

## ABSTRACT

### Defining Death: A Christian Perspective on the Limitations and Implications of Brain Death

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The redefinition of death in the 1960s from the cardiopulmonary definition to the whole brain definition is cause for careful ethical analysis by Christian philosophers. Brain death is a modern byproduct of the invention of the ventilator that allows patients who have irreversible loss of total brain functioning to be declared “dead” and to donate their vital organs regardless of whether their heartbeat has ceased. In this thesis, I defend the cardiopulmonary definition of death while evaluating the efficacy of the brain death definition of death. I do this by examining how different cases, such as the Jahi McMath case, fit into the pre-established necessary and sufficient conditions for death. As Christians hold humans to be integrated beings comprised of the body and the soul, I argue that one cannot conclude from brain death that the soul has departed from the body.

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DEFINING DEATH: A CHRISTIAN PERSPECTIVE ON THE LIMITATIONS AND  
IMPLICATIONS OF BRAIN DEATH

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## CHAPTER ONE

### Introduction

When should Christians say when death has occurred? Does death happen when the heart stops beating or when the brain stops functioning? As early as the 4th century BCE, philosophers such as Plato wrestled with the concept of death. In his *Phaedo*, Plato describes his understanding of death through the character of Socrates as he asserts that death is “a release and separation of the soul from the body.”<sup>1</sup> Insightful as this ancient definition may be, Plato’s definition is insufficiently fleshed out for practical usage in today’s world of medicine, where our definition of death has important clinical ramifications. While introducing an important starting point, Plato leaves us wondering what death is clinically and what the signs of death might look like in the most complex patient cases. Is death an event or a process? How can we know that death has occurred? Obviously, a patient who is talking is alive, and a patient who has not had a pulse for days is dead. Yet what transpires between these two stages that convert the patient from one state to the next? Is it possible to unmistakably identify the point at which the patient changed from being “alive” to being “dead?”

Evidently, the questions surrounding death are numerous, vast, and profound. Philosophical questions that surround brain death will focus on establishing a set of necessary and sufficient conditions and then weighing specific cases with this set of conditions in mind. This is because philosophical definitions establish what the necessary

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<sup>1</sup> “Phaedo, by Plato,” 12, accessed April 24, 2023, <https://www.gutenberg.org/files/1658/1658-h/1658-h.htm>.

and sufficient conditions will be for the topic of choice. Is the brainstem necessary for life? Is the cessation of the heartbeat sufficient for death? This is the type of inquiry that will be performed in this paper.

This essay will focus on the specific case of the brain death definition of death, a novel concept that originated less than a century ago. Brain death is a product of modern technology that arose as a result of the ventilator.<sup>2</sup> Examining the brain death definition of death carries a few key questions, including: Is brain death an accurate definition of death? An accurate definition for death should be able to correctly sort cases of living patients and dead patients and also cohere with background knowledge on death. Other questions that will arise will be: How can we tell when death has occurred? For what motives and reasons did we begin to adopt the definition of brain death to mean death? Lastly, is brain death the best definition of death we can conceive? Since this topic is vast, it is also important to identify what questions will not be covered in as much depth in this investigation. Questions that I will not answer will include (but not be limited to): Is death bad? For *whom* is death bad? Can death be experienced? How should we regard caring for the end of life of patients in comas and persistent vegetative states (PVS)? And do we exist after death?

Instead, the purpose of this essay is to analyze and comment on the current understanding of brain death from a Christian perspective. This is important because brain death is currently the dominant paradigm in medical and legal practice. The Uniform Definition of Death Act has ensured that medical practice since 1980 has legally

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<sup>2</sup> Robert L. Fine, "From Quinlan to Schiavo: Medical, Ethical, and Legal Issues in Severe Brain Injury," *Baylor University Medical Center Proceedings* 18, no. 4 (October 1, 2005): 303–11.



submitted to the brain death definition of death.<sup>3</sup> Death itself is no new concept to understand, and yet one might expect the redefinition of such an integral part of the human experience to attract more attention and debate. Admittedly, many books and articles have been written on the definition of death from the secular philosophical viewpoint and countless medical articles denoting the updates to diagnosing key physiological states that occur around the time of death. These works and others like them have been foundational in the modern discussion of the morality of the redefinition of death and the accuracy of the definition of death. A variety of these works will serve as the backbone for this investigation. Most important to this inquiry are Steven Luper's<sup>4</sup> *The Philosophy of Death*, Robert Fine's<sup>5</sup> "From Quinlan to Schiavo: medical, ethical, and legal issues in severe brain injury," and numerous works by Robert D. Truog.<sup>6</sup>

While we do have these foundational works of literature, there exist very few works that synthesize *both* current medical understanding and rigorous philosophy (let alone Christian philosophy) that attack the heart of the issue of brain death. Typically,

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<sup>3</sup> United States President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, *Defining Death: A Report on the Medical, Legal and Ethical Issues in the Determination of Death* (The Commission, 1981).

<sup>4</sup> Steven Luper is an associate professor and chair of the Philosophy department at Trinity University in San Antonio, Texas. He is well-acclaimed in the areas of ethics, metaphysics, and epistemology.

<sup>5</sup> Robert Fine is the Clinical Director of Clinical Ethics and Palliative Care at Baylor Scott and White Health in Dallas, Texas. He specializes in the ethics of the end of life and palliative care. He has published many scientific articles over the medical directives near the end of life. Because of his expertise and long study (44 years at the time of writing this thesis) of the topic, he is considered a quality and credible source for this investigation.

<sup>6</sup> I consider Robert Truog as one of the most insightful and knowledgeable figures on the topic of brain death. I have found his name in a majority of the highly regarded articles published on this issue, and his writings tend to have large credibility in the academic world. Dr. Robert Truog is a Professor of Medical Ethics, Anaesthesiology & Pediatrics and Director of the Center for Bioethics at Harvard Medical School.

works examine either the physiological definition of death through a “criteria-based” approach or the philosophical definition of death through a “cases-based” approach. The physiological approach is based on criteria because biological processes are not easily reduced to a single all-encompassing definition; in any case, a diagnosis will have to be made. Therefore, criteria need to be implemented. On the other hand, a philosophical approach has no mechanism for diagnosing and instead is focused on what is happening *beyond* the physical. This leads philosophical approaches to define death to look at the evidence in the form of cases that have happened as well as possible cases in the future. Therefore, there are physiological inquiries into the definition of death as well as philosophical inquiries into the definition of death. What is lacking in the current discussion is a careful analysis of the definition that combines both physiological and philosophical approaches.

The case-based philosophical approach presented in this paper will revolve around an understanding of the human person as both material (body) and immaterial (soul) and will emphasize the retention of *integrative function* as evidence of life. Integrative function describes a unique capacity to integrate various aspects of body and experience into a coherent whole. A human cannot have many integrative *functions*; instead, each person only has one integrative *function*.

While exploring the physiological and philosophical approaches toward the definition of death, I will also examine the modern dilemma around organ donation. It is generally held that donation of vital organs should occur after death. Thus, where we draw the line for where it is acceptable to donate vital organs demonstrates where we have drawn the line for death. Additionally, those who support the redefinition of death

generally accept that one of the largest benefits of brain death is that it increases the number of vital organs that can be donated. For these two reasons, organ donation will be a large topic of discussion while analyzing different arguments for the definitions of death.

This essay will explore brain death from both the physiological perspective as well as the philosophical perspective and will attempt to synthesize the two into one seamless argument. Science can benefit from the depth of meaning achieved through philosophy and philosophy can benefit from the concrete practical details of science. So, what is brain death? And what led to death being redefined?

### *Importance of the Brain Death Definition of Death*

The brain death theory of death is of utmost importance to the inquiry presented in this paper because it is the understanding of death adopted by the mainstream medical establishment. Medical school curriculum implies that brain death just *is* death, and medical professionals use brain death as the functional definition in the hospital. As a frame of reference, all 50 states use the neurological criteria for determining death. All 50 states have adopted the Uniform Determination of Death Act (a model act proposed by the federal government), which recognizes total brain death, or the irreversible cessation of all functions of the entire brain, including the brain stem, as a valid definition for death.<sup>7</sup> Some states have deviated from this exact word choice, yet each state still holds brain death as death no matter how they exactly phrase the definition. It is important to

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<sup>7</sup> Nikolas T. Nikas, Dorinda C. Bordlee, and Madeline Moreira, "Determination of Death and the Dead Donor Rule: A Survey of the Current Law on Brain Death," *The Journal of Medicine and Philosophy* 41, no. 3 (June 2016): 237–56, <https://doi.org/10.1093/jmp/jhw002>.

study brain death because it is the most widely held and medically accepted definition of death in modern practice in the United States. As the essay seeks to clarify the validity and morality of the definition of death, there will be many other questions that arise.

What is the heart of the issue anyway? As it pertains to the specific topic of brain death as death, we run into a few key questions: (1) What is human death? (2) When does death occur? And (3) How can we correctly identify when death has occurred? These questions provoke natural interdependence of the philosophical definition and the diagnostic tool. For example, if we say death is about the cessation of breathing, then we would use breathing for the diagnosis.

## CHAPTER TWO

### History of the Redefinition of Death

For the thousands of years preceding the 20th century, defining death was quite simple. If one's heart stopped beating and lungs stopped breathing, that person was regarded as dead. There was no question about this. No defibrillator could restart the heart and no ventilator could maintain the lungs. Black's Law Dictionary in 1968 defines death as "The cessation of life; the ceasing to exist; defined by physicians as a total stoppage of the circulation of the blood, and a cessation of the animal and vital functions consequent thereon, such as respiration, pulsation, etc."<sup>1</sup> Just as defining death was quite simple, so was diagnosing it. The diagnostic criteria for recognizing when someone had crossed over from the stage of "life" into the stage of "death" was as simple as listening to see if the patient had stopped breathing and checking their wrist to see if they sustained a pulse. Regardless of whether or not doctors could identify a specific instance of time at which death had occurred, they were able to make an accurate diagnosis of death not long after the process of dying started; once the heart stopped beating and the lungs stopped breathing, the process of death was underway and soon the patient was termed "dead." The same patient who was a living person when they had blood coursing through their veins had transitioned to being a corpse with no movement.

However, the development of mechanical ventilators, the increase in organ transplantation, and the improvement of intensive care units in the 1960s forced

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<sup>1</sup> "1968\_blacks\_law\_dictionary\_4th\_ed.Pdf," 488, accessed October 29, 2022, [https://www.1215.org/lawnotes/dictionaries/1968\\_blacks\\_law\\_dictionary\\_4th\\_ed.pdf](https://www.1215.org/lawnotes/dictionaries/1968_blacks_law_dictionary_4th_ed.pdf).

clinicians to face the difficult philosophical concept of the definition of death. Though the idea of the ventilator had circulated for quite some time before their original invention, mechanical ventilators started to take hold in the world after the 1953 polio epidemic in Denmark.<sup>2</sup> Physicians started performing tracheostomies on their patients and ventilating them manually with bags to create positive pressure inside the chest cavity. This marked the start of the modern idea of the Intensive Care Unit (ICU) and led to the advancement and integrated use of the ventilator in hospitals. The ventilator was extremely impactful in the medical sciences because it provided a way for patients who had stopped independently breathing to continue breathing through new “assisted means,” allowing for their blood to continue to oxygenate with a spontaneously beating heart. Therefore, their body could survive its otherwise prognostically lethal condition. In other words, instead of patients dying at the time of the cessation of the ability to spontaneously breathe, ventilators mechanically elongated their lives. While ventilators increased the time that patients were considered “alive,” they also spawned an array of daunting new questions in the medical community. These questions were highly important ethically, as the implications of their decisions on these questions could mean the difference between life and death, of killing and letting die. Some of these questions concerned the definition of death itself. Were unresponsive patients on ventilators dead? When, if ever, should a patient be “unplugged?” What is the obligation of medical institutions to sustain life by means that are costly in terms of time, energy, and money? Was the benefit of certain

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<sup>2</sup> Arthur S. Slutsky, “History of Mechanical Ventilation. From Vesalius to Ventilator-Induced Lung Injury,” *American Journal of Respiratory and Critical Care Medicine* 191, no. 10 (May 15, 2015): 1106–15, <https://doi.org/10.1164/rccm.201503-0421PP>.

technologies simply to produce more buffer time between the onset of the process of death and the termination of the process of death?

The ventilator also provoked extremely important questions regarding vital organ donation. Since patients' circulation could now be sustained for years potentially, this offered the chance for physicians to investigate the true state of the ventilated patient. And while investigating, one of the most important questions was: can "irreversibly comatose"<sup>3</sup> patients donate vital organs? If the medical establishment is to accept, normalize, and encourage organ donation, under what conditions may the necessary operations occur? In what situations would it be ethical for doctors to remove organs from patients? In the case of dying or unresponsive patients, were they to wait until after the patient had ceased all respiratory function, all heart function, or all brain function? Could a doctor be justified in taking out organs from a patient who was deemed past the "point of no return" for the sake of a great benefit on the side of the organ recipient?

These latter questions raise deeper philosophical questions, and it is worth spending a bit more time exploring its history. As ventilators became more and more developed, widely used, and specialized, patients could be sustained on ventilators for days, weeks, and even months. This created a clear obstacle to overall patient care: now that fewer patients were dying, ventilated patients were taking up hospital beds, hospitals were spending money and energy on patients who were arguably destined for death, and there were fewer beds open for other patients who needed them. Something had to be

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<sup>3</sup> The terminology used in the Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death was "irreversible coma." However, what they are referring to is brain death in this case.

done about this evident change. And yet, the Hippocratic oath's "do no harm"<sup>4</sup> clause required that physicians uphold their commitment to avoiding harming patients by accelerating death. Physicians found themselves faced with a choice that was wedged between potentially conflicting principles of clinical efficiency and the dignity of each patient. The former was encapsulated by their desire to clear out as many beds as possible and justly use as many patients as possible for organ donation. The latter was demonstrated by their desire to retain the value of human life and not kill their patients. Physicians who found themselves in this unfortunate dilemma strongly and urgently pushed for a solution to the so-called issue of "pointless ventilation," or prolonged ventilation for patients who showed no signs of recovery. A decision had to be made. Were doctors supposed to let patients remain on ventilators indefinitely until they showed some other unknown signs of expiration, or were they to "pull the plug" and test whether the patients could sustain themselves unassisted? This dilemma forced physicians to confront questions such as the definition of death, what forms of treatment they are obliged to offer, and whether there is a distinction between killing a patient and allowing their decline. As for the definition of death, the line of clinical death had to be drawn somewhere, and clinicians stepped up to mark where they thought the line should be drawn.

One of the first doctors who proposed a redefinition of death in tricky ventilation cases was Robert Schwab (1903-1972), a senior neurologist from Boston Massachusetts' General Hospital who revolutionized the use of the electroencephalogram (EEG) in the early 1960s. Because of his expertise with the EEG and his confidence in its ability to

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<sup>4</sup> "Greek Medicine - The Hippocratic Oath," Exhibitions (U.S. National Library of Medicine), l. 9, accessed March 12, 2023, [https://www.nlm.nih.gov/hmd/greek/greek\\_oath.html](https://www.nlm.nih.gov/hmd/greek/greek_oath.html).



correctly identify when a patient was dead, he was frequently consulted in the hospital for these hard cases and had increasingly taken on responsibility for making the diagnosis of death for patients where others had tarried.<sup>5</sup> Schwab's actions sparked further action from the medical community to solidify a formal clinical stance on the criteria for death for cases of ventilated patients. Anesthesiologist Henry K Beecher spearheaded the organization of a group in 1967 that came to be known as the Harvard Ad Hoc Committee on Brain Death. This group contained Beecher as Chair and 12 other professors, neurologists, surgeons, and psychiatrists<sup>6</sup> assembled to make a rapid statement on this "critically urgent" issue.<sup>7</sup> The group was founded on understanding how this type of ventilation of patients might be defined as an irreversible coma,<sup>8</sup> and how this irreversible coma could be used as a new definition for death. They never formally met in person but instead sent letters to each other over a few months. They created a series of criteria that they hoped would serve as directives for drawing the line between life and irreversible coma, which they alluded to being an indication of death. Their two stated reasons for the necessity of redefining death were:

(1) Improvements in resuscitative and supportive measures have led to increased efforts to save those who are desperately injured. Sometimes these efforts have

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<sup>5</sup> David Hamilton, *A History of Organ Transplantation: Ancient Legends to Modern Practice* (Pittsburgh, Pa: University of Pittsburgh Press, 2012), 342.

<sup>6</sup> The Ad Hoc Committee included Henry K. Beecher, MD, chair- man; Raymond D. Adams, MD; A. Clifford Barger, MD; William J. Curran, LLM, SMHyg; Derek Denny-Brown, MD; Dana L. Farnsworth, MD; Jordi Folch-Pi, MD; Everett I. Mendelsohn, PhD; John P. Merrill, MD; Joseph Murray, MD; Ralph Potter, ThD; Robert Schwab, MD; and William Sweet, MD.

<sup>7</sup> Michael Nair-Collins, "Expanding the Social Status of 'Corpse' to the Severely Comatose: Henry Beecher and the Harvard Brain Death Committee," *Perspectives in Biology and Medicine* 65, no. 1 (2022): 41–58, <https://doi.org/10.1353/pbm.2022.0002>.

<sup>8</sup> "A Definition of Irreversible Coma: Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death," *JAMA* 205, no. 6 (August 5, 1968): 337–40, <https://doi.org/10.1001/jama.1968.03140320031009>.

only partial success so that the result is an individual whose heart continues to beat but whose brain is irreversibly damaged. The burden is great on patients who suffer permanent loss of intellect, on their families, on the hospitals, and on those in need of hospital beds already occupied by these comatose patients.

(2) Obsolete criteria for the definition of death can lead to controversy in obtaining organs for transplantation.<sup>9</sup>

Beecher created the group in hopes of enlightening medical communities on the issue of “pointless ventilation” by creating a direct definition with evidential criteria for the determination of death.

In the same year, 1968, doctors developed increasingly robust methods for transplanting the heart, which rapidly increased the frequency of heart transplant surgeries. Before 1968, which became known as “the year of the heart,” attempts at heart transplantation had been dangerous and widely unsuccessful. South African surgeon Christiaan Barnard had just successfully performed the world's first human heart transplant in 1967. While his patient ultimately died 18 days after the transplant, Barnard’s pioneering operation opened up the public opinion to be accepting of heart transplantation as a legitimate option. Not long after, the first heart transplant done in the United States was completed by Dr. Norman Shumway at Stanford University. Again, the patient only survived for a few weeks, but public morale jumped knowing that organ transplantation was entering into a new realm of its own. Unfortunately, as Hamilton states in his book, “The History of Organ Transplantation,” the volatility of these operations and the little net gain by the surgeries was soon identified by the public, which marred the next decade of organ transplants as public opinion strayed toward being

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<sup>9</sup> “A Definition of Irreversible Coma.”

highly opposing heart transplants. This slump of morale lasted until the 1980s when other donations, like kidneys and liver, became widely known and trusted procedures.

At any rate, Beecher's creation of the committee aligned with the rise in public support for organ transplantation. Were they trying to solve the problem of "pointless ventilation?" Or, perhaps far more grave, were they attempting to speed up the determination of death to the advantage of organ transplantation? If the line to define death could be moved sooner or be planned, patients could receive organs that were more viable and have a higher chance of survival after the transplant. Removing ventilation at a certain time would predetermine cardiac death, leading to a more deliberate (instead of rushed) process of extracting organs from dead individuals for transplantation. This would lead to better preserved organs which would carry the possibility of a better prognosis for organ recipients. However, physicians needed to be sure that a patient was dead to harvest their vital organs for transplant. They were stuck in a clinical grey area where their ventilated patients met some of the criteria of death while not meeting all the criteria. Were physicians now utilizing their redefinition to push the line of the grey area forward to promote organ transplantation rather than preserve life? This is a difficult question to answer fully.

In the end, the committee essentially settled on this set of criteria for the determination of death:

- 1) Unreceptivity and unresponsiveness to external stimuli (at the time of testing)
- 2) No spontaneous muscular movement for one hour nor spontaneous breathing
- 3) No reflexes, including brain and spinal reflexes
- 4) Flat EEG (electroencephalogram)
- 5) All of the above are to be re-verified after twenty-four hours

- 6) The patient is not to be hypothermic (temperature below 32.2 degrees C) or under the influence of central nervous system depressants<sup>10</sup>

Not long after this proposed criteria for the definition of death, states attempted to form a consensus surrounding the legal definition of death.<sup>11</sup> Unfortunately, this attempt in the 1970s was futile, and thus there were minor language differences between some of the states' legal definitions. Public opinion at the beginning of the 1970's was uneasy about terminating ventilation for the permanently brain dead patient. However, in the mid-1970's, the public began to shift toward supporting termination of ventilation of the brain dead patient. One of the most notable cases that led toward this switch was the Karen Ann Quinlan case in 1975.<sup>12</sup> Quinlan was in a coma after consuming drugs and alcohol, and her parents requested that she be removed from a ventilator. The hospital refused, arguing that it was their duty to preserve her life. The case eventually went to the New Jersey Supreme Court, which ruled that Quinlan's parents had the right to remove her from life support. After the Quinlan case, public opinion began to shift toward greater acceptance of the idea of terminating life support in certain circumstances.

To help establish national conformity, the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research initiated their own consideration for the definition of death. They proposed the Uniform Determination

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<sup>10</sup> Doug Walton, *On Defining Death: An Analytic Study of the Concept of Death in Philosophy and Medical Ethics* (Montreal: McGill-Queen's University Press, 1979), 30.

<sup>11</sup> Thaddeus Mason Pope, "Brain Death Forsaken: Growing Conflict and New Legal Challenges," *Journal of Legal Medicine* 37, no. 3–4 (October 1, 2017): 265–324, <https://doi.org/10.1080/01947648.2017.1385041>.

<sup>12</sup> Fine, "From Quinlan to Schiavo."

of Death Act (UDDA) in 1980 which classifies the determination of death by giving this model criterion:

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.<sup>13</sup>

This model presents disjunctive criteria. The “either” clause means that the satisfaction of either standard alone is sufficient for the declaration of death. A patient is considered dead when they have irreversible function loss of the entire brain, regardless of whether their heart and lungs are functioning (albeit for the lungs, only non-spontaneously, with the help of the ventilator).

The National Conference of Commissioners on Uniform States Laws (NCCUSL) endorsed the UDDA soon after its creation, and according to the Uniform Law Commission, the UDDA model has been accepted in 37 US States, the District of Columbia, and the U.S. Virgin Islands since its creation in 1981.<sup>14</sup> Additionally, all US States now accept brain death as legal death. The only exception is in New Jersey, where a special clause allows for select religious communities, such as some Orthodox Jewish communities, to not accept brain death as legal death.<sup>15</sup> Brain death holds a mainstream

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<sup>13</sup> Research, *Defining Death*.

<sup>14</sup> The following states and territories have adopted the UDDA model: Alabama, Alaska, Arkansas, California, Colorado, Delaware, District of Columbia, Georgia, Idaho, Indiana, Kansas, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, U.S. Virgin Islands, Utah, Vermont, West Virginia, Wisconsin, Wyoming.

<sup>15</sup> Fine, “From Quinlan to Schiavo.”

position in the United States' medical arena, and it also holds a strong position in most other developed countries.<sup>16,17,18</sup> Although it has faced consistent criticisms, there is an established legal consensus over the validity of the definition.<sup>19</sup> Given the complete history behind the redefinition of death, I will now briefly explain what the term “brain death” refers to and how it situates inside the larger context of definitions of death.

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<sup>16</sup> James L. Bernat, “The Whole-Brain Concept of Death Remains Optimum Public Policy,” *Journal of Law, Medicine & Ethics* 34, no. 1 (ed 2006): 35–43, <https://doi.org/10.1111/j.1748-720X.2006.00006.x>.

<sup>17</sup> Eelco F. M. Wijdicks, “Brain Death Worldwide: Accepted Fact but No Global Consensus in Diagnostic Criteria,” *Neurology* 58, no. 1 (January 8, 2002): 20–25, <https://doi.org/10.1212/WNL.58.1.20>.

<sup>18</sup> D. Gardiner et al., “International Perspective on the Diagnosis of Death,” *BJA: British Journal of Anaesthesia* 108, no. suppl\_1 (January 1, 2012): i14–28, <https://doi.org/10.1093/bja/aer397>.

<sup>19</sup> Alexander Morgan Capron, “Brain Death — Well Settled yet Still Unresolved,” *New England Journal of Medicine* 344, no. 16 (April 19, 2001): 1244–46, <https://doi.org/10.1056/NEJM200104193441611>.

## CHAPTER THREE

### What is Brain Death?

Brain death, also called whole-brain death, is *the irreversible cessation of all functions of the entire brain, including the brain stem*. This involves total destruction of the function of the “higher brain,” and the “lower brain,” or brainstem. The “higher brain” consists of the cerebrum, which is involved in cognition and conscious awareness, and other circuits involved in higher level processes such as voluntary movement and emotion. Meanwhile, the “lower brain” refers to the brainstem, which regulates many of the body's automatic functions, such as breathing, heart rate, blood pressure, and digestion. It also controls many of the body's reflexes and alertness. The brainstem is composed of the medulla, the midbrain, and the pons.

Some modern physicians emphasize that only death of the brainstem must occur for brain death to occur. Many modern developed countries hold this *brainstem* standard for death, which is closely tied to the whole brain definition of death. The United Kingdom is likely the most prominent example of one such country. Since the brainstem has the reticular activating system, which has been described as an “on/off” switch for the functioning of the higher brain, some defend the stance that once the brainstem is dead, the whole brain is dead. In other words, no higher brain functioning can occur without lower brain functioning. This definition of death has the practical function of requiring fewer clinical tests. As the brainstem controls the critical nerves that make whole brain functioning possible, Fred Plum, M.D. asserts that “Without a brainstem I am no longer a

person, I am no more than a hopeless collection of organs, incapable of human vitality.”<sup>1</sup>  
This viewpoint, however, is not legally nor generally accepted for a medical diagnosis in the United States.

Brain death is a diagnosis that is sought for patients who have suffered massive brain trauma from a known cause. In the United States today, the most common medical criteria for diagnosing brain death are aimed at determining three conditions which characterize brain death: irreversible coma, absence of brainstem reflexes, and apnea. Irreversible coma means that the patient is permanently unconscious and unwakeful. Irreversible coma is determined over a period of time and through appropriate brain tests. To determine this coma condition also requires that doctors rule out potential confounding variables such as: hypothermia, hypertension, drug intoxication, poisoning, and electrolyte or endocrine imbalance. The absence of brain reflexes is the second necessary condition for the diagnosis of brain death. There are many such tests which examine the functionality of the brainstem. As stated before, the death of the brainstem signifies the death of the whole cerebral cortex (higher brain) because the brainstem is the “on/off” switch for the higher brain, and when the brainstem is “off,” the higher brain has no chance of being “on.” Simply put, these tests signify that the brain is completely and irreversibly devoid of function. For a patient to be considered brain dead, they must fit all of the below criteria:

- Absent sign of withdrawal or suffering of pain
- Pupils unresponsive to light
- Absent corneal reflex
- Absent gag reflex
- Absent cough reflex to suctioning
- Absent oculoccephalic movement: no eye movement

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<sup>1</sup> Stuart J. Youngner, Robert M. Arnold, and Renie Schapiro, *The Definition of Death: Contemporary Controversies* (JHU Press, 2002).



- Absent vestibulo-ocular response: the eyes fail to deviate away from the side introduced to ice water.<sup>2</sup>

We have established that the patient needs to be determined to be irreversibly unconscious and have irreversibly cessation of all brain function to be diagnosed as brain dead. The last condition that must be satisfied in diagnosing brain death is the apnea test. This test is a procedure which examines the body's ability to sustain breathing and thus the exchange of carbon dioxide for oxygen in the lungs. The apnea test is such a powerful criterion that Robert Fine, M.D., from Baylor University Medical Center in Dallas claims it has "100% sensitivity and 100% specificity"<sup>3</sup> and Fred Plum, M.D., claims he knows of no personal observation or well-documented report of a responsibly conducted, positive apnea test that has been reversed by subsequent recovery."<sup>4</sup> Calixto Machado identifies apnea testing as the "condition *sine qua non*" for determining brain death.<sup>5</sup> Apnea testing follows these requirements:

- Pretest criteria: euolemia, temperature  $\geq 36.5^{\circ}\text{C}$ , systolic blood pressure  $\geq 90$  mm Hg,  $\text{PCO}_2 \geq 40$  mm Hg
- Preoxygenate with 100% oxygen to achieve  $\text{PO}_2 > 200$  mm Hg, disconnect the ventilator (or set rate at 0), deliver 100% oxygen at 6 L/min by cannula into the endotracheal tube
- Test arterial blood gasses at 8 to 10 minutes
- The test is *positive* if no respiratory movement is present and  $\text{PCO}_2 \geq 60$  mm Hg
- Test is *inconclusive* if  $\text{PCO}_2 < 60$  mm Hg, systolic blood pressure  $< 90$  mm Hg, oxygen saturation  $< 80\%$ , or cardiac arrhythmia is present.<sup>6</sup>

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<sup>2</sup> Fine, "From Quinlan to Schiavo."

<sup>3</sup> Fine.

<sup>4</sup> Youngner, Arnold, and Schapiro, *The Definition of Death*.

<sup>5</sup> Calixto Machado, "Diagnosis of Brain Death," *Neurology International* 2, no. 1 (June 21, 2010): e2, <https://doi.org/10.4081/ni.2010.e2>.

<sup>6</sup> These are the criteria adapted from Fine, "From Quinlan to Schiavo."

Essentially, the patient's ventilator is unplugged, and an oxygen catheter is inserted into their trachea. Thus, the body is never devoid of oxygen; the catheter supplies all of the necessary oxygen the body needs without respiration. The heart continues to beat, so red blood cells keep picking up oxygen from the alveoli in the lungs and exchanging oxygen for carbon dioxide in the tissues through the capillaries. However, upon receiving the carbon dioxide from the target tissues, the red blood cells return to the lungs and attempt to deposit the carbon dioxide back in the alveoli, at which point they are unable to because of the lack of the correct partial pressure of oxygen and carbon dioxide in the lung space. This lack of partial pressure is caused by the lack of breathing of the patient. This causes the red blood cells to retain the carbon dioxide, which means that red blood cells and the body's tissues are becoming gradually less oxygenated. This is the function of the apnea test; to determine if the body can maintain a correct oxygen and carbon dioxide balance in the blood. If the patient is not breathing, the apnea test comes back positive (inability to maintain the correct balance), and the patient is declared dead. The apnea test does not induce premature death. Because oxygen is always administered during the whole test, the patient does not suddenly die upon the unplugging of the ventilator. The patient's cells still *receive* oxygen; it is the accumulation of carbon dioxide that hints that the body is not capable of *removing* carbon dioxide from the body through respiration.

Legally speaking (in the USA and most western countries), patients given a diagnosis of brain death are dead. They are considered as dead as corpses. Medically, they are irreversibly gone and cannot be revived.

However, brain dead individuals may retain some important bodily functions that complicate our ability to simply equate brain death with death. In many brain dead patients, the heart still has the *potential* to spontaneously beat. The heart can still beat because the sinoatrial (SA) node spontaneously depolarizes, causing a heartbeat. These “pacemaker” cells do not depend on the brain to function with a regular heartbeat. Now, the brain can increase the heart rate or modify its beating, but the SA node functions without the interference of the brain. Furthermore, in ventilated patients, the act of beating is proper to the heart and is not directly dependent on the action of a ventilator. The heart is dependent on the ventilator only indirectly because the heart, as a muscle, needs oxygen to function. But as an independently functioning organ, the heart is not dependent on the brain or on the ventilator. This means that while the brain dead patient is ventilated, the heart can still beat so long as the SA node keeps firing depolarization signals. In most brain dead patients on the ventilator, spontaneous heart beat continues for less than two weeks,<sup>7</sup> or more precisely, a little over one week.<sup>8</sup> However, there have been cases of patients maintaining a spontaneous heart beat while on the ventilator up to twenty years after the declaration of brain death.<sup>9</sup> For a patient who is brain dead and the ventilator is unplugged, the heart can continue to beat for anywhere from a few minutes

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<sup>7</sup> Robert D. Truog and James C. Fackler, “Rethinking Brain Death,” *Critical Care Medicine* 20, no. 12 (December 1992): 1705.

<sup>8</sup> S. Al-Shammri et al., “Survival of Cardiac Function after Brain Death in Patients in Kuwait,” *European Neurology* 49, no. 2 (2003): 90–93, <https://doi.org/10.1159/000068506>.

<sup>9</sup> Nicanor Pier Giorgio Austriaco, “A Philosophical Assessment of TK’s Autopsy Report: Implications for the Debate over the Brain Death Criteria,” *The Linacre Quarterly* 83, no. 2 (May 2016): 192–202, <https://doi.org/10.1080/00243639.2016.1164936>.

to nearly an hour because the heart cannot successfully keep beating without a constant oxygen supply.

Additionally, while brain dead, patients still exhibit many notable bodily functions. Brain dead patients have been proven to be able to gestate a fetus, sexually mature, sweat, elevate heart rate, maintain homeostasis, and heal wounds.<sup>10,11</sup> Essentially, many tissues in the body can complete their normal function apart from the brain as long as they are receiving appropriate oxygenation and nutrition. These emergent functions after a brain death diagnosis are scarcely related to normal living functions of the body and should be cause for great concern. If brain dead patients, diagnosed as dead, can still perform these functions, have they lost their integrative function?

### *Distinguishing States of Being Near Brain Death*

Brain death should be distinguished from permanent states of unconsciousness. The two main permanent states of unconsciousness are the vegetative state and the coma, both of which are *living* states of being. A vegetative state is a dissociated state of being in which the patient demonstrates wakefulness but unawareness. The patient is awake and therefore follows regular physiological functions of wakefulness such as unassisted heartbeat and respiration, sleep-wake cycles, pupillary reaction to light, and simple reflex responses such as gagging, coughing, and swallowing. However, patients in this

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<sup>10</sup> D. Alan Shewmon, "The Brain and Somatic Integration: Insights Into the Standard Biological Rationale for Equating 'Brain Death' With Death," *The Journal of Medicine and Philosophy: A Forum for Bioethics and Philosophy of Medicine* 26, no. 5 (January 1, 2001): 457–78, <https://doi.org/10.1076/jmep.26.5.457.3000>.

<sup>11</sup> Doyen Nguyen, "Does the Uniform Determination of Death Act Need to Be Revised?," *The Linacre Quarterly* 87, no. 3 (August 1, 2020): 317–33, <https://doi.org/10.1177/0024363920926018>.

condition have no connection to the function of the higher brain. Their brainstem is sustaining the vegetative functions and there is very little chance that the patient will return to awareness. Some have described PVS as “awake but unaware” and “eyes-opened unconsciousness.”<sup>12</sup> A vegetative state that persists for over one month is termed a *persistent* vegetative state (PVS), and one that persists over a year for three months for a non-traumatic injury or one year for a traumatic injury is considered a *permanent vegetative state*. Patients in vegetative states may often demonstrate involuntary and non-purposeful movements. This is the state that Karen Quinlan, Terri Schiavo, and Nancy Cruzan—patients in famous legal cases—were in following brain injuries until their deaths.<sup>13</sup>

A coma is a state in which the patient demonstrates unwakefulness and unawareness. A coma is akin to a patient who is sleeping but cannot be awakened. It can be thought of as an “eyes closed unconscious.” Unlike PVS, coma is often not a permanent condition and can sometimes be reversed without any medical treatment. In a coma, the brain has suffered serious damage but not irreversible brain damage, and the brainstem is untouched. Therefore, brain stem reflexes are preserved and the patient continues to breathe for himself. This is different from brain death, because in brain death the whole brain stem is damaged and the patient cannot breathe by himself. Coma is much more common than PVS. Lastly, it is important to note a distinction between a coma and a permanent comatose state. Patients in a *permanent* comatose state lead quickly to death and never demonstrate wakefulness, while patients in a comatose state

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<sup>12</sup> Fine, “From Quinlan to Schiavo.”

<sup>13</sup> Fine.

have a likelihood of regaining consciousness and wakefulness. All comatose patients experience unassisted heartbeat and respiration, regardless of whether they are permanently comatose or temporarily comatose.

To reiterate what was said above, PVS and coma are both states of *unconsciousness* and must be distinguished from a state of consciousness that presents with a similar appearance. Related to PVS and coma is locked-in syndrome. Locked-in syndrome is a state of *wakefulness* and *consciousness* with little to no ability to perform voluntary movements. Since the modes of arriving at PVS and the locked-in condition can be extremely similar at times, physicians need to take great care in diagnosing one over the other. In worst cases, patients can be fully conscious yet unable to move their bodies at all; this disposition inclines doctors, nurses, family, and friends to assume that the patient is in the unconscious PVS state when they are conscious. Depending on the level of paralysis, certain technological devices such as eye trackers can aid the ability of these patients to communicate. The most famous example of this condition is Jean-Dominique Bauby, a French journalist who suffered a stroke and meticulously wrote the renowned book, “The Diving Bell and the Butterfly” (1997, original French title: *Le Scaphandre et le Papillon*) letter by letter using a system of blinks and eye trackers.<sup>14</sup>

It is important to keep in mind that although the described conditions above are separate, patients can transition from one state to the next. It is not uncommon for a patient who suffers a direct blow to the head to pass through a coma, a vegetative state, and then end up with either full consciousness or, less likely, in a locked-in state. These

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<sup>14</sup> Jean-Dominique Bauby, *The Diving Bell and the Butterfly* (Knopf Doubleday Publishing Group, 2008).

changes can be so rapid that one might not be able to detect that the patient is passing through them. In other cases, they might pass very slowly.

### *Context: Other Definitions of Death*

It is important to understand other definitions of death to fully consider the philosophical and physiological framework we are entering. Of course, death has been given thousands of definitions and hundreds of names throughout the history of mankind because of the fact that every single person has confronted its reality. Hundreds of different academic disciplines have defined death from their own point of view. Poets, theologians, and soldiers may have three completely different interpretations of the same phenomenon that is death. I recognize this discrepancy to say that this essay will not have time to look into all the different ways that humans throughout centuries have regarded this complex phenomenon. It would be a long paper indeed that explored John Keats' perspective of death through his "Ode to a Nightingale" or President Truman's perspective on death that informed his decision to drop the atomic bombs. Death is everywhere around us, and death is integral to our existence as living beings. All humans will die. As Shakespeare says, "Not a whit. We defy augury. There is a special providence in the fall of a sparrow. If it be now, 'tis not to come; if it be not to come, it will be now; if it be not now, yet it will come—the readiness is all."<sup>15</sup> We are all destined for death.

That being said, this section will contextualize the brain death definition of death by sharing some of the most current, prominent, and accepted definitions of death

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<sup>15</sup> Paul A. Cantor, *Shakespeare: Hamlet* (Cambridge University Press, 2004), act V.

physiologically, philosophically, and theologically. This contextualization is important because it gives us a framework for the issue we are dealing with and the potential alternatives for the brain death definition of death.

Firstly, the cardiopulmonary definition of death is the most long-standing robust physiological definition of death. The cardiopulmonary definition of death, also known as the traditional or circulatory definition, is based on the cessation of cardiorespiratory function. According to this definition, someone is considered dead when there is irreversible cessation of spontaneous circulation and breathing. This means that death is declared when the heart stops beating and has passed the point of being restarted, and the person is no longer breathing on his or her own. In practical terms, this is usually determined by the absence of a pulse and the absence of breath. Alongside these two signs, doctors could also check for moisture near the mouth, dilated pupils, absence of reflexes, or a combination of many of these signs. It is important to remember that the cardiopulmonary approach is contingent on irremediable damage to the heart in some form so that it can no longer pump blood around the body. Therefore, we do not consider pacemakers and defibrillators to be “death-defying” machines, as nobody can truly die and come back to life using this definition, as death is, by definition, irreversible. If we think that someone has “died” and come back to life, we must be mistaken by our definition. Pacemakers and defibrillators are regarded as machines that save the heart from undergoing irreversible changes to the point of death. While the body may be progressing toward death, these machines allow for someone to be revived before arriving at the “point of no return” of death, or in the case of continuous pacing, sustained indefinitely from the perspective of cardiac activity.



This viewpoint holds that, in some sense, the heart and the lungs (along with their respective functions) constitute the integrative organs of the body. Integrative function, as stated earlier in the paper, describes the ability of the body to wholly unite to be able to perform various other functions. Integrative function, therefore, is when the body unites a living being to synthesize a variety of complex stimuli, move as a physical body in the world around itself, and do the other unified actions that the human body can do. I will also talk about other strong physical manifestations demonstrating the integrative function. These are things like gestation of a fetus, sexual maturation, and sweating.

The cardiopulmonary approach argues that without the heart and the lungs, the body will lose integrative function, fail, and die. These two organs are indeed crucial for the life of the body, but recent developments have shown that they are not necessary for the sustenance of life, at least in the most literal sense that their functional presence inside the body is not imperative to the survival of the human. After all, we have machines that can “replace” the heart and lungs, emulating the two organs’ functions while sustaining the body. This issue will be looked at in more detail with the ventilation of patients, but in a way, it would be more accurate to suggest that the *function* of the heart and the lungs is imperative to human life. The *function* of these organs is what sustains the body. Both organs can be replaced by machines that sustain the integrative function of the body, yet these machines must replicate the organs’ functions. The body must receive oxygen in its organs, tissues, and cells. Those who hold the cardiopulmonary approach, therefore, consider brain-dead patients to be alive, so long as their cardiopulmonary function is maintained, whether unassisted or assisted.

The second alternative definition of death is the higher brain standard of death. The higher brain standard is described in the best detail according to the *Stanford Encyclopedia of Philosophy*. According to the *Stanford Encyclopedia of Philosophy*, the higher brain standard of death regards death as “the irreversible cessation of the capacity for consciousness.”<sup>16</sup> This approach closely links human existence to human consciousness. This specific tie is based on the idea that one essential characterizing factor of humans being described as persons is the fact that humans have the capacity for consciousness.<sup>17</sup> Bartlett and Youngner, in their 1988 work, “Human Death and the Destruction of the Neocortex” strictly hold to the viewpoint that those who retain the capacity for consciousness retain their position as persons and that those who lose their capacity for consciousness lose this quality. This quest toward understanding consciousness as it relates to being essential for personhood can at times become grey and undefined, and thus present problems when dealing with the elderly, the extremely young, or people with intellectual or developmental disabilities. However the way that the terms “capacity for consciousness,” “essence,” and “persons” are defined exactly, the basic premises of the higher brain viewpoint are as follows:

1. There is some essential connection between the consciousness of a human being and their existence in this world. The loss of consciousness of a human being is sufficient to mark the loss of their existence.

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<sup>16</sup> David DeGrazia, “The Definition of Death,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, Summer 2021 (Metaphysics Research Lab, Stanford University, 2021), <https://plato.stanford.edu/archives/sum2021/entries/death-definition/>.

<sup>17</sup> Edward T. Bartlett and Stuart J. Youngner, “Human Death and the Destruction of the Neocortex,” in *Death: Beyond Whole-Brain Criteria*, ed. Richard M. Zaner, vol. 31, Philosophy and Medicine (Dordrecht: Springer Netherlands, 1988), 199–216, [https://doi.org/10.1007/978-94-009-2707-0\\_10](https://doi.org/10.1007/978-94-009-2707-0_10).

2. The loss of what is essential to a human being's existence is necessary and sufficient for that person's death.

Therefore,

3. The loss of consciousness for a human being means the death of (and is sufficient for the death of) that human being.

Steven Luper defines this type of death as when a person “ceases to exist.”<sup>18</sup> This is what he calls the death of the person, or, in other words, “*personal death*.” Obviously, the higher brain approach clings to a set of premises that can be extremely problematic when thinking about tough situations like the fetus, the anencephalic newborn, or the patient in a persistent vegetative state (PVS). The idea here is that these patients could die as persons before dying as biological organisms. This viewpoint also posits that the death of the person would be sufficient to qualify as overall death of the human being.

Apart from his exploration of the definition of death being that of the ceasing of the existence of the person, Luper also proposes a few understandings of the concept of death from a philosophical perspective. These can be understood as the standard philosophical approach to defining death. He begins his chapter on “Death Clarified” in his book “The Philosophy of Death” by establishing some baseline principles for his understanding of death. Firstly, he establishes that death is not instantaneous.<sup>19</sup> He assures us that death is a process. When someone is dying, they begin in a stage where their body's vital processes start to fail and their condition begins to deteriorate. This may involve a range of physical and physiological changes, such as loss of consciousness,

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<sup>18</sup> Steven Luper, *The Philosophy of Death* (Cambridge, UK ; Cambridge University Press, 2009), 48.

<sup>19</sup> Luper, 42.

decreased organ function, and altered breathing patterns. Later, they start to lose consciousness and awareness. Finally, they pass through a stage of cessation of all bodily functions with time. For Socrates, this stage happened around 4 to 10 minutes after he drank the poison. His cells slowly stopped metabolizing and slowly started rupturing. After some time, Socrates was pronounced: “dead.” Yet his death did not occur at one point in time; rather, it was stretched out over time from the time his body began to deteriorate to a moment when we could identify that he was dead.

Secondly, Luper assures that death lacks clear boundaries. It is hard to define when exactly death has started and when exactly it has ended. He draws close parallels to birth. When exactly is a baby born? Is the baby born when the mother begins having contractions? Or is it when the skin on its head makes first contact with air? Or perhaps when the whole baby is outside of the birth canal? Just as the exact moment of “birth” lacks clear boundaries, so does death.

After establishing these two premises for death, he gives his first potential type of definition for death: *denouement death*. This is when death is defined as the completion of a process. It is as if death is akin to the end of a fire: death occurs when the very last flame has gone out. In this definition, death does not begin at any moment before life has gone out. Death occurs when all of life has left. It should be noted that the brain death criteria attempt at determining where this line should be drawn. Determining death as a state rather than a “point of no return” (which is called *threshold death* by Luper and explained below) is the goal of the brain death criteria, the basis of organ donation, and the central concept of the dead donor rule.<sup>20</sup>

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<sup>20</sup> Michel Accad, “Of Wholes and Parts: A Thomistic Refutation of ‘Brain Death,’” *The Linacre Quarterly* 82, no. 3 (August 2015): 217–34, <https://doi.org/10.1179/2050854915Y.0000000004>.

The second type of definition of death that Luper proposes is *threshold death*. To Luper, threshold death is the understanding that death is the moment that the fire has passed the point of no return. There could still be a few lost flames and coals burning, but the fire is certainly destined to burn out soon. This perspective does not necessitate that all of “life” as we commonly define it be completely gone before death has occurred. This definition approaches death similarly to the act of drinking poison. The person who drinks poison has destined themselves toward death but has not died at the exact moment they took the poison. However, in terms of the threshold definition, they have destined themselves to death. Therefore, they would be considered dead the moment they drink the poison. Given this, Luper admits that “given the threshold death, it is likely that much of the dying process has yet to occur.”<sup>21</sup> For this reason, Christians would not be able to accept brain death as cause for organ donation if brain death is only threshold death.

Lastly, Luper proposes a type of definition of death as *integrative death*. This viewpoint of death, also held by many Christian scholars, is the idea that death occurs when the body has lost its ability to function as an integrative whole. Integrative death can include threshold death and denouement death. Luper admits that integrative death might include threshold death (imagine the body’s organs degrading to a level in which one could identify a “point of no return”). Yet, he also proposes the idea that threshold death could very easily happen before integrative death. It would be possible for irreparable damage to the immune system to happen at a point before the integrative function of the body was lost. Additionally, integrative death might include denouement

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<sup>21</sup> Luper, *The Philosophy of Death*, 43.

death when the process that has ceased is seen as the integrative function of the body specifically.

It is important to understand these ways to philosophical definitions of death because they will be influential in the analysis of the efficacy and validity of the brain death definition of death in later chapters of the thesis.

Lastly, the Catholic church regards death as the separation of the soul from the body. This is the separatist account of death, and it represents the main viewpoint of modern Christian philosophy. Pope John Paul II reminds us that the death of a person is a single event that happens with the total disintegration of the whole that is the self. It results from “the separation of the life-principle (or soul) from the corporal reality of the person.”<sup>22</sup> He asserts that the death of the person is an event that “no scientific technique or empirical method can identify directly.”<sup>23</sup> However, he encourages science to partake in the evaluation of when death has occurred. Since technology has allowed physicians to detect with increasing precision the biological signs that inevitably precede and follow death, physicians have a critical role to play in determining a point of death. Now, the Pope clarifies that the criteria the physicians use “should not be understood as the technical-scientific determination of the exact moment of a person's death but as a scientifically secure means of identifying the biological signs that a person has indeed

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<sup>22</sup> “To the 18th International Congress of the Transplantation Society (August 29, 2000) | John Paul II,” accessed January 14, 2023, [https://www.vatican.va/content/john-paul-ii/en/speeches/2000/jul-sep/documents/hf\\_jp-ii\\_spe\\_20000829\\_transplants.html](https://www.vatican.va/content/john-paul-ii/en/speeches/2000/jul-sep/documents/hf_jp-ii_spe_20000829_transplants.html).

<sup>23</sup> “To the 18th International Congress of the Transplantation Society (August 29, 2000) | John Paul II.”

died.”<sup>24</sup> Therefore, from the Catholic perspective, scientific methods are useful for clarifying *that* a patient is dead rather than for determining exactly *when* the patient dies.

Similarly, Pope Pius XII in his response to “When is One Dead?” (a question posed specifically to consider the case of a patient with profound brain trauma who is sustained by artificial respiration) declared that this verification of life or death “does not fall within the competence of the Church.”<sup>25</sup> However, he continues by saying that we must trust medical professionals on this issue and at the same time continue to believe that human life continues so long as its vital functions continue. By “vital functions” he means that the body continues to function as an integrative whole, not just the simple function of organs continuing to perform their job. The Pope concedes that some of the specific cases that medical practitioners must face are shrouded in “insoluble doubt.” Sometimes we must give way to the best answer at the moment even if we are unsure of whether it is the right answer.

As it pertains to the care that Christians must take near the end of life, the Catholic Church has long stood on the grounds of taking proper measures but never obliging the use of extraordinary means to prolong life. Christians are caught in the middle of two profound desires: to stay on this earth and to leave this earth to go to heaven. Saint Paul writes in Philippians 1:22-24, “If I am to live in the flesh, that means fruitful labor for me. Yet which I shall choose I cannot tell. I am hard pressed between the two. My desire is to depart and be with Christ, for that is far better. But to remain in

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<sup>24</sup> “To the 18th International Congress of the Transplantation Society (August 29, 2000) | John Paul II.”

<sup>25</sup> Pope Pius XII and The National Catholic Bioethics Center, “The Prolongation of Life: An Address to an International Congress of Anesthesiologists November 24, 1957,” *The National Catholic Bioethics Quarterly* 9, no. 2 (2009): 327–32, <https://doi.org/10.5840/ncbq20099259>.

the flesh is more necessary on your account.” Pope Pius XII points out at least one principle that can help Christians, wedged between the competing desires described by Paul, to make medical decisions: pursuing the prolongation of life through *ordinary* means ensures that nobody contracts a grave burden during the course of treatment. The ordinary means is important because Christians should be focused on higher ends, *spiritual ends*, instead of unnecessarily prolonging life. And a strict mandate to do more than ordinary means would be far too burdensome, unmanageable, and laying an unnecessary burden on his soul. However, Pius XII is clear that this does not restrict people from pursuing treatment options beyond the ordinary means when they are able and desirous to do so, as long as it does not “fail in some more serious duty.”<sup>26</sup> This perspective on the elongation of life will be important for a later discussion regarding where to draw the line of death and how it might affect organ donation.

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<sup>26</sup> Pope Pius XII. “The Prolongation of Life” An Address to an International Congress of Anesthesiologists. 1957



## CHAPTER FOUR

### Brain Death: Too Faulty to Depend On

Although the brain death definition of death seems strikingly reliable, there is good reason to tread with caution through the waters of redefinition. The purpose of this section is to explain the reasons why Christian philosophers should be wary of using the brain death definition and criteria for the definition and determination of death.

In his paper, “Brain Death: Too Flawed to Endure, Too Ingrained to Abandon,” Robert Truog excellently outlines some of the leading arguments for and against the theory of the definition of brain death and also leaves his audience with an accurate understanding of its implications for popular culture and medicine. While Truog’s paper will serve as a foundational resource for the arguments presented in this chapter, I will be building the arguments from my own synthesis of ideas. I will list the top reasons why Christians should be careful to fully accept the brain death definition for death without reservation. The main reasons Christians should be watchful of their embrace of the new definition are because of its:

1. Inadequate criteria
2. Basis of efficiency rather than accuracy
3. Uncanny permissance of certain seemingly “living” bodily functions
4. Reductionist approach
5. Common public misunderstanding

### *Inadequate Criteria*

Shockingly, the current criteria for the definition of death in terms of brain death have led to the misdiagnosis of *living* patients as dead. There are many cases of this, and they typically follow this storyline: the patient has a traumatic blow or injury to the head, the skull suffers internal bleeding, the patient's health declines quickly, doctors perform tests to determine brain death and the tests come back positive, and then the patients suddenly wake up in a comatose (or in some cases) a fully conscious state. These "false-positives" for the diagnosis of brain death should cause great concern for the criteria for the definition of death in modern medicine. How is it acceptable to use criteria that can diagnose a living patient as dead? It is especially scary that some of these patients were taken to have their organs transplanted and had woken up directly before the transplant took place.

The case of Jahi McMath is likely the most prominent example of a false-positive diagnosis for brain death. Jahi was a 13-year-old girl when a complication of complex oropharyngeal surgery forced her into brain death on December 12, 2013. She had intense cerebral hemorrhage and doctors unquestionably diagnosed her as brain dead after abiding by brain death criteria from both pediatric and adult standards. The case is unique because it garnered national attention on the news as Jahi's mother moved to New Jersey from California because New Jersey offers religious exemptions to the neurological determination of death. In New Jersey, she was able to improve to a comatose state (living as if asleep but still unconscious) in which she demonstrated signs of normal growth for four and a half years; she underwent menarche and other signs of

puberty as well as occasional responsive movements to commands.<sup>1</sup> These were all verified and well documented occurrences by home videos as well as eyewitness accounts. On June 22, 2018, Jahi died from abdominal complications. What is most curious about Jahi's case is that she was misdiagnosed as brain dead by four false-positive EEGs and one false-positive radionuclide blood flow test. She was diagnosed brain dead on three separate occasions, which rules out the chance that one of the diagnoses was "out of line" or "untimely." The false-positive diagnosis in the case of Jahi McMath has grave bioethical consequences. Alan Shewmon and Noriko Salamon wrote a report on this case which includes an in-depth exploration of the brain death diagnosis and history behind Jahi's story. In their article, "The Extraordinary Case of Jahi McMath," Shewmon and Salamon share the ominous assertion that:

Had it not been for her mother's undaunted effort to keep her alive, the false positivity would never have come to light. Because patients diagnosed as BD almost always have support withdrawn or organs donated, *there is no way to know the true incidence of false positivity associated with the guidelines*, an unsettling conclusion with profound bioethical and policy implications.<sup>2</sup>

This truth is chilling. Since it is customary to pull the plug on brain dead patients to proceed to death and the procurement of organs more rapidly for transplant, there is no way to tell how many false positives there have been in the diagnosis of brain death. It is because of the relentless pursuit of the mother for Jahi's life that allowed the physicians to recognize that her case was a false-positive.

Jahi's story is shocking and extraordinary because a girl who was diagnosed as dead on three separate occasions seemingly came back to a sort of minimally conscious

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<sup>1</sup> D. Alan Shewmon and Noriko Salamon, "The Extraordinary Case of Jahi McMath," *Perspectives in Biology and Medicine* 64, no. 4 (2021): 457–78, <https://doi.org/10.1353/pbm.2021.0036>.

<sup>2</sup> Shewmon and Salamon.

or permanently comatose state. When we talk about brain death being an accurate diagnosis of death, this does not imply the possibility of the patient coming back to some state of living. In fact, brain death by definition is irreversible. This should raise serious questions about the efficacy of the brain death definition, or the criteria implemented to diagnose it. Jahi demonstrated voluntary coordinated movements to commands that were beyond myoclonic jerks. She also proved to retain a brain structure that was more well-formed and complex than what was expected. Additionally, her passage through puberty is a serious indication that it is worth looking into where we draw the “line” of death. As Dr. Alan Shewmon says, “corpses cannot undergo puberty.”<sup>3</sup>

Jahi’s story is not the only one that documented a false-positive from brain death; there have been numerous accounts of such cases. There is a case from 2011 of a 55-year-old man who demonstrated spontaneous breathing and the gag reflex 20 hours after being diagnosed as brain dead.<sup>4</sup> He was the first documented case of reversible diagnosis of brain death in an adult where two clinical examinations as well as a positive apnea test determine brain death, and both were made in full adherence to American Academy of Neurology guidelines. He presented with respiratory distress and lost total brainstem function at hour 72. At hours 72 and 78, two different physicians made diagnoses of brain death. Clinicians explained the death of their loved one to the family, and the family affirmed that they would like for his organs to be donated. Scarily, at hour 98, the patient demonstrated coughing, the gag reflex, and spontaneous respirations while on the

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<sup>3</sup> *Brain Death and the Controversial Case of Jahi McMath*, 2018, <https://www.youtube.com/watch?v=tHD0OUUfiR0>.

<sup>4</sup> Adam C. Webb and Owen B. Samuels, “Reversible Brain Death after Cardiopulmonary Arrest and Induced Hypothermia\*,” *Critical Care Medicine* 39, no. 6 (June 2011): 1538, <https://doi.org/10.1097/CCM.0b013e3182186687>.

operating table for organ donation. At this time, the patient was on the ventilator but had nevertheless demonstrated spontaneous respiration through the apnea test. The presence of these reflexes demonstrates partial regaining of function by the brainstem and therefore the patient was not at all dead at that time. Doctors were faced with the disheartening task of admitting to the family that their loved one was still alive and then they navigated the decline of the patient over the next few days to the point where the patient once again demonstrated total brainstem loss. At that point, the physicians pulled the plug and the patient died and was diagnosed via observation of full cardiopulmonary arrest.

There are other anecdotal stories of “brain dead” patients narrowly escaping false-positive incidences. In 2008, a 21-year-old man from Oklahoma was diagnosed as brain dead and about to be opened for organ transplant when he demonstrated intentional movements and was talking and walking days later.<sup>5</sup> There is also the 2009 case of a 41-year-old woman from Syracuse who was misdiagnosed as brain dead although only in a coma.<sup>6</sup> A pastor in March of 2023 suffered a hemorrhagic stroke following a bout of listeria. He was diagnosed as brain dead and was scheduled for organ donation, but the operation was canceled after he intentionally started moving his feet to commands that same day. He has since made a recovery to be back at home with his family, using sign language with his fully mobile right side of his body to communicate.<sup>7</sup> All of these

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<sup>5</sup> “‘Dead’ Man Recovering after ATV Accident,” NBC News, March 23, 2008, <https://www.nbcnews.com/id/wbna23768436>.

<sup>6</sup> [https://www.facebook.com/johnobrien2187?skip\\_nax\\_wizard=true&ref\\_type=bookmark](https://www.facebook.com/johnobrien2187?skip_nax_wizard=true&ref_type=bookmark), “St. Joe’s ‘Dead’ Patient Awoke as Docs Prepared to Remove Organs,” *syracuse*, July 7, 2013, [https://www.syracuse.com/news/2013/07/st\\_joes\\_fined\\_over\\_dead\\_patien.html](https://www.syracuse.com/news/2013/07/st_joes_fined_over_dead_patien.html).

examples are moments where the patients were diagnosed as brain dead and then made different grades of recovery once alive “again.” It should be noted, however, that the cases of Jahi McMath and the 55-year-old are the most well documented and scientifically backed evidence in terms of the cases. In fact, in the Jahi McMath case, Jahi was diagnosed specifically according to the ACNS guidelines all three of those times, which adds great credibility to the case.

A false positive for brain death is frightening and alerting. There can be many reasons for false positives, and we must be careful to analyze these potential reasons in our exploration of examining the trustworthiness and robustness of the brain death determination of death. This includes analyzing the accuracy of the definition and the clinical diagnosis.

The first likelihood is that doctors may not have followed brain-death tests carefully enough to accurately diagnose the patients as brain dead. The doctors may have been rushed, pressed by organ demand, or careless in their approach. This would be lackluster care on the physicians’ part but would not render the brain death definition or criteria faulty. Looking at the latter three cases mentioned in this thesis, one might be able to argue this premise. The scientific extent to the news articles mentioned is brief and superficial, and the articles mainly focus on the patient and family experience. However, the two cases presented first (Jahi McMath and the 55-year-old) carry robust medical diagnoses of brain death. In the case of Jahi McMath, two different physicians

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<sup>7</sup> Erin Snodgrass, “A North Carolina Pastor Narrowly Escaped Death after His Wife Stopped Doctors from Prematurely Harvesting His Organs,” Insider, accessed April 25, 2023, <https://www.insider.com/north-carolina-pastor-escaped-death-wife-stopped-doctors-harvesting-organs-2023-3>.

carried out the brain death diagnosis in a “meticulously documented” fashion,<sup>8</sup> ensuring that she was brain dead. She met all the legal requirements such as completely absent brainstem reflexes, no spontaneous respiration, and an isoelectric EEG. Medical professionals kept advocating for the removal of the ventilator and the coroner requested removal of support by the end of the next day on December 16th. In the case of the 55-year-old man, the authors adamantly reassure that this was the first well documented case of a patient who satisfied conditions for brain death according to the American Academy of Neurology guidelines. The patient was carefully diagnosed as brain dead twice. In both cases, there is sufficient evidence that rules out the possibility that the diagnoses were made hastily or carelessly because they were made in accordance with the current medical standards.

The second likelihood is that the doctors did in fact follow the criteria rightly, but the criteria were not adequate to determine brain death. This would not disprove the definition of brain death because it means that with more adequate criteria, the definition itself could still be used. This would only mean that the criteria are not specific enough to determine where brain death actually occurs. For example, our EEG machines might not read electric waves to a necessary degree of specificity, or the brainstem reflex tests might not cover *all* of the potential functions of the cranial nerves. While this is a valiant approach at upholding the brain death definition for death, it falls short of being convincing because our diagnostic measures are already extremely detailed and thorough. Doctors take brain MRIs to evaluate how much structure the brain has retained over the course of the illness or injury, brainstem reflex tests have been clearly demonstrated to be

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<sup>8</sup> Shewmon and Salamon, “The Extraordinary Case of Jahi McMath.”

100% sensitive and specific,<sup>9</sup> and apnea tests have also been deemed 100% sensitive and specific.<sup>10</sup>

The last likelihood is that the doctors did in fact follow the criteria rightly, and that the criteria were adequate for determining death. In this situation, a misclassification of a case such as the Jahi McMath case would mean that the definition itself is wrong. Given a basic understanding of the issue at hand, this is the most probable option. If we imagine the definition of death as a “drawing of a line” to help us determine when death has passed, then the criteria for the determination of death would be the details that allow us to see if or when a patient has crossed the line from life into death. This understanding is intuitive; the redefinition of death can be perceived as a movement of the line closer toward our pre-theoretical understanding of the line of when death occurs. This movement would be to argue that death happens sooner than we previously thought; it is an acceleration of the pronouncement of death. If viewed from this perspective, the misdiagnoses that were presented above would be examples of how physicians have pushed the line too far forward. Their analysis was close, but it placed death too early. Additionally, the diagnostic criteria that are responsible for upholding the brain death definition of death are still being developed with each year that passes. We are honing the specificity of the test, but it is not foolproof yet.

The whole brain death definition of death *seems* to be plausible. Remember that whole brain definition defines death to be the irreversible cessation of all functions of the entire brain, including the brain stem. And, if the medical criteria could reach that

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<sup>9</sup> Judith Dinsmore and Anne Garner, “Brain Stem Death,” *Surgery (Oxford)*, Critical illness and intensive care I, 27, no. 5 (May 1, 2009): 216–20, <https://doi.org/10.1016/j.mpsur.2009.04.001>.

<sup>10</sup> Youngner, Arnold, and Schapiro, *The Definition of Death*.



standard, it is possible that the criteria would be the best option for defining death. One can highlight how the brain appears to be essential for consciousness, and consciousness seems essential for personal identity. Obviously, a loss of all contact to the brain via physical means such as a beheading would cause certain irreversible death. This reinforces the idea that if the whole brain has irreversible loss of function, that situation should be considered death. If we maintain this claim, we once again turn the blame back on the criteria for determining death.

### *Efficient Rather Than Accurate*

The redefinition of death should be problematic for Christians to accept because it was proposed as a more *efficient* definition rather than a more *accurate* definition. Definitions should be changed when previous definitions are wrong, not when they are inconvenient. Christians hold to a belief in objective right and wrong, and if Christians believed the cardiopulmonary approach to be wrong, it would be ample cause for a redefinition. However, the old definition still stands as true. If a patient undergoes irreversible cessation of cardiopulmonary function, he or she is dead. This cessation of cardiopulmonary function can happen with or without a ventilator; the ventilator does not necessitate a different definition of death. Now, when viewed with Millian ethics, it seems that the more efficient move would be to push the line forward on the definition of death, thereby securing the greatest good (conceived perhaps in terms of length of total human life) for the greatest number of people (such as those receiving transplanted organs). This utilitarian approach argues strongly in favor of pushing the line of death to be sooner. John Mill's ethics system holds the right choice in any situation to be the one

that promotes the greatest good for the greatest number of people (that is, minimizes pain and maximizes pleasure for the greatest number of people).<sup>11</sup> Pushing the line of death up has great benefits, including: less overall cost and energy devoted to the patient by medical staff, less strenuous grieving process for the family, and more efficient and effective organ procurement for transplantation. Thus, the redefinition rendered the pronouncement of death much more efficient because it allowed doctors to diagnose death sooner and thereby partake in these benefits earlier. However, Christians must not fall into the trap of redefining one of the most integral processes of human existence for the sake of efficiency.

#### *Uncanny Permittance of Certain Seemingly “Living” Bodily Functions*

Brain dead patients still demonstrate many bodily functions. This should be cause for caution because of the significance of some of the remaining bodily functions that persist after brain death. This issue was most famously proposed by Dr. Alan Shewmon, Professor of Neurology and Pediatrics at the David Geffen School of Medicine at UCLA. Shewmon closely followed the Jahi McMath case mentioned in the section of this chapter titled “Inadequate Criteria.” He found that there was a remarkable ability of the brain dead Jahi to continue with certain normal bodily functions that seemed strangely complex to happen without the involvement of the brain or the whole integrative function of the body. Shewmon proposed his concerns to the medical community and this became known as “Shewmon’s Challenge.” While in the brain dead state, Jahi demonstrated common elements of puberty: she had three menstrual periods, she grew pubic hair, her

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<sup>11</sup> “Utilitarianism by John Stuart Mill,” chap. II, accessed April 25, 2023, <https://www.utilitarianism.com/mill2.htm>.

breasts enlarged, and her leg and axillary hair and acne developed.<sup>12</sup> Various brain dead patients have demonstrated other signs that hint toward some type of life. There are proven accounts of brain dead patients maintaining biological signs of integrative function such as: circulating blood, maintaining respiration and body temperature, regulating salt and water homoeostasis, digesting food, healing wounds, fighting infections, mounting a stress response to surgical incisions, maturing (in children), having sexual responsiveness<sup>13</sup> and even gestating fetuses successfully.<sup>14,15,16</sup> These biological expressions of integrative function can be sustained for a long time as well; one patient who clearly met all criteria for “whole brain death” maintained integrative functioning for over 14 years.<sup>17</sup> There were 30 documented cases of brain dead mothers giving birth to babies between 1982 and 2010.<sup>18</sup> Because of its prevalence, there are now directives for how to handle those situations. In two of the 30 cases over the thirty-year time span, two

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<sup>12</sup> Shewmon and Salamon, “The Extraordinary Case of Jahi McMath.”

<sup>13</sup> A. Mohandas and S. N. Chou, “Brain Death. A Clinical and Pathological Study,” *Journal of Neurosurgery* 35, no. 2 (August 1971): 211–18, <https://doi.org/10.3171/jns.1971.35.2.0211>.

<sup>14</sup> Seema K Shah, Robert D Truog, and Franklin G Miller, “Death and Legal Fictions,” *Journal of Medical Ethics* 37, no. 12 (2011): 719–22.

<sup>15</sup> Shewmon, “The Brain and Somatic Integration,” January 1, 2001.

<sup>16</sup> Pope, “Brain Death Forsaken,” 273.

<sup>17</sup> D. Alan Shewmon, “Chronic ‘Brain Death’: Meta-Analysis and Conceptual Consequences,” *Neurology* 51, no. 6 (December 1, 1998): 1538–45, <https://doi.org/10.1212/WNL.51.6.1538>.

<sup>18</sup> Majid Esmailzadeh et al., “One Life Ends, Another Begins: Management of a Brain-Dead Pregnant Mother-A Systematic Review-,” *BMC Medicine* 8, no. 1 (November 18, 2010): 74, <https://doi.org/10.1186/1741-7015-8-74>.

mothers were held for more than 100 days on the ventilator to allow for the best development of the fetus.<sup>19</sup>

The presence of such significant functioning of the body should provoke great concern for the pronunciation of brain dead patients as dead. It appears that brain dead patients demonstrate active traits of living that we should be careful to consider. One might expect that the absence of all brain function would prevent some of the regulatory mechanisms that we observe, as listed above. Perhaps some of the most shocking are the ability to undergo puberty and the ability to gestate fetuses. It is important to consider the simple fact that patients who are diagnosed as brain dead often still demonstrate many bodily functions that seem strangely integrative.

### *Reductionist Approach*

The reductionist philosophy is a broad account which attempts to explain all phenomena in terms of their most principal scientific explanations. Reduction is a procedure which takes a domain (heat, for example) and proves how it can be absorbed into another domain (the movement of atoms). When one domain can be absorbed and explained by another domain, we call this domain “reducible” to the next domain. This can occur in all levels in the natural sciences. For example, solubility might be explained by the physical composition of the molecules of a substance, or the psychology of depression could be explained by the lack of dopamine in the brain. Thus, one implication of a full reductionist approach, which is sometimes called the “unity of

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<sup>19</sup> Esmailzadeh et al.

science,” is that sociology, psychology, biology, and chemistry can all be reduced ultimately into fundamental physics.<sup>20</sup>

There are many reasons why the definition of brain death can be perceived as a reductionist account of death. Reductionism, as stated above, is when one domain is explained by another domain of greater scientific specificity. The definition of death as explained by brain death is one such type of reduction. Scientists are taking the complex phenomenon of death and stating that the death of the brain fully encompasses and represents the broader domain of death. They argue that the phenomena of death can be explained by the lack of electrical signals passing between neurons in the brain and a lack of chemical activity in the brainstem.

What often naturally follows from the reductionist approach is a view of the brain-as-integrator of the body. Integration is a complex concept to understand, so I will now attempt to provide a brief explanation of what meaning integration takes in this investigation. Michel Accad determines integration to mean the “essence of a living substance,”<sup>21</sup> which encompasses all the functions of that organism. When we talk about an organism, we are talking about all of its integrated parts acting together. On the other hand, when we refer to all the functioning organs put together, we are speaking of the functioning organism as a whole. Each organism has a set of functioning integrative processes through cells, tissues, organs, and organ systems that is subordinate to the integrative functioning of the whole organism itself.

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<sup>20</sup> Jaegwon Kim, “Reduction, Problems Of,” in *Routledge Encyclopedia of Philosophy*, 1st ed. (London: Routledge, 2016), <https://doi.org/10.4324/9780415249126-Q089-1>.

<sup>21</sup> Accad, “Of Wholes and Parts.”

When we think about integrative function of a whole organism, it is easiest to think of the integrator as being the *formal cause* of the organism. When I refer to “cause” I mean cause in a strict sense; cause is referring to that which sustains and holds the whole organism together, not simply the “cause” in a cause-and-effect scenario. Thus, when philosophers hold that the brain is the integrator of the body, they are positing that the brain is the cause of the human body. Or in the least, they might advocate for a softer version of this claim, saying that the brain is at least essential to the integrative function of the body even if it does not carry out that function entirely by itself. In either sense, they are making the claim that the brain is the essential organ that contributes to integrative function of the body. When the brain is absent or devoid of function, the body experiences a lack of integration and thus death of the organism as a whole.

The brain-as-integrator premise has clear connections to the 1981 President’s Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research mentioned earlier in this investigation. They hold that “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.”<sup>22</sup> and that the brain is “‘regulator’ or ‘integrator’ of other bodily systems.”<sup>23</sup> It is important to distinguish that this viewpoint does not simply regard the brain as crucial for the survival of the organism. Many organs also have this responsibility: the heart, the lungs, the kidneys, etc. The brain is viewed as more than crucial; it is viewed as the integrator.

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<sup>22</sup> Research, *Defining Death*, 34.

<sup>23</sup> Research, 35.

There are evident philosophical clashes between a reductionist approach to death and a Christian viewpoint of death as the “separation of the soul from the body,” specifically when holding a Thomistic approach to death. In fact, when holding the Thomistic perspective, no part of the body can assume the integrative cause of an organism because this role is reserved solely for the soul.<sup>24</sup> The soul as the form of the body unites the functions of the body and serves as the integrator of the entire body organism. To demonstrate this point, I will defend the Thomistic approach by proving how the body as a whole cannot be sustained by one of its parts. According to the Thomistic account, the body is a whole organism made up of many parts, and it is only seen properly in terms of functioning when viewed from the perspective of itself as a whole organism. Now, one whole organism requires one whole form which is the cause of its existence. And this one form cannot come from one of the parts of the whole organism because we just stated that the unified organism needs a form as its cause that is not a part of something else. Thus, the form needs to be one thing that is immaterial and removed from the body. This is what we call the soul: the one immaterial substance that maintains and unifies the whole bodily organism. In this way, it would be incorrect to hold that the brain is the integrator because it is within the body and also because this would leave us with two things which uphold the one body: the soul and the brain, one immaterial and one material. Thus, when holding the Thomistic perspective on the definition of death, it is false that the brain could be the integrator of the body.

Moreover, some proponents of brain death and brain-as-integrator hold that the ventilator “masks” or “obscures” the integrative function of the brain. They hold that the

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<sup>24</sup> M. Potts et al., *Beyond Brain Death: The Case Against Brain Based Criteria for Human Death* (Springer Science & Business Media, 2001).

brain's functions can be nearly replicated with the use of the ventilator because the ventilator can sustain respiratory and cardiac function. However, this defense falls extremely short of proving that the brain is the integrator of the body. If the brain was the integrator of the body, we would expect that the body would completely fail once the brain was not functioning anymore. However, we see that the body still is able to maintain homeostasis, digestion, circulation, and growth in certain cases of brain death. Proponents of the brain-as-integrator will argue that the mechanical ventilator is "taking over" some aspect of the integrative unity of the brain and is thus able to sustain the body in this way. I argue that there is no possibility that a machine would be able to replicate the complex and unique functions that the brain would have as an integrator if it was integrator. There is no way that a man-made machine would be able to mask even for a second the complex purpose of holding the entirety of the body's function together. It is true that machines can do a lot: ventilate, initiate heart beats, filter waste from the blood, and provide nutrition directly through the bloodstream. Yet the integrator must be something that produces integrative unity of the entire being, not something that produces one biological sign of integration. Machines cannot replicate the integrative unity of the organism, and yet signs of integrative unity are still present in brain dead patients. This must mean that when patients are brain dead and on the ventilator, this integrated purpose is not coming from the brain (because the brain is dead) and also not the ventilator (because a man-made machine has no possibility of replicating the actions of a complex integrator).



### *Common Public Misunderstanding*

Covering all intentional scientific and philosophical pursuits of the understanding of brain death is a public *misunderstanding* of the concepts near the end of life and the difference between coma, vegetative state, and brain death. This is not a primary reason to argue against brain death, but it is true that a definition is better if the definition of death is not easily misunderstood. Dr. Robert Truog keenly identifies a far-too common example of when brain death is misrepresented in public discourse. He gives the example of a headline that read “Brain-dead woman who gave birth to girl dies”<sup>25</sup> and another headline reads (for a different woman) “Brain Dead Woman Gives Birth, Then Pulled Off Life-Support Systems.”<sup>26</sup> As stated earlier, gestation can still occur in brain dead mothers. Now, physicians would assure the public that the mother is fully dead at this time, and that the baby is living inside a corpse that is still nourishing it as long as it is plugged into a ventilator to maintain basic function. But the syntax used in the headlines and in the stories communicates that the brain dead woman gives birth and *then* dies, as if she was not already dead. In the same way, the brain dead woman is pulled off of “life-support systems.” What do life-support systems do? When phrased in this way, it seems like life support systems were sustaining life in a living body and once unplugged, that living body died. However, what needed to be communicated was that the ventilator sustained the body’s (the corpse’s) basic functions after death so that the baby could develop to an age that it could be pulled out of the womb. And the misunderstanding of

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<sup>25</sup> “Brain-Dead Woman Who Gave Birth to Girl Dies,” NBC News, August 2, 2005, <https://www.nbcnews.com/id/wbna8801899>.

<sup>26</sup> “Brain Dead Woman Gives Birth, Then Pulled Off Life-Support Systems,” AP NEWS, accessed April 11, 2023, <https://apnews.com/article/462edfd84e512b03149b2ef052c9db85>.

what is going on in brain death is not just among news crews; it also infiltrates medical professionals in the clinical setting. Dr. Truog demonstrates how clinicians seem to be misinformed and confused by reminding how a study conducted in 1989 by Younger and his colleagues demonstrated that only 35 percent of nurses and physicians who were likely to be involved in the organ transplantation process correctly identified the legal and medical criteria for determining death.<sup>27</sup> Thus, the misunderstanding of the definition of brain death pervades both the public and the clinical understanding of death. Furthermore, Truog identifies that most clinicians did not believe brain dead patients were “really” dead but felt at peace with moving on with the organ transplants because the patients were imminent dying.<sup>28</sup> Clearly there is a discrepancy in the true meaning of the definition of death as brain death and the common understanding of the definition. What is cause for great concern is how this understanding does not infiltrate the public squares only; the misunderstanding has also made its way into the area that should be filled with most expertise on the subject: hospitals.

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<sup>27</sup> “‘Brain Death’ and Organ Retrieval: A Cross-Sectional Survey of Knowledge and Concepts Among Health Professionals | JAMA | JAMA Network,” accessed April 25, 2023, <https://jamanetwork.com/journals/jama/article-abstract/377023>.

<sup>28</sup> “Brain Death - Too Flawed to Endure, Too Ingrained to Abandon - Document - Gale Academic OneFile,” accessed March 12, 2023, <https://go-gale-com.ezproxy.baylor.edu/ps/i.do?p=AONE&u=txshracd2488&id=GALE|A164829349&v=2.1&it=r>.

## CHAPTER FIVE

### In Favor of Brain Death

While brain death does have some striking problems from the Christian perspective, it can also be defended by Christian philosophy. While it would be a travesty to base our understanding of where to “draw the line of death” based on our *desire* to live or to die rather than the facts themselves, it is notable that Christians do not try via all means possible (extraordinary means, in the language of Pope Pius XII) to prolong life. In this chapter, I will give credit to the brain death criteria for the determination of death. I seek to give insight into why the brain death criteria are widely used currently. Brain death does have medical, philosophical, and societal legitimacy because of its:

1. Practical establishment of a medical and legal “line” to determine death
2. Potential signal of the departure of the soul from the body
3. Position as the most publicly accepted definition

#### *“Drawing a Line”*

Physicians and lawmakers need to be able to identify a point in time when someone dies. However, one perspective of death holds that death is a process rather than an instant in time (as opposed to denouement death, which holds that death is a moment at which the process of dying is completed). When viewed as a process, we need to draw a line that potentially excludes some cases that should be counted as death and includes some cases that should not be counted as death. Overall, legal and medical requirements

call for a definition of death that determines an instance in time for a process that is most easily interpreted as happening over some period of time.

Legally, we should not be surprised by this phenomenon. Age requirements for driving, voting, selective service registration, drinking, etc. all require drawing a line in the midst of what is really a continuum—in these cases, human development. Most everything in the law operates similarly: tax brackets, state lines, speed limits, etc. We should also not be surprised by the necessity of such a line to be drawn for the determination of death. Simply, we would need to know when to bury the patient, when their will becomes enacted, when they should be taken off life support or other medical treatments, and when they may donate their organs. For all these reasons and more, a distinct line on the spectrum of the process of death is necessary for effective and efficient medical treatment.

### *Signal of the Departure of the Soul from the Body*

One fascinating rebuttal to the argument against the brain-as-integrator perspective is that the brain death definition of death can still serve as a primary sign of when the soul has departed from the body. This perspective abides to the simple logic used by Christians, that the body is considered dead when the soul departs from the body. Aquinas commonly refers to the soul as the integrator of the body which is separate from the material body and its parts. He holds that the soul “as the form of the body is not united to the whole body through the medium of any of its parts, but is united directly to the whole body.”<sup>1</sup> Christians may view the death of the brain as the tell-tale indication

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<sup>1</sup> “Thomas Aquinas: Quaestiones Disputate de Anima: English,” a. 10, accessed April 23, 2023, <https://isidore.co/aquinas/english/QDdeAnima.htm>.

that the soul has departed from the body. Jason T Eberl writes an extensive rebuttal on this perspective, which opposes that of Accad presented in the previous chapter.<sup>2</sup> Eberl makes a strong case for why the brain, although not the rational soul itself, is the secondary instrument of movement through which the soul can enact its purposes. Note that he is not making a case for why the brain is inhabited by the soul; he is arguing that the brain perhaps plays a crucial role in preparing the body as a wholly integrated organism which can then be *inhabited* by the soul. Through the many questions about whether the brain has any importance in relation to the sustenance of the whole bodily organism, the question can be simplified down to this: is whole-brain function *necessary* for the body to exist as a living integrated organism suitable for rational ensoulment?<sup>3</sup> Eberl argues that it *is* necessary because the brain has a special coordinating function rather than an integrative function. It sends stimuli into local or global groups of cells to bring those cells into a common action or condition. Additionally, the brain demonstrates dominance over other organs in the body. Aquinas argues that there is one primary organ which is the *sine qua non* without which the body cannot be rationally ensouled.<sup>4</sup> The brain not only coordinates the body, but it also fulfills the position of the primary organ because it moves or controls the other body parts. It maintains and regulates the body's essential autonomic functions and provides constant maintenance of the proper functioning of the heart and the lungs. In this way, the brain is the commander of the body, set apart because of its unique function as regulator and maintainer. The lungs and

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<sup>2</sup> Jason T. Eberl, "A Thomistic Defense of Whole-Brain Death," *The Linacre Quarterly* 82, no. 3 (August 2015): 235–50, <https://doi.org/10.1179/2050854915Y.0000000005>.

<sup>3</sup> Eberl.

<sup>4</sup> "Thomas Aquinas: Quaestiones Disputate de Anima: English." q. un., a. 9, co. 1

the heart depend on proper brain functioning in a non-ventilated individual. Similarly, the brain is also dependent on the lungs and heart to receive oxygenated blood. However, Eberl keenly notes that “whereas the brain is dependent on the rest of the body to provide *support* for its functions, the heart and lungs depend upon coordinating signals from the brain in order to function at *all* to sustain the rest of the body.”<sup>5</sup> The brain often overrides the spontaneous signals of the heart by voluntarily changing the heart rate in response to certain stimuli (i.e., sympathetic response). If the brain is the necessary cause for proper functioning of the body, the commander of the body, and the dominant organ, it can then also be seen as the integrator of the body in a strictly physical sense. To clarify: I am not saying the brain is the formal integration factor of the body, which can only be posited to the immaterial soul. Rather, I am asserting that the brain could be an essential integrator of the physical body which can be a diagnostic as to whether the soul is in the body. Thus, “the brain-as-a-whole serves as the *evidential criterion* that a rational soul is informing a living human body.”<sup>6</sup> Since the brain is a type of physical integrator that prepares the body to be rationally ensouled, it serves as a “litmus test” to see whether the body is ensouled. Absent brain function excludes the possibility of the soul’s presence in the body. Furthermore, this relationship is only a correlation of neurological function and presence of the soul in the body; it does not imply causation, nor does it imply that the soul’s integrative activity is identical to or reducible to brain functioning. While I understand this correlation is substantially weaker than a causation, it is worth noting in the discussion of the validity of the brain death definition of death in light of Thomistic

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<sup>5</sup> “Thomas Aquinas: Quaestiones Disputate de Anima: English.”

<sup>6</sup> “Thomas Aquinas: Quaestiones Disputate de Anima: English.”

philosophy and reductionism. Understanding the lack of brain function as a sign of death aligns with the purpose of the brain death criteria: to be able to diagnose a brain dead patient as dead.

### *Position as the Most Publicly Accepted Definition*

The definition of brain death has become publicly accepted over the course of the last 40 years. Although not without confusion and misinterpretation,<sup>7</sup> the term “brain death” and the concept of brain death has been so highly publicized and discussed in mainstream media that it has generally gained the approval of the general public. Whether or not the public knows exactly what brain death refers to is not the issue here. Instead, it is the general adoption of the term and idea of brain death that holds value. Even in 1998, James Bernat asserted that the public now accepted whole-brain death as human death.<sup>8</sup> Whether correctly or incorrectly perceived, public opinion has adopted the brain death definition and there have been no notable social movements against the use of the brain death definition since its creation.

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<sup>7</sup> “A Narrative Review of the Empirical Evidence on Public Attitudes on Brain Death and Vital Organ Transplantation: The Need for Better Data to Inform Policy | Journal of Medical Ethics,” accessed April 25, 2023, <https://jme.bmj.com/content/41/4/291.short>.

<sup>8</sup> “A Defense of the Whole-Brain Concept of Death - Bernat - 1998 - Hastings Center Report - Wiley Online Library,” accessed April 25, 2023, <https://onlinelibrary.wiley.com/doi/full/10.2307/3527567>.

## CHAPTER SIX

### Moving Forward

Having explored the arguments in favor and against brain death, what are we to do as Christians? What should we do when presented with the issue of brain death or the decision to “pull the plug”? How should we navigate the issue of organ donation?

In this section, I will propose three claims:

1. Christians should adhere to the cardiopulmonary standard of death.
2. Christians are allowed to terminate life support in those who are in permanent vegetative states, permanent comatose states, and brain dead states on the premise of not using extraordinary means to prolong life.
3. Christians should only donate vital organs after cardiopulmonary function has ceased.

#### *Drawing a Line: Upholding the Cardiopulmonary Approach*

The question of how to regard brain death should precede any thought about organ donation. We should determine where the “line” for determining death is to be drawn before discussing the question of organ donation. Death is a process that leads a living body to become a corpse. Somewhere along this line, we have to establish where we hold the moment of death to be for medical and legal purposes. As Christians, I propose the exclusive application of the cardiopulmonary approach for the determination of death. As the Uniform Determination of Death Act (UDDA) allows for death to occur either by cardiopulmonary standards or by brain death standards, I propose that we get rid



of the UDDA and only abide by the first standard, the cardiopulmonary approach. The definition of the cardiopulmonary approach has already been explained in my third chapter.

There are many reasons why we should exclusively adhere to the cardiopulmonary approach to determining death, some of which have already been touched on in earlier chapters. One of the most convincing reasons why Christians should hold the cardiopulmonary definition of death is because many of the integrative unity of the body are not brain-mediated. As cited earlier, Pope John Paul II points out that the death of a person is an event that no scientific technique can observe directly but can only identify by its effects, which can then be assessed by scientific criteria. He holds death to be the “total disintegration of that unitary and integrated whole that is the personal self.”<sup>1</sup> So, what is disintegration of the integrated whole of the self?

Defining integration is a complex and daunting task. It is beyond the scope of this thesis to dive into the specific details outlining what exactly constitutes integrative function, but Alan Shewmon gives us two criteria from which we can base our discussion. He proposes two criteria for identifying integrative functioning of a whole, which satisfy seven requirements for identifying integrative function:<sup>2</sup>

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<sup>1</sup> “To the 18th International Congress of the Transplantation Society (August 29, 2000) | John Paul II.”

<sup>2</sup> Shewmon’s seven necessary requirements for criteria that determine integrative function are as follows:

1. It should be applicable to all living organisms
2. Death should be a point from which an organism cannot return to life, and a point at which entropy continues to increase
3. It should correctly regard all corpses (after death but before rigor mortis) as being devoid of integrative function
4. It should correctly identify a composite unity from a collection of parts
5. It should be essentially dichotomous; it is either present or absent and an organism is never partially integrated

1. “Integrative unity” is possessed by a putative organism (i.e., it really is an organism) *if the latter possesses at least one emergent, holistic-level property*. A property of a composite is defined as “emergent” if it derives from the mutual interaction of the parts, and as “holistic” if it is not predicable of any part or subset of parts but only of the entire composite.
2. Any body requiring *less* technological assistance to maintain its vital functions than some other similar body that is nevertheless a living whole must possess at least as much robustness of integrative unity and hence also be a living whole.”<sup>3</sup>

Using these two criteria, we can establish that brain dead patients do not lack integrative function and therefore loss of total brain function does not cause loss of integrative function of the human body. To the first criterion, we see that brain dead patients evidently retain many manifestations of integrative function, including: gestation of a fetus, proportionally growth in children, sexual maturation in children, profuse sweating, tachycardia, maintenance of homeostasis, wound healing, cardiovascular and hormonal stress responses to unanesthetized incision for organ retrieval, fighting of infections of foreign bodies, maintenance of body temperature, and elimination, detoxification and recycling of cellular wastes throughout the body.<sup>4,5,6</sup> Thus, the body continues to demonstrate many various biological manifestations of integrative function in the absence of brain functioning. These are emergent properties with quite striking

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6. It must not conflate illness or disability from death itself

7. Follow propositions 1-6, consciousness is not necessary for whole somatic integrative unity. Adapted from Shewmon, “The Brain and Somatic Integration,” January 1, 2001.

<sup>3</sup> Shewmon.

<sup>4</sup> Shewmon.

<sup>5</sup> Alan D. Shewmon, “The Brain and Somatic Integration: Insights Into the Standard Biological Rationale for Equating ‘Brain Death’ With Death,” *Journal of Medicine & Philosophy* 26, no. 5 (October 2001): 457, <https://doi.org/10.1076/jmep.26.5.457.3000>.

<sup>6</sup> Nguyen, “Does the Uniform Determination of Death Act Need to Be Revised?”

outcomes; the ability to gestate a fetus or sexually mature are complex processes that one would not expect a new corpse to be able to demonstrate.

It is important to note that this first criterion demonstrates the “integrative unity” of the body but does not necessarily prove the body to be an “organism as a whole.” As it pertains to “integrative unity,” the criterion is both necessary and sufficient. An integrative unity needs to demonstrate one emergent property, and also one emergent property is sufficient to prove integrative function. As it pertains to “whole organism,” the criterion is necessary but not sufficient. It is necessary that a whole organism demonstrate one emergent function to be considered integrative. But it is not required that something demonstrating an emergent function be an organism as a whole. There are many examples of a collection of parts working together in an un-whole fashion that still demonstrate emergent properties. For example, a society has emergent properties, but it is not a living organism.

To the second criterion, there are cases of patients who demonstrate similar somatic physiology as brain dead patients, yet who need more technological assistance. Shewmon uses the example of a patient with therapeutically compensated diabetes insipidus who suffers high cervical cord transection and is pharmacologically vagotomized.<sup>7</sup> This patient can be shown to have the exact physiology of a brain dead patient yet need more technology and treatment to sustain life. There is nothing different between the physiological states of these two patients with different diagnoses, and yet the patient with diabetes insipidus is surely considered alive with integrative function.

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<sup>7</sup> Shewmon, “The Brain and Somatic Integration,” January 1, 2001.

This is a strong piece of evidence that posits that the physiological function of the brain dead patient confirms integration.

Lastly, brain death does not disintegrate the whole self because the brain cannot be the integrator of the body due to it being a part of a whole. This argument was covered in chapter three under the “reductionist approach” heading. Essentially, the brain cannot be the integrator of the body because the integrator must be something that is separate from the physical organism and it must inhabit the whole of the organism. In that chapter, I upheld the Christian belief that the soul is the integrator of the body. The soul is separate from the physical body yet it inhabits the entire body as a whole. The brain death diagnosis creates a line to determine death that reduces the survival of the whole organism to one organ. This line is inconsistent with the Aristotelian-Thomistic hylomorphic (Christian) belief that the human body is a fusion of matter (body) and form (soul).

However, the cardiopulmonary approach accurately demonstrates loss of integrative function following loss of cardiopulmonary function. More specifically, the irreversible cessation of circulation and respiration indisputably signal the loss of the body's integrative function. This is because the heart is not the *sine qua non* for death; a human can have the heart replaced by a machine that retains its circulatory function and still be alive. In the same way, the lungs can be artificially substituted, yet mitochondrial respiration cannot. Once the body loses circulation and respiration, the whole body readily and clearly undergoes decomposition and destruction. All tissues stop receiving the necessary oxygen they need to function and therefore the whole body declines. Certain tissues become infarcted faster than others and all cells start a trajectory toward

death. The body no longer can retain the functions previously noted in brain dead patients (gestating a fetus, maturing sexually, healing wounds, etc.) and the organs lose their ability to demonstrate cooperative functions (the endocrine system and the immune system are both dysfunctional). With cardiopulmonary death, the body *does* lose its integrative function; cardiopulmonary death is evidence that the soul has left the body.

### *Pulling the Plug: Using Ordinary Means to Prolong Life*

The purpose of this section is to identify the Christian response to the permanently vegetative, permanently comatose, or brain dead patient on a ventilator. It has been established numerous times throughout this thesis that Christians are obliged to take ordinary means to prolong life and yet not forbidden to take extraordinary means.<sup>8</sup> I propose that Christians are at liberty to remove ventilation on patients in permanent vegetative, permanent comatose, and brain dead states. This act has natural primary effects and consequential secondary benefits. Primarily, the Christian perspective on life and death is upheld. Removing patients from the ventilator allows for nature to run its course without taking extraordinary means to prolong life. It also respects the patient's autonomy and capacity. If the patient stops breathing after the ventilation is removed, it should be celebrated; the patient's dignity has been respected unto death. If the patient continues breathing after the ventilation is removed, it should also be celebrated; the patient has demonstrated he/she is capable of living. The secondary benefit of this decision is pragmatic. It costs a large sum of money to keep a patient on a ventilator and

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<sup>8</sup> Pius XII and The National Catholic Bioethics Center, "The Prolongation of Life."

hospitals have a limited number of ventilators. Families do not build up false hope, and patients can progress steadily in the direction they are to go.

The underlying truth behind this action is that the primary motive of the Christian patient is not to extend life as long as possible.<sup>9</sup> Christians have a greater call to spiritual goals than to physical goals. In popular culture, the prolongation of life is the greatest good sought by medicine. From a secular perspective, we should do anything and everything we can to prolong life. However, from the Christian perspective, the length of one's life has no great or final significance.<sup>10</sup> It should be said that we as Christians cannot hold non-believers to accept the same viewpoint toward death as we do. Life extension is not always the best good for the Christian. And as such, Christians should stand out from the general public by our less frequent adoption of recommended extraordinary treatment options. Specifically, we should stand out by our approach toward the removal of the ventilator in certain cases while still upholding the cardiopulmonary approach toward death. Interestingly, the opposite is often true in the hospital. Many Christian families hang on to their loved one, hoping for a miracle.

The decision to remove the ventilator must be made on a case-by-case basis according to the specific details of the situation and according to the wishes of the patient and/or family, the time the patient has been on the ventilator, and the patient's likely long-term prognosis. It would be a travesty to regard the case of a 20-year-old patient who has a 99% likelihood of full recovery after one month on life support as equal to the case of an 80-year-old patient who has a 2% likelihood of full recovery after one month

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<sup>9</sup> "Defending Life by Embracing Death," accessed April 21, 2023, <https://www.baylor.edu/content/services/document.php/205036.pdf>.

<sup>10</sup> "Defending Life by Embracing Death."

on life support. We must be wise in determining when ventilation should be stopped and in determining what constitutes “extraordinary measures.” Simplified, the premise to not use extraordinary measures is to assert that we should use common sense when approaching treatments toward the extension of life. It makes sense to go to great lengths and spend a large amount of money to support the young pregnant mother who needs life support for one week while in a coma after a car accident.

Furthermore, Pope Pius XII asserts that although Christians are obliged to care for patients using ordinary means, they are not forbidden from using extraordinary means. Christians can use extraordinary means for treatment of patients when those means can be funded and as long as “he does not fail in some more serious duty.”<sup>11</sup> If the family wishes to do so, they may want to explore further treatment for the patient. However, if at some point the treatment fails or the funds run out, the Christian perspective is still tranquil toward the (likely) lethal prognosis of the patient. We are always in a tug of war between life and death. We may fear it, but we also desire it. Thus, at the end of ordinary *and* extraordinary means, we know that we will die eventually. And preventing that physical end is subordinate to pursuing spiritual ends.

Finally, as Christians, we must come to realize that the removal of life support for these patients is *letting them die* rather than *killing* them.

### *Organ Donation: The Christian Perspective*

I have established the inaccuracy of the criteria for death from the brain death perspective and I have defended the cardiopulmonary approach. I have also explored the

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<sup>11</sup> Pius XII and The National Catholic Bioethics Center, “The Prolongation of Life.”

Christian virtue of prudence with respect to the elongation of life. Now, I will explore the issue of organ donation using Christian philosophy. One key premise guides the Christian moral framework regarding organ donation, and it will be crucial in navigating the claims and arguments proposed in this chapter. The premise is this: We must prioritize respect for our own bodies above trying to save others' bodies. No moral virtue is possible without prudence.<sup>12</sup> Indeed, prudence is more excellent than the other moral virtues, and charity is the most excellent of all the virtues.<sup>13</sup> Building off of this premise, I will explain the dangers of donating organs at any time before irreversible cessation of cardiopulmonary function. Organ donation before irreversible cessation of cardiopulmonary function is morally faulty because:

1. It compromises the human dignity
2. It is not the *most* loving act
3. It is not a properly human act of sacrificial love (that is, a sacrifice that is made freely, knowingly, and in accord with the created order)

#### *(1) Compromise of Human Dignity*

When approaching the question of organ donation, it is tempting to compromise the dignity of the individual patient by many means. Often, the disregard for the dignity of the patient in the brain dead state is due to a tendency to analyze great pragmatic consequences of organ donation following brain death. It is easy to overlook the

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<sup>12</sup> "SUMMA THEOLOGIAE: The Connection of Virtues (Prima Secundae Partis, Q. 65, A. 2, Co. 1)," accessed April 25, 2023, <https://www.newadvent.org/summa/2065.htm>.

<sup>13</sup> "SUMMA THEOLOGIAE: Charity, Considered in Itself (Secunda Secundae Partis, Q. 23, A. 6. Co. 1)," accessed April 21, 2023, <https://www.newadvent.org/summa/3023.htm>.



preservation of one life that is in its last days when there is a large potential to drastically increase the life of the donor recipient. However, as Christians, we must prioritize the patient at hand before thinking about how the recipient might benefit. Our patient who is nearing death is *nearing* the end of life but is not there yet.

The first reason organ donation in any state before cardiopulmonary death is a compromise of human dignity is because it can potentially terminate human life. This is a simple argument: we cannot uphold organ transplantation after brain death because we might be killing the patient. Because Christians are in a gray area surrounding brain death, organ donation at brain death could easily mean the termination of a life in a *killing* fashion rather than a *letting die* fashion. To give context, one of the greatest “benefits” of brain dead organ donations is that the organs never have to be deprived of oxygen; that is, the heart never has to start beating. Organs are much more viable using this method. Yes, organ transplants are done after the diagnosis of brain death and before the heart stops beating.

To give more context, a typical organ donation from a brain dead donor looks like this: the patient is in a brain dead state, the family is called in to say their goodbyes, one physician conducts the appropriate tests to see if the criteria for brain death are fulfilled (the heart is still beating at this moment), that same physician pronounces the patient legally dead, the patient is (potentially) rolled into another room where the organ transplantation will occur (while still on the ventilator and with a heartbeat), a second doctor conducts the appropriate tests and diagnoses the patient as dead once again (while still on the ventilator and with heartbeat), and the organ retrieval team begins cutting open the patient and retrieving organs starting with the most needed organ to be retrieved

first (at the “cutting open” there have been various documented cases of the patients’ heartbeat and blood pressure increasing, common signs of a patient experiencing pain).<sup>14,15,16</sup> During the typical organ donation process following brain death, cardiopulmonary function never fully ceases. This raises grave questions about whether these patients are already dead when doctors determine them dead or whether doctors are killing patients in the act of organ removal. The sanctity of human life is of insurmountable value, and as such, these questions should be regarded with the utmost gravity.

Secondly, removing organs before cardiopulmonary death compromises human dignity because it violates the completeness and wholeness of the human body while removing organs before their due time. If we are to honor the Lord with our bodies and if our bodies really are temples,<sup>17</sup> there is no reason to disgrace the dignity of the human body by removing its integral organs before they have ceased to function. It is undignifying to remove a crucial part of the human body from the wholly created body before that body has died.

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<sup>14</sup> R. D. Fitzgerald et al., “Cardiovascular and Catecholamine Response to Surgery in Brain-Dead Organ Donors,” *Anaesthesia* 50, no. 5 (1995): 388–92, <https://doi.org/10.1111/j.1365-2044.1995.tb05989.x>.

<sup>15</sup> H. J. Gramm et al., “Hemodynamic Responses to Noxious Stimuli in Brain-Dead Organ Donors,” *Intensive Care Medicine* 18, no. 8 (1992): 493–95, <https://doi.org/10.1007/BF01708589>.

<sup>16</sup> Maurice S. Albin, *Textbook of Neuroanesthesia, with Neurosurgical and Neuroscience Perspectives* (McGraw-Hill, Health Professions Division, 1997).

<sup>17</sup> “1 Corinthians 6:19-20 ESV - Or do you not know that your body is a temple of the Holy Spirit within you, whom you have from God? You are not your own, for you were bought with a price. So glorify God in your body - Bible Gateway,” accessed April 25, 2023, <https://www.biblegateway.com/passage/?search=1%20Corinthians%206%3A19-20&version=ESV>.

Lastly, as Christians, we must prioritize the issue of the patient at hand before addressing any other patients. That is, we must identify what is the proper moral act toward the patient at hand before engaging in questions that involve external parties (organ recipients for example). The individual dignity of each person would be compromised if we were to start comparing those who are dying with healthy organs and a bad brain with those who are waiting for healthy organs and who have a good brain. This could lead to a devaluing of the patient who is dying with good organs because we would be overlooking that person's individuality and focusing on what might seem to be the greatest good for the whole society.

One potential rebuttal from an opponent of the proposed claim would be that Christians should look toward helping others by donating their organs. After all, if Christians care about loving others, should they not attempt to donate their organs in a loving and sacrificial way? Upon first thought, this first viewpoint seems convincing. Additionally, we might be tempted to start thinking of the issue from a utilitarian lens. We might be tempted to take actions to prolong life for the greatest number of people. However, if we are serious about love as Christians, we have to consider how Jesus calls us to love. The next section will explore how we need to have prudence with our decisions while we love ourselves and others.

*(2) It is not the most loving act*

Donation of organs in the brain dead patient is not the *most* loving act that could be done in that situation. This premise is built on the foundation of simple adherence to the Christian virtue of prudence and also to Christ's call to "love your neighbor as

*yourself*”<sup>18</sup> (italics added). Christians have a responsibility to care for our own bodies. We have been given our bodies as a gift, unasked.<sup>19</sup> We are not simply obliged to take care of our bodies; we have a duty to respect our bodies that we have been entrusted with. Additionally, Christ’s call is to love others as we love ourselves. If we do not love ourselves, we cannot properly love others. Christ’s command implies that we must have a deep respect and prudence regarding our own treatment of our bodies. Both of these premises amount to a confirmation that we as Christians are called firstly to respect our own bodies and *then* to the bodies of others. And not only our bodies, but also our lives. Our lives are of infinitely valuable and we need to approach questions regarding the end of life and the potential intentional termination of life with extreme caution and prudence. We must be good stewards of the infinitely valuable gift of life that we have been given.

Beside the fact that we must love ourselves before we can properly love others (and thereby must respect our own bodies and take care of them before we sacrifice a part of us for another), we also cannot be sure that this act of love is reliable. Practically, donating a heart as a brain dead Christian would look less like jumping on a grenade to save a friend and more like being the guinea pig for an experimental vaccine that causes death in the guinea pig 100% of the time and yet life for the 1 person in the world it was made for 70% of the time. And this life that the 1 person would get would be an extension of life by a variable amount for each recipient. Sometimes the recipient’s life would extend by 10 years, and other times their life would extend by a few months. Each time, it would be a toss-up as to how much more time they would gain from the vaccine

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<sup>18</sup> “Bible Gateway Passage: Mark 12:31 - English Standard Version,” Bible Gateway, accessed April 25, 2023, <https://www.biblegateway.com/passage/?search=Mark%2012%3A31&version=ESV>.

<sup>19</sup> “Defending Life by Embracing Death.”

(if the vaccine worked enough to give them a chance at more time at all). I allude to the donation of organs after brain death in this way for a few reasons.

Firstly, donation after brain death leads to one's organs going into the "abyss" of the medical world to be received by an anonymous stranger. Unlike the grenade example, donors almost always do not know who their heart or lungs are going to. They do not know who they are saving. Is making a sacrifice unto death different between a person and a stranger as opposed to a person and a loved one? I am not fully convinced it changes the morality in a large sense, but I do assert that it shifts the general feeling of the donation from a heroic act to an imprudent act. Additionally, Christ did not die for each anonymous human. Instead, Christ died for each and every one of us, knowing us while he did it. Augustine writes, "O thou Omnipotent Good, thou carest for every one of us as if thou didst care for him only, and so for all as if they were but one."<sup>20</sup>

Secondly, there is no assertion that the organ donation will be compatible with the recipient's body. The donor may give their organ and it might be rejected by the recipient or harmful to the recipient's body. This is different from the grenade example; in the grenade example, the person sacrificing themselves has a strong likelihood to save the other person in their process of being killed. There is an assurance that the act of self-sacrificial heroism would lead to longer life for the recipient of the act, regardless of how much longer the recipient lived.

Thirdly, the donated organ may or may not sustain the life of the recipient for a long time. There is no guarantee that the sacrifice on the part of the donor would lead to a longer life for the recipient. With the vaccine allusion, the functioning vaccine would

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<sup>20</sup> "Augustine's Confessions," 3.11.19 accessed April 21, 2023, <https://www.ling.upenn.edu/courses/hum100/augustinconf.pdf>.

mean a longer life for the recipient, but it by no means assures that the recipient will live for a certain time after receiving the vaccine. Therefore, it is not prudent to end the life of one patient to potentially save the life of another patient and extend their life by an unknown amount of time.

*(3) It is not a proper act of human sacrifice (that is, a sacrifice that is made freely, knowingly, and in accord with the created order)*

In this last point, I will explain why organ donation at brain death is not a proper act of human sacrifice. A proper act of human sacrifice is made freely, knowingly, and in accord with the created order. While organ donation at brain death might be seen as a sacrificial act, it is not a human sacrificial act.

The decision to donate organs at brain death is (in best case scenario) at least *freely* decided in the past. The brain dead patient has no input in the present case they find themselves in, but likely they have made a decision in the past where they exerted their free will to choose to want to donate their organs if they found themselves in a brain dead situation. This is not too morally unsound. We make decisions in the past for present occurrences many times in life: writing wills, signing contracts, etc. We also must hope that this decision was made freely and not coerced by any means. The decision to donate organs in most cases is likely freely chosen.

As for *knowingly* choosing to donate organs, the moral lines become increasingly unclear. The brain dead patient cannot know presently about the decision that is affecting them. The best case scenario is if the patient knew in the past what their decision would lead to in the future. This would mean they would be well informed and would have a reason why they would choose to donate organs. In the best-case scenario, it would also

mean that they would know that the “organ donor” label means that their organs could be extracted after the diagnosis of brain death and not just cardiopulmonary death. To this point, I doubt that many average laymen realize that they are signing up for donation at brain death when they sign off to become an organ donor. In fact, when signing up to become an organ donor in Texas, the only pertinent information on the registration form given to this topic is that by registering, one agrees to donate organs, eyes, and tissues following death. They also specify that registration does not include living organ donation, bone marrow, blood, or whole body donation.<sup>21</sup> Thus, information provided to organ donors does not allow them to knowingly commit to an act of sacrifice that they would like to do, and in some ways it restricts them from knowing exactly what they are sacrificing for.

Lastly, organ donation at brain death is not a proper human sacrifice because it does not follow the created order. As fully integrated gifts to us, our organs were given to us to be used by us to glorify the Lord. The heart is useful in pumping blood; it therefore makes most sense to leave it where it is and let it conduct its job. The lungs are great at breathing. We would not take out the lungs and use them as a flag to demonstrate a win in battle. Instead, the best position for the lungs is to leave them where they were created to be, for the sustenance of the body they were created for. This premise is especially true of singular crucial organs such as the heart, the lungs, and the brain. I am not saying that organ donation should never be done. I am saying that organ donation should not come at the cost of the donor’s life. The organs are given to us as gifts to use ourselves, for our own body’s maintenance. It is only *after* our body has given out that it is moral to give

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<sup>21</sup> “Register to Be a Donor,” *Donate Life Texas* (blog), accessed April 21, 2023, <https://www.donatelifetexas.org/register/>.

them to benefit another person. As for non-crucial organs or double organs (such as the kidneys), perhaps God enacted the created order of the human body to include two of them so that we might be encouraged to donate one to someone in need.



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