

Dying is Not Death

A Rebuttal of Brain Death As A Diagnosis of Death

Marianne Linane

Abstract

A number of medical professionals, philosophers and ethicists question brain death as an ethically valid diagnosis. Recent high profile cases of recovered ‘brain dead’ individuals have fueled the discussion. Dissent began with objections to the utilitarian function of organ donation as the driving force behind the newly minted diagnosis. They have progressed from an emotional repulsion of the concept and its utilitarian roots to more substantial technical and anthropological objections to the validity of the diagnosis as a legitimate medical determination. A small but growing body of medical professionals and philosophers now reject the diagnosis of brain death as invalid, not only for the purpose of transplantation, but for declaration of death under any circumstances. This paper is a synopsis of the objections with particular emphasis on the testing criteria, arriving at the conclusions that there are valid reasons for the objections to the diagnosis of brain death. It is also a plea for the Catholic Church to revisit its position on brain death. It will indicate that brain death represents a stage in the process of dying. The “brain dead” person may indeed be in the process of dying, but he or she is not dead yet.

‘Dying’ Is Not ‘Death’

Brain death applies to the situation when the heart continues to beat with the breathing maintained mechanically after the brain has (permanently) ceased to function. It has been referred to as an unnatural artifact of medical technology. An informal study in the 1960s revealed that among a large group of interns and residents from fifteen medical schools in the United States, not one could remember being instructed in how to determine death.¹ Prior to that time, all deaths were determined by the cardio-pulmonary criteria. With the advent of the ventilator, that has changed and we now find it necessary to set up criteria for death being and to train medical practitioners in its recognition.

Increasing instances in which individuals declared dead by brain death criteria have recovered leads to a renewed discussion on the determination of death. The fact that at least some of these cases may not have followed any of the prescribed criteria does not incriminate brain death as an unethical diagnosis, nor does the fact that the protocol itself used in the diagnosis has no universal criteria. But it begs the question, “Is it, in fact, ethical to define death by “brain death” criteria?

This paper visits the Vatican definition of death and the criteria for determining brain death and see if it is possible to ethically arrive at this diagnosis. This paper will show that brain death as a diagnosis of death is a social construct² and not a morally acceptable determination of death. It is further hoped that, in view of the fact that the Church’s statement on brain death is not an infallible statement, the Church would continue to engage in a discussion of the morality of the determination of brain death as death of the person.

¹Margaret Lock, *Twice Dead: Organ Transplants and the Reinvention of Death* (Berkeley, Calif.: University of California Press, 2002), 76.

² The reference to brain death as a “social construct” appears several times in the literature on brain death. None of the users of the term attribute it to another author. It is unclear with whom the term originated.

John Paul II presented the definition of death which has been accepted by the Church as its current working definition in a discourse given to the XVIII International Congress of the Transplantation Society on August 29, 2000. In his carefully worded consideration of the use of organs for transplantation he addressed the determination of death. Among those remarks:

- (T)he death of the person is a single event, consisting in the total disintegration of that unitary and integrated whole that is the personal self. It results from the separation of the life-principle (or soul) from the corporal reality of the person. The death of the person, understood in this primary sense, is an event which no scientific technique or empirical method can identify directly
- (T)he ‘criteria’ for ascertaining death used by medicine today 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 died.
- With regard to the parameters used today for ascertaining death--whether the ‘encephalic’ signs or the more traditional cardio-respiratory signs--the Church does not make technical decisions. She limits herself to the Gospel duty of comparing the data offered by medical science with the Christian understanding of the unity of the person, bringing out the similarities and the possible conflicts capable of endangering respect for human dignity.
- *Here* it can be said that the criterion adopted in more recent times for ascertaining the fact of death, namely the complete and irreversible cessation of all brain activity, if rigorously applied, does not *seem* to conflict with the essential elements of a sound anthropology.³

Attention is brought to the italicized (mine) words in the last statement. Use of the word ‘here’ would indicate that with additional information and examination of brain death the diagnosis could be reconsidered. Similarly, the word “seem” could be interpreted as being open to a later determined conflict with essential elements of a sound anthropology as the issue is studied further, a “provisional acceptance”, as it were. Theologian Gratton Brown refers to it as a “qualified endorsement”⁴ and later calls for the Church to press medicine for a more complete reading of the signs of death.

John Paul II’s remarks echo those of a predecessor, Pope Pius XII in his 1958 address to The International Congress of Anesthesiologists: “It remains for the doctor, and especially the

³John Paul II *Discourse to the XVII International Congress of the Transplantation Society* (August 29, 2000).

⁴Gratton T. Brown, STD, “Reading the Signs of Death”, *NCBC Quarterly*, 7:3, (Autumn 2007) 468. anesthesiologist, to give a clear and precise definition of ‘death’ and the ‘moment of death’ of a person who passes away in a state of unconsciousness”.⁵ Clearly, the Church declines to get involved in the technical aspects of how death is to be determined.

Pursuant to these declarations on death, the USCCB in its Ethical and Religious Directives for Catholic Health Care Facilities thus reserves the determination to the physician. In guideline 62: The determination of death should be made by the physician or competent medical authority in accordance with responsible and commonly accepted scientific criteria.⁶

Perhaps this distance of the Church from the technical aspects of declaring death would have been a valid position to take at one time, a time when the medical profession in Western Civilization was virtually at one with the position of the Church on respect for human life and the Hippocratic Oath was honored. But at a time when the practice of medicine is driven by economic considerations and a utilitarian ethic, and at a time when 19th Century philosophers and today’s adherents such as Peter Singer hold sway, deferring to the medical professionals may no longer be the prudent thing to do. There are a significant numbers of those physicians involved in efforts to promote abortion and euthanasia as acceptable medical practices to make the motives of others in the profession suspect.

In her book in the California Series of Anthropology, Margaret Lock makes the claim that “In contemporary medicine the concept of futility....., combined with an economically driven vigilance about the use of scarce medical resources, creates space for doubts about medically managed deaths. With the expanding commodification of human body parts, including those wanted as ‘living substitutes’ for ‘defective’ or diseased organs, these doubts are exacerbated.”⁷

⁵Pope Pius XII, “To an International Congress of Anesthesiologists”, Nov. 24, 1957, in *The Pope Speaks*, 4:4, 1958, 393-398.

⁶USCCB, *Ethical and Religious Directives for Catholic Health Care Services*, Fourth Ed., (Washington, DC) 2004, 62.

Gratton Brown’s thoughtful essay in NCBC Quarterly begins by pointing out that the determination of death is a judgment of “metaphysical, and not merely physical, relevance.”⁸

While he does not argue for this determination to be removed from the physician, Brown interprets the papal pronouncements about death as marking “the beginning of a papal magisterium that asks for the integration of medical and anthropological understandings of human death in a specific context: the unconscious person on life support.”⁸ In addition, “The Church should press medicine for a more complete reading of the signs of death.”⁸

Philosopher Josef Siefert in a paper prepared for the Pontifical Academy of Life of which he is a member, goes further and claims “...defining a human being in a state of irreversible coma dead is not a medical judgment, but a philosophical one.”⁹

This paper needs to make clear at the onset the distinction between whole brain death and death of the neocortex or the upper brain which is responsible for cognitive/affective activities specific to human persons. This upper brain criteria is definitely a “lowering of the bar” of any claim that whole brain death may have as an ethical diagnosis and is to be rejected immediately as unethical. William May says that “This way of viewing death, dualistic in nature and utilitarian in practice, is utterly inimical both to the Christian understanding of human life and to sound philosophy.”¹⁰ This rejection is in concert with rejection of the *personhood* argument which makes basically the same claim and which is also adamantly rejected by the Church. The “personhood” of an individual is a function of the upper brain or cerebrum. However, according

⁷Lock, *Twice Dead*, 73

⁸Brown, *Reading the Signs*, 468 & 469.

⁹Josef Siefert, "On 'Brain Death' in Brief: Philosophical 'Arguments' against Equating it with Actual Death", as reprinted in *Finis Vitae*, Roberto de Mattei, (ed.), (Consiglio Nazionale delle Ricerche, Rubbettino, Italy), 2005, 189-210, on 208.

¹⁰William E. May, *Catholic Bioethics and the Gift of Human Life*, (Huntington, IN, Our Sunday Visitor Press) 2000, 285.

to a 2002 critical care textbook for anesthesiologists, "No legal precedent, in any country, currently exists for equating cerebral death with brain death."¹¹ Apparently while there are some who lobby for acceptance of this criteria, it has not been accepted by any legitimate practitioners.

A major objection to the diagnosis is a disagreement with the brain as the organ or the primary organ for somatic integration of all the major bodily functions. John Andrew Armour, D. Alan Shewmon and Yoshio Watanabe¹² among others take exception to this claim pointing out that plants and embryos have no central integrating organ, "rather the integration is clearly a non-localized emergent phenomenon involving the mutual interaction among all the parts."¹³ John Armour goes into more medical technological arguments in his argument discussing in detail the role of the autonomic nervous system and that "...In the last ten years evidence has accumulated for the presence of a functional heart brain",¹⁴ a center controlling the heart activity apart from the brain stem function.

Shewmon further discusses his objection to the brain as the integrating organ in great length and citing the scenario in decapitation he arrives at two conclusions. "1) If high-cord transected bodies are disabled 'organisms as a whole', then brain dead bodies are equally disabled 'organisms as a whole'. 2) Loss of somatic integrative unity is not a viable rationale for either 'brain death' or the decapitation analogy. If 'brain death' is death, it can only be so by virtue of permanent loss of consciousness as maintained all along by the higher 'brain death' advocates."¹⁵

This would imply, not only that 'brain death' but any neurological lesion producing permanent unconsciousness (e.g., permanent vegetative state) is also death."⁷ This view that

¹¹Michael J. Murray, ed. *Critical care medicine: perioperative management*, 2nd Ed. (Philadelphia, Lippincott Williams & Wilkins), 2002, 276

¹²*Finis Vitae: Is Brain Death Still Life?* various.

¹³D. Alan Shewmon, "Brain Body' Disconnection: Implications for the Theoretical Basis of 'Brain Death'", *Finis Vitae*, 232.

¹⁴John Armour, "The Heart of the Matter", *Finis Vitae*, 19.

¹⁵Shewmon in *Finis Vitae*, 237.

persons in permanent unconsciousness are dead is the personhood argument which has been soundly rejected by the Church.

Linked to Shewmon's objections regarding high spinal cord injury and decapitation are other neurologists who cite the difficulty in brainstem death testing in the presence of high spinal cord injuries.¹⁶

Regarding Shewmon's (and others) reference to the embryo, in light of the Church's laudable adherence to consistency, we find the embryo an example of the Church's position on the inherent dignity of the human person. Bishop Fabian Bruskewitz cites that "Human zygotes, human blastocysts and human embryos do not have brains or brain function. Disputes about hominization or the ensoulment of a human being at the beginning of life on earth are obviously tied to life at the other end of life on earth with disputes about the definition of human death."¹⁷ The embryo, which does not possess any resemblance of a brain as the integrative organ of the living body, is regarded by the Church in its wisdom as a human being, a living member of the human species. Why, then, is a person whose brain is no longer performing this perhaps debatably integrative task not considered a living member of the species, but dead? Josef Seifert and others, too, make this argument. In an effort to resolve this incongruity, Alan Shewmon explains more fully this position and cites examples illustrating that "it is not the present exercising of specifically human functions, but rather the innate potency (radical capacity) for them that constitutes the truly 'essential human property' in the first (substantial) sense....the

potency for an organ-mediated biological function ultimately resides not in the organ itself but in the dynamic

¹⁶C.E. Waters, G. French and M. Burt, "Difficulty in brainstem death testing in the presence of high spinal cord injury", *British Journal of Anaesthesia*, 92:5 (January 2004), 760.

¹⁷ Fabian W. Bruskewitz, "A Brief Summary of Catholic Doctrine Regarding Human Life", *Finis Vitae*, 49.

principle underlying the body's vitality...destruction of that organ does not eliminate the potency but merely impedes its actualization."¹⁸

In another article. Shewmon describes what he considers the relationship of the brain to bodily function: "With respect to organism-level vitality, the brain's role is more modulatory than constitutive, enhancing the quality and survival potential of a presupposedly living organism. Integrative unity of a complex organism is an inherently nonlocalizable, holistic feature involving the mutual interaction among all the parts, not a top-down coordination imposed by one part upon a passive multiplicity of other parts. Loss of somatic integrative unity is not a physiologically tenable rationale for equating BD with the death of the organism as a whole."¹⁹

Philosophers and theologians (such as Gratton), who were curiously excluded from being part of the determination of death given the deep anthropological roots of the discussion, have numerous other arguments, some remarkably enlightening. Many of these arguments began with an intuitive repugnance at the proposition and in opposition to the utilitarian forces driving the newly minted definition. (See Margaret Lock above.) The "need" to get fresh organs for transplantation as stated in the original Harvard Committee declaration has no connection to the question of death. The declaration, however, opened the discussion and these arguments against brain death are a cogent reflection of the complexity of the issue.

Philosopher Michael Potts argues that acceptance of brain death is inconsistent with a pro-life view with regard to abortion and makes a convincing argument of it much like the analogy of the embryo made by Bishop Bruskiewitz.²⁰

¹⁸Shewmon, *Finis Vitae*, 237.

¹⁹ 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*, 26-5, 457.

²⁰Michael Potts, "Pro-Life Support of the Whole Brain Death Criterion: A Problem of Consistency", *Philosophy and Medicine* (Dordrecht/Boston/London, Kluwer) Vol. 66, 2000.

Elsewhere Potts describes the circuitous rationale for the criteria stating that "It is only when we reach the level of tests used to confirm a particular criterion for death that we are working at the 'purely' medical/scientific level - but of course the tests are dependent on the criterion which is in turn dependent on the definition. It is such dependence on an underlying philosophical framework that makes the issue of the declaration of death more than an issue for physicians to decide."²¹ Potts notes that "Christian Steineck criticizes the literature supporting 'brain death' for its neglect of philosophy, especially philosophical anthropology and discussions concerning the relationship between mind and body. This is unusual since the debate over 'brain death' touches directly on what it means to be human."²¹ Potts adds that it touches directly on what it means to be dead or alive and whether there can be a separation between the human being and the human person. Shewmon reports that a chapter in a 1993 book by Harvard neurosurgery professor Dr. Peter Black "contains a section entitled 'Philosophical Issues in Brain Death Declaration' in which he recounts and summarily excludes each of a series of possible rationales for equating 'brain death' with death, among which somatic integrative unity is not even mentioned."²² Although not finding any rationale for the diagnosis, Black nonetheless endorses the diagnosis for utilitarian purposes. Neurologist and self proclaimed ethicist, Dr. Ronald Cranford, who has long championed the brain death criteria for death (as well as the loss of

“personhood” as death) claims that “permanently unconscious patients have characteristics of both the living and the dead. It would be tempting to call them dead and then retrospectively apply the principles of death, as society has done with brain death. Again, the reference to brain death as a societal construct.

²¹Potts, “The Beginning and End of Life”, *Finis Vitae*, 163.

²²D. Alan Shewmon, “Recovery from ‘Brain Death’: A Neurologist’s Apologia”, *Linacre Quarterly*, February 1997, 78.

²³Cranford and Smith, 1987, as quoted by Shewmon in his “Apologia”, p 78.

Returning to Gratton Brown’s reflective essay in *NCBC Quarterly*, Brown discusses the issue as one of charity and mercy. Pointing out that “when patients lie unconscious without any reasonable hope of recovery, the command not to kill human life appears to offend both charity and mercy.” Later, in discussing brain death, Gratton states:

“There is good reason to believe that this presumption of charity often enough gives an appearance of legitimacy to declarations of death on people who are not dead. First, the widespread promotion of brain-death criteria to clinicians who lack the necessary degree of expertise might bring social pressure to use them anyway. Second, even after charitable reasons have been articulated, the demand for transplantable organs will not cease to create powerful incentives to employ sound criteria for determining death or to misuse sound criteria...Finally, the use of brain-dead protocols is easily leveraged into a larger movement to promote euthanasia and physician-assisted suicide.”²⁴

It is necessary to point out again that, while the perceived ‘need’ for organs is acknowledged as a driving force behind the establishment of brain death as a determination of death, it does not mean that brain death is unethical for this reason. But it is, as Gratton and others point out, inextricably linked to the acceptance of the brain death as a determination of death.

From a legal perspective, we hear from, among others, Judge Rainer Beckmann arguing for the need in jurisprudence for a clear distinction between life and death, because the legal rights of the living and the dead are fundamentally different. Again taking exception to Dr.

Henry Beecher that death is a process, Beckmann claims that death is regarded as a specific event in time (see John Paul II statement) which cannot be anticipated but can only be determined to have already occurred. There is no third state of being between life and death” (as we find with patients being declared ‘brain dead’ but being ‘kept alive’ for the purpose of organ transplantation. Either a person is dead, or he is alive.) Beckmann also declares that “The

²⁴Brown, “Reading the Signs of Death”, 473.

declaration of the World Medical Association on brain death does not include any direct reason why brain death should indicate the death of a human being.”²⁵ Margaret Lock in *Twice Dead* points out that “(this) debate -- as to whether death is an event or a process -- is of long standing.”²⁶ She, too, points out that “in law, it has been expedient to regard death as an event.”

Philosophy professor Robert Spaemann of Germany echoes Beckmann’s remarks saying an organism being kept from dying (placed on a ventilator to sustain life) is kept alive and cannot be declared dead at the same time. He also claims that life and death are not the property of science...and... because life is the being of the living, it cannot be defined.²⁷

Gratton Brown argues for the inclusion of philosophers and theologians in the determination of death in *NCBC Quarterly*:

“Perhaps it is obvious that the physician should make the determination of death, especially when a person dies while in a state of unconsciousness. Because physicians possess the practical knowledge and technical skill, society rightly entrusts them with this task, while establishing a legal and moral-cultural framework for performing it. On the other hand, physicians can observe only the external signs that death has occurred. Whether one gives a common philosophical definition of death as the separation of the soul from the body or a more theological one, such as the expiration of the breath of life, death marks the loss of integrative wholeness in a person whose interior life is never fully revealed through those external signs. So the physician's work makes a judgment of metaphysical, and not merely physical, relevance.”²⁸

John B. Shea quotes Roberto De Mattei in a *Catholic Catholic Insight* article discussing the ensoulment question stating that “the moment of separation of the soul from the body is shrouded in mystery, just as the moment when a soul enters a person is.”²⁹

²⁵Rainer Beckman, “Determining Death: is Brain Death Reliable”, *Finis Vitae*, 2006, 32-33.

²⁶Lock, *Twice Dead*, 73.

²⁷Robert Spaemann, “Is Brain Death the Death of A Human Being?”, *Finis Vitae*, 2006 251-251.

²⁸Brown, “Reading the Signs of Death”, *NCBC Quarterly*, 467.

²⁹Roberto De Mattei as quoted by John B. Shea in “Organ Donation: The inconvenient truth”, *Catholic Insight Magazine*, September 2007, p. 2 of html version online at http://catholicinsight.com/online/bioethics/article_747.shtml.

Joining in these cogent arguments against brain death we have the likes of transplant proponent Robert Truog. In a Hastings Center Report, organ procurement proponent Robert Truog notes that the diagnosis of brain death must involve a definition, criteria, and tests for evaluating whether the criteria have been satisfied. He then argues reasonably that there are inconsistencies between the tests to determine brain death and the criterion that are not easily resolvable, and also inconsistencies between the criterion and the definition. Citing statistics of those diagnosed with brain death, Truog contends that many, perhaps even a majority, of these patients do not fit the neurological findings. He calls the concept of brain death “incoherent in theory and confused in practice” and recommends a return to the traditional definition of death, based on cessation of respiration and circulation rather than neurologic criteria. In summary, he claims that the whole-brain death concept is plagued by internal inconsistencies in both the tests-criterion and the criterion-definition relationships, and that these problems cannot be easily resolved.³⁰

Truog criticizes the Harvard Committee for addressing too many questions with the single answer of brain death and he sees them as four distinct questions: 1) when is it possible to withdraw life support from patients with irreversible neurological damage for the benefit of the

patient; 2) when is it permissible to withdraw life support from patients with irreversible neurological damage for the benefit of society, where the benefit is either in the form of economic savings or to make an ICU bed available for someone with a better prognosis; 3) when is it permissible to remove organs from a patient for transplantation; and 4) when is a patient ready to be cremated or buried?

³⁰Robert D. Truog, “Is It Time to Abandon Brain Death?: ethical aspects of procurement of organs for transplantation”, *The Hastings Center Report*, 29:1 (Jan.-Feb. 1997) pp29-38).

Only the fact that Truog rejects brain death (and especially higher brain death criteria) as untrue and, even, although he does not use the word, hypocritical, is relevant to this paper, but it brings our attention to his proposal to alleviate the paucity of organs for transplantation:

Only by abandoning the concept of brain death is it possible to adopt a definition of death that is valid for all purposes, while separating questions of organ donation from dependence on the life/death dichotomy...By shifting the ethical foundations for organ donation to the principles of nonmaleficence and consent, the pool of potential donors may be substantially increased. In addition, by reverting to a simpler and more traditional definition of death, the long-standing debate over fundamental inconsistencies in the concept of brain death may finally be resolved.... *The most difficult challenge for this proposal would be to gain acceptance of the view that killing may sometimes be a justifiable necessity for procuring transplantable organs.*” (Emphasis mine)

Truog displays the ultimate in the utilitarian philosophy which is, unfortunately, driving much of the practice of medicine today. Again it is pointed out that it becomes impossible to sever brain death criteria from its creative impetus, the perceived need for organs. Such an observation certainly merits noting. Along with Robert Truog, we have the statement of the infamous Peter Singer who needs no introduction here, “People have enough common sense to see that a brain dead person is not really dead.”³¹

It is also telling that other transplant procurement promoters also acknowledge that brain death has troubling consequences.³²

At least one transplant surgeon was affected by this presentation of the brain dead patient which is not unlike that of other patients on ventilators who are considered very much alive by the

Medical attendants, perhaps even that of the intended donor. “Dr. Walter weaver, who has

³¹Peter Singer as quoted by Stephen N. Nelson in “The Least of These: A Christian Moral Appraisal of Vital Organ Procurement from ‘Brain Dead’ Patients”, *Ethics and Medicine*, 20-1, 2004, 7.

³²Pathak Manoj Kumar, Tripathi S K, Agrawal Prashant, Chaturvedi Rajesh, Yadav Sudhir Clinical “Criteria for Diagnosis of Brain Death and its Medico-Legal Applications”, *IndMedica Journal*, 2006, Vol. T-2, 78.

performed a number of heart transplants...had no reservations about believing he was performing a good for society...But one time he was evaluating a young motorcycle crash victim as a potential donor when something inside him changed. The teenager was on a ventilator, he had warm, healthy looking skin, self controlled temperature, a sustained blood pressure, and he was making urine naturally. ‘How could I say this young man was dead?’ Asked Weaver. Shortly thereafter, he stopped doing transplants.”³³

Several others argue from various philosophical aspect against brain death as an ethical diagnosis without reference to the rejection of its utilitarian roots, some more effectively (and easier to grasp!) than others. To argue solely from the utilitarian motivation is, however, not a valid position.

Turning to the criteria for death, the original criteria laid out by the Harvard Committee states that “brain death is a clinical judgment by the physician based on the total absence of all brain function including cortical (upper brain motor and cognitive), mid-brain (integrative), and brain stem (vegetative) function.. It is the complete and irreversible cessation of whole brain activity marked by the following:

- *Unreceptivity and unresponsivity*--patient shows total unawareness to external stimuli and unresponsiveness to painful stimuli;

- *No movements or breathing*--all spontaneous muscular movement, spontaneous respiration and response to stimuli are absent;
- *No reflexes*--fixed, dilated pupils; lack of eye movement even when hit or turned, or ice water is placed in the ear; lack of response to noxious stimuli; unelicitable tendon reflexes.

It should be noted here that subsequent comments by the Harvard Committee's chair, Dr. Henry Beecher, claim that death is a process, not an event, which is in direct opposition to Pope

³³Germaine Wensley, *The Ethics of Organ Donation and Its Relationship to Brain Death*, *Linacre Quarterly*, November 2003, 321.

³⁴*Report of the Ad Hoc Committee of the Harvard Medical School. A definition of irreversible coma. JAMA 1968 Aug 5; 205(6): 337-40.*

John Paul II's claim that it *is* a single event. Shewmon points out that the Committee made selective references to Pope Pius XII's 1957 address on "The Prolongation of Life", citing those passages which would support their claims and ignoring those which did not.

In addition to these criteria, a flat electroencephalogram (EEG) was recommended. The committee also noted that drug intoxication and hypothermia which can both cause reversible loss of brain functions should be excluded as causes. The condition of irreversible coma, i.e., brain death, needs to be distinguished from the persistent vegetative state, in which in which clinical presentations are similar but in which patients manifest cycles of sleep and wakefulness.³⁵ In addition, Murry's textbook on critical care for anesthesiologists lists no less than 20 conditions that confound the diagnosis of brain death.³⁶

The Uniform Determination of Death Act passed by Congress in 1981 defines death as "An individual who has sustained either (1) irreversible cessation of circulatory or 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."³⁷ Regarding 'irreversibility', Dr. Paul Byrne points out that "irreversibility as such is not an empirical concept and cannot be empirically determined...It is not an observable condition. Hence, it cannot serve as evidence, nor can it rightly be made part of an empirical

criterion of death.”³⁸ Yet it is part of the criteria for the patient’s condition to be determined to be irreversible. We can only deduct from presentation of the patient’s condition that it is, in all probability, irreversible. No certainty exists in the absence of empirical data.

³⁵*Defining Death*, U.S. Government Printing Office, 1981)

³⁶Michael J. Murray (et al), ed., *Critical Care Medicine: perioperative management*, (Philadelphia, Lippincott Williams & Wilkins) 2nd. Ed, 2002, 276.

³⁷(wikipedia) http://en.wikipedia.org/wiki/Uniform_Determination_of_Death_Act

³⁸ Paul A. Byrne, “Understanding brain death criteria”, originally delivered as the Terence Cardinal Cooke Lecture, Oct 18, 1998, at the Institute of Human Values in Medical Ethics, New York Medical College.

Along with irreversibility of a condition we find it necessary to put a time frame on when the diagnosis of brain death can be determined. Because the initial swelling of the brain can account for much of the clinical presentation on early examination, particularly in a trauma situation, time must be afforded for this swelling to subside before an accurate assessment of damage can be made. Murray’s textbook recommends “no improvement for 2 to 24 hours”. This is hardly enough time for such a diagnosis with some neurologists recommending as long as six weeks. There is no criteria to be found which calls for such an extended period of time. This time span before determining death by the brain death criteria is critical since resolution of the edema may significantly change the presentation of findings, particularly in the younger patient, when the tests are repeated at a longer time interval. Because of the plasticity of the skull in children, the criteria time criteria differs to allow for this.

With regard to the time span, long term observations are indicated before the diagnosis of persistent vegetative state can be reached. This is because the patient’s condition may improve in the time interval. This time interval has been set at six months to one year. Should not the same be observed for the more critical diagnosis of death?

While it is true that even in the cardiopulmonary criteria mistakes have been made (the most recent one just within the year (Val Thomas), use of the brain death criteria make it all the

more difficult to determine the exact status of when a person is to be considered truly dead. A bevy of tests including the transcranial doppler, PET scans, MRI and CT, blood flow studies, and the apnea test has been introduced to determine this state. Various authors will cite some specific array or combination of these tests. All evaluations begin with the bedside observation and physical tests. All these tests can be treated in summary as those conditions which indicate death has either occurred or is imminent and lead to establishing a more definitive evaluation that brain death has occurred. Presentation of any of these bedside criteria could be a manifestation that there is significant brain edema at the time the tests are being performed. A significant number of patients do not recover when the demonstration all of these conditions is present and will indeed proceed to death. But to determine brain death, especially when organ donation is being considered, other criteria must be met.

Originally, an EEG indicating no brain activity was recommended. With more sophisticated and indicative tests, this is not always the case any longer. EEGs indicate activity at the cortical level almost exclusively and tell little about lower brain function. All the reviews of recent brain death criteria indicate that the EEG is not conclusive and must be used in conjunction with other tests. However, in conditions which can affect both spinal and cranial nerves, segmental and autonomic, information can be prohibited from entering or leaving the CNS creating a “locked in” syndrome externally mimicking brain death. An EEG in this case would be indicated as they would be essentially normal and probably should always be done to rule out this phenomenon. EEG alone is not a reliable test for the diagnosis of brain death.

But at least one source cited a study indicating that evaluation of 56 clinically brain dead patients found diffuse widespread EEG activity in almost 20%.³⁹ Did that not possibly indicate that the patients studied were not “fully” dead? And why was there no further effort to determine

why this should be so? When the outcome doesn't meet expectations is dropping the test the correct response?

While tests revealing the structure such as the CT are indicated in fulfilling the criteria, they are much less definitive than function studies such as angiography. The literature reveals

³⁹Murray, *Critical Care Medicine: perioperative management*, 278.

numerous articles on the reliability of EEG, CT, enhanced CT, MRI, transcranial doppler and angiography. Every one found indicated that the test being studied was not to be taken in isolation and one must rely on more than one of the tests used, including the “gold standard” four-vessel angiography. Some of the literature variously cites one or more as being the “definitive test” to confirm brain death. Aside from the caveats about EEG, there seems to be little concurrence on the tests most conclusive in indicating brain death. There is, however, one thing which can be said of all of them, and that is that all have a threshold sensitivity.

In a letter to the editor of the *Transplantation Journal*, Gabriel R. De Freitas Charles Andre', in addressing the high false-negative rate of transcerebral doppler states “The reader may erroneously deduce that a false-negative rate is inherent only to TCD, whereas it is actually a problem with all technological methods used to confirm BD.”⁴⁰ Among the facts confirmed in the paper he responds to are “1) that uniform, updated criteria are urgently needed for the use of TCD as a confirmatory test for BD; 2) that TCD, *like all other technological tests, is of limited use in confirming BD* [emphasis mine]; and 3) that the diagnosis of BD is clinical and, despite being obligatory in some countries, complementary methods can be misleading and are most useful when there are conditions that interfere with the neurological examination.

While threshold activity claims are present, data was elusive. But the fact that there are no tests claiming the unequivocal claim to brain death leads one to question just whom is being convinced of their reliability in so vital a determination. These tests undeniably indicate a high degree of damage and probable inability to recover, but they fail the test needed to diagnose death. They certainly do allow the physician to claim death with a clear conscience and to

⁴⁰Gabriel R. Freitas, Charles Andre, “Drawbacks to Technological Methods for Confirming Brain Death”, Letter to the Editor, *Transplantation*, 78(2):300, July 27, 2004.

persuade the family that there is no hope of recovery. Even when this may well be the case, it is not death. Going back to Gratton’s essay in which he evokes charity and mercy for the patient and the family of persons who will not recover, one could certainly ethically discontinue treatments employed to keep the person alive, but that is quite different from declaring the person already dead.

Further, regarding technological tests, or for that matter, any tests, performed to determine brain death, Alan Shewmon claims in several of his writings that “absence of evidence is not evidence of absence”.

The one test which most practitioners agree is the last determining test is that of the apnea test. Since the center control for breathing is generally accepted as being in the brain stem and the function in the brain dead person is being maintained by a ventilator, the test is done to confirm that the brain stem is, in fact, irreparably damaged. Critics, however, point out that the actual respiration is being done in the lungs at the site of gas exchange and absence of the mechanical respirations are not indicative of death. Respiration continues to occur. They believe that apnea resulting from the removal of the ventilator further damages the brain center which controls respirations. Several critics of brain death determination of death call it the “deadly

apnea test”. They reasonable argue that it aggravates the patient’s condition and is commonly done without knowledge or consent of family members. The test significantly impairs the possibility of recovery and can lead to death of the patient through heart attack or irreversible brain damage. Dr. Yoshiio Watenabe (Japan cardiologist) stated that if patients were not subjected to the apnea test, they could have a 60 percent chance of recovery to normal life if treated with timely therapeutic hypothermia (cooling).”⁴¹

⁴¹Shea, *Organ Donation: The Inconvenient Truth*”, citing Watenabe.

Which brings us finally to the consideration of “moral certitude” that death has occurred.

Returning to John Paul II’s address to the International Congress on Organ

Transplantation, he also had this to say about declaration of death:

Therefore a health care worker professionally responsible for ascertaining death can use these criteria in each individual case for arriving at that degree of assurance in ethical judgment which moral teaching describes as ‘moral certainty.’ This moral certainty is considered the necessary and sufficient basis for an ethically correct course of action.

In order to clarify the position taken by Catholics who accept brain death as death of the body/person, it is pointed out that “Moral certainty means having solid and reasonable evidence that a claim is true; it does not mean that we are completely certain or that *further evidence might not change our decision*. Even though theoretical questions might exist about the signs or determination of biological death, it is acceptable to use brain death criteria to determine death...At present Catholics who believe that patients declared ‘brain dead’ are truly dead may certainly act upon that belief, since the Vatican has approved brain death criteria for practical purposes.”⁴² (Emphasis added.)

Adding to that analysis, the authors go on to say that “..at the time of this writing, the Vatican continues to study this question.” While a continued study has been denied by some of Catholics involved in the debate, this claim has been made by more than a few who would

welcome it. (See John B. Shea *Organ Donation: The inconvenient Truth* in which he states unequivocal that “just months before his death in April, 2005, he [John Paul II] asked for the Pontifical Academy for the Sciences to restudy the signs of death and get scientific verification that those signs were still valid.” [Catholic Insight Magazine, September 2007.] The article further reports that Benedict XVI asked that the debate be revived and although Bishop Marcelo

⁴²Janet E. Smith and Christopher Kaczor, *Life Issues, Medical Choices: Questions and Answers for Catholics*, Servant Books, 2007, 126.

Sanchez Sorondo, chancellor of the Pontifical Academy of Sciences, stated in September of 2006 that the Academy had reaffirmed that brain death was the equivalent to death of a person, Bishop Sanchez also stated that he will have “to wait and see from the Vatican.”

With specific regard to moral certitude, Shewmon cites a collection of 30 cases of protracted survival of brain-dead patients, ranging from one week to nine months, with half of these patients surviving over eight weeks.⁴³

A larger study which was the collaborative effort of a committee at Harvard Medical School in Boston is cited by Dr. Paul Byrne. The study reported on 503 patients: of these 44 did not die. Of those who did die, 10% had no pathology of the brain.⁴⁴ Certainly these cases give pause to reconsider the moral certitude involved in the declaration of brain death. Byrne answers the question of why there are not more of these cases reported by pointing out that brain death becomes a self fulfilling prophecy. “No one ever recovers if their heart is cut out.”⁴⁵

In the final analysis, it is difficult to make a solid case for either brain death or rejection of it, although the latter does have more grounding in both medical and anthropological reasoning. At the very least, more uniform and strict parameters on the criteria need to be specified in spite

of the Vatican reluctance to become embroiled in technical determination. Perhaps the most fitting diagnosis is to place the patient in a category which is that of a state preceding death in which the patient will almost certainly not recover and will die in the very near future, but is not, in fact, truly dead. Some have argued for this category, for example, Roberto de Mattei in his preface to *Finis Vitae*: “Should this be the case (that the patients declared brain dead were in fact

⁴³Shewmon, “Recovery from Brain Death”, 80.

⁴⁴ Paul Byrne in an interview with Carrie Gress as reported in *Zenit*, “Debate over Brain Death Continues, March 2, 2008.

⁴⁵Monica Seely, “Are the ‘Brain-Dead Really Dead?”, *San Francisco Faith*, October 1997

alive), it would mean that brain death should be viewed not as the death of a human being, but rather as an irreversible condition, a stage which precedes the authentic death of the individual.”⁴⁶

As Dr. Haas points out in “Absolute versus Prudential Certitude in Criteria for Determining Death, “Moral certitude, or the certitude of prudence, is the assurance one has about a proposed course of action which excludes the reasonable fear of being in error.” In view of all the reviewed factors, I do not think brain death fulfills this requirement of moral certitude.

This position does address Gratton Brown’s concern that to keep patients who have severe and probably irreversible brain damage alive does not reflect either the mercy or charity we are called to practice as Christians.. The patient could be removed from the life extending therapy and allowed to die in a dignified manner, a practice in keeping with the Ethical and Religious Directives. But to continue the ventilation until unpaired vital organs could be harvested would certainly result in the death and be the causative agent of that death, a scenario not in keeping with the Religious Directives.⁴⁷

In a further clarification on organ retrieval “In his message on the World Day of the Sick, February 4, 2003, Pope John Paul II said, “It is never licit to kill one human being in order to save another.” The Catechism of the Catholic Church states (paragraph 2296): “It is morally inadmissible directly to bring about the disabling mutilation or death of a human being, even in order to delay the death of other persons.”

If brain death is ultimately ruled out as the death of the person, removal of unpaired organs from this person would be illicit.

⁴⁶Roberto de Mattei, *Finis Vitae: Is Brain Death Still Life?*, Roberto de Mattei, ed. (Ruttettino, Consiglio Nazionale delle Ricerche, 2006) 8.

⁴⁷Footnote: From USCCB Ethical and Religious Directives 64. Such organs should not be removed until it has been medically determined that the patient has died. In order to prevent any conflict of interest, the physician who determines death should not be a member of the transplant team.

In spite of claims by Dr. Shewmon to the contrary, to declare the patient in this state would most certainly result in fewer transplant opportunities and thus be rejected by those in the medical field today. He argues for a criteria much like that of non-heartbeating organ donors, a practice which at this time does not require the diagnosis of death prior to the initiation of the procedure. This practice has its own set of ethical concerns. But the decline in the number of available unpaired organs should not drive the determination of the ethics of brain death diagnosis.

One final note by Shewmon: “At present, there is no reliable clinical criterion to distinguish early in the course between a dead “brain dead” and a live “brain dead” patient, only in retrospect: some that rapidly and inexorable deteriorate despite intensive care may have been dead all along, and those that stabilize, at least for some days, should be presumed alive.”⁴⁸ As A. M. Capron is quoted, “Calling a person dead does not make him dead.”⁴⁹

“The rationale for accepting ‘brain death’ as an entity must be something other than the

fact that the body inevitable dies soon after the brain is dead.”⁵⁰

⁴⁸Shewmon, “Recovery from Brain Death”, 80.

⁴⁹A.M. Capron in *American Medical News*, April 17, 1987 as quoted by Josef Siefert in *Finis Vitae*, 208

⁵⁰Peter Black, comment on Yoshika, et al., “Hemodynamic Maintenance,” 567 as quoted by Michael Potts in *Finis Vitae*, 181.