THREE

Locating the Moment of Death

For some time thoughtful men have been increasingly troubled by the present attitude in the medical profession: “You’re dead when your doctor says you are.”

Desmond Smith, The Nation

At the end of the 1960s, when transplant surgeons first contemplated the systematic use of patients believed to be irreversibly unconscious as a source of human organs, a new legal definition of death was urgently needed to prevent physicians from being charged with murder. It was essential that the new death be a diagnosable event and that it be timed to allow the removal of organs while they remained “fresh” and reasonably well oxygenated. No longer based on the commonsense notion of the end of life—a failure of the heart and lungs—the new death is determined by the condition of the brain alone, even though the body clearly remains biologically alive, albeit with mechanical assistance.

Identification of the moment of brain death was designed primarily to avert legal complications, but it was also necessary to reassure the public. The very existence of ventilator-dependent patients raised two concerns: first, the fear of being counted dead before one’s time and overhastily designated an organ donor; second, the fear of being kept alive too long, as a “vegetable,” with severe, irreversible brain damage, but not technically brain-dead (Pernick 1999:4).

Although this development has depended on technological innovation, it is rarely attributed to technology alone. The ventilator is simply a tool at our service. It is the moral status of “living cadavers” as alive or dead that has been troubling. Yet discussion among health care professionals over the past thirty years has nevertheless been reduced repeatedly to disputes about what constitutes biological death. Efforts to
come to terms with the ambiguous status of the living dead have usually been cast as though this matter can be settled if only we can get the facts of death straight. In part this view stems from the assumption that life and death are unequivocal, dualistic categories. But it derives also from the belief that extensive debate of this kind will increase anxiety and compromise public trust in medical judgment about death. The transplant enterprise, with its dependence on the goodwill of donor families, will then be in jeopardy.

Transplanting Hearts: Medical Hubris on Display

Medical, legal, and media debates on organ procurement and transplants that took place in the English-speaking world throughout the 1960s and 1970s reveal the disquiet that reigned at that time about organ recipients who would be walking around with someone else’s spare parts in their bodies and, even more, about the condition of potential donors as dead or alive. When the remaking of death was first discussed in the 1960s, many transplant surgeons feared repercussions from an anxious public who would refuse to cooperate with organ donation (Shapiro 1969a:50; Schmeck 1969; Paton 1971:163). The public had to understand that potential donors would be protected from any attempts to snatch their organs (Reeves 1969:406).

Four years before the first heart transplant was carried out, an editorial in the *Annals of Internal Medicine* explicitly raised the specter of a spare-parts technology, which continues to plague the transplant enterprise:

Cannibalizing was the term applied to a practice that unhappy circumstances spawned in some of the more remote areas of action in World War II. This process consisted of combining parts of a number of damaged vehicles to make one whole vehicle that would function. Such a practice in medicine has not quite arrived but we are moving in that direction. Every day the press, lay and professional, brings us news of the borrowed use of some organ, natural or artificial, to shore up some damaged human “vehicle” and put him on the road again. The analogy may be a bit stretched, but the possibility of such human cannibalizing is implicit in the development of artificial internal organs and in the experimental transplantation of natural organs from one human being to another.

(*Annals of Internal Medicine* 1964:309)

1. The analysis presented in this chapter is largely restricted to North America. The responses of Denmark, Sweden, Israel, and Germany, among other countries, are distinctly different (see, for example, Hogle 1999; Machado 1996).
The editorial inquires whether patients are in danger of being denied the right to die with dignity and with the least possible suffering. It further dramatizes the case against transplant technology by listing the outcomes of kidney transplants carried out during the 1950s. Of 28 transplants between identical twins, 21 recipients survived at the time of the survey; but among 91 patients who had received a kidney from a living blood relative, only 5 remained alive one year after the operation. And among the 120 patients who had received kidneys from living, unrelated donors or from cadavers, only one had survived more than a year (311).

Heart transplants did not begin with Christiaan Barnard. In 1964, physicians at a Mississippi hospital removed the heart of a chimpanzee and transplanted it into a sixty-eight-year-old man with severe myocardial disease. The patient had been expected to die in the next day or two. The publication that followed this experiment gives a graphic account of the removal and handling of the ape’s heart, its treatment once placed inside the recipient, and the condition of the diseased heart removed from the recipient. Readers are not informed that the patient died but simply told that the transplanted heart “ceased to function two hours after stabilization in the recipient.” The experiment was described as having “far reaching significance” because it showed that a heart could be kept functioning by perfusion alone for at least an hour. The physicians lamented that the human donor they had hoped to use had not died soon enough, and in consequence they were forced to use a chimpanzee heart that was too small. It was also asserted that the recipient was so sick that he was “perhaps the major factor in eventual failure of the transplant” (Hardy and Chavez 1968:777).

The more celebrated occasion of the first human-to-human heart transplant involved a certain amount of public relations choreography. Physicians on both sides of the Atlantic recognized that South Africa might be a suitable location because it was known to be less sensitive about ethical issues than either the United States or Great Britain. Even so, it was evident that the first donor must not be “colored.” When, in December 1967, Christiaan Barnard carried out “the ultimate operation,” he is reported to have said that the recipient, Louis Washkansky, could go home in a few weeks (Saturday Review: 1968). The recipient experienced acute rejection and lived for only eighteen days.

Despite the failure, other heart transplants rapidly followed (Time 1967). On the same day as Barnard’s surgery in South Africa, a heart transplant described as an “unequivocal failure” took place at Maimonides Medical Center in Brooklyn. This operation involved an an-
encephalic infant donor and a nineteen-month-old recipient.² Fifteen months later, 118 heart transplants had been performed in eighteen different countries, with a surgical mortality rate of just over 50 percent (that is, over half the patients died less than thirty days after surgery), and a cumulative six-month mortality rate of 88 percent (Cooper and Mitchell 1969). In the United States the cost of surgery ranged between $30,000 and $50,000. A number of people remarked not only on the expense but also on the strain that this type of surgery would place on the supply of blood for transfusion. Richard Titmuss reports that on one occasion over three hundred pints of blood were needed for an American heart transplant (1971).

On the day following Barnard’s first transplant, the New York Times carried a long feature article on the operation (1967a). One week later, Barnard was featured on the front cover of Time, and a five-page article in the same issue effused unqualified praise for heart transplants. The road accident of the Cape Town donor, Denise Darvall, the declaration of her death by Barnard himself,³ and the procurement of her organs were recounted in detail. Details about the surgical procedures used in the South African transplant were minutely reported. The article concluded with assurance that the worldwide acclaim given to Barnard in the weeks following the surgery would ensure that more people will be willing to “sanction the gift of a heart to help an ailing fellow man” (Time 1967:72). It also noted that in the Brooklyn case, the New York parents of the anencephalic baby had no regrets about their decision to donate, despite the complete failure of the transplant.

The New York Times of December 5 meticulously reported that at least one of Denise Darvall’s kidneys had been donated to a ten-year-old “colored” boy who was doing well (1967b). A separate article in the same issue pointed out that the recent operations dramatized a situation that was already a cause for concern among many doctors: “the shortage of organs for transplant.” The article concluded that “many specialists . . . are convinced that the day is fast approaching when the vital human organs will simply be too valuable to be used for just one life alone” (1967c).

Immediately following Barnard’s transplant, the South African Med-

². An anencephalic infant is born without cerebral hemispheres: that is, the upper part of the brain is entirely absent. Such infants, with very few exceptions, die shortly after birth.
³. Declaration of death by the transplant surgeon was shortly thereafter recognized as a conflict of interest and no longer permitted.
ical Journal published an article by a professor of forensic medicine reviewing the significance of the “moment of death.” This article supported the idea that resuscitation should be abandoned in hopeless cases in which the brain was irreversibly damaged and “life slips through the fingers.” Whether death is certified as “the first, second or third arrest of vital functions is immaterial so long as that is the finally accepted end of all hope and effort” (Simpson 1967:1191, emphasis in original).

The following issue of the journal carried a brief notice of regret about the death of the recipient, Mr. Washkansky. The courage of Mr. Darvall, the father of the donor, was noted, as was that of Mr. Washkansky. Despite his death, the operation was repeatedly deemed a success (Louw 1967:1257).

By mid-December, however, the tone of media coverage was beginning to shift. Two New York Times editorials described the Barnard surgery as a historic experiment—“one of the peaks of modern scientific achievement”—but voiced concerns, which grew during the following months, about the way in which this technology inextricably linked the death of one person with the survival of another. Although this was not the first time that a corpse had been “cannibalized” to aid the living, the editorial commented, the symbolic significance of the heart required a major shift in “habitual thought-patterns.” People now had to recognize that Miss Darvall’s heart was continuing to “live and work though she is dead” (1967d).
A second *New York Times* editorial appeared immediately after the death of Mr. Washkansky in late December. In defense of transplants, it noted that the patient had died of pneumonia and not because of the rejection of the transplanted heart. It argued for changes in the law and an educational campaign to encourage people to give “advance permission” to use their organs for donation. The editorial was concerned, however, to assure the public that a donor’s death would not in any way be hastened, nor a life “sacrificed prematurely for the benefit of another,” and it raised disturbing questions:

One need not be a science-fiction writer to envision the possibility of future murder rings supplying healthy organs for black-market surgeons whose patients are unwilling to wait until natural sources have supplied the heart or liver or pancreas they need. More prosaically, shall people near death be allowed to sell their heart or liver to the highest bidder or shall the future use of such vital “spare parts” be decided by some agency set up by society? *(New York Times 1967e)*

The editorial expressed concern as to how society would make choices about allocation of this new, scarce resource, fearing that decisions might simply be left to market resources unless action was quickly taken.

By January 5 the tone of articles in both *Newsweek* (1968a) and *Time* (1968a) was clearly less supportive of transplants. Barnard had by then appeared on the popular television show *Face the Nation* explicitly to win public support; after the show he was “feted like a second Pasteur” (Smith 1968). *Newsweek*, under the headline “Surgery and Showbiz,” stated that during the second heart transplant performed by Barnard in early January, “the medical significance of the feat was nearly obscured by a circus atmosphere with Marx Brothers overtones” (1968a). A freelance photographer had gained access to the gallery of the operating room. NBC-TV obtained a court order to stop him from selling his pictures; the TV company had a $50,000 agreement for exclusive interviews with the transplant recipient and his wife, as well as for coverage of the actual surgery.

In the event, NBC was kept out of the operating room but went ahead with exclusive interviews before and after surgery. Its rival company, CBS, paid Barnard’s way to the United States to appear on *Face the Nation* and contributed handsomely to the surgeon’s research fund *(Newsweek 1968a)*.

The *Saturday Review* was scathing about these new surgical procedures, and even more so about Barnard himself. It noted that in heart transplants carried out by Barnard on dogs, under the tutelage of an
American surgeon, all the dogs had died (1968). However, Ebony described the first operation as a success, as did Barnard himself, and for the same reasons, namely that the transplanted heart continued to beat strongly throughout the eighteen days it resided in the recipient’s chest. The fact that the patient died of pneumonia was, Ebony noted, “of little consequence” (1968).

Ebony exhibited even more interest in Barnard’s second heart transplant, carried out in the first days of 1968. The editorial noted that “in blatantly racist South Africa,” Barnard had transplanted the heart of twenty-four-year-old “Colored” Clive Haupt into the body of a white Jewish retired dentist, aged fifty-eight. The dentist, Philip Blaiberg, had been asked just before going into surgery if he had any objection to receiving a “colored” heart. He had none, and the operation went ahead. Ebony speculated in its editorial:

If Dr. Blaiberg completely recovers and again walks the streets of Cape Town, a most ironic situation will ensue. Clive Haupt’s heart will ride in the uncrowded train coaches marked “For Whites Only” instead of in the crowded ones reserved for blacks. It will pump extra hard to circulate the blood needed for a game of tennis where the only blacks are those who might pull heavy rollers to smooth the courts. It will enter fine restaurants, attend theaters and concerts and live in a decent home instead of in the tough slums where Haupt grew up. Haupt’s heart will go literally to hundreds of places where Haupt, himself, could not go because his skin was a little darker than that of Blaiberg. (Ebony 1968:118)

The surgery might work medical miracles but not lasting political ones: the editorial cautioned, “It is doubtful . . . that the transplant of a Colored heart into a white man will have any positive effect upon the rigidly segregated life of South Africa” (1968:118).

By spring 1968, media ambivalence was rampant. In April, Life described Barnard as an “international folk hero—and a center of medical controversy.” It noted that of 218 cardiologists interviewed, half of them said they would not undergo a heart transplant (Rosenfeld 1968). In May 1968 Newsweek expressed considerable surprise that four more heart transplants had recently taken place in three different countries, even though five out of the six recipients who had gone through this new invasive treatment were dead. This magazine suggested that a moratorium was appropriate but pointed out that Philip Blaiberg was “doing well” three months after his surgery and that this second operation had assumed enormous significance. The article cited Barnard as saying: “The patient himself seems to have answered the critics more ably than
I could” (Newsweek 1968b). When describing his first two cases in the American Journal of Cardiology, Barnard stated: “The first patient died 18 days after the operation, and the second patient is still alive after six months. Thus the technique evolved has so far carried a direct mortality of zero” (1968).

Raymond Hoffenberg, the physician for Clive Haupt, the donor for Barnard’s second heart transplant, remains troubled by the media’s role in the event. When I interviewed him in 1998, he recalled that transplant surgeons were “hanging around” the ICU where he was looking after Haupt and that he had to send them away, insisting that the patient was not dead. He decided to wait overnight before making a decision as to whether there was any possibility that Haupt could survive. Hoffenberg pointed out that, because at that time no concept of brain-death existed, it was exceedingly difficult to know when exactly to declare the deaths of patients on ventilators. When Hoffenberg returned to the unit in the morning, in his estimation, Haupt was no longer alive, but he cannot recall exactly when the death certificate was signed.

Hoffenberg is still shocked about a photograph showing Philip Blaiberg, the recipient of Haupt’s heart, “swimming” at a Cape Town beach several months after surgery. He recalls that Blaiberg was never able to walk independently after the surgery. For the photograph he had to be taken down to the water’s edge in a wheelchair, carried into the ocean, photographed, and then hauled out again.

By December 1968, one year after the first heart transplants, the initial euphoria had all but evaporated. The Nation published an article that month headlined “The Heart Market” in which they asked if someone was playing God; they asserted that a “shocking international heart transplant race” was under way. This article also reminded readers about the ambiguity of the donor’s condition and stressed that, “contrary to the general impression, few doctors can predict the so-called ‘moment of death’ with certainty” (Smith 1968:720). It presented findings about a group of 120 head-injury patients who were unconscious for more than a month at Cambridge University Hospital in England. Sixty-three of them survived, leading the writer to the conclusion: “As the need for donors grows larger, the definition of death must be carefully redefined. When are you dead enough to be deprived of your heart?” (Smith 1968:721).

Media publications of the time yield a striking contrast with contemporary practices: photographs of organ donors (taken before their accidents) appear alongside photographs of recipients. The donor is usu-
ally young and exuberant, and the recipient looks middle-aged and exhausted. In one photograph, the wife of the first heart recipient is looking sympathetically at the grieving father of the donor, who had lost not only his daughter but also his wife when they were hit by a speeding car (Life 1967). However, by 1969 photographs of donors no longer appeared in the media; donors became cloaked with anonymity as the ambiguity of their condition drew attention.  

After one hundred heart transplants, media opinion was consistently against transplantation. Three eminent U.S. cardiologists had called for a moratorium on transplants in 1968, but Albert Rosenfeld, writing in Life, was convinced that Barnard would not abide by one. Life echoed Newsweek’s earlier surprise that no moratorium had been placed on this type of surgery (Rosenfeld 1968). There was at least one call, from

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4. The media continue to report sporadically on individual, named patients who are waiting for organs, but graphic reports about the sudden, often violent death of those who donate organs was deemed early on as not appropriately newsworthy and perhaps overly macabre, even for the tabloids. In short, donor deaths go unnoticed except when they are compiled into statistics about traffic accidents and the increased suicide rates of youth.
a professor of biology, for Barnard to be disbarred permanently from medical practice (Schmeck 1969).

The Ultimate Operation: Consolidation and Dissent

In July 1969 Barnard arranged for an international meeting in Cape Town of surgeons who had carried out heart transplants. Most of the conference was devoted to surgical and postoperative techniques, diagnosis of organ rejection, and findings from recipients who had died. The first part of the meeting, however, was given over to the “selection and preparation” of donors and recipients. Barnard asked “our neurosurgeon, Dr. de Villiers,” to describe when a patient could be thought of as a potential donor. De Villiers responded that in light of recent developments in transplant technology, it had become necessary to redefine what is taken to be a cadaver, and he insisted that the termination of treatment should be exclusively a medical decision: “I don’t believe we can share this responsibility even with relatives. We may not ask consent of the relatives; it is entirely a technical medical decision, nor should we be circumscribed in this decision by legal authority” (Shapiro 1969a:40).

The ensuing discussion emphasized that if the “conventional point of death,” namely cessation of the heartbeat, was the earliest possible moment to declare death, “proper preparation” of a heart for transplant was impossible. At the same time it was argued that “for social and legal reasons,” the introduction of “radically new concepts” of death should be avoided.

Adrian Kantrowitz, the American surgeon who had attempted to transplant the heart of an anencephalic infant into a nineteen-month-old baby, reminded the group that, as shown in canine experiments, transplants that make use of a still-beating heart have a much greater success rate than those using a heart that has stopped beating. If the heart has to be resuscitated, it does not “perform as well.” Kantrowitz stressed that treatment of the donor should be terminated at the point when “irreversible brain-death” has been established (one of the first occasions when the term brain death was used). Denton Cooley, a transplant surgeon also from the United States, commented:

Neuro-surgical colleagues at times have used terms which should be avoided. In the first place—I think that we should avoid the words “alive” and “dead” as synonymous with brain function or cardiac function. “Alive” and “dead” are such nebulous and vague terms, so ill-defined that they will never be defined, since no one understands either the meaning of “life” or “death”. One should say the heart is contracting, or beating, but not “alive.” . . . In
my opinion the clinician can become too pre-occupied with the rights of the
dead, namely the donor, at the expense of the recipient. We should not jeop-
dardize the possible survival of the recipient while we are waiting around to
make a decision whether the cadaver, as you call it, is dead or not.

(Shapiro 1969a:45)

It was pointed out that France and Great Britain already had guide-
lines for diagnosis of “irreversible coma” and that the decision to dis-
continue treatment had been taken out of the hands of transplant sur-
gonors and placed in the domain of neurosurgeons. Barnard and
Kantrowitz both took exception to these guidelines, stating that the well-
established reliability of physicians obviated the need for formal criteria.
Barnard went on to declare: “I think we can say we now have a donor,
i.e., a potential donor. On the whole, people will agree that there is no
need to wait for conventional death . . . if you have a patient who can
fulfill the criteria for becoming a potential donor once you stop the
respirator, you can also be certain that the patient will die, so why wait
until the heart stops beating?” (Shapiro 1969a:50).
Defining Irreversible Coma: The Harvard Committee

One month after Barnard’s first heart transplant, with the recipient dead for just over a week, Henry Beecher, an anesthesiologist, approached the dean at Harvard medical school with a request. Beecher, well known for his ethical concerns about medical experimentation, wanted a group formed to discuss what he regarded as urgent issues associated with the “hopelessly unconscious” patient. The dean responded enthusiastically to Beecher’s request and appointed him chair of the “Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death.” This committee was composed of ten physicians (whose specialties included transplant surgery, anesthesiology, neurology, and psychiatry), one lawyer, one theologian, and one historian. Mita Giacomini, who has worked extensively with unpublished documents produced by this committee, notes that most of its members were already well acquainted (1997). After six months of meetings, the group produced a report that was published in the Journal of the American Medical Association under the title “A Definition of Irreversible Coma” (1968).

The report opens with a statement that was to be frequently cited in future discussion:

Our primary purpose is to define irreversible coma as a new criterion for death. There are two reasons why there is a need for a definition: (1) Improvements in resuscitative and supportive measures have led to increased efforts to save those who are desperately injured. Sometimes these efforts have only partial success, so that the result is an individual whose heart continues to beat but whose brain is irreversibly damaged. The burden is great on patients who suffer permanent loss of intellect, on their families, on the hospitals, and on those in need of hospital beds already occupied by these comatose patients. (2) Obsolete criteria for the definition of death can lead to controversy in obtaining organs for transplantation.

(Ad Hoc Committee of the Harvard Medical School 1968:85)

Given that in 1968 no patient survived in a brain-dead condition for more than a few hours or days, it can be assumed that point 2 is of greater interest to the committee. The report describes the characteristics of “irreversible coma,” including complete unreceptivity and unresponsiveness, an absence of movements, of spontaneous breathing, and of reflexes. The diagnostic procedures to be used in establishing the condition of a permanently nonfunctioning brain are described; an electroencephalogram (EEG) is said to be of “great confirmatory value.” The
report concludes that all relevant tests must be repeated after a twenty-four-hour interval, at which time, if the patient’s condition has not changed, death can be declared and the ventilator turned off. It is made clear that only a physician can make the diagnosis.

A legal commentary is included in the report, confirming that judgment of the criteria for irreversible coma is a medical and not a legal issue. It also states that, if the medical community as a whole is supportive, the recommendations could become the basis for much-needed change in the legal concept of death. It cautions that patients should be declared dead before any effort is made to unplug the respirator: “The reason for this recommendation is that in our judgment it will provide a greater degree of legal protection to those involved” (1968:87).

Following the legal commentary, the report refers to an address by Pope Pius XII in 1958 titled “The Prolongation of Life.” The Pope declared that it is not within the competence of the Church to determine the moment of death, and that while it is essential for a physician to take all reasonable means to restore vital functions and consciousness of patients, it is not obligatory to continue the use of extraordinary means in hopeless cases (The Pope Speaks 1958:398). From the outset, then, the Harvard group was reasonably assured that the debate over death would not open up vicious disputes, as the abortion question had done.

Martin Pernick suggests Beecher considered it a blatant waste of resources to keep patients on ventilators when their condition is deemed irreversible. Such patients could perhaps be made into experimental subjects, avoiding the ethical problems associated with experiments on fully alive patients (1999:10). But it was clear that organ transplants were uppermost in the minds of the committee. The report states: “The question before the committee could not simply be to define brain-death. This would not advance the cause of organ transplantation since it would not cope with the essential issue of when the surgical team is authorized—legally, morally, and medically—in removing a vital organ” (cited in Giacomini 1997:1474).

Pressure was on the committee to work quickly, and meetings proceeded behind closed doors. An early draft of the report proposed that before life support could be terminated, signs of death must be reaffirmed at twenty-four-hour intervals over three days. Giacomini notes dismay on the part of at least one of the involved transplant surgeons at the prospect of having to wait so long before organ procurement would be possible. The waiting period was eventually reduced to twenty-
four hours, and a much shorter interval has since become usual. As to whether transplant surgeons should be banned from making diagnoses of death, it was decided in the end not to keep them from the bedsides of comatose patients who are potential organ donors.

Indeed, the committee struggled over whether its mandate was to try to redefine the concept of death or simply to define irreversible coma. At issue was whether “a patient [should] be declared dead, or merely hopeless, in order to qualify as a vital organ source” (Giacomini 1997: 1476). The committee was sharply divided, with one transplant surgeon arguing that the word death should be used, with no qualification. A neurologist, by contrast, cited two cases of patients in his experience who had made good recoveries after many months of “complete unresponsiveness,” and as a result he argued for a much more cautious approach. The final report uses both irreversible coma and brain-death.

Noting that the committee report cites very few publications or conventional forms of scientific evidence to substantiate its statements, Giacomini argues that the committee set out to construct brain death as a verifiable fact by establishing first and foremost the technical features of brain death as medical phenomena and deliberately setting aside all philosophical “speculation.” Although diagnoses more or less synonymous with brain death were already being applied in medical practice at several hospitals—as committee members must have been aware—they deliberately ignored current practice. Instead, they crafted their document as though the committee meetings constituted a historic event, the result of progressive medical insight that crystallized for the first time while they sat around the committee table.

Giacomini concludes that the committee marked out a new space between the living and the dead in which “the irreversible comatose body became a territory over which sometimes competing, sometimes cooperating technological interests negotiated their claims” (1997: 1478). The committee shifted arguments away from earlier concerns about the meaning of death to defining it in instrumentally measurable terms. “Redefining death was not simply a technical exercise, but an aesthetic act to fit the hopelessly comatose, the dead, and the organ donor into the same clinical picture” (1997:1480).

In 1969, Henry Beecher published a commentary in the New England Journal of Medicine defending the committee report. He lamented lawyers’ reluctance to recognize irreversible coma, which had made hospital administrators hesitant about acting on the new view of death. Although the legal profession was apparently content to leave the actual deter-
mination of death in the hands of doctors, some lawyers nevertheless retained doubts. Beecher, well-known for his dislike of lawyers, insisted, “Once the decision is made to terminate the situation, to turn off the respirator, what difference does it make whether the heart is stopped by inexorable asphyxia or by removal?” He concluded that it is doubtful whether “we as a medical society have yet achieved enough emotional and sociologic maturity to handle this question boldly,” but failure to do so “verges on the unethical” (1969:1071).

Quickening the New Death

The Harvard committee in fact accomplished little that was entirely new. A Boston medical examiner, William Brickley, in a talk to the Massachusetts Medical Society in 1941, stated that he had spent many years trying to establish the precise time of legal death. He concluded that this task is extraordinarily difficult because not all the parts of the body die at the same time. Brickley noted that while “science” has various definitions of death, in his opinion, “Life is over when brain waves cease” (Time 1941:62).

The first serious attempt to redefine death on the basis of the condition of the brain was made in 1959 by French neurophysiologists, who coined the term coma dépassé (beyond coma) to describe this condition (Mollaret and Goulon 1959; Jouvet 1959). The Harvard committee ignored the French publications. Coma dépassé was recognized as a new type of coma, a stage of life beyond the cessation of all vital functions: the foundling of life-support technology. Mollaret and Goulon argued that this condition creates an overwhelming temptation for the physician to pull the plug and stop the ventilator (1959:41). They clearly recognized that the presence of this “dark zone” made the redefinition of death essential.

The debate had also been opened earlier in the United States. According to a 1966 article in Time, “Many physicians now believe that the question ‘Is the patient dead?’ should be answered largely on the basis of his electroencephalograph (EEG or ‘brain wave’ tracings).” The words of a Boston neurosurgeon were cited: “The human spirit is the product of man’s brain, not his heart” (Time 1966). Criteria for establishing brain death were set out in this article by Robert Schwab, a neurologist who later participated on the Harvard committee.

The article also reported on a Swedish cardiac surgeon who had re-
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recently caused a furor by suggesting that a person should be declared dead when a flat EEG shows that “his brain has definitely and irreversibly ceased to function.” France, the article noted, was also in uproar because its National Academy of Medicine had supported the idea that a patient was dead if no brain activity was exhibited on the EEG for forty-eight hours. *Time* concluded that modern medical technology had rendered the current laws and the traditional precepts and practices of physicians “out of date” (1966).

From the early 1960s transplant physicians, who believed that their work was being impeded because brain death was not widely accepted, pushed to place their new enterprise on a firmer footing (Moore 1964). A 1966 Ciba Foundation symposium titled “Ethics in Medical Progress: With Special Reference to Transplantation,” involving twenty-eight participants from Europe and North America (the majority of whom were physicians and surgeons), dealt extensively with increasing impatience toward conventional ideas of death. Among the questions addressed were the following:

For how long should “life” be maintained in a person with irrevocable damage of the brain? Does a parent always have the right to accept or refuse treatment of his child? What special protection might be given to minors, people of low intelligence, or prisoners, in regard to clinical trials or donation of tissues? When does death occur in an unconscious patient dependent on artificial aids to circulation and respiration? Are there ever circumstances where death may be mercifully advanced? . . . Does the law permit operations which “mutilate” the donor for the advantage of another person? (Wolstenholme and O’Connor 1966:vii–viii)

Thomas Starzl, soon to become well-known as the most experimental and aggressive of liver transplant surgeons, revealed his confusion at this early symposium. He commented: “I assume that when kidneys are removed from ‘living cadavers,’ only one organ is removed, so that the patient is not thereby killed” (1966:155).

The conference revealed that no consensus existed as to whether death should be redefined. Several participants were concerned about protecting the reputations of transplant surgeons. At one point the discussion focused on Starzl’s controversial use of prisoners as “volunteer” live kidney donors. Several participants stated that “dead” donors are more acceptable than living ones. Opponents of organ procurement from living donors invoked the Hippocratic imperative “First, do no harm,” arguing that such practices constitute an “assault” (KilBrandon,
This concern was countered by a recurrent worry that tinkering with the process of dying could easily be interpreted as an expedient move to make organs available for transplant.

It is evident from the language used that participants were sensitive to the ambiguous status of the patient-cadaver. Scare quotes were placed around words such as *dead* and *irreversible* to qualify their meaning. During the conference and in the years to follow, several physicians invented cumbersome, sometimes graphic terms for patients suspended between life and death: “dead but in a state of artificial survival” (Hamburger and Crosnier 1968:42); “living cadaver” (Starzl 1966:70); “heart-lung preparation” (Alexandre 1966:156); “potential cadaver” (Revillard 1966:70); “reanimation patient” (Bessert et al. 1970), “respirator brain” (Korein 1978:9; Moseley et al. 1976), and “neomort” (Gaylin 1974:23). The struggle to define a clear transition between life and death, to create discrete boundaries, is apparent. It is equally obvious that the “need” to find organs for transplants gave an edge to the discussion, causing certain participants, usually transplant surgeons, to appear impatient and fractious. Others, most often neurologists, are much more tentative, concerned with describing accurately the “scientific” condition of “neomorts” as either living or dead.

Toward the end of the symposium, a urological surgeon argued that “as our thinking about transplantation of human organs develops, people must become enlightened enough not to think of this as a horrible experiment, or indeed as an experiment at all, but learn to accept it as a normal event” (Goodwin 1966:211).

Popular ambivalence was evident in comments by intellectuals. In an article originally published in *Daedalus* in spring 1969, the philosopher Hans Jonas was among the first of a string of intellectuals, neither physicians nor lawyers, to criticize the new definition of death. Jonas emphasizes that his quarrel is not with those who must decide when the “artificial prolongation of life” is futile. If a diagnosis of “brain-death” were used simply for that purpose, then it would present no problems. At issue for Jonas is the need to “* advance*” the moment of the declaration of death while keeping the respirator turned on, “thereby maintain[ing] the body in a state of what would have been ‘life’ by the older definition (but is only a ‘simulacrum’ of life by the new)—so as to get at his organs and tissues under the ideal conditions of what would have been ‘vivisection’” (1974:129, emphasis in original). Jonas is above all concerned about protracting the process of dying and doing violence to
a body conveniently redefined as dead. He insists that we do not know the “exact borderline between life and death” and that only the most stringent criterion of death will do: “The patient must be absolutely sure that his doctor does not become his executioner” (1974:131).

Jonas detects the classical “soul-body dualism” of Enlightenment philosophy at work in efforts to reformulate death:

[In] its new apparition . . . the dualism of the brain and body . . . holds that the true human person rests in (or is represented by) the brain, of which the rest of the body is a mere subservient tool. Thus when the brain dies, it is as when the soul departed: what is left are “mortal remains.” Now nobody will deny that the cerebral aspect is decisive for the human quality of life of the organism. . . . The position I advance acknowledges just this . . . [but] the extracerebral body [has] its share of the identity of the person. The body is uniquely the body of this brain and no other, as the brain is uniquely the brain of this body and no other. What is under the brain’s central control, the bodily total, is as individual, as much “myself,” as singular to my identity (fingerprints!), as noninterchangeable, as the controlling (and reciprocally controlled) brain itself. My identity is the identity of the whole organism, even if the higher functions of personhood are seated in the brain.

( Jonas 1974:139)

Although it was intellectuals, rather than medical commentators, who first raised the question of the demise of the person, it has been increasingly taken up within the medical world. Today, despite advances in scientific knowledge about the brain, neurologists continue to write and openly worry about the death of the person. The ambiguous condition of the living cadaver leaves even these medical experts confused.

The Medical World Divided

Early in 1968, a patient was brought to a hospital in Richmond, Virginia, with a severe head injury. Despite intensive treatment, over the next twelve hours it became clear that the patient would not recover. The possibility of donating organs was discussed with the patient’s family and with the medical examiner. Both parties agreed to donation, the respirator was turned off, and the heart and kidneys were removed. The heart was used in the first heart transplant to be performed in Virginia. Shortly thereafter the transplant surgeon, David Hume, stood trial on a charge of wrongful death, because it was asserted that the individual’s death was caused by the removal of her heart (Pollock 1978:4). The jury eventually declared Hume and his associates not guilty. In reporting this
case in the *American Journal of Surgery* ten years after the event, the author, a surgeon, was clearly shocked that a “law book” definition of death might take precedence over a medical definition.

In 1972, also in Virginia, four years after removal of Bruce Tucker’s beating heart and its transplantation into a waiting patient, the four surgeons involved were acquitted of wrongful death charges. Tucker’s brother, who had brought the case, alleged that the donor had not been dead when his heart and kidneys were removed, and that it was the removal of the organs that caused his death. Tucker had been diagnosed as irreversibly unconscious, but in 1968 no systematic criteria existed for this diagnosis.

On the basis of preliminary comments by the judge, the prosecution was considered likely to win the case, but apparently the judge’s mind was swayed by the statements of expert witnesses. One physician insisted that the body exists only to support the brain and that “the brain is the individual” (Kennedy 1973:39, emphasis added). The donor’s brother was particularly upset because the hospital had allegedly made little effort to locate Tucker’s relatives and had treated his body as unclaimed. After the surgeons had been informed by the hospital administration and the police that the next of kin could not be traced, the procurement had gone ahead without the family’s permission and with no evidence that Tucker wished to be an organ donor. In court, Tucker’s brother testified that he had telephoned the hospital three times but was never informed that his brother was to become an organ donor. He had eventually learned of the transplant from the undertaker.

These cases and one or two others in the United States spurred the medical and legal establishment to create standard criteria for determining brain death (Gaylin 1974; Simmons et al. 1987:25). The Uniform Anatomical Gift Act, which was in place by 1968, was designed to ensure voluntary donation of corpses and body parts for transplantation. But without any standard criteria for determination of brain death, controversies had persisted.

The decision by the Virginia court permitted transplant surgeons and intensivists across the United States to breathe more easily. Critical comments in both the media and professional medical journals about predatory transplant surgery, common during the previous four years, might now subside. *Newsweek*, for example, had published the statement of a public-health official in Washington, D.C., in 1967: “I have a horrible vision of ghouls hovering over an accident victim with long knives unsheathed, waiting to take out his organs as soon as he is pronounced
dead” (1967:87). Shortly before the Harvard committee report was made public, an article titled “Transplantation in the Brave New World” appeared in a psychiatric journal. The author, a physician, brings up the role of medicine in Nazi Germany; writes of a future in which suicide-assistance squads roam the streets; and envisions the “arrangement” of accidents. He too creates a nightmare vision of the surgeon poised over a dying person, waiting to pluck out the heart at the earliest opportunity (Davidson 1968). Professional journals were also beginning to look critically at the issue. A 1968 editorial in the *Annals of Internal Medicine* reminded its readers of the fact that brain-dead organ donors would, for the most part, be young people who died traumatically: donors would have neither a timely nor a “good” death (1968).

A week after publication of the Harvard committee report, but without reference to it, James Appel, president of the American Medical Association, argued that society must face up to the ethical and legal questions posed by organ transplants. He commented negatively in *JAMA* on the “blow by blow” description that the public had been given of the first five heart transplants. Like other authors before him, Appel speculated as to why heart transplants caused so much furor when earlier liver and kidney transplants had occasioned no outcry. He concluded that the answer lay in the symbolic significance of the heart (1968).

Another article in the same journal was one of the first to note that transplantation involves the interests of two individuals—the donor and the recipient—and therefore “the people, law, and medicine must come into some comfortable and realistic rapprochement on the moral, ethical, legal, humanistic, and economic aspects of this problem” (Arnold, Zimmermann, and Martin 1968).

*The American Journal of Cardiology* compiled a list of outcomes of the 146 heart transplants performed through August 1969. Only 21 patients survived (among these, 9 had been operated in the previous two months), and details were not known about one other patient in Switzerland. Barnard’s second heart transplant patient, Philip Blaiberg, died of organ rejection 592 days after his operation (Haller and Cerruti 1969:562). No judgments were made in this article, but the figures were damning.

In *Seminars in Psychiatry* Alec Paton, writing in 1971, noted that “millions of words have been written about transplantation.” Echoing Appel’s speculations, he argued that “world-wide reaction to the first heart transplant showed that emotional attitudes are stronger than many
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scientists would like to acknowledge. To most people, the heart is more than a pump, and the sanctity of the body, especially when dead, is still firmly held.” Presumably because of Barnard’s flirtation with the media, Paton denounced transplant operations as public spectacles (reminiscent of human dissection in the sixteenth century). Observing that five heart recipients had become psychotic soon after their operations, Paton questioned why so little had been heard about this. He stopped short of outright condemnation of solid organ transplantation, but commented that since Blaiberg’s death there had been an “almost complete cessation” of heart transplants (1971:168).

Indeed, seven years later, the sociologists Renée Fox and Judith Swazey noted that “a quasi-moratorium on human heart transplantation still exists throughout the world” (1978:312). In 1976 only 31 operations had been carried out, many fewer than between 1967 and 1971, when the technique was new. After the initial contagious exhilaration had worn off, only three surgeons, including Christiaan Barnard in Cape Town, continued to perform the procedure. The outlook for recipients of liver transplants remained even more dismal than that of heart recipients (Fox and Swazey 1978:316–17). The situation would not improve for organ recipients until the powerful immunosuppressant cyclosporine was put on the market with great fanfare in 1981 (Fox and Swazey 1992).

In summary, it was not until the first heart transplants were performed that concern about transplants became widespread. Media response moved rapidly from adulation to ambivalence; medical reactions in the two years following the first heart transplants were equally mixed, with the majority of doctors pointing out that the procedure remained experimental and the survival rates dismal. Almost no comment was made, save by one or two critical psychiatrists, about the quality of life of the survivors.

Debate about which tests could be relied on to confirm the clinical judgment of death was common in the medical literature during the late 1960s and early 1970s, coupled with a sense of urgency about standardizing procedures for declaring death and procuring organs. Other worries included who would protect physicians from malpractice suits in connection with the new death and organ procurement (Black 1978:338) and the negative image of doctors that transplant physicians were creating. It became clear that transplant surgeons had a conflict of interest if they were in any way involved with diagnosing the death of
donors or promoting the new death, but in the early years this issue slipped by more or less unnoticed.

The ethical and legal issues raised, with only a few exceptions, were those that continue to plague the transplant world today: the shortage of organs, coupled with questions about their standardization, allocation, and distribution (Hogle 1995). An essay by the theologian William May (1973) is virtually unique for this time in expressing doubts about the strategies for organ procurement.

In the United States it was debated whether it was necessary to approach families to obtain consent for donation. Several European countries, where centralized state power was well established, had already institutionalized “presumed consent,” so that organs could be procured unless the patient or family opted out ahead of time.

May was concerned about a policy that permitted the routine cutting up of corpses, “even for high-minded social purposes.” He argued that we must face up to the “horror” of what was about to take place: “There is a tinge of the inhuman in the humanitarianism of those who believe that the perception of social need easily overrides all other considerations. . . . Even the proponents of routine salvaging have conceded indirectly to the awkward fact of human revulsion” (1973:5). May was categorically opposed to supporters of presumed consent who argued that requiring prior, explicit consent from prospective donors would mean that fewer organs would be procured. In May’s opinion, even if this were the case, prior consent was essential. He dismissed objections that it was inappropriate for hospital staff to make “ghoulish” overtures about donation to relatives of the newly dead: it simply would have to be done. May concluded: “The question remains whether a system that overrides rather than faces up to profound reservations is not, in the long run, more ghoulish in its consequences for the social order” (1973:5).

In retrospect May’s comments are particularly pertinent. They appeared at a time when donors, who had been disquietingly visible during the first year of heart transplants, disappeared from public view to become nameless ghosts who haunt the transplant world. The ambiguous status of living cadavers created a loophole in the laws regarding consent to medical procedures. Rather than being granted the rights of patients, including the right of informed consent (instituted in the late 1960s), they were assigned the status of corpses. As a result, their organs could be made available for commodification, perhaps even without the prior
consent of the patient or the patient’s family. Although this issue was settled reasonably quickly, and individual consent is required throughout North America before donation can take place, other troubling issues were not so easily resolved. It would be another ten years before guidelines for determining brain death were systematized and the new death was legally recognized.

5. In Europe, presumed consent laws are in use in Austria, Belgium, Bulgaria, Cyprus, Denmark, Finland, France, Greece, Hungary, Italy, Luxembourg, Portugal, Spain, Sweden, and several Swiss cantons. These laws, some of which have since been modified since their enactment, have strong and weak forms. In the exclusive or “strong” form, if the deceased has not opted out, then organs can be taken without obtaining family consent. With the “weak,” inclusive form, the family must be consulted. In practice the law everywhere is flexible, and it is claimed that the wishes of the family are not overruled.