On first reading, John Paul II’s “Address to the Eighteenth International Congress on Transplants” (August 29, 2000) might lead one to think that the Catholic Church is saying something rather simple about the use of neurological criteria for the determination of death: the medical community accepts these criteria, and therefore so does the Church. The judgment of the Pope, on this reading, would appear to rest entirely upon the testimony of medical science. For the opponent of brain death criteria, the best response to the Pope’s address might appear equally obvious: show that the medical evidence does not, in fact, support the view that brain death is actual death (or more radically, say that there is in fact no medical consensus on this issue at all). Leveling criticism against the medical evidence has the added advantage of not making it appear that one is contradicting the Pope on a point of morality, but suggesting instead that he has not been properly informed about the facts.

John Paul’s August 2000 address did indeed give definitive approval to the use of neurological criteria for the determination of death. That approval was based upon the widespread scientific and medical consensus on the validity of these criteria. The Pope stated that criterion of brain death

I would like to thank James E. Reagan, Ph.D., an ethicist living in Enfield, New Hampshire, for reviewing an earlier draft of this paper and making a number of valuable and critical comments; and Patrick D. Forsythe, M.D., an intern at The National Catholic Bioethics Center, for his advice on the medical aspects of this paper.

1That consensus is apparent in, for example, Eelco F.M. Wijdicks, M.D., “The Diagnosis of Brain Death,” New England Journal of Medicine 344.15 (April 19, 2001), 1215–1221. This is an excellent description of the medical procedure for determining whether there has been irreversible loss of brain function.
consists in establishing, according to clearly determined parameters commonly held by the international scientific community, the complete and irreversible cessation of all brain activity (in the cerebrum, cerebellum, and brain stem). This is considered the sign that the individual organism has lost its integrative capacity.

Because “the Church does not make technical decisions about such matters,” it can only evaluate what is “offered by medical science” in relation to “the Christian understanding of the unity of the person.” In view of this evaluation, John Paul concludes that the use of this standard for determining death, 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.”

Every doubt about the matter, from the standpoint of medical-moral practice, has been set aside.

Nonetheless, some claim that the Pope still expresses a degree of uncertainty. Why, for example, does he say that use of neurological criteria does not seem to violate the principles of Christian anthropology? This is a troubling word. And why does he indicate that the use of these criteria confers only a “degree of assurance” that enables the Catholic to act with “moral certainty”? One wonders whether an even greater degree of certainty (say, “absolute” certainty) would be in order, given that we are dealing with a question of life and death and the possibility of killing of an innocent human being. This concern, in conjunction with what appears to be a complete reliance of the Holy Father upon the findings of medical science, reinforces the view of some that John Paul is keeping his options open. If the medical evidence should prove to be unfounded, as many of the critics say that it is, then a reversal of the Catholic Church’s position on brain death may yet be forthcoming.

This article will show that such beliefs are unfounded. I will argue that the language of hesitancy found in the Pope’s address (which is quite minimal, in any case) does not result from any uncertainty about the medical facts. The Vatican was fully apprised of the most recent findings in the field of medicine on the topic of brain death before the Pope rendered this decision and has been engaged in discussion of


3“Address to the International Congress of Transplants,” National Catholic Bioethics Quarterly 1.1 (Spring 2001), n. 5.

4“Donation of organs after death is a noble and meritorious act and is to be encouraged as a manifestation of generous solidarity. It is not morally acceptable if the donor or those who legitimately speak for him have not given their explicit consent. It is furthermore 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.” Catechism of the Catholic Church, n. 2296.
the matter for at least thirty years. That long period of deliberation is itself strong testimony to the great care that has been devoted to the brain death question. Moreover, as we shall see, the small but vocal minority within the Catholic community who rejects neurological criteria has had ample opportunity to present its case to the Vatican.

Although I will not address the issue in any detail here, neither is there any ground for complaint about the use of the term “moral certainty,” which is all that has ever been required by Catholic moral theology for an agent to set about a particular course of action. To require a higher standard would result in the loss of many goods and the suffering of many unnecessary evils. Indeed, one of the chief errors of modern ethics has been the claim, made by René Descartes and others, that morality could be raised to the standard of the mathematical sciences. The impossibility of such a standard in a realm where free will and the variability of human experience play such a prominent role helps explain the rise of skepticism, relativism, and nihilism in our age. Setting an impossible standard results in despair over any standard at all. As Aristotle said many centuries ago, it is a mark of intelligence not to demand more precision from a subject matter than it is capable of bearing.5

The chief focus of this article will be to show that the position of the Church on neurological criteria derives not only from the degree of certitude that is available through the science of medicine, but also from fact that brain death criteria confirm certain long-held philosophical views about the nature of death and the human soul within Catholicism. The harmony of the findings of medical science with this traditional philosophical outlook, in my opinion, is the true basis of the Church’s judgment. When John Paul spoke in his Address to the International Congress on Transplants about how the use of neurological criteria does not “seem” to conflict with a sound anthropology, he did not signal any hesitancy about the medical facts, but recognized that the whole field of transplant surgery has raised new philosophical questions about the nature of life. These questions provide a new challenge to Catholic philosophers who wish to extend traditional teachings on the human soul into areas previously unexplored.

A Long and Careful Deliberation

The decision of the Pope to issue his 2000 statement on neurological criteria was not a sudden one, but had been preceded by a very long period of consideration. This review occurred at various levels within the Vatican and took place over many years. In the years prior to the Pope’s 2000 address to transplant specialists, the Vatican held a series of high-level meetings in Rome to which distinguished physicians, scientists, philosophers, and theologians were invited.6 Designated by the Italian term Morte cerebrale, these private gatherings were conducted under the aus-

5“Our discussion will be adequate if it has as much clearness as the subject-matter admits of, for precision is not to be sought for alike in all discussions .... for it is the mark of an educated man to look for precision in each class of things just so far as the nature of the subject admits.” Nicomachean Ethics, Bk. I, ch. 3 11–13; 24–26.

6These meetings occurred on June 23, 1997, November 10, 1997, and March 30, 1998. Among the participants were James L. Bernat, M.D., Professor of Neurology,
pices of the Pontifical Academy of Life and headed by Bishop Elio Sgreccia, then the Academy’s Vice President. The opponents of brain death were free to make their case, and did so, in the strongest terms available to them. A review of the unpublished transcripts of those meetings, and especially of the discussions that took place among key theological advisors to the Pope, shows that there was already in place a high degree of skepticism toward the claims of the brain death opponents. That skepticism had been growing over the course of the preceding decades.

As early as June 27, 1981, in a report of the Pontifical Council on Health Affairs “Cor Unum,” the Church had noted a concern among some Catholic physicians about the validity of brain death criteria. The Council “Cor Unum” reported on an “increased reticence in the matter of giving permission for the removal of organs for transplant” and indicated that certain “authoritative medical groups” had asked the Holy See “to make an official declaration on the validity or nonvalidity of taking cerebral death, duly established, as the ‘moment of death’ of the human being.” In a response that was to mirror later statements, the Council pointed out that it was not in a position to make such a ruling because determining what constitutes the moment of death was not a theological question, but one that fell to medical science. “The very most the Church could do,” replied the Council, “would be to reiterate the conditions that would make it legitimate to accept the better judgment of those whose specific competence has been entrusted the determination of the moment of death.” The Council, however, did note “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.” Various and somewhat different criteria had been drawn up to determine when this state obtains, “but there is sufficient correspondence among them to make up a list of symptoms of death whose accuracy can be taken as very highly probable.”

Four years later, in 1985, the Pontifical Academy of the Sciences met to discuss the same question. It would meet a second time in 1989. On both occasions, distinguished physicians, scientists, philosophers, and theologians were assembled and argued pro and con. Pope John Paul II personally addressed the Academy at Dartmouth Medical School; Carla Giuliana Bolis, Neuroscience Unit, World Health Organization; Msgr. Carlo Caffarra, Ferrara, Italy; Ignacio Carrasco de Paula, Director, Centro Accademico Santa Croce; P. Bonifacio Honings, Professor Emeritus of Moral Theology at the Lateran Pontifical University; Manfred Lütz, Pontifical Council for the Laity; Pierre Magistretti, M.D., President, Swiss Society of Neuroscience; Corrado Manni, M.D., Director of Anesthesia and Intensive Care, Catholic University of the Sacred Heart, Rome; Guy McKhann, M.D., Director, Zanvyl Krieger Mind/Brain Institute, Baltimore; Adriano Pessina, Professor of Bioethics, Department of the Sciences of Formation, Literature, and Philosophy, Catholic University of Milan; Josef Seifert, International Academy of Philosophy, Liechtenstein; and D. Alan Shewmon, M.D., Pediatric Neurology, University of Los Angeles.


Among those giving presentations at the second meeting were H. Angstrum, Neurologist, Munich, Germany; I. Carrasco de Paula, Director, Centro Academico Santo Croce;
the start of the second meeting and succinctly framed the question. Let us suppose, he said, there are two patients who share a hospital room, one in desperate need of an organ transplant and the other at the point of death with a healthy organ that could help the first. Uncertainty about the exact moment of death might lead to the unjust termination of an innocent human life.

More precisely, there is the real possibility that the life whose continuation is made unsustainable by the removal of a vital organ may be that of a living person, whereas the respect due to human life absolutely prohibits the direct and positive sacrifice of that life, even though it may be for the benefit of another human being who might be felt to be entitled to preference.9

In view of this case, the question that the Pope laid before the conference was, “What constitutes the death of the human person?” If the true criterion could be given, then the dilemma of the two patients could be resolved.

At the conclusion of both the 1985 and the 1989 meetings, the scientific members of the Pontifical Academy of the Sciences issued a statement affirming the legitimacy of brain death criteria. Death can be declared, the Academy wrote, when “spontaneous cardiac and respiratory functions have irreversibly ceased, which rapidly leads to a total loss of brain functions” or 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.”10 Moreover, these were not two separate means of determining death, but the second “is the true medical criterion of death.”11 This is because loss of heartbeat can sometimes be reversed by cardiopulmonary resuscitation, but when it is not reversed, brain death quickly ensues. In the view of the Academy, therefore, “a person is dead when there has been total and irreversible loss of all capacity for integrating and coordinating physical and mental functions of the body as a unit.”12 Such patients have lost, to use the later words of

L. Ciccone, Professor of Moral Theology, Collegio Alberoni, D.H. Ingvar, Professor of Clinical Neurophysiology, Lund, Sweden; J. M. McDermott, S.J., Associate Professor of Dogmatic Theology, Gregorian University, Rome; J.-M. Maldamè, Professor of Theology, Toulouse Cedex, France; D. Ols, Professor of Dogmatic Theology, University of St. Thomas, Rome; D. Ottoson, Professor of Physiology, Werner-Gren Center Foundation for Scientific Research, Stockholm, Sweden; J. Seifert, International Academy of Philosophy, Lichtenstein; D.A. Shewmon, M.D., Pediatric Neurology, University of Los Angeles; and R.J. White, M.D., Professor of Neurosurgery, Case Western Reserve, Cleveland, Ohio.


10White, The Determination of Brain Death, 81.

11Ibid.

12Ibid. Compare this with the 1985 statement of the Pontifical Academy of the Sciences: “a person is dead when he has irreversibly lost all ability to integrate and coordinate the physical and mental functions of the body,” ibid., 208.
John Paul II, their “integrative capacity.” The use of artificial respiration, in the case of one who is brain dead, merely allows the bodily organs of a dead person to survive until they can be retrieved for transplantation.

After yet another four-year period, the 1993 *Charter for Health Care Workers*, was issued by the Pontifical Council for Pastoral Assistance. It also affirmed the validity of brain death criteria:

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 brain 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 transplant.\(^{13}\)

The Council took note of the previous deliberations of the Pontifical Academy of the Sciences and described its conclusions as “an authoritative contribution.” The Academy’s description of death as the irreversible cessation of all brain function, the Council said, may be accepted by Catholics as a sound medical judgment. “Faith and morals accept these findings of science.”\(^{14}\)

The Pope’s “Address to the International Congress on Transplant,” therefore, should not have come as a surprise to anyone who had been following the Vatican’s previous deliberations. Every opportunity had been given to the opponents of brain death to make their case. The issue had been thoroughly vetted in a series of high-level meetings in Rome. The idea that the Holy Father did not give this matter sufficient attention, or that he was unaware of all the medical facts, or that he was misled by well-meaning but inept advisors are all absurd. As the rehearsal of facts above has shown, the brain death decision gives every evidence of having been very carefully decided. A great many people reviewed the relevant scientific evidence, debated the meaning of those facts in light of the Church’s theological, philosophical, and moral traditions, and offered their expert counsel to the Holy Father.

**The Philosophical Problem of Brain Death**

Nonetheless, the opponents of brain death do not appear to have given up even one inch of ground. They continue to look, in particular, to medical science in an effort to undermine the papal position. The most articulate opponent of neurological criteria is D. Alan Shewmon, M.D. His most recent article, “The Brain and Somatic Integration,” lays out the standard argument: the bodies of those who are declared brain dead continue to display a number of biological functions that are ordinarily associated only with the living.\(^{15}\) Among them are various types of homeostasis, cleansing the body of cellular wastes, maintenance of energy balance and body temperature, wound-healing, infection fighting, stress responses, and even the ability to gestate a fetus. How can we say that patients who display these vital functions are

\(^{13}\) *Charter for Health Care Workers*, n. 87.

\(^{14}\) Ibid., n. 129.

dead? A second way to formulate the question is: how can we explain the continued presence of life in the body of the brain-dead person?

Like most opponents of brain death, Dr. Shewmon does not believe that there is widespread agreement within the medical community on the validity of neurological criteria, though he states, somewhat oddly, that much of the disagreement is only “subliminally” expressed. Shewmon’s main objection is a purported lack of correspondence between the data of brain death and its “conceptual validity.” In other words, the difficulty would appear to be more of a philosophical than an empirical one. Specifically, Shewmon does not think that the standard theory, based on the idea of “integrative unity,” can be confirmed by a careful review of the medical facts. He indicates seven major features that he believes must belong to any operational definition of “integrative unity” and then shows how the body continues to display a variety of these functions independently of a functioning brain.

Although Shewmon presents his inquiry as an analysis of the empirical data, the manner in which he sets up his operational definition already contains the refutation of brain death criteria. Thus his review of the requirements of any operational definition of “integrative unity” leads to the criterion that a composite organism exists if it possesses at least one emergent holistic-level property. “A property of a composite is defined as ‘emergent’ if it derives from the mutual interaction of the parts, and as ‘holistic’ if it is not predicable of any part or subset of parts but only of the entire composite.” Obviously, such a description applies to a broad range of organic functions, including those that are found in every cell of the body. Even more revealing, perhaps, is his rejection of the Catholic philosophical tradition on human


16Moreover, despite several decades of pedagogical effort on the part of official medicine, many health care professionals, including those involved in transplantation—to say nothing of legislators, reporters, and the lay public—remain unconvinced, at least subliminally, that BD is really death” (note omitted). Ibid., 459.

17“...conceptual difficulty must be at least as important as diagnostic accuracy.” Ibid., 459.

18Thus the reasoning of John Paul II, which asserts that total brain death is “considered the sign that the individual organism has lost its integrative unity,” would not be acceptable to Shewmon.

19“The Brain and Somatic Integration,” 459–467. He also argues that there are a variety of integrative functions that are not brain-mediated. Ibid., 467–471.

20Ibid., 460.

21Cells are not organisms any more than are the bodies of brain-dead patients, but they nonetheless display most of the emergent and holistic properties Shewmon lists above. For example, the cell self-regulates in order to survive external shocks to its system. “In fact, the cell is amazingly stable. Whenever it is perturbed, the cell reacts so as to restore its initial state. Mutations of many kinds can eliminate particular reaction pathways, and yet—provided that certain minimum requirements are met—the cell survives. It does so because an elaborate network of control mechanisms regulates and coordinates the rates of its reac-
ensoulment. In a footnote, Shewmon faults the traditional Aristotelian-Thomistic anthropology in which, as he says, “the brain plays the role of the soul.” That is not quite accurate, as we will see below. He also states that under this view “‘brain’ and ‘body’ are conceived as falsely disjoined and set over against one another, as though the ‘brain’ referred to an entity in its own right and not part of the body, and as though the ‘body’ referred to the epidermis and everything contained within it except the brain.”

These remarks show that Shewmon’s objection is primarily philosophical in character. Empirical data, of course, could show that brain death criteria were conceptually incoherent if the right set of facts arose. In particular, if there ever were a patient who recovered from a properly diagnosed state of brain death, that fact alone would completely disprove the validity of neurological criteria. That such a case has never materialized is telling. All that remains for the brain death opponent, therefore, is a philosophical disagreement. Shewmon recognizes—though perhaps only subliminally—that the true difficulty presented by brain death is a conceptual one, but he does not see why a proper philosophical description of death from within the Catholic tradition enables one to act with moral certainty in the case of neurological criteria. Most opponents of brain death, I would contend, take the same view. They present themselves as arguing about medical facts, but are actually arguing about how to interpret those facts in the light of some philosophical system. If this is true, then the way to finally resolve the debate—at least with the Catholics opponents of brain death—is to turn to the philosophical tradition that underlies the Church’s teaching on the nature of life, death, and human ensoulment. If clarity can be achieved on this level, then those who are alarmed by the Church’s unequivocal embrace of this standard of death will perhaps find calm.

**Determining the Moment of Death**

Though it would appropriate to begin directly with a discussion of the philosophical background to John Paul’s decision on brain death, it is preferable to turn...
first to earlier papal teaching where that philosophy is in play. One of the most important documents concerning the Catholic philosophical understanding of death is Pius XII’s “Address to an International Congress of Anesthesiologists” (November 24, 1957). This relatively brief statement discusses a variety of moral issues connected with “paralysis of breathing,” including a description of a medical state that would later be characterized as brain death. It is worth emphasizing that the first papal discussion of brain death, and general acceptance of the medical description of that state, was issued a full ten years before the 1968 “Special Communication” published by the “Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death.” How was this possible? It was possible because the Catholic Church, thanks to its long philosophical tradition, already had in place a Christian anthropology that understood death to be connected in some essential way to the loss of brain function.

Pius XII’s address considered three questions posed by Dr. Bruno Haid, chief of the anesthesia section of the surgery clinic of University of Innsbruck. One of them concerned a patient who had suffered “paralysis of the central respiratory apparatus caused by serious trauma of the brain.” Dr. Haid had noted that patients who have ceased breathing can sometimes be resuscitated by means of artificial respiration, but at other times it becomes clear that spontaneous breathing will never be restored, and there is no hope of further recovery. Pius XII summarized the case as follows: “only artificial respiration is keeping him alive. The question then arises if one must, or if one can, continue the resuscitation process despite the fact that the soul may have already left the body.” This led to the third of Dr. Haid’s questions:

Third, must a patient plunged into unconsciousness through central paralysis, but whose life—that is to say, blood circulation—is maintained through artificial respiration, and in whom there is no improvement after several days, be considered *de facto* dead or even *de jure* dead? Must one not wait for blood circulation to stop, in spite of the artificial respiration, before considering him dead? Although the technology necessary to determine the absence of all brain function was not available in the 1950s, it is clear that this patient was no longer able to breathe on his own, but that oxygenation of the blood continued only because of mechanical ventilation. What was the responsible physician to do in such cases?

The response of Pius XII contains three points that would later be reiterated by John Paul II in his various statements on brain death and that contain, in essence, the seed of the solution to the entire question. The first is that the determination of death does not fall under the expertise of the Church, but belongs to the physician who is trained in this field. The physician encounters death as a part of his daily work and is most versed in determining its signs. The second is that the terms used

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27 Address to the Anesthesiologists,” in Smith, *Conserving Human Life*, 314.
to describe death in Catholic teaching do not always have a precise counterparts in the language of medical science and, therefore, 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. Here one can accept the usual concept of complete and final separation of the soul from the body; but in practice one must take into account the lack of precision of the terms “body” and “separation.”

The third point is that in “case[s] of insoluble doubt” one must presume that life remains, but that “considerations of a general nature allow us to believe that human life continues for as long as its vital functions—as distinguished from the simple life of the organs—manifest themselves spontaneously or even with the help of artificial processes.” He thus distinguished the life of the person from the life of the organs and tissues that comprise the body.

These three comments, taken together, contain a solution to the brain death question that is attentive both to the medical facts and to what Pius XII called “the principles of the philosophy of nature” that have long informed the Catholic tradition on human ensoulment. That the Church would turn to the physician to determine when the moment of death has occurred is not surprising. For the most part, death is not difficult to determine, but some of the signs are very subtle. Given the consequences of error, the determination is best left to the experts. More intriguing is Pius XII’s recognition that the separation of the soul from the body, as understood by philosophical theology, does not have exact counterparts in the language of medicine. The fact of death is known by the physician through certain external signs, but it is the interior event of the separation of the soul from the body that is of interest to the Church. Death must be “complete and final”; hence, it must occur at a definite moment in time. We are never “half-dead,” despite the colloquial expression, but always either dead or alive, that is, always either joined or separated from the body. The decay of the body is a process that occurs over a period of time and that can be witnessed by any observer, but only the subject who dies can directly experience the event of death. That interior experience is in principle unobservable.

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27Later he reiterates this point by saying that the fact of death in particular cases “cannot be deduced from any religious and moral principle and, under this aspect, does not fall within the competence of the Church. Until an answer can be given, the question must remain open.” Ibid., 318.

28Ibid.

29Failure to admit that death is an event leads to insuperable philosophical difficulties, as some physicians have recognized. “We believe that a definition of death stipulating that it occurs at a more or less definite time is preferable to a definition that makes death a process. If we regard death as a process, then either the process starts when the person is still living, which confuses the ‘process of death’ with the process of dying, for we all regard someone who is dying as not yet dead, or the ‘process of death’ starts when the person is no longer alive, which confuses death with the process of disintegration. Death should be viewed not as a process but as an event that separates the process of dying from the process of disintegration.” James L. Bernat, et al., “On the Definition and Criterion of Death,” Annals of Internal Medicine 94 (1981), 389–394, at 389.
Equally important was Pius XII’s remark that the life of the person must be distinguished from “the simple life of the organs.” This has proven to be the most prescient comment because it anticipated a phenomenon that would become much more evident with the progress of medical science: we can distinguish the death of the individual person (an unobservable event) from the death of the various organs and cells in the body (an observable process). This is a crucial distinction. It is only when we differentiate between the death of the person as a separation of the soul from the body—from the continued life of the cells and organs in the brain-dead body—that we can arrive at the determination of death by neurological criteria. The three-part response of Pius XII to Dr. Haid, if examined closely, already indicates Vatican approval of the view that the death of the person occur even though various vital functions remain in the organs of the body.

Western Teaching on the Soul

In order to appreciate the importance of this point, it is helpful to recall the traditional Western definition of the soul. The standard was set by Aristotle: “The soul must be a substance in the sense of the form of a natural body having life potentially in it.” The phrase “having life potentially in it” is not redundant, but refers to the necessity that the body be of the specific type that is capable of supporting life. Not all matter can live, only matter that possesses an organic structure. One consequence of this view is that plants and animals also have souls. The souls of plants are the least sophisticated, functioning with nutritive and generative powers only; those of animals possess the additional powers of locomotion and sensation; and those of human beings have all these abilities combined with the distinctive capacity for free will and abstract thought. These latter abilities mark our uniqueness as a species. We are, in Aristotle’s definition, “rational animals.” The idea that the human soul confers unity upon the body—the central pillar of the view that the living brain integrates the body—also descends from Aristotle. As the formal principle of life, the soul confers unity on the body (the material principle) by enlivening it. At death, the soul departs, the organism loses its unity, and the body decomposes. For Aristotle we find evidence for the existence of the soul in the vital movements of any living thing, and similarly, evidence for the absence of the soul in the loss of those same vital activities.

The advantage of this realistic view of the soul is that it conforms to observation and is compatible with the sciences. To speak of the soul is not to refer to some mysterious and ethereal entity, but of life in the things that are alive. The soul is a spiritual entity, but that does not mean that it gives no observable evidence of its existence. In fact, under the Aristotelian conception, we see the soul indirectly in the vital motions of organisms, for the soul exists in the world as the embodied life of

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30 Aristotle, *De anima*, Bk. II, ch. 2.

31 What is distinctive about human life is not the vital motions that it shares in common with the animals, but the evidence we give of free will and intelligence. We build cities, enjoy art, publish newspapers, engage in political discourse, and make progress in the sciences. These are cognitive activities that are not found among any other type of living creature. See Aristotle’s *De anima*, Bk. III., chs. 3–8.
plants, animals, and human beings. Its departure from the body is likewise indirectly observable through the various external signs of death. The idea of the soul as a kind of entity that exists only in an unobservable world, hidden from our perception, is completely foreign to the Aristotelian outlook.

The conjunction of these two views: 1) that reason is what distinguishes us from the rest of the animal kingdom; and 2) that the soul is the enlivening form of the body, brings us to a doctrinal teaching of the Catholic Church: that the intellective or rational soul is the source of integrative unity in the human body. The fact that this Aristotelian thesis is a doctrine of the Church shows how deeply indebted Catholic thought is to the man whom Dante called “the master of those who know.” Thomas Aquinas, the most distinguished Doctor of the Church, vigorously defended the view that the power of intellect specifies our human nature:

We must assert that the intellect, which is the principle of intellectual operation, is the form of the body.... For the soul is the primary principle of our nourishment, sensation, and local movement; and likewise of our understanding. Therefore this principle by which we primarily understand, whether it be called the intellect or the intellective soul, is the form of the body. This is the demonstration used by Aristotle (De anima Bk. II, ch.2).

Aquinas’s defense of this conclusion is remarkably simple. He says that we immediately experience our own thinking as the unifying source of experience, and thus it is self-evident that our own existence is immediately connected with our interior experience of thought. All other aspects of our experience presuppose the unity of our being through the primacy of thought. The fact that I am in pain, for example, is part of my unified experience because I am consciously aware of the pain that exists in my body.

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32The Council of Vienne (1311–1312) condemned as heretical the view “that the rational or intellectual soul is not of itself and essentially the form of the body.” See Ludwig Ott, Fundamentals of Catholic Dogma (Rockford, IL: Tan Books and Publishers, Inc.), 97. Cf. Catechism of the Catholic Church (Washington, D.C.: United States Catholic Conference—Libreria Editrice Vaticana, 1994), n. 365: “The unity of soul and body is so profound that one has to consider the soul to be the ‘form’ of the body: i.e., it is because of the spiritual soul that the body made of matter becomes a living, human body; spirit and matter, in man, are not two natures united, but rather their union forms a single nature.”


34Summa theologiae I. Q. 76.1.

35There remains, therefore, no other explanation than that given by Aristotle—namely, that this particular man understands because the intellectual principle is his form. Thus from the very operations of the intellect it is made clear that the intellectual principle is united to the body as its form.” Ibid. We should note that Aquinas argues, again following Aristotle, that intellectual cognition cannot occur unless we are first supplied with data from the senses. Hence, we are united to the body through the soul, but we could not exercise our intellectual powers without a body.
Given this philosophical tradition, it is not difficult to see why John Paul II, on the counsel of his many advisors, would have come to the conclusion that those who suffer a complete loss of brain function are dead. Medical science tells us that the brain is the seat of cognitive life. If the human being is a substantial union of intellective soul and physical body, which union takes place through the organ of intellectual cognition, then it is logical to conclude that when the brain is dead the soul has departed. The outward signs of death manifested in the body of a brain-dead person provide the medical evidence needed to conclude that this interior event, known in its immediacy only by the subject who dies, has indeed taken place. As John Paul II has said, the correspondence between the declaration of death by neurological criteria and the Church’s teaching on the intellective nature of the human soul provides those who would retrieve organs from brain-dead bodies with the necessary “moral certainty” to ensure that they act in conformity with the objective moral law. Thus the Church’s moral certainty rests not only upon the consensus on brain death within the medical community, but also upon the confidence that the Church has in its own metaphysical tradition.

**Answer to the Most Critical Question**

Whatever uncertainty remains in the area of brain death criteria, I would submit, does not result from remaining medical concerns expressed by the opponents of neurological criteria, but from an aspect of life that has become more persistently evident in the past half century. Pius XII took note of this phenomenon when he distinguished the life of the human being from “the simple life of the organs” in his address to the anesthesiologists: “considerations of a general nature allow us to believe that human life continues for as long as its vital functions—distinguished from the simple life of the organs—manifest themselves spontaneously or even with the help of artificial processes.” Although the difference between the death of the person and the decay of the body had long been obvious, it is only in our time that the difference between the life of the person and the life of the body has become apparent. The difference is most dramatically exposed in the body of the brain-dead patient. Even though the soul of the brain-dead person has departed, various organs of the body continue to function if oxygenation of the blood is maintained by mechanical ventilation. Brain death, however, is not the only venue in which this new phenomenon arises.

The novelty of the situation can be indicated by reflecting on some of the facts connected with organ donation. Let us suppose a living donor agrees to allow a kidney to be removed from his body. Given the traditional understanding of the soul, we can ask a difficult question about the source of life in that extracted organ. The organ is alive—there can be no doubt about that—otherwise it would not be suitable for transplantation. But is the life of that organ caused by the soul of the individual from whom it is taken? If we answer yes, then we seem to be saying that the human soul is divisible into parts, for the organ that has been removed no longer has any physical connection to the body of the one who agreed to have it removed. The fact that the organ cannot survive for very long might lead one to think that it possesses

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36See note 27 above.
only a residual sort of life. Disconnected from the donor, that life gradually fades. Under this view, the presence of life in the organ would be like the presence of heat in water taken from a stove. The source of the heat is the flame, so when the water is separated from that source, it gradually cools. The same might occur to the life of an extracted organ. Under this view, the origin of that life is the donor, but once it is removed from the body, it gradually fades because of a lack of any causal connection with the source of its life. This view has the advantage of minimizing the philosophical difficulty. The soul’s apparent divisibility is only temporary and does not represent true division.\textsuperscript{37}

The alternative response, however, may prove to be the one that is correct, for some donated tissues can live indefinitely. Skin cells, for example, can be donated, placed in a nutritive setting, and then grown in great sheets for later use as skin grafts. Some of the cells on those sheets—most of them, in fact—were never a part of the donor, but have grown in culture as descendant cells from the original sample. What is the source of life in these descendant cells? To say that it is a residue of the soul of the donor seems very odd. Can the soul give life to what exists independently of the donor? A similar case is that of immortalized stem cell lines. Some scientists dissect human embryos for the purpose of retrieving their embryonic stem cells so that they might establish cell lines for use in regenerative therapies. The embryos that are destroyed and the human formed by the union of sperm and ovum no longer exists, but the cells continue to live and multiply in culture. These cells, after they have undergone several divisions, are no longer the same cells that made up the body of the destroyed human being.\textsuperscript{38} How can this life continue without limit after the death of the person? The same phenomenon is observable in the case of adult stem cells which multiply without limit outside of the donor’s body.\textsuperscript{39} How this independent life is possible on the traditional understanding of the soul is very perplexing. If we say that the extracted cells and organs possess a life independent of the donor, how do they come to possess it? The obvious response is to say that they must already

\textsuperscript{37}Aristotle gave consideration to the segmental division of living things. “It is a fact of observation that plants and certain insects go on living when divided into segments; this means that each of the segments has a soul in it identical in species, though not numerically identical in the different segments, for both of the segments for a time possess the power of sensation and local movement. That this does not last is not surprising, for they no longer possess the organs necessary for self-maintenance.” Aristotle, \textit{De anima}, Bk. I, ch. 5 (411 b19–24).


\textsuperscript{39}The work of Catherine Verfaille of the University of Minnesota Medical School is particularly striking. Descendant cells are not live in vitro, but may be implanted in vivo where they respond to cues to become various types of cells in the body. “We identified a rare cell within human bone marrow mesenchymal stem cell cultures that can be expanded for more than eighty population doublings. This cell differentiates not only into mesenchymal lineage cells but also endothelium and endoderm. We show that cells capable of differentiating in vitro to cells of the three germ layers can be selected from rodent bone marrow. These cells contribute to most somatic tissues when injected into an early blasto-
possess that independent life prior to their removal; otherwise, we are back to the view that the continuing life in what is extracted is like heat that remains in water taken from a stove. In the case of immortalized cell lines, however, the heat lasts forever.

**Brain Death: Part of a Larger Problem**

How to satisfactorily resolve this difficulty is not immediately apparent and I do not propose to do so here, but only to note that recent findings in medical science pose a very challenging problem to traditional Catholic philosophy. What I do want to suggest, however, is that the problem of brain death is essentially the same as the problem that faces us in these other cases. An embryo that has been destroyed for its embryonic stem cells no longer exists, even though its cells continue to live and to display a number of important biological functions. Likewise, the individual with no brain function is dead, even though his body continues to display a variety of important biological functions such as homeostasis and stress responses. These functions do not show the continued existence of the person, but a remarkable new phenomenon that was previously unrecognized by medical science. Unlike the life of immortalized stem cells, the life of the brain-dead body will be brief, but there is no reason to suppose that a different principle applies than that which exists in the case of other organs and tissues that display continued life in the absence of the donor. Again, I have no philosophical explanation for this phenomenon, but only wish to indicate that it is a fact. There is a residual life that remains in the body of the brain-dead person that exists independently of the intellective soul of the deceased.40

Admitting these points, we can see that there is no reason to contradict any of the evidence presented by Shewmon concerning the continued biological functions in the brain-dead body. The body does have a variety of “integrative functions” that can perdure independently of the life of the brain. Nonetheless, Shewmon errs in saying that, in “the orthodox, biological rationale, the brain plays the role of the soul in the Aristotelian-Thomistic anthropology: the vital and unifying principle (‘substantial form’) of the body.” This is wrong, as we can plainly see from what has been indicated above. The brain is not the soul; the brain is the matter that is enlivened by cyst and engraft in vivo, where they differentiate into tissue-specific cell types in response to cues provided by different organs.” Yuehua Jiang, et al., “Pluripotency of mesenchymal stem cells derived from adult bone marrow,” *Nature* advance online publication, June 20, 2002.

40Some claim that if one holds that there can be a remaining vegetative life after the death of the person, one must also hold that there is a similar vegetative stage at the beginning of life. This type of symmetry is not entailed by my view. The beginning of human life is a unique event that involves a direct act of creation by God; the end of human life does not involve any creative act. The human soul separates from the body and exists independently of the body until the time of the general resurrection. Given this lack of symmetry between the entry and exit points, it is not at all surprising that what occurs at these two poles should prove to be radically different. Nothing prevents one from simultaneously affirming immediate hominization at fertilization and the existence of a remaining vegetative life at the time of death.

41Shewmon, “The Brain and Somatic Integration,” 475 (note #9).
the soul. This is a serious error—Shewmon has identified the “substantial form” of the body with a *material organ*. The soul, however, is not a material organ, but is what enlivens a material organ, namely, the brain, and from there, enlivens the rest of the human body. Given this confusion, it is not difficult to see why Shewmon would say that the traditional Catholic view on the human soul is dualistic. But let us admit that there is a dualism here, although it is not the fault of traditional Catholic philosophy. The same kind of “dualism,” if such a term can be used in this new situation, that confronts us when we seek to explain brain death also arises in the fields of organ transplantation and cell line therapy.

I have granted that the Catholic philosophical tradition faces new challenges in the light of modern advances in medical science, but Shewmon and others who reject the Church’s position on brain death criteria face an even more serious problem. If the *human* soul remains present in the body of a brain-dead person, as they insist, where does it reside? Obviously the human soul cannot exist in the matter that is suited to it, that is, it cannot exist in the brain. The brain is dead and therefore incapable of supporting any function—conscious, subconscious, or unconscious. If the intellective soul has no presence in the brain, then where is it? Shall we say that it exists in the heart and lungs? That would seem the logical choice for those who wish to affirm the cardio-pulmonary standard for the determination of death. To say this, however, is to assert what contradicts both scientific fact and Catholic teaching. For science teaches that the distinctive life of the human being has its locus in the brain, and the Church teaches that the human being is a body-soul composite that results from the union of the *intellect* with matter suited to its own unique functions. The claim that the intellective soul can continue to exist in a brain-dead body shows a profound misunderstanding of Catholic teaching on the nature of the human soul.