On the evening of March 19, 2005, the U.S. Congress did something it had never done before. With time running out on how much longer she could remain alive, congressional leaders announced that they would allow the parents of a 41-year-old Florida woman to petition the federal courts to have a feeding tube replaced for their severely brain damaged daughter. The next day, President Bush flew back to Washington from his Texas ranch to sign the emergency legislation.

**THE DEATH OF TERRI SCHIAVO**

“The case of Terri Schiavo raises complex issues,” the president had said in a statement three days earlier. “Those who live at the mercy of others deserve our special care and concern. It should be our goal as a nation to build a culture of life, where all Americans are valued, welcomed, and protected—and that culture of life must extend to individuals with disabilities.”

Fifteen years earlier, Terri Schiavo had incurred severe neurological damage when a chemical imbalance stopped her heart, cutting the oxygen supply to her brain. Although her entire brain wasn’t permanently destroyed, it was severely damaged. The 26-year-old was left in what physicians term a persistent vegetative state (PVS). PVS patients may exhibit spontaneous, involuntary movements such as yawns or facial grimaces. They are sometimes able to breathe without aid, but are unable to eat or speak. Their condition is often described as “awake but unaware,” because, without higher brain functions, their apparent wakefulness does not represent awareness of self or environment.

Like that of other PVS patients, Terri Schiavo’s condition was considered permanent and irreversible, but not terminal. With proper care, she could
continue to live many years, a fate her husband and legal guardian, Michael Schiavo, didn’t think she would want. Therefore, Michael requested that his wife’s artificial feeding tube be removed. When her Catholic parents, the Schindlers, objected, the stage was set for a lengthy legal battle that culminated in a court order to remove Terri’s feeding tube.

Once the feeding tube was removed, evangelical Christian conservatives sprang into action, precipitating the congressional intervention. Exploiting their pivotal role in reelecting President Bush and swelling Republican majorities in Congress, the “religious right” demanded and obtained emergency legislation allowing the Schindlers to petition federal courts to have the feeding tube reinserted. The legal tactic failed, however, and Terri Schiavo died on March 31, nearly two weeks after the removal of her life-sustaining feeding tube.

In a message to supporters and media shortly after her death, Terri Schiavo’s brother was quoted as saying, “Throughout this ordeal we are reminded of the words of Jesus’ message on the cross: ‘Forgive them for they know not what they do.’” Bobby Schindler’s allusion was to the bitter family feud between the Schindlers and Michael Schiavo. However, it implied something darker: that Terri was killed, not just let die.

Most people probably wouldn’t agree with Bobby Schindler that his sister was killed. However, they would likely agree that she was alive when the feeding tube was removed. Was she? Or was she dead long before, as some would argue? Are the thousands of patients like Terri in the U.S. dead or alive? Any answer depends on an understanding of physical death.

This chapter deals with four main approaches to defining and determining death: heart-lung, whole brain, higher brain, and brainstem. All of these formulations assume that life requires the integrated functioning of an organism. When that is lost, so is life. But exactly when that occurs is debatable. Each gives an answer with implications for morally appropriate treatment for patients like Terri Schiavo. Each also directs our thinking about bioethical issues, such as abortion, human and fetal research, cloning, stem cell research, and assisted death. One of the four approaches to death—the higher-brain formulation—is especially provocative. As we will see, it implies not only that Terri Schiavo died long before March 31 but also that many of the currently ill or disabled are properly considered dead.

**TRADITIONAL HEART-LUNG DEFINITION**

A terrible auto accident. One of the cars is occupied by a husband and wife. Authorities on the scene pronounce the man dead and rush the unconscious woman to a hospital, where she spends the next seventeen days in a coma due to severe brain damage. On the morning of the 18th day she dies. Or did she? Some time afterward, a relative contesting the couple’s estate claims that the two died simultaneously. Did they?

In an identical case about a half-century ago, the Supreme Court of Arkansas ruled that since the unconscious woman was breathing, she was alive. In making
its decision, the court relied on a time-honored understanding of death as "the cessation of life; the ceasing to exist; defined by physicians as a total stoppage of the circulation of blood and a cessation of the animal and vital function consequent thereon, such as respiration, pulsation, etc."\(^2\) This can be termed the traditional definition of death.

Given this understanding, death is to be determined by the permanent absence of breathing and heartbeat. This time-honored formulation is variously termed "heart-lung," "cardiopulmonary," or "cardiorespiratory" definition of death. It's also called "clinical death." By whatever name, death occurs when circulation and respiration permanently cease. Through the years, different ways have been used to determine this kind of death, placing a stethoscope to the chest and listening for a heartbeat being a familiar one.

Using heart-lung functioning as the criterion of death served well enough until challenged in the 1960s by two major developments in medicine: (1) breakthroughs in biotechnology, which is the application of biological research and techniques to health care; and (2) advances in transplant surgery.

The Challenge Posed by Biomedical Technology

Advances in biotechnology (e.g., mechanical respirators and electronic pacemakers) made it possible to sustain respiration and heartbeat indefinitely in patients with head trauma, stroke, or other neurological injuries. This meant that, according to the traditional formulation of death, individuals who had lost all brain functions were technically still alive because they had respiration and circulation, albeit artificially maintained. Yet to many—including relatives of the permanently comatose and those who cared for them—such persons were effectively dead.

The Challenge Posed by Transplantation

In December 1967, South African surgeon Dr. Christiaan Barnard (1922–2001) successfully transplanted a heart from one human to another. In itself an extraordinary medical achievement, this first-ever heart transplant not only publicized exciting developments in transplant surgery, but also the need for hearts and other organs from newly dead bodies. High on the list of potential organ donors were artificially supported patients, that is, ones with dead brains but sustained circulation. But which of these patients qualified as organ donors? Presumably, a patient with heart-lung function was to be considered alive and, consequently, might not have life-sustaining organs removed. To do so would cause death, and thus is murder. So would ending the patient's life in order to harvest her organs. Fearing criminal or civil liability—itself part of the larger concern of medical researchers and biomedical institutions over legal liability\(^5\)—physicians pressed for a reconsideration of the traditional heart-lung formulation of death. Beyond these legal considerations, artificially supported patients who could be declared dead offered the desirable prospect of blood-circulating organs right up to the time of removal.
WHOLE-BRAIN DEATH DEFINITION

To deal with the challenges posed by these new developments in medicine, an Ad Hoc Committee of the Harvard Medical School was formed in the 1960s. In 1968, the Committee proposed a new formulation of death, one based on brain function. In the traditional view, if and only if heart-lung function was permanently lost might a patient be declared dead. In contrast, the Ad Hoc Committee said the permanent loss of all functions of the whole brain was enough for declaring death. In other words, patients could be declared dead when the entire brain irreversibly ceased functioning. Such a nonfunctioning brain was interpreted as exhibiting:

1. unreceptivity and unresponsivity to applied stimuli and inner need
2. lack of movement and breathing for at least one hour while being observed continuously by physicians
3. lack of reflex action, such as blinking or eye movement

For a confirmatory test of this approach, the Committee recommended the use of an electro-encephalograph (EEG), where a flat electro-encephalogram would confirm a permanently nonfunctioning brain.

A 1981 presidential commission report titled “Defining Death” reinforced this alternative formulation of death by proposing what became the Uniform Determination of Death Act (UDDA). With the UDDA, the second legal standard of death throughout the U.S. was born: irreversible cessation of all functions of the entire brain, both cerebellum and brainstem. This is called “whole brain death” or simply “brain death.” (PVS patients such as Schiavo are not considered brain dead since it is only their higher brain, not their entire brain, that has irreversibly ceased functioning.)

Currently both approaches to death—heart-lung and whole-brain—are used throughout the U.S. An individual, including one artificially supported, can be declared dead who has sustained irreversible loss of either (1) circulatory and respiratory functions, or (2) all functions of the entire brain, including the brainstem.

Although generally welcomed by transplantation units and health care facilities, the new whole-brain definition of death continues to draw fire from theorists who prefer the heart-lung approach. The debate suggests that while science can determine that the heart and lungs or the brain have permanently ceased to function, medical facts alone cannot determine if a patient in such a condition is to be determined dead. That is a value judgment inevitably shaped by philosophical, ethical, religious, legal, and public policy considerations.

CHALLENGES TO THE WHOLE-BRAIN FORMULATION

Currently there are three major challenges to the whole-brain formulation of death. They are, according to the preferred formulation of death: (1) traditional heart-lung, (2) higher-brain, or (3) brainstem. (Higher-brain and brainstem
represent two additional approaches to death, making—with heart-lung and whole-brain—four in all.)

**Return to the Heart-Lung Formulation**

One assumption of the whole-brain definition is that when irreparable brain damage is more or less total to the whole brain, both cerebral cortex and brainstem, individuals cannot possibly return to spontaneous, respirator-free body activity. This accounts for the Ad Hoc Committee’s use of the term “brain-death,” that is, death according to a neurological or cortical as opposed to a cardio-pulmonary criterion.

However, some traditionalists reject the committee’s reliance on spontaneous respiration, a brainstem function, claiming that artificially sustained life is life nonetheless. Others consider the loss of the central nervous system, even of brain function, as irrelevant to the task of defining death. Breathing and blood flow, they point out, are not subsystems that, like the growth of hair or nails, function locally and display biochemical activity for themselves. They are, rather, activities whose function extends throughout the total system and insures the preservation of other parts. This would make circulation and respiration at least as important as brain activity—perhaps more important, since brain activity depends on them. Still others contend that a distinct line between life and death cannot be drawn.

Although such criticisms of whole-brain death have been invoked over the years to revitalize the heart-lung definition, the traditional cardiopulmonary formulation is rarely used today in the U.S. as the exclusive criterion of death. Notable exceptions are found among some orthodox Jews and fundamentalist Christians who view heart-lung as the only criterion fully respectful of God-created human life and consistent with biblical teaching. It was this view that fueled the last-ditch efforts to maintain Terri Schiavo.

**Adopt a Higher-Brain Formulation**

Considerations of brain state certainly have expanded the definition of death. Still, the whole-brain death formulation doesn’t go far enough to suit scientists and philosophers who don’t see why all functions of the entire brain have to be permanently lost before death may be declared. Why not merely the permanent loss of higher functions, such as consciousness, thought, and feeling? By this standard, a patient could be declared dead with brain functions that have no role in sponsoring consciousness, such as brainstem reflexes.

If adopted, a higher-brain criterion could make the irreversible loss of functioning in the cerebral cortex the primary physiological standard for defining death, since it is the cerebral cortex wherein lies the capacity for conscious life, commonly viewed as the hallmark of personhood. Irreversible loss of the cerebral cortex means the permanent loss of the capacity for consciousness. Significantly, this higher-brain standard can be met prior to whole-brain death, which must include death of the brainstem, that part of the brain that allows spontaneous
breathing and heartbeat but not consciousness. A patient in a permanent coma, then, or one who, like Schiavo, is awake but unaware, would meet the higher-brain but not the whole-brain standard of death. By the higher-brain formulation, therefore, thousands of patients currently being maintained in the U.S. could be declared dead. In contrast, they must be considered alive by either the whole-brain or the heart-lung approaches.

Consider the case of Sunny von Bulow, whose husband, Claus, was accused of trying to kill her with an overdose of insulin in 1982. The case was the basis of the movie Reversal of Fortune. Sunny von Bulow is still being maintained in an irreversible coma with such brain damage that, according to experts, she will never regain consciousness. Still, she can breathe on her own. Her eyes occasionally open and she shows sleep-wake sequences. So, is she alive or dead? By one interpretation—whole-brain—she’s alive. By another—higher-brain—she’s dead, and has been since 1982. By the same measure, Terri Schiavo died in 1990.

**Adopt a Brainstem Formulation**

Another view accepts the validity of declaring death on neurological grounds but contends that a permanently non-functioning brainstem, ordinarily determined by simple, low-tech, bedside tests such as checking the pupils, is always adequate for determining death. Proponents are led to this view by the fact that consciousness as well as heart and lung function depend on a functioning brainstem. This makes the brainstem-dead dead, regardless of cardiac prognosis, because they are irreversibly unconscious and apneic.5,6

Its supporters claim that a brainstem formulation offers advantages over both the higher-brain and whole-brain definitions. First, spontaneously breathing vegetative patients such as Schiavo would be considered alive, thus avoiding the cultural problems of the higher-brain formulation, by which such patients would be declared dead. Second, the brainstem formulation avoids common objections to whole-brain death that some patients declared “brain dead” in fact retain neuronal life above the level of the brainstem.7

Heart-lung, higher-brain, and brainstem formulations, all directly challenge whole-brain death. But like whole-brain, heart-lung and brainstem formulations are biological concepts, whereas higher-brain is psycho-social. It is the higher-brain formulation, therefore, that uniquely calls into question whole-brain’s fundamental conception of death itself. (See chart.)

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<tr>
<th>Definition of Death</th>
<th>Biological (Schiavo is alive)</th>
<th>Psycho-Social (Schiavo is dead)</th>
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<tr>
<td>Heart-lung</td>
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<td>Whole-brain</td>
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<td>Brainstem</td>
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THE BIOLOGICAL VS. PSYCHO-SOCIAL DEBATE: ORGANISMS VS. PERSONS

According to the heart-lung, whole-brain, or brainstem definitions, individuals are dead when they have permanently lost what is essential to them as an organism—respiration and circulation, all brain activity, or simply brainstem function. By any of these formulations, then, death is strictly an organismic or a biological concept. The higher-brain definition, in contrast, associates death with the irreversible loss of what is essential to an individual as a person—for example, consciousness or cognition—not just as a biological organism. This makes death a psychological and social concept.

Is the death of a human being rightly understood only biologically, as the permanent loss of functioning of an organism as a whole? Or may it also and perhaps better be understood psychologically and socially, as, for example, the permanent loss of consciousness or the capacity for consciousness? When we say that someone is dead, precisely what are we referring to—merely a biological organism that has permanently ceased to function; or something more, perhaps an entity that has permanently lost capacities uniquely human? These abstract metaphysical questions have serious clinical and moral implications. They force us to ask about the status—alive or dead—of patients who have permanently lost all brain functions and are being maintained artificially by respirators or other life support systems. Specifically, what are we to say of the estimated 40,000 PVS patients in the U.S. currently being maintained at an annual cost of billions of dollars? What is morally appropriate treatment for such patients?

Death of the Organism: A Biological Perspective

The 1981 President's Commission said that the status of such patients should not alter our understanding of death as the permanent cessation of the functioning of the organism as a whole.

The Commission pointed out, first, the loss of all brain functions permanently disrupts the integrated functioning of heart, lungs, and brain. There can be no spontaneous breathing, the heart will soon stop, and the organism as a whole will die. So, although the Commission recognized whole-brain death, it didn't depart from the traditional biological or organismic understanding of death.

Second, the Commission said that the many thousands of PVS patients are alive because even though they are permanently unaware they still exhibit integrated functioning of brain, heart, and lungs. So long as there is integrated functioning of the circulatory, respiratory, and central nervous system, then, the "organism as a whole" is alive. But the Commission emphasized that these cases of "partial brain impairment" (such as Schiavo) must be distinguished from cases of "complete and irreversible loss of brain function." Specifically, it said:

The President's Commission...regards the cessation of the vital functions of the entire brain—and not merely portions thereof, such as those responsible for the cognitive functioning—as the only proper
neurological basis for declaring death. This conclusion accords with the
overwhelming consensus of medical and legal experts and the Public.

Today the consensus may not be as “overwhelming” as it was a quarter-century ago
but it still stands, supported by the traditional understanding of death as the per-
manent cessation of the functioning of the organism as a whole. For heart-lung,
whole-brain, and brainstem theorists, then, PVS patients such as Terri Schiavo are
still alive since they exhibit integrated functioning of the most important organic
subsystems, such as temperature regulation, spontaneous heartbeat, and normal
blood pressure.

To higher-brain theorists, however, these patients are dead. They have per-
manently ceased to function as persons. Biologically they may be alive, but socially
and psychologically, they’re not.

**Death of the Person: A Psycho-Social Perspective**

Despite its widespread endorsement, a growing number of theorists object to the
whole-brain standard—not because it goes too far in defining death, as some
traditionalists claim, but because it doesn’t go far enough.

Higher-brain enthusiasts say that whatever makes us uniquely human, such
as consciousness and cognition, is what matters in determining human death.
Without awareness, without being able to think, reason, or remember, patients
such as Terri Schiavo or Sunny von Bulow can’t ever function as persons.
They’re dead.

By this account, then, the whole-brain standard of death may adequately
capture the death of non-human animals, but not a human death. Human
beings are dead, say higher-brain theorists, when they are no longer persons.
And that means when there is irreversible loss of higher brain functions.
Without higher brain functions, there can be no integration of the mind and
body and, thus, no basis for asserting that human life is present. By this standard,
Schiavo was a costly tempest in a teapot, since the subject was long since dead.
The same can be said of the many similar patients currently being maintained at
considerable cost.

It’s worth noting that not all higher-brain theorists are agreed on what it is that
is essential to us as persons—what, metaphysically speaking, is necessary for a
human being to be a person. This is why they sometimes employ the purposely
ambiguous term “higher brain function.” It’s “a way to make clear that the key
philosophical issue is which of the many brain functions are really important,” says
bioethicist Robert Veatch. So, this makes the key question: What exactly is it
that has lost life or ceased to be when we say that someone like you or me is
dead? That question starkly contrasts with the procedural one that ordinarily
monopolizes cases such as Schiavo, namely: “What does the patient want and who
is entitled to say?”

Although the higher-brain school of thought has attracted a considerable
following, it has also attracted critics of its psycho-social, person-based perspective
of death.
Problems with the Person-Based View

Philosopher David DeGrazia has identified what he calls some “irresolvable tensions” with the person-based, higher-brain concept of human death.13

First of all, says DeGrazia, human beings undoubtedly are organisms as well as persons, which means that biological death still applies to humans. What, then, are we to make of permanently unconscious patients? Are they dead as persons but alive as organisms? Doesn’t the person-based, higher-brain view imply two deaths for a single human being: one of the person and a later of the organism? “This is somewhat odd,” DeGrazia writes, “since we are accustomed to believing that there is just one death associated with every human being.”

Another conceptual problem relates to the meaning of “personhood.” Because philosophers are not agreed on what constitutes personhood, any higher-brain standard that relies on a concept of it will prove controversial. More troublesome, the unsettled nature of personhood has grave, practical implications, as evident in DeGrazia’s most serious objection to the higher-brain standard: the “slippery slope” upon which he sees the person-perspective teetering.

DeGrazia fears that defining death as loss of personhood invites an expansion of those humans to be counted as dead, since personhood is generally thought to require more than consciousness or the capacity for consciousness. Indeed, today’s bioethicists generally associate “person” with rational attributes or sentience. Whatever the character(s) of a person, presumably conscious individuals who lacked it (or them) are to be considered dead. Among these patients certainly would be ones like Schiavo, but probably also: disabled adults and children, including Parkinson’s and Alzheimer’s patients; the mentally ill and retarded; and the frail elderly.

The Person-Based Reply

For their part, person-based, higher-brain theorists say that critics like DeGrazia miss the point.

When we permanently lose consciousness, we lose the possibility of any meaningful existence, including any meaningful proposed candidate of personhood. We have no self-awareness, for example, or sense of personal identity—no sense of a self that persists from one moment to the next. We can’t think, evaluate, or choose. We have no social existence. We can’t speak, think, feel, work, or play. We can’t befriend or love. “What possible meaning and value can life have under such circumstances?” person-based theorists ask. Besides, as Veatch points out, even if there are living human beings who don’t satisfy the various concepts of personhood, “as long as the law is only discussing whether someone is a living individual, the debate over personhood [and personal identity] is irrelevant.”14

Higher-brain theorists respond further that it is only from a biological or organismic perspective that an individual appears to die twice. There is, in fact, only one death, regardless of whatever biological or minor brain functions might be present. Terri Schiavo didn’t die twice, she died once—not on March 25, 2005, but 15 years earlier when she incurred catastrophic brain damage. Sunny von
Bulow will not have died twice. She died back in 1982. What is being maintained in a Manhattan hospital is a breathing cadaver, albeit a fabulously wealthy one. To talk about "two deaths," then, is to beg the question, which is simply whether the higher-brain standard is preferable to the whole-brain standard. And since an uncovered whole-brain standard always reveals higher-brain functions such as self-awareness or rationality, then why not define death by reference to the higher-brain standard?

As for potential abuses, Veatch, for one, thinks that it is the whole-brain formulation of death that stands on the slippery slope, not the higher-brain. After all, he says, for no good reason whole-brain effectively draws "a sharp line between the top of the spinal cord and the base of the brain (i.e., the bottom of the brain stem)," thereby discounting the significance of any spinal reflexes. But if spinal reflexes can be ignored in determining death, then why can't some brainstem reflexes as well? Why can't the wincing and tearing of patients like Schiavo, for example? The typical reply is that brainstem reflexes are more integrative of bodily function, and, so long as the central nervous system can retain the capacity for integration, a person is alive. But Veatch doubts that brainstem reflexes are more integrative of bodily function than spinal reflexes. "Whatever principle could be used to exclude the spinal reflexes," he writes, "surely can exclude some brainstem reflexes as well."

By contrast, Veatch insists that defenders of the higher-brain formulation, like himself, in fact are avoiding the slipperiness by relying on classical Judeo-Christian notions that the human is essentially the integration of the mind and body and that the existence of one without the other is not sufficient to constitute a living human being. Such a principle provides a bright line that would clearly distinguish the total and irreversible loss of consciousness from serious but not total mental impairments.15

Other defenders of the higher-brain, person-based position have taken a less technical, more pragmatic approach to the whole-brain/higher-brain debate. One, philosopher Martin Benjamin, simply asks which conception of the human individual makes more sense? He believes there are powerful practical reasons for understanding human beings as persons, not merely as biological organisms. For one thing, such a view jibes with what really matters to us about human life and death: opportunities for acting and enjoying. Death makes all of this experience impossible; that's why it's a great loss.

Benjamin is also troubled by the fact that the whole-brain formulation effectively leaves patients who are in need of new hearts and livers waiting for the organs of PVS patients until the latter meet the UDDA. But by then their hearts and livers may no longer be suitable for transplantation. The same issue arises with the estimated 1,000 to 2,000 babies born annually in the U.S. with anencephaly, the total or near total absence of the cerebral hemisphere.16 Anencephalic infants who aren't stillborn generally don't live longer than a few weeks. In some cases their kidneys and hearts, though undeveloped, could be transplanted to other infants who might die without them. For the transplants to have a
reasonable chance of success, however, they need to be taken from these infants before they meet the criteria of whole-brain death. But even if the parents of the anencephalic infant agrees to the transplant, the law does not permit this sort of organ donation.

Beyond the matter of transplants, higher-brain theorists such as Benjamin hope that a shift from mainly a biological to a psycho-sociological conception of death may help settle an array of bioethical issues, including abortion, embryo and stem cell research, euthanasia, and assisted suicide. But critics worry about the implications. Imagine a society, they suggest, where adult human non-persons—perhaps Parkinson’s patients or the mentally retarded—could be used in experimental research.

**LINGERING QUESTIONS ABOUT BRAIN-DEATH**

Besides inviting a spirited response from higher-brain theorists, the current whole-brain formulation of death continues to be criticized for being conceptually confusing and even harmful. Adding to the critical mix are the voices of those who say that any biologically based definition fails to understand that death is not an event but a process. Such are among the concerns that today swirl around brain-death.

**Definition or Permission?**

The “Report of the Harvard Committee to Examine the Definition of Brain Death”—the official subtitle of the Harvard Committee’s 1968 report implies—that the committee was proposing an alternative definition of death. In the eyes of its supporters and many of its detractors, it did precisely that. For them the only issue involves the relative breadth of that definition. But amidst the critics is another school of thought, one that views the report as offering not a necessary new definition of death but criteria for permitting death to occur unopposed.

The concern of the Harvard Committee, it should be remembered, was plainly physiological, specifically with (1) the irreversible loss of reflex activity mediated through the brain or spinal cord, with (2) electrical activity in the cerebral neocortex, and/or with (3) cerebral blood flow. On the basis of medical facts—such as reflex activity and cerebral blood flow—the Committee advocated whole-brain criteria for determining death. Because of its emphasis on organic integration as defining life, whole-brain enthusiasts read in the criteria a new definition of death, “brain death.” On the other hand, Committee reference to consciousness, personality, or mental activity permitted others to read a higher-brain definition in the criteria. By conflating criteria and definition, the Committee set the stage for conceptual confusion.

The problem is that a definition of death cannot be derived from medical facts alone, as evidenced by the whole-brain/higher-brain dispute. Each side, for example, generally agrees on the medical facts in a PVS case, but dispute the
meaning of these facts—how they’re best interpreted. For psycho-social reasons, higher-brain theorists believe that the medical facts determine that the patient is dead. For biological reasons whole-brain theorists believe that the patient is still alive. These opposed viewpoints leave little doubt that a definition of death is, at base, a philosophical (and legal) issue, not a medical one.

Now, if the medical facts in these cases invite interpretation, who is to say that the interpretation must necessarily favor one or the other, whole-brain or higher-brain orientations? Perhaps the facts are best interpreted strictly as criteria that do not define death but permit it to take place. If so, then what the Harvard Committee proposed, unintentionally perhaps, was not a set of conditions for determining death but for allowing it to occur. By this account, the Committee and, later the President’s Commission, wasn’t addressing the question of whether patients with irreversible loss of the entire brain are dead but rather how such patients should be dealt with. They were really saying—or should be viewed as saying—not that such patients are dead, but that they may be allowed to die, by turning off a respirator, for example.

The difference between definition and permission in these matters is morally important, for once patients are declared dead—as in “brain dead”—then they are no longer persons with certain moral and legal rights. They’re corpses. And as corpses they can be treated, in the words of philosopher Hans Jonas, however “law or custom or the deceased’s will or next of kin permit and sundry interests urge doing with a corpse.” Once assured we’re dealing with a corpse, for example, what’s to stop us from maintaining the body in an artificially animated state as a source for life-fresh organs—as a “plant for manufacturing hormones or other biochemical compounds...a self-replenishing blood bank?”

Jonas happens to believe that a patient with irreversible loss of the entire brain is nonetheless a patient—“an organism as a whole minus’ the brain, maintained in some partial state of life so long as the respirator and other artifices are at work.” Therefore, for him the question is not “Is the patient dead?” but “How should the patient be dealt with?” This latter moral question is basically asking: “Are we justified, let alone obligated, in artificially supporting the life of a brainless body?” No, say Jonas and others like him, while whole-brain and higher-brain enthusiasts treat the question as moot, since in their views the patient is already dead.

Help or Harm?

Although Hans Jonas rejected the Harvard criteria as a definition of death, he at least viewed the criteria as establishing needed ground rules in our modern, high-tech era for withdrawing life support. Others have been less charitable.

As early as the 1970s and 1980s, some critics were calling the Harvard criteria unnecessary and harmful. One of them, physician/bioethicist Norman Fost, recently revisited the issue. He has concluded that events over the last three decades prove that the new definition has failed its main original social purposes of (1) ending medically worthless treatment and (2) improving organ supply. Fost says:
Overtreatment—the continuation of life-sustaining treatment on patients who have no reasonable prospects for meaningful survival and often no clear interest in or desire for such treatment—seems far more widespread today than in 1968, when the redefinition was proposed as the solution to that problem…[and] organ supply lags further and further behind demand.\(^\text{20}\)

Supporting Fost’s second point: Currently, of the approximately 75,000 people on waiting lists for organ transplantations, less than a third will receive the needed organ. Nationwide, an average of five people a day die awaiting liver transplants alone.\(^\text{21}\) Compounding things, according to Fost, the statutes have made it very difficult to develop sensible, coherent policies and practices on withholding and withdrawing life support from a wide range of patients as well as to have a more rational policy of organ procurement involving a much broader population of patients than those who are “brain dead.” Consider, for example, non-heart-beating cadavers (NHBCs).

**Non-Heart-Beating Cadavers**  
Brain criteria are used in most organ procurement centers. Still, many centers will remove organs from patients declared dead by traditional heart-lung criteria.\(^\text{22}\) This practice, done with appropriate patient consent (e.g., do not resuscitate or DNR orders), makes for a quick pronouncement of death and a rapid, damage-minimizing removal of organs from dead bodies. But in some cases, this procedure has been refined to a controversial degree.

For example, under the so-called Pittsburgh protocol, in place at the University of Pittsburgh Medical Center since 1992, a consenting life-support patient is taken to the operating room and disconnected from life support, leading usually to cardiac arrest.\(^\text{23}\) Since the patient has executed a valid DNR order, no attempt to resuscitate him is made. After the heart stops functioning for two minutes death is declared, despite any brain functions, on the basis of “irreversible cessation of circulatory and respiratory functions.”\(^\text{24}\) The body can then be artificially supported to insure fresh organs.

Alexander Capron, a professor of law and medicine, as well as the chief theorist in the President’s Commission, views the Pittsburgh protocol as a flat-out contradiction of the UDWA. He says, “The failure to attempt to restore circulatory and respiratory functions in these patients prevents lawfully declaring that death has occurred because irreversibility must mean more than simply ‘we choose not to reverse, although we might have succeeded.’”\(^\text{25}\)

Does the Pittsburgh protocol violate the sacrosanct “dead-donor-rule,” the principle that prohibits the removal of vital organs from donors prior to their death? Or does it not, since NHBCs are dead according to the whole-brain definition? Currently a patient may be determined dead by one standard but alive by the other. Reason enough, according to some theorists, for single standard of death,

holding that irreversible cessation of all function of the entire brain is the death of the person and that one can know that indirectly by circulatory cessation or directly by examination of the brain and its functioning. Then the error would be obvious for those who wrongly believe that
cessation of spontaneous heartbeat for 2 minutes allows them to declare the person dead and to place the body on artificially supported circulation.

**Event or Process?**

Any biologically based definition of death views death as an event in which the biological organism permanently ceases to function. It is further assumed that a single criterion—heart-lung, entire brain, and brainstem—demarcates the moment of death.

But some bioethicists believe that it may be impossible to pinpoint a single criterion of human death because death (or dying) in our high-tech medical environment is less an event than a process that defies demarcation by a single point. At various points along the way, capacities—respiratory, hormonal, and cardiac—are compromised and must be supported. Does it make sense, then, to say that the organism died at some specific point in this process? Isn’t it more reasonable to say that “the organism was fully alive before the chain of events began, is fully dead by the end of the chain of events, and is neither during the process.”

Still, there are important questions that demand specificity about when the organism actually died. When can life support be withdrawn, organs be harvested, or the body be cremated? In 2003, the Michigan State Court of Appeals upheld a 2001 ruling allowing a divorce for a woman comatose since a 1994 auto accident. The woman had filed for divorce several times but had not followed through. Friends said that the woman, who had a $1.5 million dollar estate, planned to file again but was prevented by the accident. After she was hospitalized, her brother and legal guardian pressed the case. In the court’s eyes, obviously, the woman was alive, that is, she hadn’t reached that point that marks the moment of death. Absent this assumption, how would the court possibly decide such a case?

**CONCLUSIONS**

Although the whole-brain definition is widely endorsed in the U.S., it isn’t surprising that disagreement continues about both a single definition and criterion. With conceptual issues, death no exception, much depends on the observer.

As we will see in the chapters ahead, our understanding of death, including our attitudes and feelings towards it, reflect our basic beliefs about life itself, including our nature and destiny. On these matters people differ, even people of similar backgrounds.

Recall, again, the Schiavo case, where people of strong religious faith, even within the same religion, were divided. For some of them, Terri Schiavo’s life had value and dignity regardless of her condition. She was a person, albeit a vegetative one. Since she had biological vitality, her life had sanctity. For others of equal faith, Terri Schiavo’s life had passed into mere existence. For them it wasn’t biological life that mattered, but its quality. True, they didn’t say she was a non-person, at least not publicly, but they obviously were mostly concerned with her status as a person, as were the majority of Americans, according to polls.
As advanced medical technology increasingly blurs the distinction between living and merely existing, the person-based approach to death will continue to bedevil us. To ignore quality of life seems wildly unrealistic, even cruel and immoral. But the same might be said of labeling Grandma a “non-person” because she has Alzheimer’s disease.

For its part, the prevailing whole-brain formulation of death is not conceptually coherent. The Pittsburgh protocol, for example, shows that a patient may be determined dead by one standard (brain) but alive by the other (heart-lung). No wonder bioethicists are concerned about potential violation of the dead-donor rule, as well as the cornerstone principle of medical ethics, “Do no harm,” as both apply to living patients who are potential organ donors.

It is true that, aggregately, cases covered by a Pittsburgh-like protocol are rare, overwhelmingly outnumbered by deaths not requiring scientifically precise assays. Indeed, that the practice goes on at all may suggest that the whole-brain formulation has succeeded in an initial goal of the Harvard Committee: providing physicians legal protection they otherwise would lack, and without which there would be fewer transplantations. Still, prior to a brain-death statute, several states, notably Wisconsin, were quietly and successfully procuring organs from patients who were not brain dead by prevailing standards. Furthermore, it isn’t by any means certain that the statute, a new definition of death, has significantly affected organ procurement.

Beyond expediting transplantations and providing physicians legal protections, the new whole-brain statute supposedly was needed to facilitate discontinuation of life support. There, too, the record is uneven. Brain-dead patients sometimes have been maintained at the family’s insistence. Also, in some jurisdictions the physician may declare death when the brain is dead but is not required to. This seemingly would give the physician, perhaps together with the family, the legal discretion to declare death, thereby leading not only to conflicting decisions in medically identical cases but possibly to a prolongation of suffering. Then there are cases in which cultural considerations have been ignored once the brain death has been determined. In 1994, for example, two Japanese students who had been shot were declared brain dead under California law notwithstanding that their parents lived in Japan, where brain criteria for death pronouncement are not recognized.

The failure to reach consensus about death has led some theorists to back a public policy that would implicitly acknowledge multiple, valid definitions of death. From these, patients or their legal surrogates could choose according to their own values and philosophies. New Jersey, for example, operates under a whole-brain formulation of death but permits patients for religious reasons to choose heart-lung criteria. Some say that offering a menu of options—heart-lung, whole-brain, higher-brain—would maximize personal freedom, square with the nature and ideals of a democratic and pluralistic society, and expedite organ transplants by decriminalizing cases that today are considered killing, as with PVS patients and anencephalic newborns.

Others see only confusion and controversy in such a “cafeteria” plan. They doubt that the general public would grasp, let alone embrace, the validity of multiple meanings of death. Unacceptable to the many who view death as a
A profoundly spiritual event would be the implicit secular notion of reducing its definition to “just another” choice. Then there are the practical matters raised by conscientious choice, including insurance coverage and impact on health care professionals who may consider the option selected inappropriate.

Such concerns have brought some theorists to feel that, perhaps, legal and social issues are best viewed as separate and distinct points in the process of dying that allow, even require, different answers. Accordingly, they propose “decoupling” or separating such matters from a determination of death. For example, life support might be withdrawn when higher brain function is permanently lost, whereas organs might be removed when the entire brain ceases to function. Neither decision, however, applies a single criterion of death justified by some definition of death. Circumstance rules: the best use of resources, for example, in the case of withdrawing life support; the greatest number or organs appropriately harvestable, in the case of organ removal. While such a position avoids the problems of multiple definitions, it may raise another as potentially divisive: voiding the dead-donor rule. In any event, decoupling theorists strongly oppose the conscientious choice model, generally preferring the current whole-brain formulation as a default position to their own.

Defining and establishing criteria of death clearly remain problematic, inevitably inviting different approaches and defenses. Ultimately, it may be enough to accept death as “the permanent and irreversible cessation of the relevant aspects of life, where different accounts select different aspects as relevant.”

REFERENCES

7. Ibid., p. 95.