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A CALL TO REJECT THE NEUROLOGICAL
STANDARD IN THE DETERMINATION OF
DEATH AND ABANDON THE
DEAD DONOR RULE

*Lauren J. Riley**

INTRODUCTION

Advances in life-saving technologies coupled with the growing demand for solid organs have caused the medical community to challenge its traditional understanding of death. Today, most states have adopted the Uniform Determination of Death Act (UDDA),¹ which prescribes two criteria for determining death. The UDDA states that a person is dead when he or she “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.”² The Act further specifies that the determination of death “must be made in accordance with accepted medical standards.”³ These two standards have become known as the cardiopulmonary standard and the neurological standard, respectively.

But the standard for determining death was not always twofold. Prior to the second half of the twentieth century, people had long understood death according to the cardiopulmonary standard, that is, “when a person’s heart and circulatory system have permanently and irreversibly ceased to function.”⁴ However, during the second half of

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1 UNIF. DETERMINATION OF DEATH ACT §1 (1981), 12A U.L.A. 777 (2008).

2 *Id.*

3 *Id.*

4 Seema K. Shah & Franklin G. Miller, *Can We Handle the Truth? Legal Fictions in the Determination of Death*, 36 AM. J. L. & MED. 540, 541 (2010).

the twentieth century, the advances in intensive care medicine and the growing demand for vital organs set the stage for the development of a new way of determining death.⁵ Specifically, by the mid-1960s, medical technology had progressed to the point where ventilators could maintain heart and lung function in patients who had suffered devastating neurological injuries.⁶ In addition, “the discovery of cyclosporine in 1978 is thought to have revolutionized the field of transplantation” by helping to prevent organ recipients from rejecting transplanted organs and markedly improving survival rates.⁷

In 1968, Harvard Medical School created a physician-led committee to develop a new set of criteria for the determination of death. The committee’s work paved the way for the neurological standard.⁸ In a paper entitled, *A Definition of Irreversible Coma*,⁹ the committee concluded that patients who meet the diagnostic criteria for a certain type of brain injury can be pronounced dead before their hearts stop beating.¹⁰

Then in 1981, the President’s Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research (Commission) proposed the language for the Uniform Determination of Death Act in *Defining Death: Medical, Legal, and Ethical Issues in the Determination of Death*.¹¹ The text accompanying the statute clarified the relationship between the two alternative standards: “in almost all cases of human death the traditional standard [cardiopulmonary standard] should be used, as it always ha[s] been,”¹² and “[o]nly in rare cases in which mechanical ventilation is used to support the breathing of a severely brain-injured individual . . . should a brain-based standard be employed.”¹³ However, today, most organs are recovered

5 See *id.*

6 See Maxine M. Harrington, *The Thin Flat Line: Redefining Who Is Legally Dead in Organ Donation After Cardiac Death*, 86 DENV. U. L. REV. 335, 340 (2009).

7 *Id.* at 343.

8 PRESIDENT’S COUNCIL ON BIOETHICS, CONTROVERSIES IN THE DETERMINATION OF DEATH 4 (2008), available at <http://bioethics.georgetown.edu/pcbe/reports/death/index.html>.

9 Ad Hoc Comm. of the Harvard Med. Sch. to Examine the Definition of Brain Death, *A Definition of Irreversible Coma*, 205 J. AM. MED. ASS’N 337 (1968).

10 *Id.* at 339.

11 PRESIDENT’S COMM’N FOR THE STUDY OF ETHICAL PROBLEMS IN MED. & BIOMEDICAL & BEHAVIORAL RESEARCH, *DEFINING DEATH: MEDICAL, LEGAL, AND ETHICAL ISSUES IN THE DETERMINATION OF DEATH* 73 (1981), available at http://bioethics.georgetown.edu/pcbe/reports/past_commissions/defining_death.pdf.

12 PRESIDENT’S COUNCIL ON BIOETHICS, *supra* note 8, at 4.

13 *Id.* at 4–5.

from donors who meet the neurological criterion.¹⁴ The Commission's model statute was endorsed by the American Medical Association (AMA), the American Bar Association (ABA), and the National Conference of Commissioners on Uniform State Laws (NCCUSL).¹⁵ The NCCUSL published the statute under the name "Uniform Determination of Death Act" and encouraged states to pass it.¹⁶ The key section of the Act reads as follows:

An 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. A determination of death must be made in accordance with accepted medical standards.¹⁷

Even though not all states have adopted the exact language of the UDDA, they all have some form of legal recognition for a neurological standard of death.¹⁸ This Note argues that we should reject the neurological criterion and return to using only the cardiopulmonary standard because of the uncertainty surrounding the neurological standard. Evidence has shown that the patients determined dead by the neurological standard exhibit a number of integrative functions, including maintenance of body temperature, proportional growth, sexual maturation, and elimination of waste. Because the majority of cadaveric donors are determined dead by the neurological standard, and the organ supply is already far too low to meet the demand, it is also necessary to abandon the dead donor rule in order to preserve the organ transplantation system. In the absence of the dead donor rule, the ethical integrity of the organ donation process can be grounded in the constitutional right to personal liberty and the common law notion of informed consent.

Part I describes the organ donation system, in which the demand for organs far exceeds the supply. Part II provides a comprehensive overview of the neurological standard for determining death. It discusses the biology behind the integrative functioning of the brain, the cardiopulmonary system, and the respiratory system. It then details the pathophysiology of total brain failure and the clinical tests physicians use to diagnose the condition. This Part also describes the Commission's rationale for using the neurological standard in the

14 See Harrington, *supra* note 6, at 336 (citing Eelco F.M. Wijdicks, *The Diagnosis of Brain Death*, 344 NEW ENG. J. MED. 1215, 1215–18 (2001)).

15 See PRESIDENT'S COUNCIL ON BIOETHICS, *supra* note 8, at 5.

16 See *id.*

17 UNIF. DETERMINATION OF DEATH ACT § 1 (1981), 12A U.L.A. 777 (2008).

18 See PRESIDENT'S COUNCIL ON BIOETHICS, *supra* note 8, at 5–6.

determination of death. Finally, this Part distinguishes patients with total brain failure from those in a persistent vegetative state and makes clear that this Note advocates procuring organs only from those with total brain failure and not from patients in a persistent vegetative state.

Part III outlines the main criticisms of the neurological standard, including the uncertainty involved in determining death by this criterion and the fact that patients with total brain failure continue to exhibit certain integrative functions. Part IV describes the possible solutions to the problems associated with the neurological standard, including the use of legal fictions to retain both the neurological criterion and the dead donor rule. This Part also examines Robert Truog's proposal to reject the neurological standard and abandon the dead donor rule. Part V proposes a rejection of the neurological criterion based on the medical profession's struggle with the standard and the risk of the public's confusion about the neurological criterion. This Part also argues that the rationales for the neurological standard offered by the Commission and the 2008 President's Council are undermined by evidence demonstrating a number of integrative functions that patients with total brain failure continue to exhibit. Because rejecting the neurological standard will cause the supply of organs—which is already far too low to meet the demand—to plummet, this Note also proposes abandoning the dead donor rule, so that doctors can continue to procure organs from patients who have suffered total brain failure. Part VI argues that the ethical integrity of organ donation can be grounded in the constitutional right of personal liberty and the notion of informed consent.

I. THE REALITY OF OUR ORGAN TRANSPLANTATION SYSTEM

Despite debates about the standards for determining death, the one thing scientists, ethicists, legislators, and doctors can all agree on is that our current system of organ donation is failing. The demand for organs far exceeds the supply and thousands of people on the transplant list die each year. Today, doctors can transplant the heart, the kidneys, the pancreas, the lungs, the liver, and the intestines.¹⁹ Doctors also transplant tissues, including eyes, skin, bone, heart valves, and tendons.²⁰ However, there are significant obstacles to overcome before a donor's organs can be transplanted into another person, including issues of tissue and blood compatibility and organ size, espe-

¹⁹ *Common Myths of Organ Donation*, UNITED NETWORK FOR ORGAN SHARING, http://www.unos.org/donation/index.php?topic=fact_sheet_7 (last visited Mar. 21, 2012).

²⁰ *See id.*

cially when the donor or the recipient is a child.²¹ Further, in the case of cadaveric organ donation, the focus of this Note, “the potential donor pool is limited both by cause of death and the health of the organs upon death.”²²

The United States’s organ transplantation system is facilitated by the United Network for Organ Sharing (UNOS), which contains data regarding every organ donation and transplantation occurring in the United States since 1986.²³ UNOS “enables the nation’s organ transplant institutions to: [1] register patients for transplants, [2] match donated organs to waiting patients [, and 3] manage the time-sensitive, life-critical data of all patients, before and after their transplants.”²⁴

The reality of our organ transplantation system is that the demand for organs far exceeds the supply. The current waiting list for organs indicates that the demand for all organs is 122,596,²⁵ but in 2011, only 26,246 organs were donated.²⁶ Sixty percent of people on the waiting list will die while waiting for a donor.²⁷ Further, approximately 300 new candidates are added to the waiting list each month.²⁸ The number of people requiring a life-saving transplant continues to rise faster than the number of available donors.²⁹ It is interesting to note that there are almost as many living donors as there are deceased donors; in 2011, there were 12,958 donors, 7502 of whom were deceased and 5456 of whom were living.³⁰

21 Sean Arthurs, Comment, *No More Circumventing the Dead: The Least-Cost Model Congress Should Adopt to Address the Abject Failure of Our National Organ Donation Regime*, 73 U. CIN. L. REV. 1101, 1105 (2005).

22 *Id.*

23 *Data*, UNITED NETWORK FOR ORGAN SHARING, <http://www.unos.org/donation/index.php?topic=data> (last visited Mar. 21, 2012).

24 *Id.*

25 *Overall by Organ Current U.S. Waiting List*, HEALTH RESOURCES & SERVICES ADMIN., ORGAN PROCUREMENT & TRANSPLANTATION NETWORK, <http://optn.transplant.hrsa.gov/latestData/step2.asp> (in drop down select “Waiting List”; then select “Overall by Organ”) (last visited Feb. 25, 2012).

26 *Transplants by Donor Type*, HEALTH RESOURCES & SERVS. ADMIN., ORGAN PROCUREMENT & TRANSPLANTATION NETWORK, <http://optn.transplant.hrsa.gov/latestData/step2.asp> (in drop down select “Transplant”; then select “Transplants by Donor Type”) (last visited Mar. 21, 2012).

27 Arthurs, *supra* note 21, at 1110 (footnote omitted).

28 *FAQs*, THE NAT’L NETWORK FOR ORGAN DONORS, <http://www.thenationalnetworkoforgandonors.org/faqs.html> (last visited Mar. 21, 2012).

29 *See id.*

30 *Donors Recovered in the U.S. by Donor Type*, HEALTH RESOURCES & SERVS. ADMIN., ORGAN PROCUREMENT & TRANSPLANTATION NETWORK, <http://optn.transplant.hrsa>

Organ transplants are now performed for more diseases and conditions than ever before.³¹ The increase in the average lifespan has resulted in “a larger pool of the people who are statistically most likely to need organ transplants.”³² And as Americans live longer lives, the supply of cadaveric organs will continue to shrink since the elderly’s organs are less suitable for human transplantation than middle-aged people’s organs.³³ Further, “[t]ransplantation becomes safer, less time consuming and more pain free with each passing year,” thus increasing the demand for organs.³⁴ Finally, organ transplantation is a more attractive alternative from the financial perspective of insurance companies. As the costs of transplantation have decreased, in most cases, it has become cheaper than a lifetime regimen of expensive drugs.³⁵

II. THE NEUROLOGICAL STANDARD

A. Terminology

Scholarly literature has used a number of terms to refer to the neurological standard and it is important to understand the terminology in this area. When someone has met the neurological standard for determining death, this Note will refer to the condition as “total brain failure.”

B. Circulatory and Respiratory Systems

Traditionally, death had been determined by the absence of circulation and respiration, namely, the cardiopulmonary standard. Under normal circumstances, the presence of these processes is a definite sign of life, and an understanding of how breathing and circulation operate in healthy individuals will demonstrate why we associate these functions with life.³⁶ The Central Nervous System (CNS), which is comprised of the brain and the spinal cord, plays an integral role in breathing and circulation.³⁷ Inhalation is a function of the contraction of muscles in the thorax or chest cavity.³⁸ This “contraction of

gov/latestData/step2.asp (in drop down select “Donor”; then select “All Donors by Donor Type”) (last visited Mar. 21, 2012).

31 Arthurs, *supra* note 21, at 1111.

32 *Id.*

33 *See id.* at 1112.

34 *Id.* at 1111.

35 *Id.*

36 *See* PRESIDENT’S COUNCIL ON BIOETHICS, *supra* note 8, at 21.

37 *See id.* at 25.

38 *See id.* at 22.

muscles is [dependent on] a signal sent from the respiratory center of the CNS."³⁹ The respiratory center of the CNS "is located at the base of the brainstem, in a structure known as the medulla oblongata."⁴⁰ Breathing is dependent on the CNS because in order for a person to inhale, the medulla oblongata must send a signal to the muscles in his chest cavity.⁴¹ When the CNS's respiratory center is destroyed, the person permanently loses the ability to breathe.⁴²

In patients declared dead according to the neurological standard, the respiratory and circulatory functions are dependent on the external support of a ventilator.⁴³ The ventilator takes the place of the contraction of the respiratory muscles "by increasing and decreasing the pressure in the lung cavities so that oxygen-rich" air will travel in and carbon dioxide-rich air will travel out, rendering contraction of the respiratory muscles unnecessary.⁴⁴ However, the exchange of gases that the ventilator maintains will not benefit the patient unless the blood is kept circulating as well.⁴⁵ Oxygen coming in through the lungs "must be transported to the tissues that need it, and . . . carbon dioxide must be removed [from the tissues] to the lungs for expulsion from the body."⁴⁶ The ventilator will help the patient only if the heart is working, pumping blood through the arteries, veins, and capillaries.⁴⁷

Although the mechanics of the circulatory system are similar to the mechanics of the external respiratory system, there are important differences. One of those differences is that "there is no part of the CNS that is *absolutely indispensable* for heart contractions in the way that the respiratory center in the brainstem is absolutely indispensable for the muscular contractions involved in breathing."⁴⁸ Although the CNS is not "absolutely indispensable" to the circulatory system, in healthy individuals, stimuli from the CNS will change the rate and strength of contractions. In particular, "the heart rate will change in response to danger, excitement, or other stimuli. But even when there is no stimulus whatsoever from the CNS, the heart can continue

39 *Id.* at 25.

40 *Id.*

41 *See id.*

42 *See id.* at 35.

43 *See id.* at 21.

44 *Id.* at 27.

45 *See id.*

46 *Id.*

47 *See id.*

48 *Id.* at 28.

to beat.”⁴⁹ However, in a patient with total brain failure, the circulatory system needs the ventilator indirectly to effect the exchange of gases, because in order for “the heart muscle to continue to function, . . . its cells, like all other cells in the body, need oxygen to stay alive.”⁵⁰

C. *Understanding the Pathophysiology of Total Brain Failure*

When a doctor diagnoses a patient with total brain failure, the doctor believes “that the brainstem and the structures above it have been destroyed and therefore have lost the capacity to function ever again.”⁵¹ In many cases, however, this destruction of the brain was not a function of the initial injury but came about through a series of self-perpetuating events that progressively damaged brain tissue and ultimately destroyed the brainstem.⁵²

The catalyst for this series of damaging events is elevated pressure in the cranial vault that holds the brain.⁵³ The most common injuries that lead to total brain failure all cause severe damage to the tissue of the brain, which leads to an “abnormal accumulation of fluid,” also known as “edema.”⁵⁴ With no space to expand in the cranial vault, “the swelling brain suffers steady increases in intracranial pressure (ICP).”⁵⁵ The elevated ICP then prevents oxygen-rich blood from entering the cranial cavity and thus deprives brain tissues of essential nutrients.⁵⁶ This lack of nutrients leads to more edema and swelling.⁵⁷ The brain then herniates through the tentorium and foramen magnum, which crushes the brain stem and leads to the functional losses discussed above.⁵⁸

Another term used to describe this process is “total brain infarction.”⁵⁹ Infarction means “insufficiency of arterial or venous blood supply,” and thus, the “total destruction of the brain has occurred due to infarction or lack of blood supply.”⁶⁰ Clinical tests that establish loss of all brainstem reflexes can show that the rest of the brain has

49 *Id.*

50 *Id.* at 29.

51 *Id.* at 35.

52 *See id.*

53 *See id.* at 35–36.

54 *Id.* at 36.

55 *Id.*

56 *See id.*

57 *See id.*

58 *Id.* (footnote omitted).

59 *See id.*

60 *Id.*

also been irreversibly compromised, because the brainstem is often the last structure affected by the self-perpetuating damage.⁶¹

D. *Clinical Tests to Determine Total Brain Failure*

Neurologists perform a series of clinical tests to determine if a patient exhibits any sign of brainstem function.⁶² First, “other possible causes for the absence of neurological function” must be ruled out.⁶³ It must be determined that the cause of the patient’s injury is not hypothermia, drug intoxication, poisoning, hypoxia, or any other cause that produces similar effects to those of total brain failure.⁶⁴ Second, the patient must be in a completely unresponsive coma, which means that the patient’s eyes must be closed and the patient must not exhibit any response to verbal or painful stimuli.⁶⁵

Once other possible causes have been ruled out and it has been determined that the patient is in an unresponsive coma, the neurologist will perform a series of diagnostic tests, which involve “unresponsiveness, apnea, and . . . cranial nerve reflexes.”⁶⁶ Apnea is the “technical term for an inability to breathe,”⁶⁷ and the apnea test is “[o]ne of the most important tests of brainstem function.”⁶⁸ It “involves removing the patient from the ventilator to determine whether the patient has any *neurological drive* to breathe.”⁶⁹

Another set of exams that neurologists perform tests the patient’s “automatic responses or ‘brainstem reflexes,’” including the “gag reflex, the cough reflex, and the reflex to move the eyes . . . under certain conditions.”⁷⁰ If any of these reflexes are present, the patient has not suffered total brain failure.⁷¹ If no neurological function is

61 See *id.* at 37.

62 See Robert D. Truog, *Brain Death—Too Flawed to Endure, Too Ingrained to Abandon*, 35 J. L. MED. & ETHICS 273, 273 (2007).

63 *Id.*

64 See *id.*; PRESIDENT’S COUNCIL ON BIOETHICS, *supra* note 8, at 31.

65 See PRESIDENT’S COUNCIL ON BIOETHICS, *supra* note 8, at 30.

66 Mike Nair-Collins, *Death, Brain Death, and the Limits of Science: Why the Whole-Brain Concept of Death Is a Flawed Public Policy*, 38 J.L. MED. & ETHICS 667, 668 (2010).

67 PRESIDENT’S COUNCIL ON BIOETHICS, *supra* note 8, at 32.

68 Truog, *supra* note 62, at 273.

69 *Id.* (emphasis added); see also PRESIDENT’S COUNCIL ON BIOETHICS, *supra* note 8, at 32 (“Although all patients who receive ventilator support need the machine’s help to breathe, most are not so injured that they have no drive to breathe whatsoever. The purpose of the apnea test . . . is to establish that the patient has *no* drive to bring air into the body even when the sensors in the brainstem are receiving an unambiguous signal that breathing is required.”).

70 PRESIDENT’S COUNCIL ON BIOETHICS, *supra* note 8, at 33.

71 See *id.*

detected, the physician usually repeats the testing in six to twelve hours, and if the findings persist, the patient is deemed dead according to the neurological standard.⁷² The Harvard committee also recommended the use of laboratory tests to confirm total brain failure, such as an electroencephalogram (EEG).⁷³ However, these tests are optional in the United States.⁷⁴ Through the use of these tests, physicians can confirm the existence of total brain failure, as distinguished from a permanent vegetative state (PVS). In contrast to PVS patients, “no patient diagnosed with ‘total brain failure’ has ever recovered the capacity to breathe spontaneously or shown *any* sign of consciousness.”⁷⁵

E. 1981 President’s Commission’s Rationale for the Neurological Standard

In developing the neurological standard, the Commission relied on the assumption that the brain controls the integrative functioning of the human body as a whole. The Commission believed that once the brain has deteriorated, the death of the body will follow shortly.⁷⁶ The Commission viewed the brain as the “complex organizer and regulator of bodily functions.”⁷⁷ The Commission explained that the heart, the lungs, and the brain are all interrelated and that “the irreversible cessation of anyone [sic] very quickly stops the other two and consequently halts the integrated functioning of the organism as a whole.”⁷⁸ While the Commission acknowledged some of the functions that a patient with total brain failure still exhibits, it also contended that “[e]ven with extraordinary medical care, these functions cannot be sustained indefinitely—typically, no longer than several days.”⁷⁹

⁷² See Truog, *supra* note 62, at 273.

⁷³ See ALASTAIR CAMPBELL ET AL., *MEDICAL ETHICS* 200 (4th ed. 2005); Alexander Morgan Capron & Leon R. Kass, *A Statutory Definition of the Standards for Determining Human Death: An Appraisal and a Proposal*, 121 U. PA. L. REV. 87, 89 n.11 (1972).

⁷⁴ See PRESIDENT’S COUNCIL ON BIOETHICS, *supra* note 8, at 34. In some other countries, the imaging tests are mandatory. *Id.*

⁷⁵ *Id.* at 45.

⁷⁶ See PRESIDENT’S COMM’N FOR THE STUDY OF ETHICAL PROBLEMS IN MED. & BIOMEDICAL & BEHAVIORAL RESEARCH, *supra* note 11, at 33.

⁷⁷ *Id.* at 34 (“Only the brain can direct the entire organism. Artificial support for the heart and lungs, which is required only when the brain can no longer control them, cannot maintain the usual synchronized integration of the body.”).

⁷⁸ *Id.* at 33 (“Since life is a matter of integrating the functioning of major organ systems, breathing and circulation are necessary but not sufficient to establish that an individual is alive. When an individual’s breathing and circulation lack neurologic integration, he or she is dead.”).

⁷⁹ *Id.* at 35.

The Commission argued that the traditional means of determining death, the cardiopulmonary standard, “actually detected an irreversible cessation of integrated functioning among the interdependent bodily systems.”⁸⁰ Thus, the neurological standard denotes the same thing that the cardiopulmonary standard has denoted all along, namely the irreversible cessation of the integrated functioning of the heart, the lungs, and the brain. “When artificial means of support mask this loss of integration as measured by the old methods,” the Commission explained, “brain-oriented criteria . . . provide a new window on the same phenomenon.”⁸¹

*F. The Distinction Between Total Brain Failure
and Persistent Vegetative State*

It is important to understand the difference between patients who have suffered total brain failure and patients who are in a persistent vegetative state (PVS), because it is a common misunderstanding to conflate the two conditions. Patients such as Karen Ann Quinlan, Nancy Cruzan, and Terry Schiavo, who have been the subject of media attention because their families wished to withdraw life-sustaining treatment were all in a PVS, despite the fact that they were consistently referred to as exhibiting total brain failure.⁸²

The main difference between a patient who has suffered total brain failure and one in a PVS is that the tests provide evidence to suggest that the brainstem of a patient with total brain failure is completely destroyed.⁸³ In contrast, a PVS patient’s brainstem, and possibly some parts of the brain above the brainstem, function to some degree.⁸⁴ Although the initial clinical state of a patient in a PVS may be similar to that of a patient with total brain failure, the clinical tests described above will help doctors discriminate between these two conditions.⁸⁵ Although the PVS patient may “initially be in the same . . . unresponsive coma as the patient with total brain failure, the [PVS] patient will eventually emerge from this coma and display the . . . signs of the vegetative state,” including opening his eyes, experiencing the sleep/wake cycles, moving his limbs, breathing spontaneously, and, in

80 *Id.* at 33.

81 *Id.* “On this view, the heart and lungs are not important as basic prerequisites to continued life but rather because the irreversible cessation of their functions shows that the brain [has] ceased functioning.” *Id.* at 34.

82 See PRESIDENT’S COUNCIL ON BIOETHICS, *supra* note 8, at 42–43.

83 See *id.* at 43.

84 See *id.*

85 See *id.*

some cases, exhibiting minimal responsiveness to painful stimuli.⁸⁶ The most striking difference between the PVS patient and the patient with total brain failure is that the PVS patient does not need the continual support of the respirator to breathe. Because the PVS patient's brainstem is not completely destroyed, the medulla oblongata can continue to facilitate breathing in the PVS patient.⁸⁷ A patient in a PVS can survive for many years in this condition if sustaining treatment and nursing care are provided.⁸⁸ This Note does not advocate procuring organs from PVS patients. It proposes the removal of organs only from patients who have suffered total brain failure.

G. Why Donors with Total Brain Failure Make Better Donors than Cardiac Arrest Donors

One of the motivating factors behind the Harvard committee's neurological definition of death was the gap between the supply and demand of vital organs.⁸⁹ The definition the committee proposed was a function of this necessity. Patients deemed dead by the neurological standard are ideal organ donors because their organs are still perfusing at the time of procurement.⁹⁰ That is, the organ tissue is still retrieving nutrients from the flow of blood through the vessels of the body, preserving the quality of the organs. In the case of donors determined dead by the cardiopulmonary standard, the poorer organ quality is "caused by warm ischemia time, [which is] the period in which the donor's organs begin to die from lack of an oxygenated blood supply."⁹¹ This is why, in 2007, about ninety-two percent of all donated cadaveric organs came from donors declared dead by the neurological standard.⁹²

86 *Id.*

87 *See id.*

88 *See id.*

89 *See* Ad Hoc Comm. of the Harvard Med. Sch. to Examine the Definition of Brain Death, *supra* note 9, at 337 ("There are two reasons why there is need for a definition: . . . (2) Obsolete criteria for the definition of death can lead to controversy in obtaining organs for transplantation."); *see also* HANS JONAS, *Against the Stream: Comments on the Definition and Redefinition of Death*, in *PHILOSOPHICAL ESSAYS FROM ANCIENT CREED TO TECHNOLOGICAL MAN*, 132, 132 (1974) ("The [Harvard] report leaves no doubt of the practical reasons 'why there is need for a definition,' naming these two: relief of patient, kin, and medical resources from the burdens of indefinitely prolonged coma; and removal of controversy on obtaining organs for transplantation.").

90 *See* Shah & Miller, *supra* note 4, at 570.

91 Harrington, *supra* note 6, at 340 (footnote omitted).

92 *See* Jane E. Brody, *The Solvable Problem of Organ Shortages*, N.Y. TIMES, Aug. 28, 2007, at F7.

III. CRITICISMS OF THE NEUROLOGICAL STANDARD

Although all states have adopted the neurological standard in some form and it is widely accepted as a legal definition of death, evidence has emerged that calls into question the validity of equating total brain failure with death. The chief justification for that equation—that patients diagnosed with total brain failure have lost the integrated functioning of the organism as a whole—has been criticized as conceptually unsound.⁹³ Scholars have attacked the neurological standard by citing scientific evidence that several significant life functions continue in people diagnosed with total brain failure.⁹⁴ There have also been cases in which people with total brain failure persisted on life support for years.⁹⁵

A. *Uncertainty in Determining Death (Hans Jonas)*

Soon after the Harvard committee proposed the neurological standard, philosopher Hans Jonas disagreed with the committee's equation of irreversible coma and death.⁹⁶ In his 1970 essay, *Against the Stream*, Jonas contended that the committee had defined "not death, the ultimate state, itself, but a criterion for permitting [death] to take place unopposed—e.g., by turning off the respirator."⁹⁷ Thus, for Jonas, total brain failure did not represent death, but merely a state in which it was thought to be appropriate to let death occur by removing life-sustaining support and allowing the functions of the heart and lungs to cease. Jonas criticized the Harvard committee's definition of death as motivated by its desire to ensure sufficient organ availability.⁹⁸

Jonas argued that because there is evidence that a patient with total brain failure may still exhibit some signs of life, we should be cautious in declaring that patient dead.⁹⁹ He explained that the reality of death may be "imprecise in itself, or the knowledge obtainable of it may be [imprecise]," and "[t]o acknowledge such a state of affairs is more adequate to it than a precise definition, which does violence

93 See Shah & Miller, *supra* note 4, at 548 (footnote omitted).

94 See *infra* notes 103–15 and accompanying text.

95 Shah & Miller, *supra* note 4, at 548.

96 See PRESIDENT'S COUNCIL ON BIOETHICS, *supra* note 8, at 53.

97 JONAS, *supra* note 89 at 133.

98 See *id.* ("I contend that, pure as this interest, viz., to save other lives, is in itself, its intrusion into the *theoretical* attempt to define death makes the attempt impure; and the Harvard Committee should never have allowed itself to adulterate the purity of its scientific case by baiting it with the prospect of this *extraneous*—though extremely appealing—gain.")

99 See *id.* at 138.

to it."¹⁰⁰ Jonas recognized the uncertainty in declaring the death of patients who have suffered total brain failure and doubted the validity of the practice. He wrote:

We do not know with certainty the borderline between life and death, and a definition cannot substitute for knowledge. Moreover, we have sufficient grounds for suspecting that the artificially supported condition of the comatose patient may still be one of life, however reduced—i.e., for doubting that, even with the brain function gone, he is completely dead.¹⁰¹

In light of this uncertainty over whether the patient is in fact dead, Jonas advocated for a conservative course of action. He concluded, "In this state of marginal ignorance and doubt the only course to take is to lean over backward toward the side of possible life."¹⁰²

*B. Integrative Functions Exhibited After Total
Brain Failure (Alan Shewmon)*

Alan Shewmon has also challenged the use of the neurological standard in the determination of death. Shewmon revealed two flaws in the criterion. First, his research demonstrated that total brain failure does not *immediately* lead to the cessation of heartbeat or bodily disintegration,¹⁰³ as supporters of the neurological standard had claimed.¹⁰⁴ Secondly, Shewmon's research showed that a number of integrative functions continue in patients who are diagnosed with total brain failure.¹⁰⁵

The 1981 Commission's rationale for employing the neurological standard in determining death was that the brain was the central integrator of the body and that when the functions of the brain are lost, the cessation of heart and lung function is inevitable.¹⁰⁶ In 1998 Shewmon published an article in *Neurology* that demonstrated that cessation of heartbeat does not always occur immediately after total brain failure.¹⁰⁷ Shewmon researched 175 cases in which patients survived

100 *Id.* at 134.

101 *Id.* at 138.

102 *Id.*

103 See D. Alan Shewmon, *Chronic "Brain Death": Meta-analysis and Conceptual Consequences*, 51 *NEUROLOGY* 1538, 1542 (1998).

104 See *supra* notes 76–81 and accompanying text.

105 See D. Alan Shewmon, *The Brain and Somatic Integration: Insights into the Standard Biological Rationale for Equating "Brain Death" with Death*, 26 *J. MED. & PHIL.* 457, 467 (2001).

106 See PRESIDENT'S COMM'N FOR THE STUDY OF ETHICAL PROBLEMS IN MED. & BIOMEDICAL & BEHAVIORAL RESEARCH, *supra* note 11, at 33.

107 See Shewmon, *supra* note 103, at 1539.

for a week or longer after suffering total brain failure.¹⁰⁸ Out of the 175 cases, fifty-six had sufficient information for meta-analysis of facts affecting survival capacity.¹⁰⁹ Of those fifty-six meta-analyzed cases, half of the patients survived more than one month, nearly one-third more than two months, seven more than six months, and four more than one year, the record being fourteen and a half years.¹¹⁰ Shewmon thus proposed that “[t]he rapid, inexorable deterioration in a minority of . . . patients [with total brain failure] . . . is therefore less attributable to absence of brain function per se than it is to . . . damage to *multiple organs*, especially the heart.”¹¹¹ He went on to conclude that “the body’s integrative unity derives from mutual interaction among its parts, not from a top-down imposition of one ‘critical organ’ upon an otherwise mere bag of organs and tissues.”¹¹² Thus, he argued, “[i]f [total brain failure] is to be equated with human death . . . it must be on some basis more plausible than that the *body* is dead.”¹¹³

Shewmon’s second contribution was even more significant. In an article published in the *Journal of Medicine and Philosophy* in 2001, he argued that most integrative functions of the body are not mediated through the brain and persist in at least some patients who had suffered total brain failure.¹¹⁴ In particular, Shewmon found that some patients with total brain failure were able to maintain homeostasis of many different chemicals, regulate body temperature only a few degrees below normal, fight infections, mature sexually, carry a pregnancy to term, and exhibit stress responses to unanesthetized incision for organ retrieval.¹¹⁵

108 *See id.*

109 *See id.* at 1542. Meta-analysis combines the results of different studies that address a set of related research hypotheses.

110 *Id.*

111 *Id.* at 1544.

112 *Id.*

113 *Id.* (emphasis added).

114 *See* Shewmon, *supra* note 105, at 467 (providing a list of functions not mediated by the brain and possessed by at least some patients with total brain failure).

115 *See id.* at 467–68; Shah & Miller, *supra* note 4, at 549. For a complete list of the integrative functions Shewmon found in patients with total brain failure, see Table 1 *infra* in the Appendix.

IV. POSSIBLE SOLUTIONS

A. *Using Legal Fictions to Retain the Neurological Standard and the Dead Donor Rule*

There are scholars who appreciate the fact that current organ procurement practice rests on a misunderstanding of the relationship between the brain and the rest of the body.¹¹⁶ In a 2008 article, Franklin G. Miller and Seema K. Shah proposed that we continue to use total brain failure as a determination of death, while acknowledging that total brain failure is not in fact death.¹¹⁷ They suggested retaining the neurological standard of determining death but advocated greater transparency about the biological realities of total brain failure.¹¹⁸ They proposed to use a “transparent legal fiction that admits the truth [that total brain failure is not death] but allows the existing law to continue to treat people as if they were dead in certain, well-justified circumstances.”¹¹⁹ The transparency of the legal fiction concerning total brain failure would work identically to the transparent legal fictions with which we are familiar. For example, the law treats corporations as if they are persons, even though no one really believes corporations are persons.¹²⁰ Likewise, the law would treat patients with total brain failure as if they were dead in the context of organ donation, even though everyone would understand that patients with total brain failure are not in fact dead. This approach would allow “vital organ transplantation to continue with organs donated by individuals who are regarded as *legally* dead but remain biologically alive or not known with certainty to be dead.”¹²¹

It is because of the dead donor rule (DDR) that Shah and Miller proposed their acknowledged-legal-fictions approach rather than advocating abandonment of the neurological standard altogether.¹²² The DDR is a “widely endorsed moral and legal constraint stipulating that transplantation of vital organs can only occur after a donor’s death because it cannot be the cause of the donor’s death.”¹²³ The DDR is part of the Uniform Anatomical Gift Act and a number of

116 See Shah & Miller, *supra* note 4, at 548–49.

117 See *id.* at 573.

118 See *id.* at 573–74.

119 *Id.* at 574.

120 See *id.* at 542.

121 *Id.* at 573 (emphasis added). The patients would be considered legally dead, because the neurological standard for determining death would remain.

122 See *id.* at 577–78.

123 *Id.* at 543.

states have codified it into law in one form or another.¹²⁴ In addition, homicide laws do not contain exceptions allowing physicians to cause death in the context of organ donation.¹²⁵ Shah and Miller noted that if the neurological standard is rejected and the DDR is abandoned, “physicians who remove[] organs from patients under the specified conditions might be subject to liability for criminal homicide.”¹²⁶ They argued that the major legal change necessary to achieve complete transparency is too great an obstacle to overcome in the short term.¹²⁷ Instead, they contended that an “[a]ppeal to transparent legal fictions” would allow us to “preserv[e] the [current] practice of . . . organ transplantation without the need to formally abandon the dead donor rule and to change the homicide laws.”¹²⁸

However, Shah and Miller were quick to qualify their approach as a short-term solution. They called their solution “a practical policy choice [and] a compromise that is less than satisfactory.”¹²⁹ They acknowledged that our current practices are incompatible with other established legal norms, namely the DDR (because patients with total brain failure are still living), but contended that the “problem . . . rests with those other norms, not the practices of vital organ donation.”¹³⁰ They conceded that their approach was “theoretically deficient in comparison with a more transparent ethical and legal approach that abandons the dead donor rule.”¹³¹ But in the meantime, Shah and Miller believed the best way to recognize the biological reality of total brain failure, while still maintaining the organ donation system, was to employ legal fictions.

124 *See id.* The 2006 Uniform Anatomical Gift Act (UAGA) revised the acts of 1968 and 1987, but not all states have adopted the 2006 version of the Act. REVISED UNIF. ANATOMICAL GIFT ACT (2006), 8A U.L.A. 42 (Supp. 2011). It was promulgated to address, in part, the critical organ shortage by providing additional ways for making organ, eye, and tissue donation. *Id.* The original UAGA was introduced in 1968 and promptly enacted by all states. *Id.* In 1987, the UAGA was revised and updated, but only twenty-six states adopted that version. Many states adopted non-uniform amendments to their anatomical gift acts, and the law is no longer consistent. *Id.* The 2006 revised act was introduced to address changes in federal law and recent developments in the field of organ donation, in order to better facilitate organ donation. *Id.*

125 Shah & Miller, *supra* note 4, at 543–44.

126 *Id.* at 572 (footnote omitted).

127 *See id.* at 573.

128 *Id.* at 581.

129 *Id.* at 583.

130 *Id.*

131 *Id.*

*B. Rejecting the Neurological Standard and Abandoning
the Dead Donor Rule*

Dr. Robert Truog, a professor of medical ethics, anesthesiology, and pediatrics at Harvard Medical School and a senior associate in critical care medicine at Children's Hospital Boston,¹³² has been at the forefront of the proposal to reject the neurological standard and abandon the DDR. In light of the evidence of the integrative functions that patients with total brain failure exhibit, Truog does not accept that these patients are dead under the neurological criterion.¹³³ However, he also believes that it is morally appropriate to procure organs from those with total brain failure in certain circumstances, namely, when informed consent has been obtained.¹³⁴ Truog "argue[s] that it is time . . . to face honestly the fact that our current practices of vital organ donation violate the dead donor rule."¹³⁵ However, he contends that "[t]his does not mean that we are unethically extracting vital organs from living patients; rather, it means that we need to develop a coherent alternative ethical account of vital organ donation."¹³⁶

Truog analogizes procuring organs from living patients to withdrawing life-sustaining treatment from living patients.¹³⁷ In employing this analogy, he argues that withdrawing life support is actually *causing* the death of the patient, rather than *letting* the patient die.¹³⁸ In asserting that withdrawing life support causes the patient to die, he appeals to the "common-sense understanding of the causes of particular events," rather than to "any particular philosophical . . . theory of causation."¹³⁹ He argues that the view that withdrawing life support is letting a patient die, rather than causing the death of the patient, is merely a fiction designed to bring the practices of withdrawing life-sustaining treatment in line with established norms.¹⁴⁰ Further,

132 THE DIVISION OF MED. ETHICS AT HARV. MED. SCH., <http://medethics.med.harvard.edu/people/truog/> (last visited Mar. 21, 2012).

133 See Franklin G. Miller & Robert D. Truog, *Rethinking the Ethics of Vital Organ Donations*, 38 HASTINGS CTR. REP. 38, 39 (2008).

134 Robert D. Truog, *supra* note 62, at 279 (comparing a physician's act of removing a ventilator with the consent of the patient or surrogate to procurement of organs under the same circumstances).

135 Miller & Truog, *supra* note 133, at 39.

136 *Id.* at 40.

137 See *id.* at 40–41.

138 See *id.*

139 *Id.* at 40.

140 See Franklin G. Miller et al., *The Dead Donor Rule: Can It Withstand Critical Scrutiny?*, 35 J. MED. & PHIL. 299, 300 (2010).

Truog contends that the right to forgo life support has nothing to do with whether terminating the treatment is the cause of the death.¹⁴¹ Rather, he notes, this right is “based on patient autonomy and informed consent” and “grounded in the personal liberty and self-determination protected by the U.S. [C]onstitution as well as by the common law doctrine of bodily integrity, which makes treatment without informed consent the tort of battery.”¹⁴²

Truog argues that abandoning the DDR is not as radical as it may seem. Because our current practices already violate the DDR, he contends, it is a change only at the terminological level, for it puts our justifications in line with our practices.¹⁴³ He posits that an honest consideration of our current practices will “pave the way for the seemingly radical and controversial position of abandoning the dead donor rule.”¹⁴⁴

However, Truog’s approach is not without qualifications. The “key protection” for the integrity of the process is *consent* to organ donation, along with a “valid decision to withdraw life support.”¹⁴⁵ Truog explains that the “consent process should be free from conflict of interest: consent should not be solicited by clinicians who are involved in extracting the organs or caring for the recipient.”¹⁴⁶ Further, he explains that there are only two situations in which removing a vital organ from a living patient may be morally justifiable: “when the patient is either permanently unconscious or imminently dying.”¹⁴⁷ He argues that in these situations, the patient should be allowed to decide “whether [he] want[s] to accept the harm of an earlier death in order to bestow the benefits of transplantable organs to others in need.”¹⁴⁸

Ultimately, however, Truog believes that “any changes to current practice are very unlikely in the near future.”¹⁴⁹ He contends that the solution will not come from “philosophical argument, but from technological advance,” and notes that “research is being done to overcome the immunological barriers to transplantation between species.”¹⁵⁰ He predicts that we will implant animal organs in humans

141 See Miller & Truog, *supra* note 133, at 41.

142 *Id.* at 41.

143 See *id.* at 38.

144 *Id.* at 42.

145 *Id.* at 44.

146 *Id.*

147 Truog, *supra* note 62, at 278.

148 *Id.*

149 *Id.* at 280.

150 *Id.*

before we remedy the current legal and ethical ramifications of the determination of death in the context of vital organ donation.¹⁵¹

V. REJECTION OF THE NEUROLOGICAL STANDARD

Although the concept of total brain failure has been widely accepted, on close examination it is counterintuitive to our understanding of death.¹⁵² The range of integrative biological functioning that patients diagnosed with total brain failure continue to exhibit is too great an obstacle to declaring these patients dead.¹⁵³ In addition, patients with total brain failure have a beating heart, are warm to the touch, and are breathing (with the help of a ventilator).¹⁵⁴ This Note proposes a rejection of the neurological standard.

A. *Medical Professionals' Struggle with Total Brain Failure*

The medical community struggles with the neurological standard in two ways. First, a number of medical professionals likely to be involved in the organ transplantation process are unfamiliar with the neurological criterion and do not understand its implications.¹⁵⁵ Second, those who do understand the criterion, but do not agree with it, are forced to compromise their professional integrity in order to comply with the legal standard.¹⁵⁶

Many health professionals, including those actively involved in organ transplantation, are confused about the current criteria for determining death.¹⁵⁷ In addition, most do not believe patients who have suffered total brain failure are in fact dead, but are comfortable with the process of organ procurement anyway because the patients are permanently unconscious or imminently dying.¹⁵⁸ Thus, the "ethically salient feature [is] not whether the patients [are] alive or dead, but [what] their clinical condition and prognosis" is.¹⁵⁹

Further, some professionals who do not agree with the legal definition of death have "had to pay the price of self-delusion."¹⁶⁰ Although these physicians know that the neurological standard is the

151 *See id.*

152 *See id.* at 273-74.

153 *See supra* Part III.B.

154 *See* Truog, *supra* note 62, at 275.

155 *See* Nair-Collins, *supra* note 66, at 677.

156 *See* Truog, *supra* note 62, at 277.

157 *See* Nair-Collins, *supra* note 66, at 677; Truog, *supra* note 62, at 274.

158 *See* Truog, *supra* note 62, at 274.

159 *Id.*

160 *Id.* at 277.

legal definition of death, they have a hard time reconciling this with the biological realities of patients diagnosed with total brain failure,¹⁶¹ namely the integrative functions these patients continue to exhibit. Robert Truog describes his own struggle with the total brain failure criterion in this way:

Despite my own reservations about the concept of [total brain failure], I strongly support the potentially life-saving opportunities provided by organ transplantation. In the absence of an alternative, I must therefore make the diagnosis of [total brain failure] and explain it to families in a way that conveys confidence and certainty. This dilemma has created a schizophrenic split between my intellectual commitments and the realities of clinical practice.¹⁶²

Truog understands that the neurological standard allows him to begin organ procurement, but he struggles with the criterion because he does not think that the patient with total brain failure is in fact dead in the biological sense of the term.

B. The Risk of the Public's Confusion About Total Brain Failure

It is likely that the public is uneducated about the legal determination of death, specifically the neurological standard. This is especially true if the neurological criterion is an unacknowledged legal fiction, as some have argued, employed to support the high demand for vital organs.¹⁶³ Generally, there is nothing wrong with legal fictions when they are transparent. However, the problem with the legal fiction concerning the neurological criterion is that it is unacknowledged. That is, it is presented as a fact that patients who have suffered total brain failure are dead.¹⁶⁴

Currently, the viability of our organ transplantation system hinges on the public's belief that the organ donation process is conducted professionally, with informed consent, and only after the patient is dead. However, our current practices already violate the DDR.¹⁶⁵ Patients determined dead by the neurological standard continue to exhibit a number of integrative functions, including maintenance of body temperature and elimination of waste.¹⁶⁶ The organ transplanta-

161 See Shewmon, *supra* note 105, at 459 (“[M]any health care professionals, including those involved in transplantation . . . remain unconvinced, at least subliminally, that [total brain failure] is *really* death.”).

162 Truog, *supra* note 62, at 277.

163 See Shah & Miller, *supra* note 4, at 541–42.

164 See *id.*; Nair-Collins, *supra* note 66, at 675.

165 See Miller & Truog, *supra* note 133, at 39.

166 See Shewmon, *supra* note 105, at 467.

tion system is completely dependent on voluntary donation, and thus, if people feel they are being “tricked,” or that their doctors are not being completely truthful, they may be unwilling to donate their organs or the organs of a family member. Thus, if information about the biological realities of patients diagnosed with total brain failure becomes more widely available, the situation may become unstable.¹⁶⁷ There is a risk that organ transplantation could be significantly cut back if the public begins to understand that the current practice of organ transplantation conflicts with the DDR, a notion the system purports to respect.¹⁶⁸

Further, the current approach is keeping important moral issues out of the realm of democratic debate.¹⁶⁹ “[A] relatively small group of physicians and bioethicists have made a normative judgment about a fundamental moral issue involving life, death, and the value of biologically living human beings at the end of life.”¹⁷⁰ The neurological criterion has been presented as a “factual claim that medical scientists have discovered, and about which the general public has no standing to determine,”¹⁷¹ despite the fact that patients who have been diagnosed with total brain failure continue to exhibit integrative functions. This evidence has simply been ignored because the neurological standard is actually a claim about the moral propriety of procuring organs from patients in this medical state.¹⁷² Therefore, the scientific evidence does not affect it, because that evidence does not change the moral analysis of the situation. Regardless of whether one agrees with the underlying value judgment that organ removal from patients with total brain failure is morally acceptable under some conditions, the problem is that this judgment has been taken out of the public debate by simply equating total brain failure with death.

C. *Unpersuasive Rationales for the Neurological Standard*

The 1981 Commission’s rationale for recommending the neurological criterion is unconvincing in light of the evidence that Shewmon and others have discovered regarding the integrative functions that persist in patients with total brain failure. The Commission was mistaken about two aspects of total brain failure—timing and implications. First, the Commission believed that once the brain has

167 See Shah & Miller, *supra* note 4, at 566.

168 See *id.*

169 See *id.* at 565.

170 Nair-Collins, *supra* note 66, at 676.

171 *Id.* at 675.

172 See *id.* at 676.

deteriorated, death of the body will follow shortly, namely, that the heart and lungs will cease to function.¹⁷³ The Commission explained that the heart, the lungs, and the brain share a very special relationship such that “the irreversible cessation of anyone [sic] very quickly stops the other two and consequently halts the integrated functioning of the organism as a whole.”¹⁷⁴ While the Commission acknowledged some of the functions which a patient with total brain failure still exhibits, it also contended that “[e]ven with extraordinary medical care, these functions cannot be sustained indefinitely—typically, no longer than several days.”¹⁷⁵ This is contrary to Shewmon’s research which demonstrates that patients with total brain failure have lived for months, and in some cases, even years.¹⁷⁶

Furthermore, the Commission was wrong about the implications of total brain failure. The Commission was under the impression that total brain failure leads to the death of the human body as a whole.¹⁷⁷ It explained, “[t]he functioning of many organs . . . are mutually interdependent, so that the loss of any part [of the organ system] leads to the breakdown of the whole [system] and, eventually, to the cessation of functions in every part.”¹⁷⁸ It contended that when the brain dies, “[a]rtificial support for the heart and lungs . . . cannot maintain the usual synchronized integration of the body.”¹⁷⁹ However, Shewmon’s research demonstrating the existence of a number of integrative functions, which patients with total brain failure exhibit, undermines this assertion.

Twenty-seven years (and much controversy) later, the 2008 President’s Council on Bioethics (Council)¹⁸⁰ recognized the need to develop a new biological rationale for the neurological criterion in light of the evidence that patients diagnosed with total brain failure continue to exhibit a number of integrative functions. Unfortunately,

173 PRESIDENT’S COMM’N FOR THE STUDY OF ETHICAL PROBLEMS IN MED. & BIOMEDICAL & BEHAVIORAL RESEARCH, *supra* note 11, at 33–35.

174 *Id.* at 33 (“Since life is a matter of integrating the functioning of major organ systems, breathing and circulation are necessary but not sufficient to establish that an individual is alive. When an individual’s breathing and circulation lack neurologic integration, he or she is dead.”)

175 *Id.* at 35.

176 *See supra* Part III.B.

177 *See* PRESIDENT’S COMM’N FOR THE STUDY OF ETHICAL PROBLEMS IN MED. & BIOMEDICAL & BEHAVIORAL RESEARCH, *supra* note 11, at 32–35.

178 *Id.* at 32.

179 *Id.* at 34.

180 The 2008 President’s Council is similar to the 1981 President’s Commission, in that they were both special task forces ordained by the President to undertake specific research.

the Council's rationale is even less convincing than the one proposed in 1981. The Council abandoned reliance on the concept of integration and the false assumption that the brain is the integrator of vital functions.¹⁸¹ Instead, it focused on the "fundamental vital *work* of a living organism—the work of self-preservation, achieved through the organism's need-driven commerce with the surrounding world."¹⁸²

The Council explained that the work of an organism depends on three fundamental capacities, all of which are absent in patients with total brain failure. These fundamental capacities include: (1) openness to the world or receptivity to stimuli, (2) the ability to act upon the world to obtain what the organism needs, and (3) the basic felt need that drives the organism to act to obtain what it needs.¹⁸³ Because the patient with total brain failure does not exhibit these functions, "total brain failure can continue to serve as a criterion for declaring death—not because it . . . indicates complete loss of integrated somatic functioning, but because it is a sign that this organism can no longer engage in the essential work that *defines* living things."¹⁸⁴

However, the Council's new rationale suffers from the argument that the integrative functions that continue in patients with total brain failure do, in fact, signify the essential work that defines living things. It is difficult to see how proportional growth and sexual maturation of a child with total brain failure, and the successful gestation of a fetus in a pregnant woman with total brain failure, do not qualify as "essential work that defines living things." Furthermore, maintaining homeostasis through the functions of the liver, kidneys, and cardiovascular and endocrine systems also represents the "work" of a living thing. Finally, the Council claimed that patients with total brain failure do not exhibit "openness to the world" or "receptivity to stimuli," but patients with total brain failure develop a fever in response to infection and have the ability to fight infections and foreign bodies. In addition, these patients exhibit cardiovascular and hormonal stress responses to unanesthetized incision for organ procurement. In sum, the functions and responses of patients with total brain failure discredit the Council's rationale for the neurological standard.

181 See PRESIDENT'S COUNCIL ON BIOETHICS, *supra* note 8, at 60.

182 *Id.*

183 See *id.* at 61.

184 *Id.* at 64–65 (emphasis added).

VI. CALL TO ABANDON THE DEAD DONOR RULE

If we reject the neurological standard as a criterion for determining death and return to employing only the cardiopulmonary standard, the supply of organs—which is already far too low to meet the demand—will plummet. In 2007, close to ninety-two percent of all donated cadaveric organs came from donors declared dead by the neurological standard.¹⁸⁵ This Note argues that if we are to do away with the neurological standard, which we should, we must abandon the DDR as well, in order to preserve the organ transplantation system.

In certain circumstances, namely where informed consent has been obtained, death may not be a necessary precondition to vital organ donation. Even though patients with total brain failure can be maintained for months, “given their permanent loss of consciousness and inability to interact with others, nearly everyone agrees that no humanly meaningful life remains.”¹⁸⁶ In addition, because these patients have perfusing organs, they are ideal candidates for donation.¹⁸⁷ Even though these patients may be alive under the cardiopulmonary standard when they are diagnosed with total brain failure, it may be appropriate to procure their organs if they, through the use of an advance directive¹⁸⁸ or their authorized representatives, have clearly expressed their wishes to serve as donors in this situation. Abandoning the DDR may seem like a radical change, but procuring organs from patients with total brain failure already violates the DDR, because these patients are still living.¹⁸⁹ Furthermore, there is evidence that people who are already aware of the distinction between total brain failure and death are comfortable with organ donation when a patient has suffered total brain failure.¹⁹⁰

Two conditions should always be met when one decides to donate organs after total brain failure. First, the choice to end life support should always be made before and independent of the choice to donate organs. The Uniform Anatomical Gift Act prohibits any physician who attends the patient at the time of death, or who declares the

185 See Brody, *supra* note 92, at F7.

186 Shah & Miller, *supra* note 4, at 569–70.

187 See *id.* at 570.

188 Advance directives are legal documents that allow people to convey their decisions about end-of-life care ahead of time.

189 See Miller & Truog, *supra* note 133, at 40.

190 See Shah & Miller, *supra* note 4, at 575.

patient's death, from being a member of the transplantation team.¹⁹¹ In addition to this safeguard, the clinicians who seek consent to organ donation should always be different from those professionals involved in the organ procurement process.¹⁹² This will help to deter any incentive on the part of the organ transplantation team to pressure a family to consent to organ donation.

Secondly, in order to reconcile this Note's proposal to abandon the DDR with the fact that the patient is still living when the organs are procured, it is important to understand the impossibility of a total brain failure patient's recovery. No patient diagnosed with total brain failure has ever recovered the capacity to breathe spontaneously.¹⁹³ More importantly, no patient diagnosed under the neurological standard has ever shown any signs of consciousness—including the minimal and ambiguous signs displayed by patients in a PVS.¹⁹⁴ Further, since 1968, total brain failure has been understood as legitimating both the withdrawal of life support and the procurement of organs. Both of these actions remain ethically appropriate when patients with total brain failure are understood to be alive under the cardiopulmonary standard but in a state of irreversible coma.¹⁹⁵

A. *Grounding the Integrity of the Organ Donation Process in Informed Consent and the Constitutional Right to Personal Liberty*

The DDR helps to ensure the integrity of the organ transplantation process.¹⁹⁶ Abandoning the DDR would be a dangerous proposition if the organ transplantation system was left without a guiding principle to ensure the integrity of the process and to curb abuse. The solution is to ground the validity of the organ transplantation system in the constitutional right to personal liberty and the common law notion of informed consent. The courts' jurisprudence in this area can provide support for the notion that competent patients, through the use of an advance directive or a surrogate, have a liberty interest in donating their organs when they have been diagnosed with total brain failure. This is not to say that the precedent reflects a right to determine one's fate in the face of imminent death, but there are

191 See Alexandra K. Glazier, "The Brain Dead Patient Was Kept Alive" and Other Disturbing Misconceptions: A Call for Amendments to the Uniform Anatomical Gift Act, 9 KAN. J.L. & PUB. POL'Y 640, 645-46 (2000).

192 See Miller & Truog, *supra* note 133, at 44.

193 See PRESIDENT'S COUNCIL ON BIOETHICS, *supra* note 8, at 45.

194 See *id.*

195 See Miller & Truog, *supra* note 133, at 41.

196 See *id.* at 38.

compelling arguments to be made in favor of a constitutional right to donate one's organs.

B. The Supreme Court's Personal Liberty Jurisprudence

The Supreme Court's personal liberty jurisprudence began with the recognition of a right to privacy, but then in the 1990s the Court used the term "personal liberty" to protect many of the same rights it had once recognized under the right to privacy.¹⁹⁷ The Court's recognition of a right to privacy was firmly established in *Griswold v. Connecticut*.¹⁹⁸ There, the Court struck down a Connecticut law that banned the use of contraceptives by married couples on the grounds that it violated the right of marital privacy.¹⁹⁹ Although the Constitution does not explicitly mention "privacy," the Court found that the right could be implied from the Bill of Rights.²⁰⁰ It reasoned that the specific guarantees in the Bill of Rights have "penumbras formed by emanations from those guarantees that help give them life and substance."²⁰¹ The Court held that "[v]arious guarantees" of the Bill of Rights created "zones of privacy."²⁰² The Court relied on earlier precedent involving the rights of people to make personal decisions about their families and procreation in its recognition of a sphere of privacy.²⁰³

Since *Griswold*, the Court has recognized a right to privacy in a number of contexts, including the recognition of an unmarried couple's right to use contraceptives in *Eisenstadt v. Baird*²⁰⁴ and a woman's right to obtain an abortion in *Roe v. Wade*.²⁰⁵ *Eisenstadt* was significant because it expanded the right enjoyed by married couples to use contraceptives recognized in *Griswold* to unmarried people.²⁰⁶ In doing so, the Court reasoned that if under *Griswold*, the distribution of contraceptives to married persons cannot be prohibited, then a ban on the distribution to unmarried persons would be equally impermissible.²⁰⁷ The Court acknowledged that in *Griswold* the right

197 See *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833 (1992).

198 381 U.S. 479 (1965).

199 See *id.* at 485.

200 See *id.* at 484.

201 *Id.*

202 *Id.*

203 See *id.* at 485.

204 405 U.S. 438 (1972).

205 410 U.S. 113 (1973).

206 See *Eisenstadt*, 405 U.S. at 453.

207 See *id.*

of privacy inhered in the marital relationship.²⁰⁸ However, it altered that analysis by recognizing that the “marital couple is not an independent entity . . . but an association of two individuals each with a separate intellectual and emotional makeup.”²⁰⁹ It then proclaimed that “[i]f the right of privacy means anything, it is the right of the *individual*, married or single, to be free from unwarranted governmental intrusion into matters so fundamentally affecting a person as the decision whether to bear or beget a child.”²¹⁰ The right to an abortion, recognized in *Roe v. Wade*, was also grounded in this right to privacy.²¹¹

Nineteen years later, in *Planned Parenthood of Southeastern Pennsylvania v. Casey*,²¹² the Court reaffirmed the right to have an abortion recognized in *Roe*.²¹³ At issue in *Casey* were five provisions of the Pennsylvania Abortion Control Act of 1982, which all restricted a woman’s right to an abortion in some way.²¹⁴ Although the Court upheld some of the restrictions and rejected others, *Casey*’s central holding reaffirmed a woman’s right to an abortion.²¹⁵ The “privacy” rubric employed in *Griswold* and *Eisenstadt* is absent in *Casey*. Instead, the focus is on the textual guarantee of “liberty” and not the unenumerated right of privacy.

208 *See id.*

209 *Id.*

210 *Id.*

211 *See Roe v. Wade*, 410 U.S. 113, 153 (1973). It should be noted that substantive due process jurisprudence has been criticized for its recognition of rights not found in the Constitution. *See, e.g.*, RAOUL BERGER, *GOVERNMENT BY THE JUDICIARY: THE TRANSFORMATION OF THE FOURTEENTH AMENDMENT* (2d ed. 1997) (arguing that the Supreme Court is not empowered to rewrite the Constitution, but through its transformation of the Fourteenth Amendment has done so); John Hart Ely, *The Wages of Crying Wolf: A Comment on Roe v. Wade*, 82 *YALE L.J.* 920 (1973) (criticizing *Roe* for its recognition of a due process right not found in the Constitution).

212 505 U.S. 833 (1992).

213 *See id.* at 846.

214 *See id.* at 844. The Act requires that a woman seeking an abortion give her informed consent prior to the abortion procedure and specifies that she be provided with certain information at least twenty-four hours before the abortion is performed. *See id.* For a minor to obtain an abortion, the Act requires the informed consent of one of her parents but provides for a judicial bypass option if the minor does not wish to or cannot obtain a parent’s consent. *See id.* Another provision of the Act requires that, unless certain exceptions apply, a married woman seeking an abortion must sign a statement indicating that she has notified her husband of her intended abortion. *See id.* Finally, the Act also imposes certain reporting requirements on facilities that provide abortion services. *See id.*

215 *Id.* at 846.

In its analysis, the *Casey* Court described the Due Process Clause as “a promise of the Constitution that there is a realm of personal liberty which the government may not enter.”²¹⁶ It noted that the Constitution affords protection to personal decisions relating to the following areas: “marriage, procreation, contraception, family relationships, child rearing, and education.”²¹⁷ The Court explained that these matters are central to the liberty protected by the Fourteenth Amendment because they “involv[e] the most intimate and personal choices a person may make in a lifetime.”²¹⁸ In particular, the Court found that a woman’s decision to have an abortion was a choice “central to personal dignity and autonomy.”²¹⁹ The Court recognized that “[i]t was this dimension of personal liberty that *Roe* sought to protect,”²²⁰ and therefore reaffirmed its holding.

C. In re Quinlan

A 1976 New Jersey Supreme Court case, *In re Quinlan*,²²¹ played an influential role in the recognition of a patient’s right to refuse medical treatment. There, Joseph Quinlan, the father of Karen Ann Quinlan, a twenty-two year old woman in a PVS, sought to discontinue the life-sustaining treatment keeping her alive.²²² Joseph Quinlan relied on the constitutional rights of free exercise of religion, protection from cruel and unusual punishment, and privacy in seeking judicial authority to withdraw life support.²²³ He argued that his free exercise of religion required the court to grant him the authority to discontinue life support,²²⁴ but the court rejected this argument.²²⁵ The court also rejected Joseph Quinlan’s argument that the continuance of life-sustaining procedures was cruel and unusual punishment.²²⁶ It found that the Eighth Amendment protection was not relevant in situations other than the imposition of penal sanctions.²²⁷

216 *Id.* at 847.

217 *Id.* at 851.

218 *Id.*

219 *Id.*

220 *Id.* at 853.

221 355 A.2d 647 (1976).

222 *See id.* at 651. It is important to clarify here that Quinlan had not suffered total brain failure, as this Note has addressed, but was in a PVS. *Id.* at 654.

223 *See id.* at 653.

224 *See id.* at 657–58.

225 *See id.* at 661–62.

226 *See id.* at 662.

227 *See id.*

The court did, however, find merit in Joseph Quinlan's argument invoking the right of privacy in seeking the discontinuance of his daughter's life-sustaining treatment. The court first concluded that if Quinlan were competent, she would have the right to refuse life support.²²⁸ In reaching this conclusion, it found that there was "no external compelling interest of the State [that] could compel [Quinlan] to endure the unendurable, only to vegetate a few measurable months with no realistic possibility of returning to any semblance of cognitive or sapient life."²²⁹ The court grounded this right to refuse medical treatment in the right of privacy, reasoning that although the Constitution does not explicitly mention a right of privacy, the Supreme Court has recognized one.²³⁰ The court concluded that this liberty interest was broad enough to include a patient's right to decline medical treatment under certain circumstances.²³¹

The court's discussion of the state's interests as weighed against Quinlan's interest is significant. First, the court identified the claimed interests of the state as (1) the preservation and sanctity of human life and (2) the right of the physician to administer medical treatment according to his best judgment.²³² The court then compared the present situation before it with past cases where medical treatments were ordered by the court.²³³ It accepted Joseph Quinlan's argument that Quinlan's present treatment could not cure or improve her condition, but could only "prolong her inevitable slow deterioration and death."²³⁴ It found Quinlan's case, in which there was no hope for recovery, to be significantly different from those cases in which the medical treatment, usually a transfusion, had been required, because in those cases, the treatment "constituted a minimal bodily invasion and the chances of recovery and return to functioning life were very good."²³⁵ The court then announced a continuum it would use in

228 *Id.* at 663 ("We have no doubt . . . that if [Quinlan] were herself miraculously lucid for an interval . . . and perceptive of her irreversible condition, she could effectively decide upon discontinuance of the life-support apparatus, even if it meant the prospect of natural death.").

229 *Id.*

230 *Id.* ("The Court has interdicted judicial intrusion into many aspects of personal decision, sometimes basing this restraint upon the conception of a limitation of judicial interest and responsibility, such as with regard to contraception and its relationship to family life and decision.").

231 *See id.*

232 *See id.* The doctors claimed that removing Quinlan from the respirator would conflict with their professional judgment. *See id.*

233 *See id.* at 664.

234 *See id.* at 663.

235 *Id.* at 664.

weighing the state's interest in the preservation of life against the patient's interest in refusing medical treatment. It explained that the state's interest in the preservation of life weakens and the individual's right to privacy grows as the "degree of bodily invasion increases and the prognosis dims."²³⁶ The court concluded that "[u]ltimately there comes a point at which the individual's rights overcome the State interest," as they would in Quinlan's case if she were competent to assert her right to discontinue medical treatment.²³⁷

The court then addressed the question of what becomes of the right to refuse medical treatment once the patient is rendered incompetent. Even though the court noted that the affirmation of this right would ordinarily be based upon Quinlan's competency to assert it, and that it could not discern her wishes, it concluded that her right of privacy may be asserted on her behalf by her father.²³⁸ The court emphasized that if this right to resist treatment was "a valuable incident of [Quinlan's] right to privacy," as the court believed it was, then the fact that she could not consciously exercise the choice did not extinguish it.²³⁹ After finding that the right still existed, the court recognized that the only practical way to preserve it was to allow Quinlan's family to assert it.²⁴⁰

Finally, the court considered the alleged criminal liability that might attach when the doctors removed the life-sustaining treatment. The court held that there would be no criminal homicide in the circumstances of this case because (1) the ensuing death would be from natural causes, rather than homicide, and (2) even if it were to be regarded as homicide, it would not be "unlawful."²⁴¹ Significantly, the court drew a distinction between "the unlawful taking of the life of another and the ending of artificial life-support systems as a matter of self-determination."²⁴² It held that the exercise of a constitutional right, such as the right to refuse medical treatment recognized here, was protected from criminal prosecution, and it explained that the doctors would not be vulnerable to criminal liability because the con-

236 *Id.*

237 *Id.*

238 *See id.*

239 *Id.* ("If a putative decision by [Quinlan] to permit this non-cognitive, vegetative existence to terminate by natural forces is regarded as a valuable incident of her right to privacy, as we believe it to be, then it should not be discarded solely on the basis that her condition prevents her conscious exercise of the choice.").

240 *See id.*

241 *Id.* at 669–70 ("The termination of treatment pursuant to the right of privacy is, within the limitations of this case, *ipso facto* lawful.").

242 *Id.* at 670.

stitutional protection extends to third parties “whose action is necessary to effectuate the exercise of that right.”²⁴³ It is interesting to note that Quinlan’s respirator was ultimately removed, but to everyone’s surprise, she lived for nine more years.²⁴⁴

D. Cruzan v. Director, Missouri Department of Health

Over a decade later, the Supreme Court considered *Cruzan v. Director, Missouri Department of Health*.²⁴⁵ There, Nancy Beth Cruzan suffered a severe brain injury in an automobile accident, which rendered her incompetent.²⁴⁶ Her parents sought a court order directing the withdrawal of her artificial feeding and hydration equipment.²⁴⁷ At the time, the state of Missouri had a provision that prohibited the removal of life-sustaining treatment without clear and convincing evidence of the patient’s desire to have life-sustaining treatment withdrawn under the circumstances.²⁴⁸ In this case, the Missouri Supreme Court refused to order the removal of Cruzan’s life-sustaining treatment because her family had failed to present clear and convincing evidence of this desire on her part.²⁴⁹

By the time the case was brought, some lower courts had addressed similar cases and had found a right to refuse medical treatment.²⁵⁰ The Court noted that while *Quinlan* held that the right to refuse medical treatment was grounded in the constitutional right to privacy, after *Quinlan*, most courts based a right to refuse treatment either solely on the common law right to informed consent or on both the common law and a constitutional privacy right.²⁵¹ Informed con-

243 *Id.*

244 Natalie Rezek, *Is Self-Harm by Cutting a Constitutionally Protected Right?*, 12 QUINNIAC HEALTH L.J. 303, 320 n.132 (2009).

245 497 U.S. 261 (1990).

246 *See id.* at 265. Like Quinlan, Cruzan was in a PVS; she had not suffered total brain failure.

247 *See id.*

248 *See id.*

249 *See id.*

250 *See Superintendent of Belchertown State Sch. v. Saikewicz*, 370 N.E.2d 417 (Mass. 1977); *In re Storar & Eichner*, 420 N.E.2d 64 (N.Y. 1981), *superseded by statute*, Health Care Decisions Act for Persons With Mental Retardation, N.Y. SCPA Law § 1750-b (McKinney 2010).

251 *See Cruzan*, 497 U.S. at 265; *see also Saikewicz*, 370 N.E.2d at 435 (relying on both the right of privacy and the right of informed consent to permit the withholding of chemotherapy from a profoundly retarded sixty-seven year old man suffering from leukemia); *Storar*, 420 N.E.2d at 70 (declining to base a right to refuse treatment on a constitutional policy right; finding the right adequately supported by the informed consent doctrine).

sent derives from the notion at common law that the touching of one person by another without consent and without legal justification is battery.²⁵² The Supreme Court explained that this notion of bodily integrity “has been embodied in the requirement that informed consent is generally required for medical treatment.”²⁵³ When Justice Cardozo sat on the New York Court of Appeals, he described this doctrine in the following words: “Every human being of adult years and sound mind has a right to determine what shall be done with his own body; and a surgeon who performs an operation without his patient’s consent commits an assault, for which he is liable in damages.”²⁵⁴ The “logical corollary of the doctrine of informed consent is that the patient possesses the right not to consent, that is, to refuse treatment.”²⁵⁵

The Supreme Court narrowly framed the issue in *Cruzan* as “whether Cruzan has a right . . . which would require the hospital to withdraw life-sustaining treatment from her under these circumstances.”²⁵⁶ The Court first acknowledged that “[t]he principle that a competent person has a constitutionally protected liberty interest in refusing unwanted medical treatment may be inferred from our prior decisions.”²⁵⁷ The problem for the Court was that Cruzan was incompetent and unable to assert this interest. In *Quinlan*, the New Jersey Supreme Court found that in order to preserve the right to refuse medical treatment, it was necessary to allow a surrogate decision maker to assert it on behalf of the incompetent patient.²⁵⁸ However, the Supreme Court disagreed with the New Jersey Supreme Court on this issue; it was unwilling to give a surrogate the full extent of the competent patient’s right. Here, Missouri did recognize that, under certain circumstances, a surrogate may act for the patient in removing life-sustaining treatment, but it required clear and convincing evidence of the patient’s wishes.²⁵⁹ The Court held that the Constitution did not forbid Missouri from requiring the party seeking to remove the treatment to show, by clear and convincing evidence, that removal is what the patient would have wanted.²⁶⁰

252 See *Cruzan*, 497 U.S. at 269.

253 *Id.*

254 *Schloendorff v. Soc’y of N.Y. Hosp.*, 105 N.E. 92, 93 (N.Y. 1914).

255 *Cruzan*, 497 U.S. at 270.

256 *Id.* at 269.

257 *Id.* at 278.

258 See *supra* notes 238–40 and accompanying text.

259 See *Cruzan*, 497 U.S. at 280.

260 See *id.*

In upholding Missouri's evidentiary requirement, the Court balanced the individual's liberty interests against the state's interests.²⁶¹ The Court conceded that it "assume[d] that the United States Constitution would grant a competent person a constitutionally protected right to refuse lifesaving hydration and nutrition."²⁶² But, the Court recognized a number of state interests involved in the decision, including the protection and preservation of human life.²⁶³ The Court concluded that a state may properly decline to make judgments about the *quality* of life that an individual may enjoy and simply assert an unqualified interest in the preservation of life.²⁶⁴ The Court also found more particular interests in Cruzan's situation, one of which was Missouri's right to safeguard the *personal element* of the choice between life and death by imposing a heightened evidentiary requirement to ensure compliance with the patient's wishes.²⁶⁵ The Court also recognized the state's interest in "guard[ing] against potential abuses in such situations."²⁶⁶ Cruzan's parents alternatively contended that Missouri must accept the "substituted judgment" of close family members in the absence of clear and convincing evidence, but the Court rejected this argument on the ground that only the patient could make this profound decision.²⁶⁷

However, Justice O'Connor's concurrence emphasized that, in some situations, it may be necessary for a state to honor the right of an incompetent patient to refuse medical treatment when it is asserted by a surrogate, absent a showing of clear and convincing evidence. She began her concurrence by agreeing that "a protected liberty interest in refusing unwanted medical treatment may be inferred from [the Court's] prior decisions and that the refusal of artificially delivered food and water is encompassed within that liberty interest."²⁶⁸ Notably though, Justice O'Connor explained that she wrote separately to emphasize that "the Court does not today decide the issue whether a State must also give effect to the decisions of a surrogate decisionmaker."²⁶⁹ Justice O'Connor recognized that this may be "consti-

261 *See id.* at 279.

262 *Id.*

263 *See id.* at 280.

264 *See id.* at 282.

265 *See id.* at 281 ("Missouri may legitimately seek to safeguard the personal element of [the choice to refuse life-sustaining treatment] through the imposition of heightened evidentiary requirements.").

266 *Id.*

267 *Id.* at 285-86 ("[W]e do not think the Due Process Clause requires the State to repose judgment on these matters with anyone but the patient herself.").

268 *Id.* at 287 (O'Connor, J., concurring) (citation omitted).

269 *Id.* at 289.

tutionally required” in some cases in order to protect the patient’s liberty interest in refusing medical treatment.²⁷⁰ She reasoned that because most people do not provide explicit instructions regarding their intent to refuse medical treatment should they become incompetent, states that refuse to consider any evidence other than these instructions will sometimes fail to honor a patient’s intent.²⁷¹ Justice O’Connor suggested that states could more faithfully honor a patient’s wishes by considering what she deemed “an equally probative source of evidence,” namely, “the patient’s appointment of a proxy to make health care decisions on her behalf.”²⁷² Justice O’Connor concluded her opinion by emphasizing that the Supreme Court has left the surrogate decision making question open:

Today’s decision, holding only that the Constitution permits a State to require clear and convincing evidence of Nancy Cruzan’s desire to have artificial hydration and nutrition withdrawn, does not preclude a future determination that the Constitution requires the States to implement the decisions of a patient’s duly appointed surrogate.²⁷³

Justice Brennan’s dissent, joined by Justice Marshall and Justice Blackmun, argued that Missouri’s evidentiary requirement was an impermissible burden on the fundamental right to refuse medical treatment. In its due process analysis, the Court asks whether the liberty interest is “‘deeply rooted in this Nation’s history and tradition.’”²⁷⁴ Justice Brennan contended that the interest in freedom from medical treatment satisfied this standard.²⁷⁵ He deemed Cruzan’s right “fundamental” and not outweighed by any interests of the state.²⁷⁶ Justice Brennan described the standard to be applied when a fundamental right is at issue in this way: “[I]f a requirement imposed by a State ‘significantly interferes with the exercise of a fundamental right, it cannot be upheld unless it is supported by sufficiently important state interests and is closely tailored to effectuate only those interests.’”²⁷⁷ He explained that an evidentiary rule “must

270 *Id.*

271 *See id.* at 289–90.

272 *Id.* at 290. Justice O’Connor noted that these procedures for surrogate decision making are gaining in acceptance and that they “may be a valuable additional safeguard of the patient’s interest in directing his medical care.” *Id.* at 291–92.

273 *Id.* at 292.

274 *Id.* at 304. (Brennan, J., dissenting) (citing *Bowers v. Hardwick*, 478 U.S. 186, 192 (1986)).

275 *See id.* at 305.

276 *Id.* (citing *Snyder v. Massachusetts*, 291 U.S. 97, 105 (1934)).

277 *Id.* at 303 (quoting *Zablocki v. Redhail*, 434 U.S. 374, 388 (1978)).

meet these standards if it significantly burdens a fundamental liberty interest," and he then contended that the Missouri evidentiary requirement failed this test.²⁷⁸

Justice Brennan then addressed the question of what happens to the right to refuse medical treatment once the patient is rendered incompetent and can no longer assert it. Like the New Jersey Supreme Court in *Quinlan*, he embraced the notion that an incompetent patient's right to refuse medical treatment can be asserted by a surrogate decision maker.²⁷⁹ He argued that Cruzan was not deprived of this fundamental right when she was rendered incompetent.²⁸⁰ He explained this by invoking a quotation which specifically referenced patients with loss of brain function:

The law must often adjust the manner in which it affords rights to those whose status renders them unable to exercise choice freely and rationally. Children, the insane, and *those who are irreversibly ill with loss of brain function, for instance, all retain 'rights,'* to be sure, but often such rights are only meaningful as they are exercised by agents acting with the best interests of their principals in mind.²⁸¹

Once Justice Brennan determined that Cruzan's right was fundamental, and that she possessed the same right when incompetent that she would possess if she were competent, he moved to the next step in the due process analysis: weighing her interest in refusing medical treatment against a variety of state interests. One asserted state interest was a general interest in the preservation of life, but Justice Brennan contended that "the State has no legitimate general interest in someone's life . . . that could outweigh the person's choice to avoid medical treatment."²⁸² Another interest Missouri asserted was an interest in providing *Quinlan* with an accurate determination of how she would exercise her rights under these circumstances.²⁸³ Throughout the discussion of this interest, Justice Brennan focused on the need for accuracy in this determination²⁸⁴ and ultimately concluded that Missouri's "safeguard" did not further this interest for a number of reasons.²⁸⁵ Justice Brennan first noted that the Missouri court's "exclusion of relevant evidence dispenses with any semblance of accu-

278 *Id.*

279 *See id.* at 309 ("[T]he question is not whether an incompetent has constitutional rights, but how such rights may be exercised.").

280 *See id.*

281 *Id.* at 309 (quoting *Thompson v. Oklahoma*, 487 U.S. 815, 825 n.23 (1988)).

282 *Id.* at 313.

283 *See id.* at 315.

284 *Id.* at 316 ("Accuracy, therefore, must be our touchstone.").

285 *See id.*

rate factfinding.”²⁸⁶ Further, like Justice O’Connor, he pointed out that too few people execute wills or advance directives for such an evidentiary rule to adequately ensure that the wishes of incompetent patients are honored.²⁸⁷ *Cruzan* illustrates that the Court has recognized a competent patient’s right to refuse medical treatment, although the fate of that right is unclear once the patient has been rendered incompetent.

E. *Washington v. Glucksberg*

Seven years later, the Supreme Court decided *Washington v. Glucksberg*.²⁸⁸ At issue there was the State of Washington’s ban on physician-assisted suicide.²⁸⁹ Physician-assisted suicide occurs when a doctor prescribes medication that, if taken by the patient, is intended to cause the patient’s death. A group of terminally ill patients, with their doctors and a nonprofit organization, brought an action claiming that the Washington statute violated the Due Process Clause.²⁹⁰ Specifically, the plaintiffs asserted that the statute violated their liberty interest, which they argued extends to a personal choice to commit physician-assisted suicide by a mentally competent, terminally ill adult.²⁹¹ The Court began by examining the nation’s history and legal traditions to determine whether the right asserted was fundamental.²⁹² The Court concluded that because most states had historically considered suicide and the assistance of suicide crimes, and the Anglo-American common law tradition had punished suicide for over 700 years, the right to commit suicide was not rooted in the nation’s history and tradition, and thus was not fundamental.²⁹³

The respondents acknowledged that while many states prohibited suicide, the Supreme Court had nonetheless recognized a fundamental interest in the right to make deeply personal decisions free from governmental interference. The respondents invoked both *Cruzan* and *Casey* in support of this assertion.²⁹⁴ The Court distinguished those cases on the grounds that they turned on the fact that both of

286 *Id.* at 321 (“The court adverted to no evidence supporting its decision, but held that no clear and convincing, inherently reliable evidence had been presented to show that [Cruzan] would want to avoid further treatment.”).

287 *See id.* at 323.

288 521 U.S. 702 (1997).

289 *See id.* at 705–06.

290 *See id.* at 707–08.

291 *See id.* at 708.

292 *See id.* at 710.

293 *See id.* at 711.

294 *See id.* at 724.

those decisions were deeply rooted in our history and traditions and were deemed fundamental to the concept of ordered liberty, rather than on the premise that they involved profoundly personal decisions.²⁹⁵

The respondents argued that *Cruzan* had recognized a “liberty interest in determining the time and manner of one’s death.”²⁹⁶ The Court responded, however, that the holding in *Cruzan* was more precise than that; it did not involve a right to die according to one’s wishes, but a right to refuse medical treatment.²⁹⁷ The Court reasoned that the right recognized in *Cruzan* was mostly rooted in the common law notions of battery and informed consent in the medical context, rather than “abstract concepts of personal autonomy.”²⁹⁸ It also distinguished *Cruzan* by noting that the right to refuse medical treatment was rooted in our nation’s history and tradition, while suicide and the assistance of suicide were widely condemned.²⁹⁹ Thus, for the majority, the decision in *Cruzan* turned on the fundamental nature of the right as rooted in the nation’s history and tradition, rather than the profoundly personal nature of the decision at issue.

Respondents also used *Casey* in asserting that the Court’s recent jurisprudence in this area reflects a general tradition of “self-sovereignty” and “personal autonomy.”³⁰⁰ They contended that the decision whether or not to have an abortion is similar to the decision of how and when to die because it is one of the most intimate and personal choices a person may ever make.³⁰¹ However, as it did in distinguishing *Cruzan*, the Court emphasized that it had found the right to an abortion fundamental to our concept of ordered liberty. This understanding, rather than the fact that it was a deeply personal deci-

295 See *id.* at 727.

296 *Id.* at 722 (citation omitted).

297 See *id.* at 723. The Court described its holding in *Cruzan* much more narrowly: “We assumed that the Constitution granted competent persons a ‘constitutionally protected right to refuse lifesaving hydration and nutrition.’” *Id.* (quoting *Cruzan v. Director, Mo. Dep’t of Health*, 497 U.S. 261, 279 (1990)). Before the Court ultimately concluded that Missouri could impose an evidentiary requirement on the discontinuance of life-sustaining treatment, it recognized a competent patient’s right to refuse medical treatment in certain circumstances.

298 *Id.* at 725.

299 See *id.* (“The decision to commit suicide with the assistance of another may be just as personal and profound as the decision to refuse unwanted medical treatment, but it has never enjoyed similar legal protection.”).

300 *Id.* at 723–24.

301 *Id.* at 726 (citation omitted).

sion, motivated the Court to uphold the liberty interest.³⁰² The *Glucksberg* Court described the *Casey* opinion as moving “from the recognition that liberty necessarily includes freedom of conscience and belief about ultimate considerations to the observation that ‘though the abortion decision may originate within the zone of conscience and belief, it is *more than a philosophic exercise.*’”³⁰³ Finally, it stated, “That many of the rights and liberties protected by the Due Process Clause sound in personal autonomy does not warrant the sweeping conclusion that any and all important, intimate, and personal decisions are so protected.”³⁰⁴

However, under its due process jurisprudence, even if the Court finds that the right burdened by the governmental action is not fundamental, it must still ensure that the action is rationally related to a legitimate state interest.³⁰⁵ Here, the Court recognized a number of state interests at stake in Washington’s assisted-suicide ban, including: (1) the preservation of human life,³⁰⁶ (2) the prevention of suicide,³⁰⁷ (3) the protection of the integrity of the medical profession,³⁰⁸ (4) the protection of vulnerable groups, including the poor, elderly, and disabled persons from abuse, neglect, and mistake,³⁰⁹ and (5) the avoidance of the possibility that permitting assisted suicide will lead to the acceptance of voluntary and involuntary euthanasia.³¹⁰ The Court

302 *See id.* at 727 (“By choosing this language, the Court’s opinion in *Casey* described, in a general way and in light of our prior cases, those personal activities and decisions that this Court has identified as so deeply rooted in our history and traditions, or so fundamental to our concept of constitutionally ordered liberty, that they are protected by the Fourteenth Amendment.”).

303 *Id.* (quoting *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833, 852 (1993)).

304 *Id.* However, six years later in *Lawrence v. Texas*, the Court recognized the right of homosexuals to engage in sodomy, finding that “the petitioners [were] entitled to respect for their private lives.” 539 U.S. 558, 578 (2003). The Court explained that the petitioners’ “right to liberty under the Due Process Clause gives them the full right to engage in their conduct without intervention of the government.” *Id.* The Court quoted *Casey* in support of its decision: “‘It is a promise of the Constitution that there is a realm of personal liberty which the government may not enter.’” *Id.* (quoting *Casey*, 505 U.S. at 847). In its conclusion, the Court held that “[t]he Texas statute furthers no legitimate state interest which can justify its intrusion into the personal and private life of the individual.” *Id.*

305 *See Glucksberg*, 521 U.S. at 728.

306 *See id.*

307 *See id.* at 730.

308 *See id.* at 731.

309 *See id.*

310 *See id.* at 732.

easily found that all of these interests were important and rationally related to Washington's ban on assisted suicide.³¹¹

Justice Stevens's concurrence is significant because in contrast to the majority opinion, which emphasized the history and tradition of the rights upheld in *Cruzan* and *Casey*, it highlighted the personal nature of those rights and the implications of the Court's holdings in those cases. He began by noting that the Court had decided that Washington's statute was valid on its face, and explained that this holding did not foreclose the possibility that some applications of the statute may be unconstitutional.³¹²

Justice Stevens then linked the *Cruzan* Court's vindication of Cruzan's right to refuse medical treatment to its implicit recognition of her right to "affirmative conduct that would hasten her death."³¹³ While the majority emphasized that its decision in *Cruzan* was grounded in the common law notion of informed consent, Justice Stevens argued that there was another source of Cruzan's interest. He contended that this right was derived from a "far broader and more basic concept of freedom that is even older than the common law," a freedom which "embraces not merely a person's right to refuse a particular kind of unwanted treatment, but also her interest in dignity, and in determining the character of the memories that will survive long after her death."³¹⁴ Justice Stevens explained that when the Court recognized a competent patient's right to refuse medical treatment, it relied not simply on the common law right to refuse medical treatment, "but—at least implicitly—on the even more fundamental right to make this 'deeply personal decision.'"³¹⁵ This was precisely the line of reasoning the *Glucksberg* respondents employed in their argument that the *Cruzan* Court had recognized a right to liberty broad enough to encompass the right to commit physician-assisted suicide. Justice Stevens explained that "the common-law right to protection from battery, which included the right to refuse medical treatment in most circumstances, did not mark 'the outer limits of the substantive sphere of liberty' that supported the Cruzan family's deci-

311 See *id.* at 735 ("We need not weigh exactly the relative strengths of these various interests. They are unquestionably important and legitimate, and Washington's ban on assisted suicide is at least reasonably related to their promotion and protection.").

312 See *id.* at 739 (Stevens, J., concurring).

313 *Id.* at 743.

314 *Id.*

315 *Id.* at 744 (quoting *Cruzan v. Director, Mo. Dep't of Health*, 497 U.S. 261, 289 (1990) (O'Connor, J., concurring)).

sion to hasten Nancy's death."³¹⁶ He argued that *Cruzan* gave recognition "not just to vague, unbridled notions of autonomy, but to the more specific interest in making decisions about how to confront an imminent death."³¹⁷ Although the majority in *Glucksberg* rejected the notion of a liberty interest in committing physician-assisted suicide by characterizing the decisions in *Cruzan* and *Casey* as turning on the fundamental nature of the rights, rather than the profoundly personal nature of the decisions, the concurrences challenge this assertion.

F. *Applying the Precedent to Organ Donation After Total Brain Failure*

Although the Supreme Court has not yet decided a case concerning the right of a patient to donate organs after total brain failure, the Court's recognition of the right to liberty in making certain profoundly personal decisions provides support for the proposed right. The Court has indicated two sources of the rights it has recognized in the context of imminent death, which can both be employed in the argument for a right to consent to organ donation after total brain failure. The first is the constitutional right of personal liberty, and the second is the common law notion of informed consent.

A right to consent to organ donation could be recognized as a right to personal liberty because of the profoundly personal nature of the decision to donate one's organs. The Supreme Court's jurisprudence in this area, beginning with *Griswold* and including *Eisenstadt*, *Roe*, and *Casey*, equates the right to liberty with the right to make personal decisions free from state interference. Although *Griswold* grounded the right to use contraceptives in marital privacy, *Eisenstadt* rejected this notion when it recognized the right of individuals to use contraceptives.³¹⁸ Further, *Casey* highlighted the various areas in which the Court has recognized the right of personal liberty outside the contraceptive and abortion context.³¹⁹ *Casey* noted that the Constitution affords protection to personal decisions relating to marriage, procreation, contraception, family relationships, child rearing, and education.³²⁰ And *Cruzan* extended this protection to end-of-life deci-

316 *Id.* (quoting *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833, 848 (1993)).

317 *Id.* at 745.

318 *See Eisenstadt v. Baird*, 405 U.S. 438, 453 (1972) ("If the right of privacy means anything, it is the right of the *individual*, married or single, to be free from unwarranted governmental intrusion into matters so fundamentally affecting a person . . .").

319 *See Casey*, 505 U.S. at 851 (listing marriage, family relationships, child rearing, and education).

320 *See id.*

sions. The *Casey* Court explained that these matters are central to the liberty protected by the Fourteenth Amendment because they “involv[e] the most intimate and personal choices a person may make in a lifetime.”³²¹ With this language, the Court equated liberty to a right of privacy in decision making in certain realms of life. It elaborated on this right by stating:

At the heart of liberty is the right to define one’s own concept of existence, of meaning, of the universe, and of the mystery of human life. Beliefs about these matters could not define the attributes of personhood were they formed under compulsion of the State.³²²

The right to consent to organ donation after total brain failure is one of the “most intimate and personal choices a person may make in a lifetime.”³²³ Further, this interest is likely encompassed in the right to “define one’s own concept of existence, of meaning, of the universe, and of the mystery of human life.”³²⁴

Although the *Glucksberg* Court emphasized that the holdings of *Cruzan* and *Casey* turned on the fact that the Court found the respective rights fundamental to our concept of constitutionally ordered liberty, rather than the personal nature of the decisions at issue, *Cruzan* and *Casey*, along with Stevens’s concurrence in *Glucksberg*, rebut this argument. First, in *Cruzan*, the Court was concerned with Missouri’s right to “safeguard the personal element of [the] choice” between life and death.³²⁵ The Court found that the state’s interest in honoring the incompetent patient’s personal choice was important enough to justify Missouri’s clear and convincing evidence requirement.³²⁶ Justice O’Connor’s concurrence in *Cruzan* also emphasized the significance of respecting the patient’s personal decision in this context. She approached the issue from a different angle than the majority by arguing that states should consider evidence other than a patient’s explicit instructions so as to ascertain the patient’s intent with greater accuracy.³²⁷

In addition, Justice Souter’s concurrence in *Glucksberg* challenged the majority’s assertion that the rights recognized in *Cruzan* and *Casey* were not products of the personal nature of the decisions at issue. He argued that the Court’s recognition of *Cruzan*’s interest in refusing

321 *Id.*

322 *Id.*

323 *Id.*

324 *Id.*

325 *Cruzan v. Director, Mo. Dep’t of Health*, 497 U.S. 261, 281 (1990).

326 *See supra* notes 265–67 and accompanying text.

327 *See supra* notes 268–73 and accompanying text.

medical treatment did not rest solely on the common law notion of informed consent, but at least implicitly, “on the even more fundamental right to make this ‘deeply personal decision.’”³²⁸ Justice Stevens explained that the freedom the Court has recognized in its personal liberty cases “embraces not merely a person’s right to refuse . . . unwanted treatment, but also her interest in dignity, and in determining the character of the memories that will survive long after death.”³²⁹ The right to decide whether to consent to organ donation after total brain failure is encompassed in the patient’s interest in dignity and in determining the character of the memories that will survive after her death.

Lastly, Justice Stevens stated that *Cruzan* “g[ave] recognition, not just to vague, unbridled notions of autonomy, but to the more specific interest in making decisions about how to confront an imminent death.”³³⁰ The broad recognition of the freedom the Court has recognized in this area applies to the context of organ donation. The decision to consent to organ donation after total brain failure is made under similar circumstances as the decision to withdraw life-sustaining treatment and thus, patients should have the right to exercise the same autonomy in both situations. The decision to donate organs after total brain failure is as personal as any of the decisions the Supreme Court has recognized within the right to personal liberty.

Although the *Glucksberg* majority refused to recognize a liberty interest in committing physician-assisted suicide,³³¹ the right to donate one’s organs after total brain failure, through an advance directive, is more like the right recognized in *Cruzan*, namely, the right of a competent adult to refuse unwanted medical treatment,³³² than the right to commit physician-assisted suicide. *Cruzan* extended the reach of the Due Process Clause to the right of a competent adult to determine the time and manner of his death by allowing the patient to refuse medically necessary nutrition and hydration. With this liberty interest affirmed, the recognition of the right to donate one’s organs after total brain failure is just a small step for the Court to take. The decision to donate one’s organs after total brain failure falls firmly within the liberty interest in determining the manner of

328 *Washington v. Glucksberg*, 521 U.S. 702, 744 (1997) (Stevens, J., concurring) (quoting *Cruzan*, 479 U.S. at 289 (O’Connor, J., concurring)).

329 *Id.* at 743.

330 *Id.* at 745.

331 *See id.* at 728.

332 *See Cruzan*, 479 U.S. at 278 (1990) (“The principle that a competent person has a constitutionally protected liberty interest in refusing unwanted medical treatment may be inferred from our prior decisions.”).

one's death. Further, Justice O'Connor's emphasis on the need to honor a patient's wishes in her *Cruzan* concurrence³³³ lends support to the notion of a constitutional right to donate one's organs after total brain failure. Where a person has evidenced a choice to donate his organs should he ever suffer total brain failure, his liberty interest in donating deserves to be protected under the Due Process Clause.

The courts' jurisprudence regarding the common law notion of informed consent also lends support to the right to donate organs in the context of total brain failure. While on the surface informed consent entails a right to be free from touching or battery, there is something more fundamental to the concept. As Justice Cardozo put it, the concept entails "a right to determine what shall be done with [one's] own body."³³⁴ When informed consent is framed in this way, it can be applied to the right to decide whether or not to donate organs in certain circumstances.

The first major premise to glean from the Supreme Court's personal liberty jurisprudence is its recognition of a competent person's unqualified right to refuse medical treatment.³³⁵ The New Jersey Supreme Court first proposed this notion in *Quinlan*,³³⁶ and the Supreme Court affirmed it in *Cruzan*.³³⁷ Where the Supreme Court has had trouble is with what should be done in the absence of an advance directive, where the state cannot be sure of an incompetent person's wishes. In *Cruzan*, it held that the State of Missouri was permitted to require clear and convincing evidence of an incompetent patient's wishes before the removal of life-sustaining treatment. Up until this point, this Note has only argued that a patient with total brain failure should be able to consent to organ donation through an advance directive, but the absence of evidence of an incompetent person's wishes is likely to be common in cases of organ donation after total brain failure, as it has been common in the cases the Court has considered. Thus, this Note now turns to its argument that in the absence of an advance directive, surrogate decision makers should be able to consent to organ donation on behalf of patients with total brain failure.

There is considerable support in the case law for allowing a surrogate decision maker to assert the right to refuse medical treatment,

333 See *id.* at 289-90 (O'Connor, J., concurring).

334 *Schloendorff v. Soc'y of N.Y. Hosp.*, 105 N.E. 92, 93 (N.Y. 1914).

335 See *Cruzan*, 497 U.S. at 278 (1990) ("The principle that a competent person has a constitutionally protected liberty interest in refusing unwanted medical treatment may be inferred from our prior decisions.")

336 See *supra* note 228 and accompanying text.

337 See *supra* note 257 and accompanying text.

which can be invoked in the argument for honoring a surrogate decision maker's assertion of an incompetent patient's right to donate organs after total brain failure.³³⁸ In *Quinlan*, the Supreme Court of New Jersey recognized that the only practical way to preserve the right to refuse medical treatment after the patient is rendered incompetent is to allow a surrogate to assert it.³³⁹ The court honored Joseph Quinlan's assertion of Quinlan's right to refuse medical treatment.³⁴⁰

Justice O'Connor's concurrence in *Cruzan* lends further support to the notion that a surrogate should be permitted to assert a dying patient's right when that patient has been rendered incompetent.³⁴¹ She wrote separately in *Cruzan* to emphasize that the Court did not decide the issue of whether the State must give effect to the decisions of a surrogate.³⁴² Justice O'Connor emphasized the importance of honoring the patient's intent and concluded that, because most people do not prepare advance directives or provide instructions regarding their intent to refuse medical treatment, states that only consider this type of evidence in making the determination about the incompetent patient's intent will sometimes be wrong. In her concurrence, she suggested that the appointment of a proxy to make health care decisions in the event of incompetence could further the asserted goal of honoring the patient's wishes. This same reasoning is applicable in the context of organ donation after total brain failure.

CONCLUSION

We ought to reject the neurological criterion for determining death and return to using only the cardiopulmonary standard. Both Jonas and Shewmon launched major attacks on the Harvard committee's proposal of the neurological criterion. Jonas's concern was with the uncertainty that surrounds the determination of death according to the neurological standard. Shewmon's research challenged the assumptions upon which the neurological criterion was based. He demonstrated that the functioning of the heart and lungs does not

338 See *Cruzan*, 497 U.S. at 289–90 (O'Connor, J., concurring) (noting that the Court did not decide the issue whether a state must also give effect to the decisions of a surrogate decision maker, and that such a duty may be constitutionally required in some circumstances, because few individuals provide explicit instructions regarding their intent to refuse medical treatment should they become incompetent); *In re Quinlan*, 355 A.2d 647, 664 (1976) (concluding that an incompetent patient's right to privacy may be asserted on her behalf by her guardian).

339 See *Quinlan*, 355 A.2d at 664 (1976).

340 See *id.*

341 See *Cruzan*, 497 U.S. at 289–90 (O'Connor, J., concurring).

342 See *id.* at 289.

necessarily immediately cease after total brain failure and that, in fact, patients with total brain failure can continue to exhibit heart and lung functioning with the help of a ventilator for months, and in some cases, even years. Shewmon's research also revealed that patients who have suffered total brain failure continue to exhibit a number of integrative functions, including maintenance of body temperature, proportional growth, sexual maturation, and elimination of waste. In light of this evidence, the risk of the public's confusion about the criterion, and the President's Commission's unpersuasive rationales for the standard, this Note proposes a rejection of the neurological standard and a return to the use of only the cardiopulmonary criterion in determining death.

Because the majority of cadaveric donors are determined dead by the neurological standard, and the organ supply is already far too low to meet the demand, it is also necessary to abandon the dead donor rule in order to preserve the organ transplantation system. In the absence of the dead donor rule, the ethical integrity of the organ donation process can be grounded in the constitutional right to personal liberty and the common law notion of informed consent.

The Supreme Court's personal liberty jurisprudence in *Griswold*, *Eisenstadt*, *Roe*, and *Casey* provides support for the recognition of a competent adult's constitutional right to donate organs after total brain failure by way of an advance directive. The decision to donate one's organs is just as personal as any of the rights recognized in the above cases. Furthermore, *Quinlan*, *Cruzan*, and *Glucksberg* demonstrate that the Court has recognized some extent of personal autonomy in the face of imminent death. This notion of personal autonomy is applicable to the decision of whether to donate one's organs after total brain failure.

APPENDIX

Table 1: Somatically Integrative Functions Not Mediated by the Brain and Possessed by Some Patients with Total Brain Failure³⁴³
Homeostasis of a variety of mutually interacting chemicals through the functions of liver, kidneys, cardiovascular, and endocrine systems.
Elimination, detoxification and recycling of cellular wastes through the body.
Energy balance, including interactions among liver, endocrine systems, muscle and fat.
Maintenance of body temperature (albeit at a lower than normal level and with the help of blankets).
Wound healing, the capacity for which is diffuse throughout the body.
Fighting of infections and foreign bodies through interactions among the immune system, lymphatics, and bone marrow.
Development of fever in response to infection.
Cardiovascular and hormonal stress responses to unanesthetized incision for organ retrieval.
Successful gestation of a fetus in a woman with total brain failure.
Sexual maturation of a child with total brain failure.
Proportional growth of a child with total brain failure.

343 Shewmon, *supra* note 105, at 467–68.

