransplants.org/understanding/death/> (last visited April 23, 2006). Even if five times as many people are tested for brain death as are ultimately diagnosed as brain dead (a number that seems high), no more than approximately four percent of people who die each year are tested for brain death.

\textsuperscript{153} Dr. Goldenring suggests that a brain birth definition of life would have many implications for abortion, in vitro fertilization (IVF), fetal research, the treatment of rape victims, and the disposal of fetal remains. Goldenring, 11 J Med Ethics at 198 (cited in note 2). Dr. Goldenring, however, generally referenced "brain life" and did not distinguish between brain birth I and brain birth II.

\textsuperscript{154} See Bell, 33 Ariz L Rev at 907 (cited in note 97) (arguing that necessity, self-
birth I definition of life would also severely restrict the ability of women to obtain abortions without a legal justification. Many women may not be able to determine that they are pregnant, seek counseling, make a decision about the pregnancy, and comply with any state restrictions on obtaining an abortion within ten weeks of conception.  

If these potential difficulties with a brain birth I definition of life seem unacceptable, then perhaps society should look more carefully at the current and relatively uncontroversial definition of death, whole brain death. For 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 should be the legal definition of life.

3. Quickening and paralysis.

At common law, quickening was considered an important legal and moral point in a pregnancy because it was the first sign of life. But quickening, as a legal definition of life, was not without its problems. The quickening standard as originally used in the law relied on the mother’s determination that the baby had moved. The time of quickening varies widely from pregnancy to pregnancy and it often takes first-time mothers longer to feel the fetus moving. Therefore, the quickening standard presented potential evidentiary problems. For example, a mother being investigated for manslaughter as a result of an abortion would have an incentive to lie about whether she had...
felt the fetus move. Even if the mothers were always truthful, there would be a bias against experienced mothers because they would be more likely to feel fetal movement earlier in their pregnancies.

Georgia is the only state that appears to maintain a quickening standard in any context, and it has legally redefined quickening so that the mother need not actually feel fetal movement. Instead courts have held that the fetus must only be capable of limb movement to be considered quick. Therefore, quickening, as an implicit legal definition of life, currently focuses only on fetal limb movement.

This conclusion suggests that if quickening is adopted as the legal definition of life in any jurisdiction, then perhaps paralysis of a person's limbs should be adopted as that jurisdiction's legal definition of death. But paralysis is an unacceptable definition of death for moral reasons. There is no reason to think that a person's ability to move is what makes a person worthy of moral and legal status. People who are paralyzed contribute in enormous ways to society and have traditionally been granted the same legal rights as people with fully functioning limbs. No one should be declared legally dead solely because they are paralyzed.

Paralysis, if defined as death, could also create some practical problems. For example, temporary states of paralysis exist. They may be caused by a transient ischemic attack, a degenerative disease such as multiple sclerosis or Lou Gehrig's disease, or induced purposefully for medical reasons. Yet people

159 Shirley v Bacon, 267 SE2d 809, 811 (Ga App 1980) (redefining quickening in the wrongful death context, the only context in which Georgia or any other state applies the quickening standard).


161 To have total paralysis of a person's limbs that would prevent the type of slight movement the court discusses in Citron v Ghaffari, 542 SE2d 555 (Ga Ct App 2000), a person would probably have to be quadriplegic. Quadriplegia is defined as "paralysis of all four limbs." Stedman's Medical Dictionary at 1496 (cited in note 127).

162 Theoretically, quickening could be legally defined in many ways. It could be defined in the traditional medical sense as occurring when the mother feels fetal movement. It could be defined as the time when the fetus is capable of moving its limbs, as the Georgia courts suggest. It could be defined as any fetal movement detectable by any equipment, such that detection of a fetal heartbeat at eight weeks could constitute movement. The law could even define quickening as the movement of the fetus's cells. This section, however, focuses on the current legal definition of quickening for the purposes of analyzing quickening under the forced symmetry approach.

163 Examples of enormously successful and influential people suffering from limb paralysis include Stephen Hawking and Christopher Reeve.
often recover from these temporary paralyses, and no one would
venture to declare them dead during this period. To do so could
create potentially complicated legal problems, particularly if life
insurance policies had been paid or assets from the estate
distributed during a period of temporary paralysis.

If one adopts quickening, the beginning of fetal limb
movement, as an appropriate definition of life under the forced
symmetry approach, then the absence of movement, paralysis,
should be of the definition of death. This conclusion of the forced
symmetry approach shows that defining life as fetal movement,
or quickening, is inappropriate because defining paralysis as
death is socially and morally unacceptable.

4. Viability and low probability of survival.

A fetus is viable when it is able to live independently of its
mother. The earliest legal test of viability was used in the
homicide context, and it focused on the fetus’s ability to establish
independent circulation and to breathe on its own. More recent
cases have defined viability as occurring when:

in the judgment of the attending physician . . . there is a
reasonable likelihood of the fetus’ sustained survival
outside of the womb, with or without artificial support.
Because this point may differ with each pregnancy,
neither the legislature nor the courts may proclaim one of
the elements entering into the ascertainment of
viability—be it weeks of gestation or fetal weight or any
other single factor . . . .

164 The medical definition of viability is the “[c]apability of living; the state of being
viable; usually connotes a fetus that has reached 500 g in weight and 20 gestational
weeks.” Stedman’s Medical Dictionary at 1960 (cited in note 127). The medical definition
of viable is “[c]apable of living; denoting a fetus sufficiently developed to live outside
of the uterus.” Id.

165 See, for example, Singleton v State, 35 S2d 375, 378 (Ala Ct App 1948) (citing a
variety of cases that use either the establishment of independent circulation, breathing,
or both as the test of viability). But see West v McCoy, 105 SE2d 88, 90-91 (SC 1958)
(“[T]he expression ‘viable fetus’ means the child has reached a stage of development
where it can live outside the female body as well as within it. A fetus generally becomes a
viable child between the sixth and seventh month of its existence.”) (citations omitted).

166 Colautti v Franklin, 439 US 379, 388-89 (1979). See also Planned Parenthood of
Southeastern Pennsylvania v Casey, 505 US 833, 860 (1992) (reaffirming that viability is
the point at which the state has an important and legitimate interest in protecting
prenatal life, but refusing to determine whether viability takes place prior to twenty-two
weeks, twenty-three to twenty-four weeks, twenty-eight weeks, or some other time).
While courts generally leave medical determinations of viability to individual physicians, most babies born prior to the twentieth week of gestation are not considered legally viable.

Analyzing viability under the forced symmetry approach means that the legal definition of death should be based on probabilities of survival. If “a reasonable likelihood of the fetus’ sustained survival outside of the womb, with or without artificial support” constitutes the legal definition of life, then the forced symmetry approach suggests that a person’s unreasonable likelihood of sustained survival, with or without artificial support, should be the legal definition of death. But such a definition might mean that a person diagnosed as having less than a five percent chance of survival should be declared dead. This might be a rational way to allocate scarce resources, but most Americans would not find it to be a legally or morally acceptable definition of death.

Legally, it would be difficult to determine both the appropriate probability of survival and the time-frame for sustainable survival. Even if these hurdles were overcome, there is likely to be great variance among physician opinions on what a particular patient’s chances of survival are. A legal definition of death based on probabilities is also likely to lead to uncertainty. Imagine that a man enters the emergency room and doctors determine that he has a less than five percent chance of survival during the next forty-eight hours. In accordance with the law, they declare him dead. What if that person defies the odds and actually survives? If someone could be declared dead, and then

167 Id.

168 See Planned Parenthood of Southeastern Pennsylvania v Casey, 505 US 833, 860 (1992) (recognizing that in 1992 viability generally takes place at twenty-three to twenty-four weeks, but ultimately leaving the viability determination up to physicians); Webster v Reproductive Health Services, 492 US 490 (1989) (upholding a Missouri viability-testing provision as constitutional where it created a presumption that fetuses are viable at 20 weeks).

169 Of course what counts as an “unreasonable likelihood of survival” would be open to debate. But see, Jacinto A. Hernández, et al, Comment, Impact of Infants Born at the Threshold of Viability on the Neonatal Mortality Rate in Colorado, 20 J Perinatology 276 (2000) (finding that infants at less than twenty-four weeks gestation and weighing less than 500 grams die 94.7 percent of the time). In most hospitals infants delivered at twenty-two weeks or less are generally only provided comfort care. Giovanna Verlato, et al, Guideline for Resuscitation in the Delivery Room of Extremely Preterm Infants, 19 J Child Neuro 31-34 (Jan 2004) (recommending only comfort care for infants delivered at twenty-two weeks gestation).

170 Expensive medical resources could be allocated to those most likely to benefit from their receipt instead of patients who have an “unreasonable likelihood of sustained survival.” The money saved could provide increased access to health care.

171 This might require us to imagine a physician that proceeds with aggressive
declared alive, and then declared dead again, society's faith in the appropriateness of the definitions would falter and eventually lead to public outcries for change. It is unlikely that society would be comfortable declaring someone dead if he or she has any chance of survival.

There is also no reason to think that insurance companies would continue to pay for the treatment of someone who is legally dead. But while legally dead, many people with less than a five percent chance of survival would likely have a desire to continue living. While doctors do refuse to treat patients in rare circumstances, a legal rule defining death in terms of probability of survival might result in the routine provision of comfort care only after a person is declared legally dead.

Perhaps these concerns also make viability as a definition of life undesirable. One way courts have dealt with some of these concerns is to leave the determination of viability to qualified physicians. But such a rule necessarily means that within a certain range of cases, some fetuses will be declared nonviable while other fetuses of the same weight and gestational age might be declared viable. Furthermore, defining life or death on the basis of probabilities for survival seems morally troubling. If there is "something" that makes a person alive, or dead, it is hard to think of that very special thing as a probability. The forced symmetry approach, therefore, suggests that viability may not be as good a measure for defining life as many think.


While whole brain death is the "irreversible cessation of all functions of the entire brain, including the brain stem," neocortical death (higher brain death) is the "irreversible loss of

\[^{172}\text{This has happened recently. See Barry Saunders, Death Can't Be Uncertain, newsobserver.com (Jan 28, 2005), available at <http://www.newsobserver.com/195/story/204803.html> (last visited June 28, 2006) (discussing the story of a man who was incorrectly pronounced dead and proclaiming that "Someone deserves punishment for such obvious dereliction of duty. Far more important than punishment, though, is the need for systemic changes to reduce the likelihood of this happening again."). Even if events such as this are exceedingly rare, public outcries are to be expected. No one wants to be the outlier that is declared dead and refused medical treatment when there is any possibility, no matter how remote, that they are alive.}\]

\[^{173}\text{Verlato, Guideline for Resuscitation at 31-34 (cited in 169). (recommending only comfort care for infants delivered at twenty-two weeks gestation).}\]

\[^{174}\text{See, for example, Planned Parenthood of Southeastern Pennsylvania v Casey, 505 US 833, 860 (1992) (ultimately leaving the determination of viability to physicians).}\]
consciousness and cognitive functions." Neocortical death occurs when a person’s brain is irreversibly damaged so that he or she lacks self-awareness and is unable to understand or interact with his or her environment. A person who has undergone neocortical death can have “periods of sleep alternating with periods of an awake-like state, in which his or her eyes are open and may move about, and the patient may breathe, yawn, and open his or her mouth, but not interact meaningfully with others”; no patient in such a state for more than a full year has ever recovered. Persons who are neocortically dead, such as Terri Schiavo, may be said to be in a persistent vegetative state. Given the permanent loss of a person’s personality, self-awareness, and ability to interact, several scholars have advocated for a neocortical legal definition of death. These advocates often argue that neocortical death is an appropriate legal definition of death because neocortical functioning allows consciousness and cognition, the fundamental qualities that make someone both human and morally significant.

Neocortical birth, what I call brain birth II, has rarely been proposed as a definition of life. But the few scholars that have explored a brain birth definition of life have advocated for its adoption for similar reasons: it is the point at which consciousness and cognition become possible. Adopting brain birth II and neocortical death as the legal definitions of life and

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175 Smith, 71 Cornell L Rev at 850-51 (cited in note 146).
176 Id at 851 n 6 (defining “neocortical death” as “a clinical condition in which the critical elements of the central nervous system have been destroyed, leaving the patient in an irreversible unconscious condition”).
177 Id.
178 Id.
179 Smith, 71 Cornell L Rev at 851 n 6 (cited in note 146).
180 See, for example, id at 852 (arguing that neocortical death should be the legal definition of death for all purposes but that “the deceased (by prior written directive) or the family of the deceased should have the option of maintaining biological existence, subject to the financial ability of the estate or family to shoulder the costs of biological maintenance”).
181 See, for example, id at 860 (arguing that if neocortical functions are the “key to human life,” then their loss should be the “key to human death”); Bonnie Steinbock, *Life Before Birth* 85 (Oxford 1992) (recognizing that proposals for life and death definitions based on neocortical functioning are premised on the “idea that it is intelligence that sets humans apart from all other creatures, and it is neocortical activity that endows human beings with higher intellectual functions”).
182 The term “brain birth II” is borrowed from Jones, 24 J Med Ethics at 237 (cited in note 111).
death may be appropriate for practical reasons as well. Determining neocortical birth and neocortical death, in the cases where a scientific determination is necessary, would be relatively inexpensive. Furthermore, because brain birth II occurs late in fetal development, persons seeking an abortion would have plenty of time to determine that they were pregnant.

On the other hand, determining brain birth II may not be so easy or certain. Brain birth II is signaled by the emergence of cortical activity. But the emergence of cortical activity, much like other life processes, is a process itself. Between twenty-two and twenty-five weeks of gestation, EEG activity, seen as bursts of activity for up to twenty seconds followed by periods of no activity for as long as eight minutes, can be recorded. This means that at twenty-four weeks gestation the periods of EEG activity only occupy approximately two percent of the EEG recording time (if EEG activity is being continuously recorded). The periods of inactivity decrease in length and frequency until approximately week twenty-nine to thirty-five, at which time EEG activity occupies approximately eighty percent of the recording time. Most researchers thus place conscious activity as occurring some time between the twenty-ninth and thirty-fifth week. While the emergence of cortical activity, and hence consciousness, is a process, there is no reason to think that there would be a need to test every fetus. Furthermore, where there is a need, perhaps in the context of abortions after the twenty-ninth week, testing could be provided.

A potential problem with a neocortical brain death standard, and hence a brain birth II definition of life, is that society is most likely unwilling to call someone who is breathing on his or her own dead, even if that person will never again be able to interact meaningfully with his or her environment. And certainly it is hard to imagine burying a breathing body or taking essential organs from a breathing body. To combat these concerns, the
law could define persons who are neocortically dead as legally dead, allowing their estates to be opened and their assets distributed, but create legal rules requiring the withdrawal of water and nutrition or allowing the person to receive support as long as the estate or family is capable of paying the bill. Alternatively, the law could declare such persons dead, but impose obligations on living persons to treat the dead in a certain way. For example, the law might recognize a PVS patient as dead and obligate physicians to provide continued medical treatment in the form of water and food. Given that no state has yet adopted a legal definition of life or death based on neocortical functioning, it is unlikely that the adoption of such a standard is forthcoming, at least in the near future. Nonetheless, legal definitions of life and death based on neocortical functioning are among some of the best solutions under the forced symmetry approach.

6. Cardiac birth and cardiac death.

For most of the twentieth century death in America was defined almost exclusively as cardio-pulmonary death, the cessation of both breathing and a heartbeat. Cardiac death, while not often independently defined in the law or in medicine, is for purposes of this paper simply the loss of a heartbeat. While modern physicians often do not separate pulmonary function from cardiac function when determining death, some early physicians believed that the heart alone held the key to life. Furthermore, it is physiologically possible to have cardiac

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191 The latter of these two legal rules is suggested in Smith, 71 Cornell L Rev at 852 (cited in note 146).

192 This happens all the time under our current legal definitions of death. See Kirsten Rabe Smolensky, Rights of the Dead (work in progress on file with the author).

193 “Cardiac death” as used in this paper denotes only the cessation of a heartbeat and not a myocardial infarction, where a portion of the heart’s wall dies as a result of a sudden insufficiency of blood to the heart’s tissue. For a more detailed definition of myocardial infarction see Stedman’s Medical Dictionary at 894-95 (cited in note 127).

194 Generally death is defined as the “cessation of life . . . manifested by the loss of heartbeat, by the absence of spontaneous breathing, and by cerebral [death].” Id at 460. Such a definition encompasses cardiopulmonary death and brain death. Likewise cardiopulmonary death encompasses what I call cardiac death and pulmonary death because the cessation of breath and the cessation of the heartbeat can happen independently of one another. Therefore, the legal definition of death could be cardiac death independent of pulmonary death or vice versa.

195 “Classical Greek physicians believed that death could begin in the lungs, brain or heart, but that the heart alone served as the seat of life; the first organ to live and the
functioning without pulmonary functioning and vice versa. While the cessation of a heartbeat and cessation of breathing often occur within moments of each other, it is not impossible to contemplate a legal definition of death that focuses on cardiac functioning without pulmonary functioning.\textsuperscript{196}

The specifics of defining cardiac death, however, greatly impact its usefulness as a legal definition. For example, a person's heart might stop beating, but it might not make sense to consider that person legally dead if his heart is restarted momentarily via an electrical shock. Additionally, a person undergoing heart surgery might be placed on a heart-lung bypass machine during which time his heart would not beat, yet the patient would not be considered dead. If the surgery is successful, the heart is successfully restarted.\textsuperscript{197} In both surgery and non-surgery situations where a heart stops beating, there is a possibility that the patient will regain a heartbeat. During these minutes, or hours, however, future heartbeats are not certain.

Legal determinations of death should not be declared during moments of uncertainty; legal determinations of death must be final. Furthermore, the legal significance of death and various administrative considerations make it impractical to declare someone dead one minute and alive the next, only to declare them dead again several minutes, days, or years later. But a determination of cardiac death does not have to be impractical. Perhaps only a more accurate legal definition of cardiac death is required. For example, cardiac death could be defined as "the permanent cessation of a heartbeat as determined by accepted medical standards." Such a definition leaves the determination of death to medical professionals, allowing them to decide whether a person is dead after ten or twenty minutes of attempted resuscitation or whether the person is dead immediately after

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\textsuperscript{196} In the clinical setting, cardiac death and pulmonary death may happen so close to one another in time that there is little practical difference. But separating the two definitions when using the forced symmetry approach is important because cardiac birth and pulmonary birth happen at different times at the beginning of life.

\textsuperscript{197} One-year survival rates from heart transplantation surgery are currently eighty-eight percent. This means that not only was the heart successfully started after surgery, but the patient also survived at least one year. Frances M. Hoffman, \textit{Outcomes and Complications After Heart Transplantation: A Review}, 20 J Cardiovascular Nursing S31, S31 (Sept/Oct Supp 2005).
the heart stops beating (as may be the case if the patient has a DNR order).

The converse of cardiac death, cardiac birth, would therefore occur when a fetus's heart started to beat. A fetus's heart begins to beat twenty-two days after conception, signaling the beginning cardiac life. Arguably cardiac life does not truly exist when cardiac functioning and circulation are being maintained by the fetus's mother, but something similar is true of an adult sustained by a heart-lung bypass machine.

Using cardiac life and death as the legal definitions of life and death may be a particularly good option for those who believe that the heart is the key to life. It is also attractive for those wishing to make determinations of death cost effective, but it most likely serves as a poor legal definition of life for several practical reasons. It would be virtually impossible for a pregnant woman to know that she was pregnant and then successfully seek an abortion within twenty-two days of conception. While some pregnancy tests can detect a pregnancy as soon as six days after ovulation, most pregnancy tests cannot detect a pregnancy until at least two weeks after ovulation, or the first day of a missed period. Since it can take up to three days after ovulation to conceive, this means that some women may not know they are pregnant until at least eleven days after conception. Some studies have suggested that most home pregnancy tests are not accurate until several days or perhaps even weeks after a missed period. Therefore, a woman may not be able to determine if she is pregnant until twenty-two or twenty-three days after conception even if she is intently looking for a pregnancy.

From a theoretical viewpoint, there is no particular reason to think that cardiac functioning necessarily defines life. While cardiac functioning may be an important factor in determining

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199 The relatively low-tech nature of determining cardiac death, via the use of a stereoscope by a trained and legally authorized medical practitioner, makes it exceptionally cost effective.
200 A fetus's heart begins to beat on the twenty-second day after conception. Larsen, *Human Embryology* at 166 (cited in note 198).
202 Laurence A. Cole, et al, *Accuracy of Home Pregnancy Tests at the Time of Missed Menses*, 190 Am J Obstetrics & Gynecology 100 (Jan 2004) (finding that only sixteen percent of home pregnancy tests were able to detect a pregnancy on the first day of a missed period).
life or death, it seems difficult to argue that it is solely the absence or emergence of a heartbeat that makes us alive.

7. Live birth and the cessation of breathing.

The born alive rule has been used for several different causes of action throughout America’s legal history. For example, early tort law held that no claim could be made for prenatal injury to a fetus unless that fetus was subsequently born alive. Under early criminal law, a person could not be convicted for killing a child in utero unless the child was born alive. Generally, a live birth was proved if the child attained circulation and respiration independent from its mother.

If independence from one’s mother as evidenced by breathing establishes legal life, then under the forced symmetry approach the cessation of independent breathing should be the legal definition of death. Under both definitions the independent ability to breathe means the ability of an individual to breathe absent any biological or mechanical [206]

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203 See notes 54, 72 and accompanying text.
204 Approximately ten states still follow the born alive rule for wrongful death claims. See Bolin v Wingert, 764 NE2d 201, 205 (Ind 2002).
205 See generally, Shah, 29 Hofstra L Rev at 936-38 (cited in note 50). See also Canfield v State, 56 Ind 168, 170 (Ind 1877) (citing John Wilder May, 3 Greenleaf on Evidence §136 (Little, Brown 13th ed 1876)) (“To support an indictment for infanticide, at common law, it must be clearly proved that the child was wholly born, and was born alive, having an independent circulation, and existence.”).
206 State v Winthrop, 43 Iowa 519 (1876). See, for example, State v Bogge, 161 NW 1022, 1023 (ND 1917) (affirming defendants’ conviction for manslaughter where there was medical testimony that the child’s “lungs were filled with air; that they possessed the color of the lungs of a child rather than a foetus; that the pulmonary arteries were enlarged; [and] that foetal circulation had ceased and natural circulation commenced”); Goff v Anderson, 15 SW 866, 866 (Ky App 1891) (holding that a child was born alive where it made an effort to breathe even if was not able to achieve a full inspiration). See also Stanley B. Atkinson, Life, Birth, and Live-Birth, 20 L Q Rev 134, 142-47 (1904) (noting that live birth was legally defined as the occurrence of a vital act as determined by a medical man and did not necessarily require that the child had breathed, but ultimately conceding that in the medical world “breathing is taken as the rough test of live-birth” and that a legal finding of live birth is “usually . . . supported by signs of inspiration”). But see Paul H. Winfield, The Unborn Child, 8 Cambridge L J 76, 78-79 (1942-44) (arguing that a child was not born alive until it established circulation independent of its mother’s and that whether the child had breathed was irrelevant).
207 Other evidence of independence or vitality, such as the complete expulsion of the fetus from the mother’s body, movement, and the establishment of independent circulation, were also relied upon, but where there were no witnesses to the birth other than the mother, the court often had to rely on circumstantial evidence and the finding of a live birth was “usually . . . supported by signs of inspiration.” Atkinson, 20 L Q Rev at 146-47 (cited in note 206).
208 Fetal breathing activity can be recorded by measuring fetal nasal fluid flow velocity. Samvel S. Badalian, et al, Fetal Breathing Characteristics and Postnatal
support. While the inability to breathe independently was historically a sign of imminent death, twentieth-century advances in technology, such as the iron lung and its predecessors, have allowed people to breathe when they otherwise might have died. The ability to breathe independently, therefore, is not as vital as it once was to modern definitions of life and death.

A definition of death focused on the unsupported breathing of air also creates some of the same practical problems created by a cardiac death definition of death. For example, if someone requires temporary mechanical assistance with breathing, it would be legally problematic to declare that person dead only to declare him or her alive again after removal of a ventilator. But even if the legal definition of death were changed to focus on the permanent inability to breathe independently, it would be morally unacceptable. Many people live daily with the assistance of breathing devices such as mechanical ventilators, and most people would find it morally reprehensible to declare these people legally dead. While it is true that inability to breathe will eventually lead to the cessation of cardio-pulmonary functioning and brain activity, and hence death under a myriad of possible legal definitions, it does not seem readily apparent that a legal definition of life in today's technological world need turn on one's ability to breathe independently. It seems, therefore, that a legal definition of life or death that relies on one's ability to breathe without biological or mechanical support is outdated and impractical. The born alive rule, therefore, may need to be revisited as an implicit legal definition of life.

Outcomes in Cases of Congenital Diaphragmatic Hernia, 171 Am J Obstetrics and Gynecology 970 (1994). Such activity is supported biologically by the mother and is distinct from the inspiration of air.

People with neuromuscular or musculoskeletal diseases, such as Lou Gehrig's disease, muscular dystrophy, spinal muscular atrophy, and scoliosis, and people who have sustained a high spinal cord injury, are often ventilator dependent because they are unable to breath continuously on their own. Some individuals may be able to breathe on their own during the day and need mechanical ventilation at night, while other patients require twenty-four-hour support. For more detailed information about ventilator dependence, see National Ventilator Users Network, Information About Ventilator Assisted Living (revised ed 2005), available at <http://www.post-polio.org/ivun/about_val_1.html> (last visited Sept 18, 2006).

People who are ventilator-dependent can live full, rewarding lives. Christopher Reeve was probably the best-known ventilator-dependent person in the United States. During the nine years that he was ventilator-dependent, he made numerous public appearances and became very politically involved. Many of his public appearances and political activities are recorded at www.chrisreevehomepage.com.
CONCLUSION

Using the forced symmetry approach to explore possible legal definitions of life and death provides useful and interesting insights into both the abortion debate and the academic debates about when legal life should begin or end. While this Article does not advocate a particular definition of life or death, for it is only meant to provide an introduction to the forced symmetry approach, some basic conclusions can be reached.

The forced symmetry approach suggests that conception, quickening, and viability may not be good legal definitions of life. Conception may not be a good definition of legal life because its end-of-life corollary is the death of a person’s last living cell, and it is difficult to think of a legal person solely as a single cell with a fixed genetic code that has the potential to develop into a human being. This conclusion gathers more support, of course, if cloning technology becomes available because cloning technology is likely to diminish the strength of the potentiality argument. Quickening has been an accepted legal definition of life in some areas of the law for a long time, but using paralysis, its end-of-life corollary, as the legal definition of death is morally unacceptable. Drawing this parallel, therefore, eliminates quickening as a reasonable option for the definition of legal life. Defining life as viability under the forced symmetry approach necessitates defining death in terms of probabilities of survival. Under a probability of survival definition of death, one might imagine that a person becomes legally dead when, for example, he has less than a five percent chance of survival over the following six-month period. As no one wants to be declared

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211 The hope is that other scholars will engage in a discussion about the usefulness of the forced symmetry approach and its potential conclusions.

212 In response to this conclusion, one could make an argument that technological tinkering with life (or potential life) should change the rules of the forced symmetry approach. Persons making this argument would also have to address how technology affects the definitions of cardiac life and death, brain birth, brain death, and many other possible definitions of life and death.

213 I chose a six-month time frame because the standard for referring patients to hospice is one hundred percent expected mortality within six months. See, for example, Center for Medicare & Medicaid Services, Medicare Benefit Policy Manual, Ch. 9: Coverage of Hospice Care Under Hospital Insurance, §10 (Rev 28 Dec 3, 2004) (stating that Medicare will cover the cost of hospice services if the patient is covered under Part A of Medicare and terminally ill, where an “individual is considered terminally ill if the medical prognosis is that the individual’s life expectancy is six months or less if the illness runs its normal course”). Of course other time periods or percentages could be chosen under a probability of survival rubric. This is only meant to serve as an example.
dead simply because his or her chances of survival are low, such a definition of death is extremely unlikely to be socially acceptable. This calls into doubt the use of viability, also a definition based on the chances of survival, as an appropriate definition of legal life.

The forced symmetry approach also suggests that brain-based definitions of life or death, while not completely unproblematic, may be preferable to other options. A brain birth I definition of life, with recognition of life at ten weeks gestation, suggests that perhaps a whole brain death legal definition of death should be more controversial than it currently is. But given the relatively uncontroversial nature of a whole brain death definition of legal death, it is not unreasonable to think that brain birth I may serve as a good definition of life. Another approach, particularly for persons concerned with a woman's right to have an abortion, might be to adopt brain birth II and neocortical death as legal definitions of life and death.

While all possible definitions of life and death seem to have some faults, the forced symmetry approach does highlight some interesting problems with historical and current legal definitions of life and death. Hopefully, practicing attorneys, scholars, physicians, politicians, and activists will use this approach along with others when debating what the appropriate legal definitions of life and death should be.