

# SAINT JOHN PAUL II LECTURE SERIES IN BIOETHICS

## *Catholic Teaching regarding the Legitimacy of Neurological Criteria for the Determination of Death*

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### **Introduction**

Blessed Pope John Paul II cautioned against the advances of a “culture of death” in our day and called for countering it by building up a “culture of life.” These are terms which he employed in his great 1995 encyclical *The Gospel of Life*, and they are such powerful constructs that they soon entered the very language of contemporary public debate.

The Catholic Church is at the forefront of the struggle against a culture of death, raising her voice against direct assaults against human life such as abortion and euthanasia, in vitro fertilization, embryonic stem cell research, and the use of embryonic human beings for research.

In *The Gospel of Life*, John Paul II declares, “To claim the right to abortion, infanticide and euthanasia, and to recognize that right in law, means to attribute to human freedom a *perverse and evil significance*: that of an *absolute power over others and against others*.<sup>1</sup>”<sup>1</sup>

The Pope goes on to observe that these evil practices have received the protection of the law so that the coercive powers of the state are now used to protect those who would take innocent human life rather than to protect the innocent lives that are threatened. Indeed, John Paul II observes with dismay that even health care professionals who have given themselves by a sacred oath to heal and to care have been seduced by this notion of freedom, which manifests itself as “absolute power over others and against others.” He continues, “It is not only that in generalized opinion these attacks tend no longer to be considered as ‘crimes’; paradoxically they assume the nature of ‘rights,’ to the point that the State is called upon to give them *legal recognition and to make them available through the free services of health-care personnel*.<sup>2</sup><sup>2</sup>

John Paul II insists that the recognition of the inviolability of innocent human life is a duty of all people and could and should be recognized by all:

Every person sincerely open to truth and goodness can, by the light of reason and the hidden action of grace, come to recognize in the natural law written in the heart (cf. Rom. 2:14–15) the sacred value of human life from its very beginning until its end, and can affirm the right of every human being to have this primary good respected to the highest degree.<sup>3</sup>

## Mistaken Pro-life Catholics

It is understandable that pro-life Catholics are going to be very sensitive to any possible violation of the human person's fundamental right to life. On occasion, however, some misunderstand Catholic teaching in their pro-life zeal and deny that certain actions are morally permissible. For example, there are some Catholics who reject the notion of vital organ transplantation and the criteria that are currently used to judge a donor to be dead before the organs are extracted.

In the introduction to a recent book titled *Finis Vitae*, Paul Byrne, MD, a pediatrician, writes, "The holocaust of abortion and transplantation of organs from living donors will go down in history as the two most tragic and transcendental events of the last two centuries. Such massacres continue with the protection of law in the Western countries and the unwavering support of the legal and medical professions."<sup>4</sup> Dr. Byrne claims that those who have been judged dead by neurological criteria are still alive and that the excision of their vital organs is tantamount to murder. By taking such a position, Dr. Byrne is at odds with the current teaching of the magisterium of the Catholic Church.

*The Gospel of Life* encourages organ donation as a generous act of self-denial. Pope John Paul II speaks of heroic acts of generosity which "are the most solemn celebration of the Gospel of Life, for they proclaim it by the total gift of self. . . . A particularly praiseworthy example of such gestures is the donation of organs, performed in an ethically acceptable manner, with a view to offering a chance of health and even of life itself to the sick who sometimes have no other hope."<sup>5</sup> When he addressed a Congress on Organ Transplants four years earlier, in June 1991, the Holy Father observed that every donated organ comes from a decision of great ethical value, because it is "the decision to offer, without reward, a part of one's own body for the health and well-being of another person."<sup>6</sup> When he spoke of those making this decision during an address in August 2000 to health care professionals involved in organ transplantation, he stated, "Here precisely [in the gift of self] lies the nobility of the gesture, a gesture which is a genuine act of love."<sup>7</sup>

### **Moral Necessities: Informed Consent and the Dead Donor Rule**

Two basic conditions have to be met for the ethical retrieval of vital organs from donors: the donor must freely consent to it, and the donor must be dead. Fortunately, there is broad general agreement in society on these conditions. Within the Church, there is not only general agreement but unambiguous insistence that the person must be dead before vital organs can be removed for transplantation. This is known as the dead donor rule. A controversy has developed in some circles, however, as to how death is to be ascertained.

The traditional and still most common means for judging someone dead are the cardiopulmonary criteria—specifically, a person is declared dead by a physician when the person has stopped breathing and the heart has stopped beating. Once a beating heart and breathing have ceased, oxygenated blood is no longer pumped through the body to keep the organs, and the individual,

alive. The organs begin to atrophy and die. The brain eventually dies as well, since it is not receiving oxygenated blood.

Because of developments in life-support systems, such as ventilators, individuals who in the past would have died because of the cessation of heartbeat and breathing may now be kept alive mechanically, and some have recovered. However, some patients do not survive despite the use of the ventilator. In those cases, the patients often appear alive because the body and its organs continue to be suffused with oxygenated blood. Because life-support systems mechanically force the heart and lungs to continue functioning, criteria other than the cardiopulmonary ones had to be found for determining whether death had occurred. Persons had been revived after the cessation of breathing and heartbeat. No one, however, had ever been revived after the brain, serving as the basic integrative organ of the body, had died. The death of the brain, then, constituted unquestionable death.

Tests were eventually developed to ascertain whether the brain was dead. In the United States, these tests received their first formal articulation by an ad hoc committee at Harvard Medical School in 1968,<sup>8</sup> and they have been continually refined since. In 1980, the National Conference of Commissioners on Uniform State Laws drafted the Uniform Determination of Death Act, accepting neurological as well as cardiopulmonary criteria for determining death.<sup>9</sup> The act was drafted in collaboration with the American Medical Association and the American Bar Association and has been adopted by most U.S. states. It states specifically that “an individual who has sustained either (1) irreversible cessation of circulatory and respiratory functions, or (2) irreversible cessation of all functions of the entire brain, including the brain stem, is dead. A determination of death must be made in accordance with accepted medical standards.”

Very rigorous tests are used by physicians to determine whether a patient has indeed died according to the neurological criteria. Because the brain controls and directs not only thought and movement but also the spontaneous activities of the body that are necessary for life, such as breathing and heartbeat, the tests are used to determine whether the brain is indeed still alive and functioning. A battery of tests is used because any one test alone might not provide conclusive evidence. A person may appear to be dead because of hypothermia, a radical drop in body temperature, or because of the effects of certain drugs on the body. The following tests are representative of the ones used to judge whether the brain has died.<sup>10</sup>

When the brain has died, the patient has no movement or reflexes in the limbs, which will simply drop when released, and the pupils of the eyes will be fixed. When a bright light is shined into the pupil of a patient with a living brain, the optic nerve sends a signal to the brain, which sends an impulse to constrict the pupil. If the brain is dead, there is no constriction of the pupil.

Another test determines whether there is an oculocephalic reflex. When the brain is alive and the head is turned from side to side, the eyes will move. When the brain is dead, the eyes remain fixed and move with the head. Another test involves rubbing a cotton swab across the cornea of the eye. If the brain is alive, this will generally cause a spontaneous blinking reaction, which will not occur if the brain is dead. There is also a test of the oculovestibular reflex. After it has been

determined that the ear drum is intact and the ear canal is free of wax, cold water is inserted into each ear canal. If the brain is alive, the radical change in temperature will cause a violent twitching of the eye, but if the brain is dead, the twitching will not occur. Furthermore, if the brain is dead, there will be no gag reflex when an instrument is placed at the throat.

An apnea test involves removing the patient from a ventilator for a period of time. If the lack of oxygen does not produce spontaneous breathing by the patient, it is another sign that the brain is dead.

After these clinical tests have been carried out, confirming tests may be done. These include the use of an electroencephalogram to measure electrical activity in the brain, a test so sensitive that it will even record static electricity. A test for cerebral blood flow using a radioactive isotope may also be done. If there is no electrical activity and no blood flow, it is clear that there is no brain function. These tests may be repeated after a twenty-four-hour period. Usually only after the rigorous application of such tests will the person finally be declared dead using neurological criteria.<sup>11</sup>

## **Misdiagnoses**

The clinical tests for determining death using neurological criteria must be performed with precision.<sup>12</sup> It must be admitted that some physicians will not always be careful in the administration of these tests and may prematurely declare a person to be dead without properly ensuring that the criteria have been met.

It should be pointed out that “brain death” is not the same as a persistent vegetative state, which is a condition of severe disability but not death. Terri Schiavo was declared to be brain dead by some commentators during the controversy over the removal of her nutrition and hydration. This assertion was patently false. Terri Schiavo was very much alive in a persistent vegetative state, and she died from starvation and dehydration.

There was also the highly publicized case of a young man in Oklahoma who was in a four-wheeler accident in 2008. Zack Dunlap was declared brain dead thirty-six hours after the accident, after various tests had been run and a scan showed a complete absence of blood flow to his brain.<sup>13</sup> Dunlap recovered, however, and later said he remembered overhearing physicians declaring him brain dead and discussing the removal of his organs for transplantation. What saved him was the fact that a relative took a penknife and ran it up the sole of Dunlap’s foot. Dunlap withdrew the foot. The hospital insisted that all the tests had been properly performed, but one has to wonder if they were, especially in light of the fact that a relative was able to elicit a response using such a primitive, indeed commonsense, test. The hospital also insisted that Dunlap’s vital signs would have been detected before his organs were removed. However, such stories illustrate the need for exercising caution and insisting that tests be thorough and rigorously applied. But this applies to other areas of medicine as well as to diagnoses of death.

There have also been reports of supposedly brain-dead pregnant women who continued to gestate their children, sometimes for months, until the children were viable. Almost always,

though, these have been cases of pregnant women in very precarious conditions who were being kept alive by mechanical support, which is then removed after the child has been born. One headline in a national newspaper declared, “Brain-Dead Virginia Woman Dies after Giving Birth.”<sup>14</sup> The article stated that the woman had been declared “brain dead” on May 7 and was delivered of the baby three months later on August 3. It went on to say that she was given last rites of the Catholic Church before life support was removed and she died. However, no one dies two deaths, and the Church does not administer sacraments to the dead but to the living. The woman obviously was not already dead.

Such cases of false declarations of brain death usually indicate the inadequate practice of medicine and do not negate the legitimacy of determining death by the use of neurological criteria, if it is done properly.

### **Rejection of Neurological Criteria for Death**

Because of such reports, and because of deeper philosophical and medical opinions, some Catholics adamantly refuse to accept the legitimacy of neurological criteria for determining death. Because such negative judgments can be very unsettling to the consciences of the faithful and may lead them to reject the appeal of Pope John Paul II to be organ donors—or recipients—it is important to determine just what it is the Church teaches.

In the last ten years, two essays appeared in *Catholic World Report* by certain authors who later contributed to *Finis Vitae*, including Dr. Byrne; both essays have created confusion in the minds of the Catholic faithful. One essay appeared in March 2001 under the title “Are Organ Transplants Ever Morally Licit?”<sup>15</sup> The other appeared in March 2005 under the title “Brain Death is NOT Death.”<sup>16</sup> The view of the authors of the second essay could hardly have been clearer, the emphatic “not” being written in extra- bold, italicized, and underlined capital letters. Yet nowhere in magisterial teaching can one find a denunciation of ethical decision making based on a determination of death using neurological criteria. In fact, it is quite the opposite. According to current Church teaching, a Catholic may accept the neurological criteria for determining death and may make moral choices based on those criteria so long as the neurological tests are rigorously performed.

To begin to clear up the confusion, it is probably best first to refrain from using the expression “brain death,” as though there were different kinds of death. Just because the expression is now commonly used among medical professionals and ethicists, there is no reason to continue using it if it is misleading—which it is. Death is a singular, nonrepeatable event for every human being, the moment of which cannot be observed by empirical means. As John Paul II says in his 2000 address to the Transplantation Society,

It is helpful to recall that *the 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*.<sup>17</sup>

The reason no scientific technique can directly identify the moment of death is quite simple: the

soul is a non-corporeal, spiritual life-principle which cannot be observed or measured or weighed using the tools of empirical science. The presence or absence of the soul can be ascertained only by observing certain biological signs that *indirectly* attest to its presence or its absence.

John Paul II continues:

Yet human experience shows that once death occurs *certain biological signs inevitably follow*, which medicine has learnt to recognize with increasing precision. In this sense, the “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 scientifically secure means of identifying *the biological signs that a person has indeed died*.<sup>18</sup>

Notice that the Pope says that the biological signs indicate only that death has already occurred. They cannot tell us the precise moment of death.

As mentioned earlier, death was traditionally determined using cardiopulmonary criteria—that is, the absence of breathing and heartbeat. But modern technology and science have provided tools for determining when the brain is “dead,” which is an even more certain physiological sign that death has occurred than is the cessation of breathing and heartbeat. Neurological criteria do not indicate a different kind of death; they are simply another set of physiological criteria, like the cardiopulmonary criteria, to indicate that death has already occurred.

In his address to the Transplantation Society, the Pontiff acknowledged the neurological criteria in addition to the cardiopulmonary:

It is a well-known fact that for some time certain scientific approaches to ascertaining death *have shifted the emphasis from the traditional cardio-respiratory signs to the so-called “neurological” criterion*. Specifically, this consists in establishing, according to clearly defined parameters commonly held by the international scientific community, the complete and irreversible cessation of all brain activity (in the cerebrum, cerebellum, and the brain stem). This is then considered the sign that the individual organism has lost its integrative capacity.<sup>19</sup>

Despite the key importance of this papal address, consideration of the legitimacy of these criteria was not new in the Church’s reflections on death. Death has to be determined before ethical decisions are made about such matters as sacramental anointing and organ transplantation. The determination of death came to be rendered more difficult, however, with the use of life-support systems, which may give an appearance of life to patients whose bodies and their systems are being sustained only by artificial, mechanical means.

In October 1985, the Pontifical Academy of Sciences studied the question of the determination of death at the request of John Paul II. At the conclusion of their deliberations, they made the following statement:

A person is dead when he has irreversibly lost all capacity to integrate and

coordinate the physical and mental functions of the body. Death occurs when (a) the spontaneous cardiac and respiratory functions have definitively ceased; or (b) if an irreversible cessation of every brain function is verified. From the debate it emerged that cerebral death is the true criterion of death, since the definitive arrest of the cardiorespiratory functions leads very quickly to cerebral death.<sup>20</sup>

Ever searching for greater clarity, John Paul II raised the question with the Pontifical Academy of Sciences again in 1989, giving the question a greater sense of urgency in the quest for more precision. Now the Pope was concerned specifically with organ donation. In his opening address to the academy, John Paul II asked,

How does one reconcile respect for life—which forbids any action likely to cause or hasten death—with the potential good that results for humanity if the organs of a dead person are removed for transplanting to a sick person who needs them, keeping in mind that the success of such an intervention depends on the speed with which the organs are removed from the donor after his or her death?<sup>21</sup>

Two things should be noted in this question. First of all, the Pope refers to the dead donor rule. This is, as we have said, the norm—universally accepted in the medical professions involved in transplantation—that vital organs will not be taken until the donor is dead. Second, the Pope alludes to the importance of the “speed” with which organs are extracted. This is of particular importance for such vital organs as the heart and liver, which quickly suffer damage when they are deprived of oxygen as a result of the loss of circulation.

At the end of its deliberations in 1989, the Pontifical Academy of Sciences came to the same conclusion it had reached in 1985: death can be determined when “there has been an irreversible cessation of all brain functions, even if cardiac and respiratory functions which would have ceased have been maintained artificially.”<sup>22</sup> The Pontifical Academy of Sciences visited the question again in 2006 and published a statement in 2008 under the title “Why the Concept of Brain Death Is Valid as a Definition of Death.”<sup>23</sup> The statement was signed primarily by neurologists, but it was also signed by three cardinals and one bishop who later became a cardinal. Furthermore, the meeting and publication of the statement took place during the pontificate of Pope Benedict XVI. Thus three times now, under two different pontificates, the Pontifical Academy of Sciences has concluded that the neurological criteria are a legitimate basis for determining death. No pope, no dicastery of the Holy See, and no official consultative body to the Holy See has ever called into question this conclusion of the academy. Indeed, as noted, senior members of the hierarchy have concurred, as did John Paul II himself.

### **U.S. Hierarchy and Vatican Dicasteries**

The Church in the United States reflected on this problem even before it was specifically put to the Pontifical Academy of Sciences by Pope John Paul II. In 1975, the Committee on Health Affairs of the United States Catholic Conference issued “Guidelines for the Determination of Brain Death.”<sup>24</sup> The document acknowledged the traditional cardiopulmonary

criteria for determining death, of course, and then went on to state that there were circumstances in which “an additional set of criteria, which provides a moral certainty of brain death, may be more suitable.” It described these criteria as being “morally sound and acceptable.”

In 1995, the Pontifical Council for Pastoral Assistance to Health Care Workers under Fiorenzo Cardinal Angelini issued its *Charter for Health Care Workers*. The legitimacy of neurological criteria was accepted by this body as well:

In order that a person be considered a corpse, it is enough that cerebral death of the donor be ascertained, which consists in the “irreversible cessation of all cerebral activity.” When total cerebral death is verified with certainty, that is, after the required tests, it is licit to remove organs and also to surrogate organic functions artificially in order to keep the organs alive with a view to a transplant.<sup>25</sup>

Even though the Charter does not carry the magisterial weight of a papal encyclical or a decree of the Congregation for the Doctrine of the Faith, it can hardly be maintained that it does not reflect the thinking of the Holy See and its advisors. Never has there been any indication from a pope or any other dicastery that the Charter is doctrinally deficient or that following it would place any Catholic in moral danger.

Indeed, Cardinal Angelini referred to the collaborative and consultative process that went into its issuance, including its having been submitted for review to the Congregation for the Doctrine of the Faith, the highest doctrinal body in the Vatican, headed at the time by Joseph Cardinal Ratzinger, now Pope Benedict XVI. Cardinal Angelini wrote,

This Office cannot but feel flattered that the Congregation for the Doctrine of the Faith approved and quickly confirmed in its entirety the text of the Charter submitted to it: another reason for its full validity and secure authority, but also a concrete proof of the interdicastery cooperation expressly desired in the *motu proprio* which set up the Pontifical Council for Pastoral Assistance to Health Care Workers.<sup>26</sup>

Yet dissenting voices and writings, like the article “Are Organ Transplants Ever Morally Licit?” in *Catholic World Report*, continued to create confusion in the minds of a number of the faithful. Some Catholics became convinced that they would have to forgo becoming organ donors if organ donation meant that their deaths would be determined by use of the neurological criteria. Using the same line of reasoning, some Catholics were convinced that they could not ethically receive a donated organ under those circumstances.

A professor of medicine at Harvard Medical School, Theodore Steinman, MD, was faced with a difficult clinical situation when a patient of his awaiting a kidney transplant read the essay “Are Organ Transplants Ever Morally Licit?” and came to the conclusion that she would commit a mortal sin if she received an organ transplant. This Jewish surgeon was dismayed that his Catholic patient could die without the transplanted organ. He rather boldly sent a copy of the essay to Pope John Paul II, asking if it indeed reflected Catholic teaching. In response to his

question, Dr. Steinman received a letter from the Vatican dated September 14, 2001. It was written by Bishop Elio Sgreccia at the request of the Cardinal Secretary of State, Angelo Sodano.<sup>27</sup>

Perhaps it should be noted who these individuals are who responded on behalf of the Pope. Cardinal Sodano was Secretary of State under Pope John Paul II and was reappointed to that position by Pope Benedict XVI. Bishop Elio Sgreccia was one of the principal advisors to Pope John Paul II in the area of medical ethics and bioethics. A professor at Sacred Heart University in Rome, he founded and was the director of the Center for Bioethics there and at the Gemelli Hospital on the university campus. At the time of the correspondence with Dr. Steinman, Bishop Sgreccia was serving as president of the Pontifical Academy for Life. He is the author of the two-volume *Manuale di bioetica*, the most authoritative Catholic work in print on bioethics. Finally, he founded the International Federation of Centers and Institutes of Bioethics of Personalist Inspiration, based in Rome, and was its president until he retired and became its honorary president in February 2011. The “personalist” in the title of the federation indicates that the centers take their inspiration from the personalist thought of Pope John Paul II. In 2010, Elio Sgreccia was elevated to the dignity of Cardinal.

A portion of the letter written by then-Bishop Sgreccia to Dr. Steinman follows:

The Secretariat of State of His Holiness Pope John Paul II has asked me to respond to your letter of April 7, 2001. In it you express your perplexity and conscientious concern after reading the article that appeared in the periodical *Catholic World Report* (March 2001) entitled “Are Organ Transplants Ever Morally Licit?”

I can confirm that this article does not reflect the official doctrine of the Church. The Church’s thinking continues to be what was expressed in the Holy Father’s discourse of August 29, 2000. . . .

I would like to take this opportunity to thank you on behalf of the Holy Father both for the confidence and appreciation you expressed for his Magisterium, and for your own commitment in the service of patients. In the Holy Father’s name, I am pleased to extend to you his apostolic blessing as a sign of the Lord’s accompaniment in the comforting task you carry out for patients and their families in the delicate area of surgery.<sup>28</sup>

The letter is hardly a Vatican condemnation of the activities of a surgeon involved in the transplantation of organs from those declared dead using neurological criteria, as if such an action were immoral. In fact, it is an explicit encouragement of Dr. Steinman’s work. Bishop Sgreccia further states expressly that the March 2001 article in *Catholic World Report* does not reflect the official teaching of the Church.

When John Paul II spoke about organ transplantation in August 2000, he was not presuming to settle every medical dispute about the neurological criteria for determining death or every

philosophical question on the nature, meaning, and moment of death. *He was providing pastoral guidance* for individuals faced with difficult ethical decisions concerning organ transplantation. He wanted to indicate what they could or could not do without incurring moral guilt. He provided them with moral guidance with an emphasis on the competencies of medical professionals in declaring death and on the role of prudential certitude.

## Physicians Are the Ones Competent

Some who oppose neurological criteria for determining death cannot surmount the difficulties posed by the appearance of life in a body that is warm or in which an organ or set of organs continues function. However, it has long been shown that hearts can continue beating and other organs can survive the death of the person. In 1957, in an address known as “The Prolongation of Life,” Pope Pius XII made a distinction between the life of the whole organism and the “life” of individual organs, saying that the presumption in favor of life obtains when the “vital functions—distinguished from the simple life of organs—manifest themselves spontaneously or even with the help of artificial processes.”<sup>29</sup> Here Pius XII indicates that organs can continue to be “alive” even when the organism, or the person, is not. In the same address he states clearly, “It remains for the doctor . . . 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.”<sup>30</sup>

In 1981, the Pontifical Council “Cor Unum” stated that the determination of the moment of death is a medical, not a theological, judgment: “The very most the Church could do would be to reiterate the conditions that would make it legitimate to accept the better judgment of those to whose specific competence has been entrusted the determination of the moment of death,” that is, physicians. The council also noted “a growing consensus of opinion that considers a human being dead in whom a total and irreversible absence of life activity in the brain has been established.”<sup>31</sup>

This consensus has only grown. The council’s statement was issued the same year that the Uniform Determination of Death Act—providing a legal determination of death by cardiopulmonary or neurological criteria—was approved for the United States.<sup>32</sup> By 2001, every state had recognized such criteria as the legally acceptable means of determining death, with thirty-one states and the District of Columbia having adopted the act itself. Furthermore, “a study of criteria in 78 countries showed that there is judicial recognition of brain death in more than two thirds of the countries, with actual statutes in 86 percent.”<sup>33</sup> Neurological criteria for the determination of death were also adopted by the American Academy of Neurology in 1995 and updated in 2010.<sup>34</sup> There is not an attempt here to settle the moral questions involved in this issue by appealing to the policies of such institutions and countries. Reference is made to them merely to point to the consensus in the medical and legal communities to which the Pontifical Council “Cor Unum” alluded.

Although there are differences in the tests for brain death and in their application, the tests continue to be perfected and improved. The authors of the 2001 essay in *Catholic World Report* rightly point out that there are a variety of tests and neurological criteria for determining death. They go on to maintain, however, that this variety renders the neurological criteria illegitimate

and that Pope John Paul II was ill advised: “Perhaps the Pope has been advised that if the criteria are ‘rigorously applied,’ this is sufficient for a determination of death.” They assert that “rigorous application of the criteria implies that such criteria exist. Since they do not exist, they cannot be applied in any fashion - much less ‘rigorously.’”<sup>35</sup>

The fact that there are a number of tests for determining death by the neurological criteria does not mean that there are no accurate tests or that the testing cannot be improved. And it is hard to believe the authors of the article in *Catholic World Report* could be aware of this fact while the Pope and his advisors were not. By analogy, just because there are many theories or explanations of the Real Presence of Christ in the Eucharist does not mean that Christ is not really present in the Eucharist. Some of the explanations are inadequate; some are simply incorrect. The same can be said of the neurological criteria for determining death. Just as theologians have the competencies to judge various theories of the Real Presence, medical scientists determine the most adequate criteria for determining death by the neurological criteria.

In some countries, such as England, medical authorities allow death to be declared when the brain stem has been destroyed but the higher brain continues to function. But in his 2000 address, John Paul II insisted that the tests must determine that death of the entire brain—the cerebrum, the cerebellum, and the brain stem—has occurred.<sup>36</sup> So the Pope was obviously well aware of the fact that there are different criteria and was indicating the types of criteria that would have to be rigorously applied to be acceptable to the Church.

## **Moral Legitimacy of Involvement in Transplants**

Again, when the Pope insisted on the necessity of testing for total brain death before the removal of organs for transplantation, he was not claiming to resolve every debate about the nature of death and the means of recognizing that it has occurred. On the theoretical and philosophical levels, that debate will certainly continue. However, the Pope wanted to pass a moral judgment which would allow Catholic health care professionals and institutions to perform certain actions with a clear and sound conscience. Moral philosophy and moral theology are practical sciences; that is, they are disciplines that exist to help people determine what a moral course of action is so that they can act.

This moral assistance is precisely what the Holy Father provided in his 2000 address:

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. Therefore a health-worker professionally responsible for ascertaining death *can use* these criteria in each individual case as the basis for arriving at that degree of assurance in ethical judgment which moral teaching describes as ‘moral certainty.’”<sup>37</sup>

The Pope is clear that one can base one’s moral action on neurological criteria for determining death. He continues to insist on the dead donor rule, and he remains open to developments in

medicine and the life sciences.

Both essays in *Catholic World Report* were critical of the “Harvard criteria” for determining death, as though there had been no development in the criteria since the Harvard report was published in 1968. In fact, medical science has continually been refining and perfecting the “reading” of the biological signs for determining death. One important summary of these developments was published in the *New England Journal of Medicine* in 2001, almost a year after John Paul II’s address to the Transplantation Society.<sup>38</sup> More recently, in 2010, the American Academy of Neurology updated its guidelines for determining death by neurological criteria.<sup>39</sup>

## **Moral or Absolute Certitude That a Donor Is Dead?**

Another area of controversy surrounding the determination of death by neurological criteria is the kind of certitude needed before one can act. Must one have absolute certitude or prudential certitude that death has occurred? The authors of the 2001 *Catholic World Report* article say that there must be absolute certitude, whereas Pope John Paul II says that moral or prudential certitude is the necessary and sufficient basis.

First, it should be pointed out that the highest degree of certitude for moral action is indeed prudential certitude. This is not a lesser degree than “absolute” certitude. It is precisely the certitude appropriate to moral action. Aristotle states, “Most of the things about which we make decisions, and into which we therefore inquire, present us with alternative possibilities. For it is about our actions we deliberate and inquire, and all our actions have a contingent character; hardly any of them are determined by necessity.”<sup>40</sup>

In fact, because of the contingent character of our actions in the area of moral judgment, we cannot anticipate the same kind of certitude which we enjoy, for example, in mathematics. As Aristotle pointed out, the virtuous individual is to seek “as much clearness as the subject-matter admits of, for precision is not to be sought for alike in all discussions.”<sup>41</sup> The nature of a given subject matter allows exactness to the extent appropriate to its nature. Moral certitude, or the certitude of prudence, is the assurance one has about a proposed course of action that excludes the reasonable fear of being in error. It is impossible to know all the factors surrounding a decision in a concrete circumstance, and if one refrained from acting until every doubt or ambiguity were removed, one would be incapacitated; one could not act at all.

St. Thomas Aquinas accepted Aristotle’s teaching on the role of prudence in moral judgment. In the commentary on the *Sentences* of Peter Lombard, prudence is given such prominence that it is called the *genitrix virtutem*, the mother of all virtues.<sup>42</sup> The German philosopher Josef Pieper goes so far as to claim that “the whole ordered structure of the Occidental Christian view of man rests upon the pre-eminence of prudence over the other virtues.”<sup>43</sup> This is a bold claim, but it is a way of acknowledging the contingent and situational character of prudence without sacrificing the conviction that a judgment achieved through prudence is not merely a subjective perception of a situation, but rather a response grounded in objective reality, with respect to the acting agent as well as the moral object which has been chosen.

Indeed, even the complexities and ambiguities of a situation do not deter the prudent person from action. Prudential certitude is not to be seen in opposition to truth, but relies on its own particular grasp of truth. As Aquinas says, “Non potest certitudo prudentiae tanta esse quod omnino sollicitudo tollatur”;<sup>44</sup> that is, prudential certitude cannot remove every concern about a proposed course of action. But it does remove any concern which would prevent one from acting. And it certainly is not a “lower standard” of truth and certainty being applied to human actions. It is rather the appropriate standard applied to moral action even in the midst of ambiguity. Again, if one waited for absolute certitude one would never act, one would be incapacitated.

John Paul II is speaking out of this ancient philosophical and theological tradition when he says, as noted above, “A health-worker professionally responsible for ascertaining death can use [the neurological] criteria in each individual case as the basis for arriving at that degree of assurance in ethical judgment which moral teaching describes as ‘*moral certainty*.’”<sup>45</sup> He continues, “Only where *such certainty* exists, and where informed consent has already been given . . . is it morally right to initiate the technical procedures required for the removal of organs for transplant.”<sup>45</sup>

Byrne and others will insist, contrary to the clear teaching of John Paul II, that absolute certitude instead of moral certitude is needed for a declaration of death. He has said that disintegration (i.e., putrefaction) must have set in for absolute certitude.<sup>46</sup> However, such a rigorous position has never been adopted by the medical profession. Waiting for the first signs of disintegration would not only be impractical but in some cases could pose public health risks.

## **Brain Death and Prudential Certitude**

A respected professor of moral theology at St. John Vianney Seminary in Denver has, unlike Byrne, admitted the adequacy of moral, rather than absolute, certitude in the declaration of death, but does not say what signs of death would provide such certitude.

E. Christian Brugger does, however, go on to adopt a position contrary to that of Pope John Paul II by writing that there is reasonable doubt that neurological criteria provide moral certitude for a declaration of death. He has written on the subject through the international Catholic news agency Zenit and in a posting on the Culture of Life Foundation, where he serves as a senior fellow.<sup>47</sup> As a result, a highly regarded theologian has run the risk of unsettling the consciences of the faithful on a life-and-death ethical matter for which the authentic magisterium of the Church has provided clear guidance.

Brugger takes his position contrary to the Pontifical Council “Cor Unum,” the Pontifical Academy for Life, the Bioethics Center at the Gemelli Hospital in Rome (founded by Elio Cardinal Sgreccia), the Congregation for the Doctrine of the Faith, the Pontifical Council for Health Care Workers, and the Pontifical Academy of Sciences, to say nothing of Blessed Pope John Paul II. He turns for his guidance on this matter, not to any of these dicasteries or to the Pope himself, but to Dr. Alan Shewmon, a pediatric neurologist at UCLA who disputes the legitimacy of neurological criteria.

Brugger appeals to Shewmon’s authority as a neurologist and as a consultant to the Pontifical

Academy of Sciences.<sup>48</sup> However, Shewmon has never served as a member of the academy. On one occasion Shewmon delivered a paper at a meeting of the academy. Yet while Brugger accepts Shewmon's authority, he does not accept the authority of the other neurologists who have advised the Pope and who have actually served in the Pontifical Academy for Sciences. Brugger also accepts Shewmon's scientific authority as a neurologist but does *not* accept the position of the American Academy of Neurology. Finally, Brugger does not accept the findings of the Pontifical Academy itself issued in 1985, 1989, and 2008. Brugger claims that the Church and the Pope are not competent to provide sure moral guidance based on the legitimacy of neurological criteria for determining death because a judgment on the reliability of those criteria does not concern faith and morals, the areas in which the Church *has* competence.

The Church, however, has always looked to the legitimate findings of science to guide it in its moral teachings. Modern embryology, for example, has shown that a new, genetically unique human being comes into existence at the fusion of the nuclei of the two gametes and the beginning of cell division. Since the Catholic Church has no competency in embryology as such, does that mean she cannot appeal to the findings of embryology to buttress her insistence on the moral imperative that human beings be protected from the first moment of conception? And how is it conceivable that the Pope could presume to provide guidance on the life-and-death issue of the determination of death before organ excision if the determination of death did not qualify as a moral issue? The guidance John Paul II offered to those attending the meeting of the Transplantation Society in 2000—where he explicitly taught that one could proceed with a transplant procedure when the donor was declared dead using neurological criteria—was moral, not medical, guidance.

Professor Brugger appears ready to judge the highest moral authority in the Church as incapable of assessing the ethical significance of the findings of science with respect to a human action concerning life and death, despite all the scientific advisors and dicasteries at the Pope's disposal. And how does the position of one neurologist, Alan Shewmon, who is admittedly brilliant, trump the conclusions of the American Academy of Neurology and the neurologists and other scientists who advise the Pontifical Academy of Sciences?

Brugger asserts rather boldly and unequivocally, "Shewmon's research demonstrates conclusively that the bodies of some who are rightly diagnosed as suffering whole brain death express integrative bodily unity to a fairly high degree."<sup>49</sup> Demonstrates conclusively? Customarily, professors of moral theology do not make such strong assertions in scientific fields in which they have no particular competency. And besides, what was the nature of the research and to what extent was it corroborated by other neurologists? Even if "a fairly high degree" of "integrative bodily unity" persists in some rare instances, what is the significance of this from a medical or moral point of view? How does a moralist so confidently draw conclusions from one neurologist's research that call into question those of the American Academy of Neurology and the conclusions of the Pontifical Academy of Sciences on three different occasions? In coming to those conclusions, the academy relied on neurologists who were either members of the academy or official consultants.

Nonetheless, Brugger goes on to assert, in the cautious language of scholarship, "Although

Shewmon's evidence certainly does not establish that brain dead bodies are the bodies of living (albeit highly disabled) persons, in my judgment, and in that of other competent scholars and scientists, it raises a reasonable doubt that excludes 'moral certitude' that ventilator-sustained brain dead bodies are corpses."<sup>50</sup>

Compare Brugger's assertion with John Paul II's, which is repeated here:

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. *Therefore* a health-worker professionally responsible for ascertaining death *can use* these criteria in each individual case as the basis 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."<sup>51</sup>

Which authority is the faithful Catholic to follow? John Paul II or E. Christian Brugger? Brugger is cautious enough to assert that Shewmon "does not establish that brain-dead bodies are the bodies of living . . . persons." But he does assert that Shewmon has raised "a reasonable doubt that excludes 'moral certitude' that ventilator-sustained brain dead bodies are corpses."<sup>52</sup>

If one has "reasonable doubt" that *excludes* moral certitude that an organ donor is dead, then clearly one cannot proceed with the removal of the organs for transplantation. The practical consequences of Brugger's assertions are clear: A Catholic cannot be the donor of vital organs if the means of determining death are neurological criteria. This is in clear contradiction to the teaching of John Paul II and several Vatican dicasteries.

Furthermore, it is dismaying that pro-life Catholics who question the Church's acceptance of scientific findings on the legitimacy of neurological criteria will appeal to Shewmon's work to advance their cause. Shewmon is opposed to the legitimacy of neurological criteria for determining death, but he still is a supporter of the transplantation of vital organs.

Many do not know that Shewmon has advocated setting aside the dead donor rule and excising organs from individuals who have not been declared dead on the basis of either cardiopulmonary *or* neurological criteria. He does this by attempting to apply the distinctions between extraordinary and ordinary means of prolonging life and the principle of double effect. When it is clear that a life-support system has become an extraordinary means of prolonging life, i.e., non-obligatory, and that the removal of the organs will not harm the donor since he or she is dying anyway, the organs may be removed.<sup>53</sup>

In *Finis Vitae*, Shewmon writes, "The demise of brain death does not necessarily imply the death-knell to transplantation that so many of its defenders seem to fear. It does, however, imply going about the transplantation procedure in a different way, so that the removal of 'vital' organs neither kills nor harms the donor if the donor is not yet dead (ethically analogous to live donors of blood, bone marrow, a single kidney or a lobe of liver)."<sup>54</sup> The removal of "vital" organs from

a donor who is not yet dead is not, however, analogous to taking blood or bone marrow or a single kidney from a living donor, because the living donor continues a vibrant life. But to remove vital organs from a dying patient is precisely to take advantage of the patient's gravely incapacitated and dying condition.

Shewmon writes elsewhere of the uselessness of the dead donor rule: ““Is the patient (i.e., donor) dead?” not only is the wrong question to ask on the practical, physical level; it is not even a meaningful one when asked on a microscopic time-scale in the transition between life and death.”<sup>55</sup> But this is precisely the question that Pope John Paul II posed to the Pontifical Academy of Sciences in 1989. What Shewmon does is to trivialize the question by suggesting that it is impossible to know the precise moment of death if we ask whether it occurs at the last spontaneous beat of the heart or the last firing of a neuron in the brain. But John Paul II had already acknowledged as much by saying that it is impossible for us to know the precise moment when death occurs. What we want, said the Pope, is moral certainty that death has occurred based on certain physiological signs: neurological or cardiopulmonary.<sup>56</sup>

Shewmon rejects the need for a determination of death using either cardiopulmonary or neurological criteria. He writes, “For transplantation of noncardiopulmonary organs, it is utterly irrelevant ethically whether ‘brain death’ is ‘really death,’ or whether the [University of] Pittsburgh protocol’s 2 minutes of asystole [no heartbeat] is ‘really death,’ or whether any other physical event is ‘really death.’ Such questions are both malformulated and ethically beside the point.”<sup>57</sup> He continues, “Regarding organ transplantation, the important and truly meaningful question is not ‘When is the patient dead?’ but rather ‘When can organs X, Y, Z be removed without causing or hastening death or harming the patient in any way?’”<sup>58</sup> Shewmon argues that the heart can be removed even before there is certainty that autoresuscitation will not occur, because even if the heart did beat again on its own, the restoration of heartbeat would be transient, and decomposition and deterioration of the body would already have been set in motion; thus, removal of the heart would make no difference in terms of adherence to the medical ethics maxim “First, do no harm.”<sup>59</sup> What he is saying, in other words, is that you cannot really harm a patient who is deep into the process of dying, even though the patient is not yet dead.

Shewmon does not seem perturbed about departing from magisterial guidance in moral matters surrounding organ donation, whether it is the necessity of adhering to the “dead donor rule” or allowing that neurological criteria can provide the moral certitude necessary to excise organs for transplantation. How does Shewmon deal with the clear teaching of Pope John Paul II in the 2000 address to the Transplantation Society? Speaking to the Catholic Medical Association the end of October 2010, Shewmon referred to the address as a “bombshell.”<sup>60</sup> It is a little difficult to understand why it would have been a bombshell, since it followed on clear and consistent teaching from the Pontifical Academy of Sciences on two occasions as well as the positions articulated by the Pontifical Academy for Life and the Pontifical Council for Health Care Workers.

Shewmon asked how the Pope could have come up with the formulation he did - namely, that death can be ascertained with “the complete and irreversible cessation of all brain activity (in the

cerebrum, cerebellum, and the brain stem)" - and why. Shewmon did not attempt to answer those questions, but went on to say what "someone close to the Holy Father" shared with him: "At the time [of the Pope's address] Cardinal Ratzinger was out of town on vacation, and had he been in town he would not have had the Pope read the address as presented."<sup>61</sup>

This assertion suggests that a major, formal address of the Supreme Pontiff would not have received some review before it was given. The notion is that if there had been a major flaw in the Pope's allocution, Cardinal Ratzinger would have intervened only if he happened to be in the town where the allocution was going to be given. This lacks all credibility. But much more seriously, it places the magisterial authority of a curial cardinal, no matter how bright, above that of the Pope. This simply does not conform to Catholic teaching.

In the same presentation at the CMA conference, Shewmon mentioned the 2008 conference on organ donation organized by the Pontifical Academy for Life.<sup>62</sup> He faulted the Academy for neglecting to have papers presented on the controversy surrounding the legitimacy of the neurological criteria for determining death. But the Academy surely did not have such papers presented because the issue had already been thoroughly addressed.

In his CMA presentation, Shewmon did mention that Pope Benedict XVI addressed the 2008 conference and told participants that organs could be excised from the donor "only in the case of his or her true death."<sup>63</sup> Pope Benedict did not mention neurological criteria, which Shewmon suggested was an indication that the Pope disagreed with John Paul II. As Shewmon put it, Pope Benedict's "silence on neurological criteria was deafening." Of course, there was no need for silence. The Pope could have addressed the issue if he thought that advances in scientific thought and evidence made a change in Church teaching necessary. But in 2008, the Pontifical Academy of Sciences reiterated the legitimacy of neurological criteria for determining death,<sup>64</sup> and there was no hint of papal disapproval. Indeed, before he became Pope, Cardinal Ratzinger generously carried an organ donation card indicating his own willingness to be a donor.

Shewmon's repudiation of the dead donor rule is a radical departure from a fundamental moral standard accepted in organ transplantation by the medical and legal professions and by the teaching authority of the Church. Shewmon's positions illustrate vividly how dangerous it is to depart from the trustworthy moral guidance offered by the magisterium of the Church. According to the magisterium of the Church, moral certitude in the determination of death can be achieved using either cardiopulmonary or neurological criteria. This means that Catholics may in good conscience offer the gift of life through the donation of their organs after death as determined on the basis of neurological or cardiopulmonary criteria, and Catholics may in good conscience receive such organs. This does not mean that the teaching is irreformable; the teaching may be modified on the basis of future scientific discoveries. It does mean that, at this point in time, the teaching can be followed with a clear conscience.

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## ENDNOTES

<sup>1</sup> John Paul II, *Evangelium vitae* (March 25, 1995), n. 20, emphasis added.

<sup>2</sup> Ibid., n. 11, emphasis added.

<sup>3</sup> Ibid., n. 2.

<sup>4</sup> Roberto de Mattei, ed., *Finis Vitae: Is Brain Death True Death?* (Oregon, OH: Life Guardian Foundation, 2009), ix.

<sup>5</sup> *Evangelium vitae*, n. 86.

<sup>6</sup> John Paul II, Address to the First International Congress of the Society for Organ Sharing (June 20, 1991), n. 3.

<sup>7</sup> John Paul II, Address to the Eighteenth International Congress of the Transplantation Society (August 29, 2000), n. 3, reprinted in *National Catholic Bioethics Quarterly* 1.1 (Spring 2001): 89–92. This has become the key magisterial text for addressing questions of determination of death and transplantation.

<sup>8</sup> See “A Definition of Irreversible Coma: Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death,” *Journal of the American Medical Association* 205.6 (August 5, 1968): 337–340.

<sup>9</sup> National Conference of Commissioners on Uniform State Laws, *Uniform Determination of Death Act*, approved 1980, available at <http://www.law.upenn.edu/bll/archives/ulc/fnact99/1980s/udda80.htm>.

<sup>10</sup> See Eelco F. M. Wijdicks, “The Diagnosis of Brain Death,” *New England Journal of Medicine* 344.16 (April 19, 2001): 1215–1221; and Wijdicks et al., “Evidence-Based Guideline Update: Determining Brain Death in Adults - Report of the Quality Standards Subcommittee of the American Academy of Neurology,” *Neurology* 74.23 (June 8, 2010): 1911–1918, <http://www.neurology.org/content/74/23/1911.full>.

<sup>11</sup> Wijdicks, “Diagnosis of Brain Death,” 1215.

<sup>12</sup> Ibid.

<sup>13</sup> Natalie Morales, “‘Dead’ Man Recovering after ATV Accident,” *Dateline* transcript, NBC News, March 23, 2008, [http://www.msnbc.msn.com/id/23768436/ns/dateline\\_nbc-newsmakers/t/dead-man-recovering-after-atv-accident/](http://www.msnbc.msn.com/id/23768436/ns/dateline_nbc-newsmakers/t/dead-man-recovering-after-atv-accident/).

<sup>14</sup> Richard Willing, *USA Today*, August 3, 2005, [http://www.usatoday.com/news/nation/2005-08-03-torres-obit\\_x.htm](http://www.usatoday.com/news/nation/2005-08-03-torres-obit_x.htm).

<sup>15</sup> Fabian Wendelin Bruskewitz et al., “Are Organ Transplants Ever Morally Licit?” *Catholic World Report*, March 2001, 50–56.

16 Paul A. Byrne et al., “‘Brain Death’ Is *NOT* Death!” *Catholic World Report*, March 2005, 54–58.

17 John Paul II, Address to the Transplantation Society, n. 4, original emphasis.

18 *Ibid.*

19 *Ibid.*, n. 5, emphasis added.

20 “The Artificial Prolongation of Life: Report of a Pontifical Academy of Sciences Study Group,” *Origins* 15.25 (December 5, 1985): 415.

21 John Paul II, Address to the Working Group on the Determination of Brain Death and Its Relationship to Human Death (December 14, 1989), n. 3, in *Papal Addresses to the Pontifical Academy of Sciences 1917–2002 and to the Pontifical Academy of Social Sciences 1994–2002*, *Scripta Varia* 110 (Vatican City: PAS, 2003), 313.

22 R. J. White, H. Angstwurm, and I. Carrasco de Paula, ed., *Working Group on the Determination of Brain Death and Its Relationship to Human Death, 10–14 December 1989*, *Scripta Varia* 83 (Vatican City: PAS, 1992).

23 A. Battro et al., “Why the Concept of Brain Death Is Valid as a Definition of Death: Statement by Neurologists and Others,” excerpt from *Signs of Death: Proceedings of the Working Group of 11–12 September 2006*, *Scripta Varia* 110 (Vatican City: PAS, 2007).

24 U.S. Catholic Conference Advisory Committee on Ethical and Religious Directives for Catholic Health Facilities, “Guidelines for the Determination of Brain Death,” *Health Progress* 56.10 (December 1975): 26.

25 Pontifical Council for Pastoral Assistance to Health Care Workers, *Charter for Health Care Workers* (Boston: Pauline Books, 1995), n. 87.

26 *Ibid.*, preface.

27 In “A Dangerous Argument against Organ Donation,” Dr. Steinman discusses the case and reprints the letter from Bishop Sgreccia in its entirety. *National Catholic Bioethics Quarterly* 2.3 (Autumn 2003): 473–478.

28 *Ibid.*, 474–475.

29 Pius XII, “The Prolongation of Life,” Address to an International Congress of Anesthesiologists (November 24, 1957), reprinted in *National Catholic Bioethics Quarterly* 9.2 (Summer 2009): 332.

30 *Ibid.*, 330.

31 Pontifical Council “Cor Unum,” *Questions of Ethics regarding the Fatally Ill and Dying*

(June 27, 1981), nn. 5.3 and 5.2.

32 See President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, *Defining Death: A Report on the Medical, Legal and Ethical Issues in the Determination of Death* (Washington, DC: Government Printing Office, 1981).

33 Eelco F. M. Wijdicks, letter, *New England Journal of Medicine* 345.8 (August 23, 2001): 617, <http://www.nejm.org/doi/full/10.1056/NEJM200108233450813>.

34 Quality Standards Subcommittee of the American Academy of Neurology, "Practice Parameters for Determining Brain Death in Adults," *Neurology* 45 (1995): 1012–1014. See also Wijdicks et al., "Evidence- Based Guideline Update."

35 Bruskewitz et al., "Are Organ Transplants *Ever* Morally Licit?" 55.

36 John Paul II, Address to Transplantation Society, n. 5.

37 Ibid., emphasis added.

38 Wijdicks, "Diagnosis of Brain Death."

39 Wijdicks et al., "Evidence-Based Guideline Update."

40 Aristotle, *Rhetoric*, 1357b23–27.

41 Aristotle, *Nicomachean Ethics*, bk. I, ch. 3, 1094b24. See also Thomas Aquinas, *Summa contra gentiles*, bk. I, ch. 3.

42 "Prudentia dicitur genitrix virtutum." Josef Pieper, *The Four Cardinal Virtues* (South Bend: University of Notre Dame Press, 1966), 3 note 1, quoting bk. 3, d. 33, q. 2, art. 5, of the commentary.

43 Pieper, *Four Cardinal Virtues*, 3.

44 *Summa theologiae* II-II, q. 47, a. 9 ad 2.

45 John Paul II, Address to Transplantation Society, n. 5, emphasis added.

46 Byrne said, "True death . . . is the body without life, when disintegration sets in." Carrie Gress, "Debate over Brain Death Continues," *Zenit*, March 2, 2008, <http://www.zenit.org/article-21947?l=english>.

47 See "Transplants from Murder Victims, Diverging Definitions of 'Brain Death,'" *Zenit*, February 2, 2011, <http://www.zenit.org/article-31647?l=english>; and Christian Brugger, "Organ Donation Euthanasia: A Dangerous Proposal," June 2011, Culture of Life Foundation, <http://culture-of-life.org/content/view/641/1/>.

48 See Brugger's reply to the second question in "Transplants from Murder Victims."

49 Ibid.

50 Ibid.

51 John Paul II, Address to Transplantation Society, n. 5, emphasis added.

52 Brugger in “Transplants from Murder Victims.”

53 D. Alan Shewmon, “The Dead Donor Rule: Lessons from Linguistics,” *Kennedy Institute of Ethics Journal* 14.3 (September 2004): 277–300.

54 D. Alan Shewmon, “Brain–Body Disconnection: Implications for the Theoretical Basis of Brain Death,” in *Finis Vitae*, ed. de Mattei, 251.

55 Shewmon, “Dead Donor Rule,” 292.

56 John Paul II, Address to Transplantation Society, nn. 4 and 5.

57 Shewmon, “Dead Donor Rule,” 293–294.

58 *Ibid.*, 297.

59 *Ibid.*, 294–295.

60 D. Alan Shewmon, “Defining Death,” oral presentation at the Catholic Medical Association’s Seventy-ninth Annual Educational Conference in Seattle, Washington, October 29, 2010; available on DVD from the CMA at <https://app.etapestry.com/cart/CatholicMedicalAssociation/default/item.php?ref=967.0.211924129>.

61 *Ibid.*

62 The 2008 PAL conference, titled “A Gift for Life: Considerations on Organ Donation,” was held November 6–8, 2008, in Rome.

63 Benedict XVI, Address at an International Congress Organized by the Pontifical Academy for Life (November 7, 2008).

64 Pontifical Academy of Sciences, “Why the Concept of Brain Death Is Valid.”