

## The challenge of brain death for the sanctity of life ethic

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### Abstract

For more than thirty years, in most of the world, the irreversible cessation of all brain function, more commonly known as brain death, has been accepted as a criterion of death. Yet the philosophical basis on which this understanding of death was originally grounded has been undermined by the long-term maintenance of bodily functions in brain dead patients. More recently, the American case of Jahi McMath has cast doubt on whether the standard tests for diagnosing brain death exclude a condition in which the patient is not dead, but in a minimally conscious state. I argue that the evidence now clearly shows that brain death is not equivalent to the death of the human organism. We therefore face a choice: either we stop removing vital organs from brain dead patients, or we accept that it is not wrong to kill an innocent human who has irreversibly lost consciousness.

**Keywords:** definition of death, brain death, sanctity of life, organ transplantation, Jahi McMath

### I. Introduction

In 1968, *Black's Law Dictionary* defined death as follows:

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 thereupon, such as respiration, pulsation, etc.

Twenty years later, most of the world had accepted, with surprisingly little controversy, a new way in which one could be dead, even if one's heart was beating, one's blood was circulating, and "animal and vital functions", including having a pulse, continued. That new way was defined in terms of the irreversible cessation of all functions of the entire brain, including the brain stem. One reason why this view gained acceptance without controversy was that the new definition was generally presented as an improved scientific understanding of the nature of death, and not as taking a new stance on an ethical issue. This was consistent with an oft-cited statement made by Pope Pius XII at a conference of anaesthesiologists, held in 1957, at a time when ventilators were beginning to be used. Pius XII was asked how a doctor should determine that a patient on a ventilator is dead. He reiterated the Church's view that death occurred when the soul separated from the body; but, aware that this was not of great practical help to the doctors in his audience, he added: "It remains for the doctor, and especially the anaesthesiologist, to give a clear and precise definition of 'death' and 'the moment of death' of a patient who passes away in a state of unconsciousness" (The prolongation of life, 1957, p. 396).

Over the thirty years since brain death became widely accepted as a criterion of death, a few bioethicists and physicians have raised questions about it, but public discussions have been rare.

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More recently, the case of Jahi McMath has raised new questions about brain death, and especially about the standard diagnostic guidelines for diagnosing brain death. In 2013, at the age of 13, Jahi underwent what should have been a routine tonsillectomy in a California hospital. After the operation she bled excessively, and the bleeding was not stopped. Jahi was placed on a ventilator, and two days later, declared brain-dead. A social worker urged her family to take her off the ventilator, and to consider donating her organs. Her mother, Nailah McMath, did not understand how she could be dead when her skin was still warm and she was occasionally moving her arms, ankles and hips – movements that the hospital doctors said were only a spinal reflex. In any case, the family insisted on first finding out what had happened to her before taking her off the ventilator. (The family is African American, and suspected that a white patient would have received better care.) A lawyer agreed to take their case on a pro bono basis.

The coroner issued a death certificate for Jahi, but the family, using funds raised online, took what was then officially a corpse, and flew it (or her), attached to a portable ventilator, to New Jersey, where state law forbids hospitals from treating a patient with a beating heart as dead if the family has religious objections to brain death. Nailah, a Christian, said she did have such objections. Jahi was admitted to St Peter's University Hospital, a Roman Catholic hospital in New Brunswick.

In newspapers and on television, leading American bioethicists criticized both the family's actions and the hospital's decision to admit Jahi. Lawrence McCullough said the hospital's decision was "crazy". Art Caplan managed to say both "Keeping her on a ventilator amounts to desecration of a body" and "There isn't any likelihood that she's gonna [sic] survive very long". Robert Truog, on the other hand, was troubled by criticisms of the family, subsequently telling Rachel Aviv of the *New Yorker*: "I think that the bioethics community felt this need to support the traditional understanding of brain death, to the point that they were really treating the family with disdain, and I felt terrible about that" (Aviv, 2018).

After eight months at St Peter's, Jahi was discharged from hospital: the diagnosis on the discharge was brain death. But her family had not given up. They rented a nearby apartment where, for nearly four years, she remained on a ventilator and was fed through a tube. Her condition remained stable for nearly four years, but then she suffered further medical complications. Her heart stopped and she was declared dead in the traditional way, which her family accepted.

During the years Jahi was on a ventilator, her family engaged a malpractice attorney, and sued the California hospital where the tonsillectomy was performed. If that suit had come to trial, whether Jahi was really dead would have been a central issue, because under Californian law, damages awarded in medical malpractice suits involving children who die cannot exceed \$250,000. There is no limit on damages when patients survive (Aviv, 2018). After Jahi's death, however, the case was settled for an undisclosed amount.

The first aim of this article is to update my earlier writings in which I argued that there are good reasons for rejecting the prevailing view of brain death.<sup>2</sup> A second aim is to show that rejecting brain death raises the stakes in the debate between those who believe in the sanctity of human life, and those who hold that the quality of a life must affect its value. I also take account of a new issue raised by the Jahi McMath case. I conclude by pointing to possible ways forward.

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<sup>2</sup> See especially *Rethinking Life and Death* (Singer, 1994).

## II. The origins of the new definition of death

The first step towards the development of a new definition of death can be traced to Henry Beecher, a distinguished professor of medicine at Harvard University and chair of a committee that oversaw the ethics of experimentation on human beings. In 1967 he wrote to Robert Ebert, Dean of the Harvard Medical School, proposing that the committee should take up the issue of the definition of death. This idea had emerged, he told Ebert, from conversations with Joseph Murray, a surgeon at Massachusetts General Hospital and a pioneer in kidney transplantation. The need for further consideration of the definition of death arose, Beecher wrote, from the fact that “[E]very major hospital has patients stacked up waiting for suitable donors”.<sup>3</sup> The issue gained added urgency when Dr Christiaan Barnard carried out the world’s first heart transplant. Shortly thereafter Ebert set up the Harvard Brain Death Committee, under Beecher’s chairmanship. It published its report in the *Journal of the American Medical Association* in August 1968. The report began as follows:

“Our primary purpose is to define irreversible coma as a new criterion for death. There are two reasons why there is a need for a definition: (1) Improvements in resuscitative and supportive measures have led to increased efforts to save those who are desperately injured. Sometimes these efforts have 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” (Report, 1968, p. 337).

Nowhere in the Harvard committee’s final report does the committee claim that the new definition of death reflects some scientific discoveries about, or improved scientific understanding of, the nature of death. It was, instead, because the committee saw the status quo as imposing great burdens on various people and institutions affected by it, including preventing the proper use of the “life-saving potential” of the organs of people in “irreversible coma” that the committee recommended the new definition of death. But the judgment that it is good to avoid these burdens, and to ensure that organs can be used, is an ethical judgment, not a scientific one.

The Harvard committee’s report was influential. In the decade following its publication, a number of U.S. states changed their legal definition of death so that, if tests showed that the brain had ceased to function, patients could be declared dead, despite the fact that their hearts were still beating, and their blood circulating. That meant that a patient with a beating heart but no brain function might be declared dead in one state, but if moved to another state would legally be alive.

In 1981 the United States President’s Commission for the Study of Ethical Problems in Medicine took up the problem of the definition of death. Its report, *Defining Death*, recommended uniform legislation that would enable people to be declared dead if tests established the irreversible cessation of all brain function (President’s Commission, 1981). The report was endorsed by the American Medical Association, and subsequently every state and territory of the U.S. adopted legislation recognizing that a person whose brain has irreversibly ceased to function is dead.

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<sup>3</sup> Henry Beecher to Robert Ebert, 30 October 1967 (Rothman, 1991, pp. 160–161).

### III. Death as the irreversible loss of integrated organic functioning

A proponent of the view that brain death really is death might argue that the Harvard committee made the right recommendation for the wrong reasons. What reasons, other than the various benefits mentioned by the committee, would there be for holding that the death of the brain really is the death of the whole human being? A typical answer is that the introduction of modern methods of intensive care has exposed a certain vagueness in the concept of death, and a new account is needed to clear this up. The question is what that new account should be.

The President's Commission said that brain death is the death of the human organism because without brain function, the body is no longer an integrated whole, but just a collection of cells and organs. In this they were following two prominent Roman Catholic bioethicists, Germain Grisez and Joseph Boyle, who, in *Life and Death with Liberty and Justice*, had argued that death is to be understood in theoretical terms as "the permanent termination of the integrated functioning characteristic of a living body as a whole..." (Grisez & Boyle, 1979, p. 77; Lamb, 1985).

Since *Defining Death* was published, however, it has become clear that integrated organic functioning can persist despite the irreversible cessation of all brain functions. Already in 1998, a literature search conducted by Alan Shewmon, then professor of paediatric neurology at the University of California, Los Angeles, Medical School, found 175 cases of brain dead patients "surviving" for at least one week, 80 for at least two weeks, 44 for at least four weeks, 20 for at least two months, and seven for at least six months. These were all cases in which there was a formal diagnosis of brain death made by a physician, usually including at least one neurologist or neurosurgeon. Shewmon notes that many examples are of "unequivocal BD [brain death] confirmed by multiple clinical examinations, EEGs, intracranial blood flow, and necropsy findings" (Shewmon, 1998a, pp. 1538–1545; Shewmon, 1999, pp. 1369–1372). Moreover in many of these cases, treatment was eventually withdrawn. The number of patients "surviving" for long periods would have been greater still if treatment had been maintained in all cases. As Shewmon says, the diagnosis of brain death is nearly always "a self-fulfilling prophecy" as it is followed by organ harvesting or the discontinuation of support. Occasionally, however, a family will insist on support being maintained even after a diagnosis of brain death, as Jahi McMath's mother did. Another such case has been described by Shewmon. A patient, known as "TK" contracted a form of meningitis at the age of four and was declared dead. Shewmon visited him when he was 18 years old. He described the case as follows:

"Cerebral edema was so extreme that the cranial sutures split. Multiple EEGs have been isoelectric, and no spontaneous respirations or brain-stem reflexes have been observed over the past 14 1/2 years. Multimodality evoked potentials revealed no intracranial peaks, magnetic resonance angiography disclosed no intracranial blood flow, and neuroimaging showed the entire cranial cavity to be filled with disorganised membranes, proteinaceous fluids and ghost-like outlines of the former brain" (Shewmon, 1998a, p. 1543).

Shewmon examined TK and documented everything photographically. He concluded: "There is no question that he became "brain-dead" at age 4; neither is there any question that he is still alive at age 18 1/2". TK "lived" – if that is the right word – at home on a ventilator, fed by a gastrostomy tube. His heart continued to beat for another six years after Shewmon wrote the account just quoted. During the 20 years he was without brain function, he grew, overcame infections, and healed wounds (Shewmon, 1998b, pp. 125–145; Repetinger, 2006, pp. 591–595).

In cases like TK exhaustive tests have shown that the brain no longer exists, and there can be no brain function at all. Such cases force us to reconsider the assumption on which Grisez and Boyle, as well as the President's Commission, rely for their acceptance of brain death: that a functioning brain is a necessary condition for an integrated organism. Instead, Shewmon concludes: "The body's integrative unity derives from mutual interaction among its parts, not from a top-down imposition of one "critical organ" upon an otherwise mere bag of organs and tissues" (Shewmon, 2001, pp. 457–478; Shewmon, 2012, pp. 423–494). How this is possible, and what parts are interacting to maintain this integrative unity, is an interesting scientific question, but is beyond the scope of this paper.

The development of Shewmon's own views is worth a short digression. A Roman Catholic, in 1989 he presented a defence of a version of "whole-brain death" to the Pontifical Academy of Sciences. Subsequently he rejected all brain-based formulations of death. In this he is joined by another leading Roman Catholic scholar in this area, John Finnis, Professor of Law at the University of Oxford, and by the former archbishop of Cologne, Joachim Cardinal Meisner, who in 1994 declared that "the identification of brain death with death of the person is from a Christian point of view no longer justifiable".<sup>4</sup>

Once it became clear that a human organism can, with the aid of a ventilator and good nursing care, continue to function for months or even years after the irreversible cessation of all brain function, the view that this irreversible cessation is equivalent to the death of the human being was on shaky ground. We can see this in the case of patients with a high spinal cord injury that leaves the patient paralysed below the injury and unable to breathe on his or her own. Although the brain has not lost all functions, it has lost its integrative function, because it can no longer communicate with the body below the injury. Yet patients with such an injury are still conscious. It would be absurd to say that because the brain has lost its integrative function, a fully conscious patient is dead.

#### **IV. What do the standard tests for brain death show?**

More recently, Shewmon has added another complication to the discussion. He examined Jahi McMath, and also watched videos taken by her family in which she appears to respond, with a frequency Shewmon says is highly unlikely to be chance, to spoken requests to raise a finger or make other movements. His conclusion is that at the time when Jahi was declared dead, she did fulfil the requirements of brain death, but "[W]ith the passage of time, her brain has recovered the ability to generate electrical activity, in parallel with its recovery of ability to respond to commands". Jahi was therefore at the time of Shewmon's statement, in his view, "an extremely disabled but very much alive teenage girl" (Aviv, 2018). Brain death is defined as the *irreversible* cessation of all brain functions, so it is logically impossible for Jahi to have been dead in accordance with this definition, and for her brain to then recover some function. If her brain now has some function, she was never brain dead.

Shewmon knows this, of course, so when he says that Jahi fulfilled the requirements of brain death, he must mean that when Jahi was declared dead, the tests standardly used to establish brain death were correctly carried out, and yielded the readings standardly taken to

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<sup>4</sup> John Finnis expressed his view in unpublished comments on a paper I gave to the Philosophy Society, Oxford University, 14 May 1998; for Joachim Cardinal Meisner, see "Erklärung des Erzbischofs von Köln zum beabsichtigten Transplantationsgesetz" [Declaration of the Archbishop of Cologne on the proposed transplantation law], September 27, 1996, *PEK Pressedienst*, 1996, Erklärung nr. 316, cited by Gerhard Wolf, "Strafbarkeit von Organentnahmen für Transplantationen?" In: Jan Joerden, (ed.): *Der Mensch und Seine Behandlung in der Medizin*. Berlin: Springer, 1999, p. 301, n. 91.

mean that all brain functions have irreversibly ceased. If that is the case, however, it shows that the standard tests are not a completely reliable indicator of brain death. Shewmon believes that Jahi was probably in a minimally conscious state, as a result of a condition known as global ischemic penumbra, in which intracranial blood flow is too low to support synaptic function, but is just sufficient to prevent the death of the cells. At present, the standard tests for blood flow used to diagnose brain death are not sensitive enough to distinguish this low level of blood flow from no flow at all (Shewmon, 2018).

If Shewmon is right about this, it would seem that we have a choice. One option is to devise new tests with the requisite sensitivity and use them instead of the now-standard tests in the guidelines for diagnosing brain death, so that they are able to detect global ischemic penumbra, and possibly other conditions from which the brain can recover some function but which are not detected by the standard tests. This may not be as simple as it sounds. According to Shewmon:

“[T]he “accepted medical standards” do not include ruling out GIP as a confounding factor... and there is no way to rule it out in a given case short of actual measurement of blood flow in every part of the brain, for which no practical test exists (an area ripe for urgent clinical research)” (Shewmon, 2018, p. 169).

Under the present legal definition of death, however, unless we can develop such a test, there is a risk that every removal of a heart from a patient who has been declared to be brain dead is, legally speaking, murder.

The other option is therefore to return to the traditional definition of death, and cease to remove organs from patients with beating hearts. I will now turn to the deliberations of President George W. Bush’s Council on Bioethics, which considered this possibility.

#### **V. President George W. Bush’s Council on bioethics enters the debate**

In 2008, the President’s Council on Bioethics, a conservative-leaning body appointed by President George W. Bush to replace its more liberal predecessor, took up the question of brain death, noting controversy about the view that “total brain failure” (as the Council refers to brain death) is the death of the human being. On the basis of evidence from Shewmon and others, the Council rejected the view that total brain failure means the end of an integrated organism. It might therefore seem that the Council must reject brain death itself. After all, Shewmon concluded, as the Council correctly notes, that to hold that the condition of the brain determines the death of the organism is a mistake (President’s Council on Bioethics, pp. 54–55). Nevertheless, the Council did not recommend a return to the traditional view that death occurs when the heart stops beating and the blood ceases to circulate. Instead a majority of its members found a new rationale for supporting the view that brain death is the death of the organism. The majority proposed that we take note of the fact that living organisms “engage in commerce with the surrounding world” (President’s Council on Bioethics, p. 60). The “commerce” on which the majority focused most attention, and regarded as most critical, is breathing:

“As a vital sign, the spontaneous action of breathing can and must be distinguished from the technologically supported, passive condition of being ventilated (i.e., of having one’s “breathing” replaced by a mechanical ventilator). The natural work of breathing, even apart from consciousness or self-awareness, is itself a sure sign that the organism as a whole is doing the work that constitutes—and preserves—it as a whole. In contrast, artificial, non-spontaneous breathing produced by a machine is not such a sign. It does not signify an activity of the organism as a whole.

It is not driven by felt need, and the exchange of gases that it effects is neither an achievement of the organism nor a sign of its genuine vitality” (President’s Council on Bioethics, p. 63).

The idea that spontaneous breathing could be used as a criterion for deciding whether someone is dead or alive faces several objections; most obviously, many patients placed on ventilators have lost the ability to breathe spontaneously. They will, after an interval, regain it, and walk out of hospital. The Council is aware of this, of course, and sees only the *irreversible* loss of the capacity as a sign of death but people with a high spinal cord injury may have irreversibly lost the ability to breathe spontaneously, and yet be fully conscious. Again, the Council acknowledges this, and adds that “other vital capacities might still be present”. The report continues:

“For example, patients with spinal cord injuries may be permanently apneic or unable to breathe without ventilatory support and yet retain full or partial possession of their conscious faculties. Just as much as striving to breathe, signs of consciousness are incontrovertible evidence that a living organism, a patient, is alive” (President’s Council on Bioethics, p. 63).

The Council therefore decides, though with some dissenting members, to stay with brain death, not because this signifies the death of the integrated organism, but because “total brain failure” indicates the irreversible absence of both spontaneous breathing and consciousness.

This is a desperate attempt to reach a much-desired conclusion. Let’s first see why the Council was so keen to preserve the definition of death in terms of brain death, and then see why its attempt to do so fails.

The Council’s report contemplates the possible conclusion that brain death is not the death of the organism, and that consequently we need to return to defining death in terms of the cessation of heartbeat and circulation of the blood. What practical difference would this make? There are two possible ways of responding to this situation. One is that we preserve the rule that organs may only be taken from dead donors, and therefore do not take organs from donors whose hearts are still beating, even if their brains have irreversibly ceased to function. Because some organs, including the liver and the heart itself, are subject to rapid damage once the heart stops, this is likely to mean that significantly fewer people would benefit from organ transplants, and many lives now saved would be lost. In addition, the Council expresses concern that the need to certify a patient as dead as soon as possible after the heart stops beating would have an adverse impact on the care of dying patients whose hearts stop, but perhaps could be resuscitated. In other words, if we combine the traditional definition of death with a world in which transplants can save lives, we will introduce a new tension between making absolutely certain that the patient is dead, and saving the lives of other patients.

The other possible way of responding to the return to the traditional definition of death is to draw on the present criteria for ascertaining total brain failure in order to determine, not that a patient is dead, but that the patient is eligible to be an organ donor. Such patients would be eligible because (and here I use my own words, not those of the Council) their lives are over, not as organisms, but as conscious beings. They will never again experience anything. In these very specific circumstances, continuing their lives beyond this point is of no further benefit to them. (Singer, 1995; Miller & Truog, 2011).

The Council is aware of the attractions of this view. It requires no questionable arguments defending a new concept of death, and it does not force us to reject or significantly hamper the

practice of organ donation. Nevertheless, the Council finds this view unacceptable on ethical grounds:

“[T]his solution is deeply disturbing, for it embraces the idea that a living human being may be used merely as a means for another human being’s ends, losing his or her own life in the process. For good reason, many recoil from the thought that it would be permissible to end one life in order to obtain body parts needed by another... abandoning the “dead donor rule” would entail dismantling the moral foundations of the practice of organ donation” (President’s Council on Bioethics, p. 17).

In short, the Council knows that if organs cannot ethically be removed from donors with beating hearts, then many people whose lives could be saved by organ transplants will die; but the Council nevertheless believes that it is ethically unacceptable to remove vital organs from living human beings in order to benefit others. No wonder that most members of the Council were desperate to find a basis for retaining a definition of death that includes total brain failure.

A strong desire to reach a pre-determined conclusion often leads to poor reasoning. That applies to the Council’s stance that the absence of spontaneous breathing is a sign of death – except when it isn’t, for example when there is consciousness in the absence of spontaneous breathing. This addition to the initial selection of the absence of spontaneous breathing reveals that the Council has been forced to patch together from disparate elements its account of the difference between life and death. As Albert Garth Thomas, an anaesthesiologist with qualifications in philosophy, notes in his discussion of the Council’s report, this conjunction “marks their analysis as *ad hoc* and unconvincing”. Thomas also points out that “[J]ust how one would understand spontaneous respiration as the epitome of human life is difficult to grasp”. That’s because breathing is no more crucial to our normal lives than many other functions, such as those of the kidneys, liver, and pancreas (Thomas, 2012, p. 106). These organs too could be described as “engaged in commerce with the surrounding world” and they can continue to operate spontaneously after spontaneous breathing has ceased. Why is their spontaneous operation not enough to show that a patient is alive?

As we have seen, the Council sought to avoid a return to the traditional definition of death. It rejected, not unanimously but by a majority, the alternative of abandoning the “dead donor rule” on the grounds that this would “dismantle” the moral foundations of the practice of organ donation. That is not so; at most, it would amend the moral foundations of that practice, and even that claim presupposes that these moral foundations have the Kantian basis described in the passage quoted above. Historically speaking, this presupposition is highly dubious. As we saw earlier, the moral foundations of the initial stimulus for the change in the definition of death, and thereby for the development of the modern practice of organ transplantation, seems to have been much closer to utilitarian principles than to Kantian ones.

One might, of course, accept, as a matter of historical fact, that the Harvard committee was thinking upon broadly utilitarian lines, and yet deplore this, and seek to persuade current practitioners that the only defensible moral foundation of the practice is Kantian. The more significant question, however, is whether the Kantian objection to using living, but irreversibly brain-dead human beings as organ donors, is valid. In my view, it is not. Whatever Kant may have meant by his famous statement that we should treat others “never merely as a means to an end, but always at the same time as an end”, the principle is plainly indefensible unless it includes, in the idea of treating someone “merely as a means” the proviso that the person did not freely and voluntarily consent to being so used. Otherwise, why is not mailing a letter wrongly using as mere means the people who collect, sort and deliver the mail? The standard Kantian

answer to this obvious objection is that postal employees freely consent to do their work. Hence the work is an end, for them, and there is no wrong-doing in mailing a letter; but organ donors also consent, prior to their death, at least in countries that have “opt-in” systems of donation, as the United States does. It is also arguable that in “opt-out” systems, people who do not opt out are giving implicit consent, as long as the opportunity to opt out is well-known to everyone and easily accessible.

It might be said that under either opt-in or opt-out systems, donors consent for their organs to be taken after their death, but if we abandon the dead donor rule, the organs will be taken when they are not dead. If that is the concern, then the problem that the President’s Council finds so morally fundamental could easily be overcome. All that is necessary is to rephrase the question potential donors are asked, so that they are asked to consent to organs being taken after irreversible total brain failure, with no hope of any recovery of consciousness. We could then see what proportion of those currently willing to be organ donors would continue to be willing to donate under the new conditions. My hope is that this change would not cause a significant drop in the number of donors, as long as they were accurately informed about the irreversible nature of the condition that they would be have to be in before they could be considered as a donor, and the degree of confidence with which that condition could be diagnosed.

#### **VI. The significance of irreversible unconsciousness**

We have seen that the Harvard committee thought that people in an “irreversible coma” should be regarded as dead. We have also noted the reasons the Harvard committee gave for this change. It was, in large part, because of the good consequences that would flow from this change, for the families of the person in the irreversible coma, for the hospitals, and for the potential organ recipients. All of these reasons apply not only to patients whose brains have totally and irreversibly ceased to function, but also to patients who have irreversibly lost all capacity for consciousness. Why then did the Harvard committee limit its concern to those with no brain activity at all?

One reason may be that in 1968, the only form of “irreversible coma” that could be reliably diagnosed – with no possibility of a patient being declared dead and then “waking up” – was that in which there was no discernible brain activity at all. Another possible reason for the committee redefining death to cover only those with no brain activity at all is that if the ventilator is removed from such patients, they stop breathing and so will soon be dead by anyone’s standard. People in a persistent vegetative state, on the other hand, continue to breathe without mechanical assistance. So if the Harvard committee had included in its definition of death people who are in an irreversible coma but still have some brain activity, they would have been suggesting that people could be buried while they are still breathing.

Technology has, in many cases, eliminated the first of these reasons. Admittedly, in some cases of patients in a long-term persistent vegetative state, we still lack any completely reliable means of saying when recovery is impossible. In other cases, however, new forms of brain imaging can establish that parts of the brain necessary for consciousness have ceased to exist, and hence that consciousness cannot return. This would be the case, for example, if there has been no blood flow to the cortex for so long that the entire cortex had turned to liquid. The brain stem may still be functioning, however, so the problem of declaring patients dead when they are breathing spontaneously remains. This condition would be visible on a scan, and would also serve to ensure that the patient was not even in a minimally conscious state, as Jahi McMath appears to have been.

Several writers have urged that the solution to the present unsatisfactory state of the definition of death is to draw on our improved diagnostic abilities to move on to a definition of death in terms of the irreversible loss of consciousness. Among those defending this view are Michael Green and Daniel Wikler, John Lizza, Calixto Machado, Jeff McMahan, and Robert Veatch (see for example: Engelhardt, 1975, pp. 587–590; Veatch, 1975, pp. 13–30; Green & Wikler, 1980, pp. 105–133; Machado, 1995; McMahan, 1995, pp. 91–126; Lizza, 2018, pp. 1–19).

The significance of consciousness, and its link with the brain, answers the fundamental question – “why the brain?” – that supporters of the whole brain death criterion have never been able to answer satisfactorily. The death of the whole brain is the end of everything that matters about a person’s life, but so too is the death of those parts of the brain necessary for consciousness. So the definition of death in terms of the irreversible loss of consciousness means that the criterion for death is the irreversible cessation of function of what is variously referred to as the cortex, the cerebral hemispheres, or the cerebrum. To avoid the need to define this more precisely, I shall use the expression “the higher brain” to refer to whatever parts of the brain are necessary for consciousness.

We have already seen that even total brain failure is not the same as the death of the organism. Given that, it is obviously going to be difficult to argue that an irreversible loss of consciousness is equivalent to the death of the human organism. Warm, breathing human beings, with their hearts beating and their blood circulating, are not dead, whether the breathing is spontaneous or mechanically assisted. “Dead” is a term applied much more widely than human beings, or conscious beings, or beings with brains. An oyster has no brain at all, let alone a higher brain, yet oysters are alive, and they can die.

Jeff McMahan’s defence of the higher brain account of the death of human beings is more philosophically sophisticated than most, and worth our attention for that reason. McMahan takes his cue from Mark Johnston’s assertion that we are not “essentially human organisms” (Johnston, 1987, pp. 75–76) and uses this claim to distinguish the death of the person from the death of the organism. Our survival as persons, McMahan claims, requires “continuity of mind”, and so our continued existence, for all practical purposes, “requires the preservation of various mental powers or capacities in the areas of the brain in which consciousness and mental activity occur” (McMahan, 1995, p. 111; Green & Wikler, 1980). Thus, unlike organisms without minds, we can die while our body is still alive. McMahan recognises that the category of “organisms with minds” is not limited to the human species, nor applicable to all members of that species. A dog may die while its body is still living, and an anencephalic human infant is a living human organism without a mind. On this view, the grieving family of the warm, breathing body in the hospital ward are right to think that they are not facing a dead body. But they are also right if they understand that the person they loved is gone forever. In McMahan’s terms, that person is dead.

## **VII. The centrality of ethics**

McMahan’s proposal has the merit of not denying that human organisms die in the same sense that plants die. Hence it does less violence to the common conception of death than other defences of a move to a higher brain definition of death. His view helps us to conceptualise what is going on when the higher brain has been destroyed and the body continues to live, but he acknowledges that it does not resolve the ethical questions. Is it wrong to cut the heart out of an anencephalic infant, which is a living human organism but can never be a person? Or out of an irreversibly unconscious human organism who has been, but can never again be, a person?

The existence, over the past three or four decades, of the definition of death in terms of brain death has, quite literally, made it possible for Christians to get away with what would, under the earlier traditional definition of death, have been murder – and without abandoning their support for the sanctity of all human life. Moreover, if brain death is not the death of the human organism, it is hard to see how defenders of the equal value of all human life can support the removal of ventilators from brain-dead patients with beating hearts. Roman Catholic teaching holds that extraordinary treatment is not obligatory when it imposes a disproportionate burden on the patient or others – disproportionate, that is, in terms of the benefits gained. This doctrine allows Christians to discontinue extraordinary means of life-support that are burdensome to a patient or demand scarce medical resources, and the burden on the patient or the use of resources is disproportionate to the benefit that will be achieved. This may be the case when the patient is suffering and will, in any case, live for only a short time, or when the medical resources could save other patients who will live much longer. Now consider a brain-dead human being who, like TK, could live another 10 or 15 years, cared for at home by his family at relatively modest cost. In what way are the measures taken to keep him alive disproportionate to the benefit of an extra 10 years of life? There is no suffering. Admittedly, there is also no joy nor any other experiences at all but to say that the extension of human life is not a significant benefit because it brings no conscious experiences of any sort, and therefore the life of the human being need not be prolonged, is to invoke an explicit quality-of-life judgment as the basis for discontinuing treatment. That is in direct contradiction to the words of Pope John Paul II in *Evangelium Vitae*: “As far as the right to life is concerned, every innocent human being is absolutely equal to all others...” For those who take this view, if brain dead human beings can be kept alive for many years without the use of scarce medical resources, the distinction between “ordinary” and “extraordinary” or between “proportionate” and “disproportionate” means of care cannot be used to justify withdrawing medical support from them.<sup>5</sup>

If, on the other hand, we reject the view that all human life is of equal value, we have another ethical option. We could accept the traditional conception of death – thus agreeing, in effect, with Shewmon and Finnis on this question – but reject their ethical view that it is always wrong intentionally to end the life of an innocent human being. We could then regard it as justifiable to remove organs for transplantation, when there has been an irreversible loss of consciousness, as long as the donor gave the appropriate consent, applicable to this situation. We would then achieve the same practical outcome as we would achieve by redefining death in terms of the irreversible loss of consciousness. To return to the language used by the Harvard committee, we would be able to relieve the burden on families, hospitals and those in need of hospital beds, not only when the patient’s brain has wholly ceased to function, but also when the patient’s higher brain has irreversibly ceased to function. We would be able to do this without having had to finesse the definition of death in order to achieve our objective. Last, but by no means least, we would have made our ethical judgments transparent, thus advancing public understanding of the issues involved rather than obscuring it.

The most troubling objection to this approach is a practical one: no matter how logically compelling the proposal may be, it may seem to be such a radical ethical change that it stands no chance of success. After all, it is a head-on challenge to the traditional doctrine of the sanctity of all human life. Better, some will say, to do our best to push back the extent of that doctrine’s reach, than to hurl ourselves vainly against its citadel. Better, in other words, to maintain the belief that brain death really is death, and indeed to try to go beyond whole brain death, by

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<sup>5</sup> For a critique of attempts by Catholic ethicists to appeal to these distinctions as a way of avoiding explicit quality-of-life judgments, see *The Sanctity-of-Life Doctrine in Medicine: A Critique* (Kuhse, 1987).

arguing that we die when we irreversibly lose consciousness. Otherwise, we risk denting the public confidence in brain death. That could lead to fewer people giving consent for the removal of organs – their own or those of their loved ones – when brain death is diagnosed, and that would mean that fewer lives could be saved by organ transplantation.

### VIII. Conclusion

We are left with two options that preserve and extend the possibility of organ transplantation without using anyone without their consent, or violating anyone's human rights. We could hold that conscious beings die when they irreversibly lose consciousness, and that this, and not the death of the organism, is what makes permissible the removal of organs from a consenting donor.

Alternatively, we could return to the traditional definition of death in terms of the cessation of heartbeat and the stoppage of the circulation of the blood, but hold that it is not wrong to remove organs from living human beings who have irreversibly lost consciousness, and have consented to the donation of their vital organs in such circumstances. Both of these options avoid the misconceptions involved in the view that organs can only be taken from dead human organisms, and that the test of death for a donor with a beating heart is the irreversible loss of all brain function.

I will not here attempt to choose between these two options, for they converge on the crucial point: the existence of a living human organism is not a sufficient reason for ruling out the removal of vital organs from that organism. There is, however, one remaining problem; both of these options require that we establish that the patient has irreversibly lost consciousness. In the light of the Jahi McMath case, that may not be simple, given that we would not want to wait, in every case, for the liquefaction of the cortex in order to establish it. Such a delay would come at a high price, both in financial and human terms. Nevertheless, this is a technical problem. If solving it became a requirement of continuing organ transplants from beating heart donors, I assume that a solution would soon be found.

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