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“The object of philosophy is the logical clarification of thoughts. Philosophy is not a theory but an activity.”

- Ludwig Wittgenstein

Hot Topic:

Brain Death: Real or Legal Fiction

Saint Augustine once wrote, “What then is time? If no one asks me, I know what it is. If I wish to explain it to him who asks, I do not know.” This quote touches on the nature of how humans experience reality. We interact with phenomena often enough that we have an intuitive understanding of them, but then when we try to truly understand them at a fundamental level, we are unable to. What Saint Augustine said about time can also apply to death. We know what death is but when we try to explain death, it becomes more difficult. Specifically, at what moment does life end and death begin? As medical technology advances, the answer to this question becomes increasingly challenging.

Three Criteria for Determination of Death

Before the ability to artificially maintain independently the function of separate organ systems, when one system would cease working, all other systems would too and thus result in the death of the person. For example, if a person’s heart were to stop functioning, then the brain, lungs, liver, etc. would also stop functioning due to the integrated nature of the body and its different organs. Death happened, and seemed obvious to onlookers.

But with advancements in technology, that is no longer the case, at least sometimes. Modern medicine can keep lungs and hearts functioning even if they would not without medical interventions. Kidney function can be maintained potentially for many years by hooking up to a dialysis machine. If a person can no longer swallow, medically assisted nutrition and hydration is possible. If one’s intestines or bladder cannot function, there may be colostomy and catheter options. If liver function is lost, there is at least the possibility of getting a donor organ transplanted, as is the case for other solid organs.

Medical technological innovation enables prolongation of life beyond what could have been imagined a century ago. But no one lives forever. And the advent of medical interventions to replace temporarily the permanent loss of natural bodily functions created another problem. How do we determine when death has occurred?

For at least the past 50 years or so, most societies in the world and all 50 states have agreed on three criteria that can be utilized for determination of death:

- irreversible loss of cardiac and circulatory functions
- irreversible loss of respiratory functions
- irreversible loss of all brain functions

The first two criteria are bundled together in the 1981 Uniform Determination of Death Act as “irreversible cessation of all circulatory and respiratory functions” That would be the old-fashioned way to die. While there are some interesting ethics debates pertaining to circulatory death and organ recovery for transplantation, for the most part, there is little argument that flat-line with no unassisted respiration constitutes death of the body.

Death determined on the basis of neurological criteria, “irreversible cessation of all functions of the entire brain including the brain stem,” is relatively new to human understandings of what it means to be dead. This remains somewhat controversial even after 50 years of statutory permissibility and clinical practice.

Guidance for Transplant Medicine

Discussion of what it means to be dead is more than an interesting academic exercise. There are real-world necessities for the development of legal definitions of death, including brain death. This is due especially to the possibility of organ donation and procurement for purposes of transplantation.

The rules that provide guidance to transplant medicine include the previously mentioned Uniform Determination of Death Act. While not every state or territory uses exactly the language of the UDDA, brain death is legal everywhere in the United States. The other prominent rule for recovery of donor organs is referred to as the Dead Donor Rule (DDR). A donor of vital organs must be dead and the proximate cause of death must not be the donor surgery. Exceptions to the rule are made only for living donation of a kidney or a lobe of lung or liver, and a few other body parts that can be donated without causing death of the donor.

As noted, the UDDA permits two distinct ways to determine the death of a body. One can be found legally dead either by cardiorespiratory or neurological criteria. Cardiorespiratory death is how most of us will die, but most organs are recovered from brain dead donors. Of the 13,861 decedents in 2021 who became organ donors, only 4,187 were donations following cardiorespiratory death (a nearly 30% increase from the previous year, per [OPTN data](#)). The rest were brain dead donors.

Death with A Heartbeat

What constitutes death by neurological criteria? When is a patient truly brain

dead?

While the UDDA states that the discovery of “irreversible cessation of the functions of the entire brain” should be done according to “accepted medical standards,” it does not define those standards. The American Academy of Neurology (AAN) published a 1995 practice parameter to delineate the medical standards for the determination of brain death” ([Wijdicks et al.](#)) Updates occur as neurological knowledge and technology improve. Examination for death by neurological criteria is conducted by a physician, who may be a neurologist or neurosurgeon, but not necessarily. Brain death testing seeks any evidence of brain function. If none is found, and all possibility of potentially reversible coma is ruled out, the patient is legally dead.

But is this truly death? If there is still a heartbeat, if blood is perfusing, skin is warm, a ventilator continues to push air in and out of the lungs—how is this “dead”?

Bioethics in the News

- [The End of 'Life' As You Know It](#)
 - [Sundar Pichai Says Ethicists and Philosophers Need to be Involved in the Development of AI to Make Sure It is Moral, and Doesn't Do Things Like Lie](#)
 - [China's New Bioethics Guideline 'Most Comprehensive' Since He Jiankui Gene-Edited Baby Scandal](#)
 - ['I'll Lose My Family.' A Husband's Dread During an Abortion Ordeal in Oklahoma](#)
 - [US Surgeon-General Says that America has a Loneliness Epidemic](#)
 - [The Center for Practical Bioethics New Clinical Ethics Services Page is Live](#)
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Case Study:

Brain Dead

Patient is a 20-year-old male, recently in an accident that caused severe neurological damage. The patient is currently receiving full aggressive measures, including being on a ventilator. All scans show that the entirety of the patient's brain is grey matter, and neurology says there is no expectation of any form of meaningful recovery. The patient is declared to be dead by neurologic criteria (brain dead) after completing the testing twice. Even after the declaration of brain death, the family do not agree. They say that he cannot be dead, that it has only been a day and we need to give him more time to recover. They also say he cannot be dead because “he doesn't look dead.” The patient is a first-party organ donor, and is able to donate multiple organs.

The team is unsure how aggressive they can and should be with the family regarding brain death and organ procurement. An ethics consult is requested.

Ethical Musings:

It has often been said in bioethics circles that brain death is something of a legal fiction. It is law created to enable a means of stopping life supports that have run their course, and especially for the purpose of gaining more and better organs available for transplant. The legality of death on neurological criteria was needed so as to not violate the Dead Donor Rule. But beyond the utility of having an alternative to cardiorespiratory death, are “brain dead” patients really and truly dead? Not everyone thinks so. I do.

Death is not necessarily an event but rather a spectrum. I see it as a series of events leading to a permanent state of nonliving. While brain death might be limited and a human-created point on that spectrum, it is best to understand that when a patient reaches this state, blood pressure is unstable, often relentlessly declining despite efforts. Cardiac arrhythmias appear and multisystem injury occurs as a result of widespread inflammatory response and intravascular coagulation. Life support measures are complex and often fail, and the ability to maintain a brain-dead body is difficult to impossible. It is a point that, when reached, cardiorespiratory death would be the imminent and inevitable outcome. If brain death is indeed a point on the spectrum, it is “good enough” death. Or so it seems to me, and also to most of us most of the time.

It may be helpful to consider the importance of the brain to the concept of the self. The *Decapitation Gambit* thought experiment helps to illustrate this. Imagine that a surgical decapitation is performed, and immediately both head and torso-limbs are placed on life support measures that perfuse the parts and maintain temporarily some semblance of biological life. In this rather gruesome scenario, where is the *person* of the decapitated body? The strongest argument, I believe, holds that personal identity, hence life, resides in the head portion (particularly if consciousness is retained also). When perfusion of the head/brain stops, the person is dead—even if perfusion and cell life were to continue for a time in the decapitated torso/limbs. Brain death then is tantamount to physiologic decapitation. When the patient does not have brain function, that *self* is no longer there.

Death is an important and ever-present aspect of life. We understand it, know it, and see it but often struggle to perfectly define it. Brain death is a human created point when death occurs. It has its value but is also limited. It is important to know when and where it is of value, and what its limitations are.

Life and death are immanently linked dueling opposites. We think we know what death is because we know what life is. It is almost undeniable that if you are reading this, then you are alive to be doing so. We have a pretty good idea of what life is since we all are experiencing it. Thus, the opposite of this is death, and if we know what life is, it should be just as easy to distinguish when death is. But as we are finding, it is not as easy or straight forward as we thought. It also relates to personhood. It is very difficult for an individual who exists to imagine a state where they do not exist. And that loss of life connects to our loss of personhood. But this might not be exactly the case. Lao Tzu is

said to have said, "The body comes to its ending but nothing dies." Many cultures believe that death is not the end. This could be through a spiritual understanding or a personal one. Some cultures believe that all those who die are still alive by those who remember them. Even after death, we are remembered and even known, to some degree, by those that remember and love us.

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