3: Definition of Death

A. Definition of Death and Euthanasia

Until the 1960s there was no legal problem about the definition of the death of a person. Statutes did not define death, because it was considered to be one of those facts too obvious to need definition. Case law presupposed a common understanding of death but wrestled with problems about determining the time of its occurrence. *Black's Law Dictionary* provided a definition:

> The cessation of life; the ceasing to exist; defined by physicians as a total stoppage of the circulation of the blood, and a cessation of the animal and vital functions consequent thereon, such as respiration, pulsation, etc.

The death of a person in this traditional legal view was a matter of fact; the occurrence and time of this fact could be established by medical certification or other competent evidence.[1]

In a living human body, as in other higher animals, life depends upon the coordinated functioning of the cardiovascular system, the respiratory system, and the central nervous system. If any of these three stops for long, the others stop shortly thereafter, and a process follows which everyone recognizes as characteristic of a dead body: unresponsiveness, lividity, frigidity, rigor mortis, decomposition.

Of the three interlocking functions that of the central nervous system, which is centered in the brain, is the most vulnerable. If the brain is deprived of fresh, oxygenated blood, one loses consciousness in a matter of seconds; irreversible damage to the brain begins in a few minutes, with parts of the brain required for conscious activities giving way more quickly than those parts which regulate nonconscious functions. But in fifteen or twenty minutes the brain no longer can signal the lungs to furnish more air. If nothing is done to force air into the lungs, the blood—even if it still circulates—no longer carries the oxygen necessary for muscle action, and the heart stops.[2]

Since breathing, blood circulation, and the functioning of the brain are so

intimately related, and since a body is dead when these three functions cease, it generally has been accurate enough to identify death—the transition from the state of a living organism to that of a dead body—by cessation of breathing for more than a few minutes, by massive blood loss, by cessation of pulse and heartbeat, and even by abnormally prolonged unconsciousness from which an individual could not be roused to eat and drink. In the last case, as in those involving the heartbeat and blood circulation, breathing would soon cease, and then the process characteristic of a dead body would unfold.

However, modern techniques of intensive care loosen the connection between the cessation of vital functions. A brain destroyed to the point that the individual will never recover consciousness still can function sufficiently to continue to control nonconscious functions, including breathing. And if breathing continues, the heart can continue to beat and oxygenated blood flow to the brain. Although the individual cannot be roused to eat and drink, nutrients can be supplied by tube, and the body maintained in coma for a long period of time. This is the case with Miss Karen Quinlan after she was weaned from the respirator.[3] The ability to breathe spontaneously can be lost for a time or even permanently—for example, due to damage to the nerves between the brain and the lungs—in an individual whose conscious life goes on in a normal way, because the respirator can supplement or replace one's natural respiratory function. A heart-lung machine can replace both functions for a short time.

However, none of these techniques set off the current debate about definition of death. This debate was set off by the cases of individuals whose respiration is sustained by a respirator and who also seem to be in irreversible coma. If one turned off the respirator, the individual would surely be dead. But what is the situation before the respirator is turned off? Is such an individual already dead—inasmuch as there is neither consciousness nor spontaneous breathing—or is the individual still alive? One might think the latter to be so, because the heart continues to beat, and because the process characteristic of a dead body does not unfold. There may be reflexes in the extremities mediated by the spinal cord; the skin keeps its normal color and elasticity; the body is warm; rigor mortis does not set in; decomposition does not begin.

Clearly, if the individual is already dead, then there is no question as to whether treatment should be stopped. Turning off the respirator cannot kill someone who is already dead, and keeping it going obviously is pointless so far as the deceased is concerned. But being able to say with confidence that an individual is dead without turning off the respirator at once is not pointless so far as others are concerned. For under certain conditions such an individual's heart, kidneys, and other organs can be transplanted to other patients. To take the heart from a dying patient would be to kill that person; to take a

heart from one obviously dead for some time would be to transplant a useless lump of dead and dying material, not an organ capable of sustaining the life of its recipient.[4]

Thus the issue is: Does the conception of death based upon the close interdependence of the functions of brain, lungs, and heart still hold when modern techniques of care make it possible to separate the termination of the three functions? Must the older conception of death be applied to individuals capable of neither consciousness nor spontaneous respiration when the termination of the three functions has been separated, inasmuch as the brain already is dead? Or may not such individuals be declared dead—even though the process characteristic of a dead body is not going on—so that their hearts and other parts might be used to benefit other persons without burdening the recipients and the transplant surgeons with the legal, moral, and psychological onus of conspiracy in homicide?[5]

One might wonder what this issue, considered in this way, has to do with the topic of our present study: euthanasia. How is the question of the definition of death more relevant to euthanasia than many other questions in legal medicine and medical ethics which will remain untreated here?

The relevance of the question of the definition of death to euthanasia is twofold.

First, if it is possible to correctly call "dead" certain classes of individuals which previously were considered living, and if it seems to many people appropriate to deal with these individuals as dead, then the law can approve what people consider appropriate without admitting homicide, for there is no homicide involved in treating the dead as dead. Thus, a correct definition of death, if it would eliminate some false classifications of dead individuals among the living, could relieve some of the pressure for legalizing euthanasia—in this case, pressure arising from a right attitude toward individuals really dead and only considered alive due to conceptual confusion.

Second, if it is possible to mistakenly call "dead" certain classes of individuals who previously were considered living, then the law can be made to approve homicide without seeming to admit it. Thus, a mistaken definition of death, if it would create some false classifications of living individuals among the dead, could achieve the objective of legalizing euthanasia without having to meet and deal straightforwardly with the questions of liberty and justice involved in such legalization. To take an example which goes well beyond any proposal we have seen: If anyone suffering from senile dementia can be classed as dead, then the dilemma of having either to care for such individuals or to kill them can be escaped. One can simply treat them as suits their condition.

Considerations of justice are raised in defining death by going too far in either direction. Obviously it would be unjust to those in fact alive to legally

transform them into dead bodies by redefinition of death, for this would remove without due process all their rights as persons, deprive them of all their privileges or immunities, and leave them altogether without protection—let alone equal protection—of the laws. Less obviously it is likely to be unjust to others to class dead individuals as legally alive. The duties, including the duty of care, due to the living will be exacted inappropriately if required for those in fact dead and only held to be legal persons due to a mistake in the definition of death.

Still less obviously the rights of all who could benefit from the use of transplants of organs are infringed if the dead are mistakenly classed as living. Many persons have exercised their liberty to donate their remains or parts of their remains for the benefit of others by making use of procedures enacted into law by the Uniform Anatomical Gift Acts.[6] Although no one would have had any right to the remains of such persons apart from their gift, once they make this gift, those for whom it is intended have a right to receive it, just as persons who are lawful heirs have a right to their inheritance. Having provided for anatomical gifts, the law would be unjust to obstruct the execution of such gifts by mistakenly classing the dead as living.

B. Should Death Be Defined Anew?

Willard Gaylin sketched out in some detail the many ways in which the bodies of unconscious individuals—those in irreversible coma—might be used if such individuals can be considered legally dead. At present only those meeting the criteria for brain death in jurisdictions which have adopted this criterion can be used, and such individuals are encumbered with respirators. But Gaylin favors a definition of death which would include all decorticates now being treated as incurably ill. Gaylin calls individuals which he wishes to define as dead, although many signs of life still are observable in them, "neomorts." He suggests that rather than only one or another organ being taken from a neomort, it be maintained in a bioemporion—something analogous to the hospitals in which the living are maintained and the morgues in which cadavers are stored. Not only might vital organs be harvested as needed from neomorts but parts of the body which regenerate, such as blood, hormones, and skin, might be taken without ending the usefulness of the neomort. They also could be used for medical training and surgical practice. Neomorts could be used for the testing now done on prisoners, retarded children, and volunteers, as well as for sorts of testing not now done on human subjects. All sorts of experimentation could be done on neomorts, and they could be used to manufacture antibodies.[7]

Paul Ramsey objected to the updating of the definition of death or the proce-

dures for diagnosing its occurrence for the purpose of facilitating transplants.[8] This objection is altogether reasonable if the updating is merely a matter of making an arbitrary change, for then the redefinition of death would amount to nothing more than a declaration that some legal persons are nonpersons so that they can be treated in ways which obviously would violate their rights if they were admitted to be persons. However, if the updating merely remedies the present vagueness of an insufficiently precise definition, then the possibilities of transplanting organs and making the other uses of neomorts which Gaylin outlines make it a matter of justice that the updating be done.[9]

It should be noticed that the question of defining death is different from the question of regulating the conditions under which treatment may be terminated. If an individual is dead, treatment obviously may and should be terminated. But, as we shall argue in chapter four, legally competent persons are at liberty to refuse treatment; if they have done so, then treatment ought to be terminated, although they are still alive and the termination of treatment will permit an existing condition of disease or injury to bring about their death. Also, as we shall argue in chapter nine, there are conditions in which the law ought not to mandate medical treatment for the legally noncompetent; in such cases those responsible for the care of the patient are at liberty to terminate treatment and allow the patient to die. Thus in order to deal with most of the problems about termination of treatment, it is neither necessary nor sufficient to redefine death.[10]

It also should be noticed that death can be defined in various ways. A definition of death in theoretical terms will tell what happens when an organism dies when this matter is considered within the framework of a general theory of life. A definition of death in factual terms will tell what observable or inferable state of affairs obtains if the theoretical concept of death is satisfied. A definition of death in operational terms will tell how to establish that the factual state of affairs obtains.

If, for example, one considers death to be permanent loss of consciousness, one needs a theory in which human life is defined in terms of conscious activity, and then the theoretical definition of death as permanent unconsciousness will follow. But this definition in theoretical terms needs to be supplemented by a definition in factual terms. What observable state of affairs must obtain if a body is to be declared permanently unconscious? Someone might assert that a necrotic condition of all or certain parts of the brain is sufficient to fulfill the conceptual requirement. Finally, this definition in factual terms needs to be supplemented by a definition in operational terms. How does one go about finding out that the relevant part of the brain (or the whole brain) is in fact in the specified necrotic condition? Certain tests must be prescribed and the method of interpreting their results specified. For example, it may be suggested that an electroencephalogram be made, and that if

it reveals no electrical activity in the cortex of the brain, then one can be sure that the cortex is necrotic, provided that other possible and known causes of a flat or isoelectric EEG are ruled out.

There has been a good deal of disagreement as to whether there ought to be a statutory definition of death. In 1977 the Judicial Council of the American Medical Association continued to maintain that

> . . . this is neither desirable or necessary for physicians or patients, as it may result in confusion instead of clarification as advances in scientific capabilities occur. The physician is always ultimately responsible for the diagnosis he makes. Accordingly, death should be determined by the clinical judgment of the physician using the necessary available and currently accepted criteria.[11]

This position seems to assume that the only current problem is in regard to an *operational* definition of death, that this matter is within medical competence, and that there are adequate, currently accepted criteria.

In fact, the current problem primarily is in regard to the more basic theoretical and factual definitions of death. Indeed, many participants in the debate, as we shall soon see, do not consider that the theoretical question can be settled other than by an ethical or policy decision, which is no more in the competence of physicians than of other members of the society. Furthermore, once it is realized that the diagnosis of death terminates legal personhood, and that large questions of justice depend upon the correctness of this diagnosis, it is clear that even in the operational domain judgments by physicians in this matter need some regulation by legal guidelines, particularly inasmuch as there are no criteria currently and universally accepted by physicians in respect to the kinds of cases which gave rise to the current debate.

If the opinion of the Judicial Council were not based upon a misconception of the issue, it would be arrogant, for it would amount to a declaration that physicians alone can settle that certain individuals are legal nonpersons, and that no one has a right to question their judgments in so doing, although a debate about individuals of certain kinds has been going on for ten years among physicians, lawyers, philosophers, theologians, and others.

Some have granted that law must take an interest in the definition of death, but they have argued that statutes be avoided and judicial decisions sought to clarify the matter. The slowness and inconsistency of any development by judicial decisions argues against this approach. So does the lack of facility for the courts to investigate and hear evidence from all sides, and to consider the problem in general rather than within the problematics of a particular case. Most important, judicial decisions cannot guide action until they are formulated, and then they can guide action only for kinds of cases for which they would be adequate precedents.

Others have proposed similar and other strong arguments in favor of trying to settle the issue of the definition of death by statute.[12] Apart from the Judicial Council of the American Medical Association, we find little serious opposition to this conclusion. Therefore, we consider it settled. In any case, statutory definitions of death have now been enacted by at least eighteen states. Those who regard such definitions as undesirable ought nevertheless to be realistic enough to admit the value of considering what the law ought to hold on the matter if similar statutes are enacted in other jurisdictions or the statutes already enacted amended.

C. The Harvard Committee's Criteria

The first important attempt to redefine death was published in 1968 under the title "A Definition of Irreversible Coma: Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death."[13] The chairman of this committee was Henry K. Beecher.

The title of the report betrays an ambivalence or confusion in the committee about its project, for "irreversible coma," "brain death," and "death" express distinct concepts, but the report proceeds on the unargued assumption that a single definition will suffice for all three. The committee does not define death in theoretical terms. However, in urging that redefinition be accepted to avoid great burden "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," the committee seems to imply that those suffering permanent loss of intellect, although thereby burdened, are to be considered dead. Another argument in the report which only compounds the confusion is that because the termination of the use of extraordinary means to prolong life is morally acceptable—on the authority of Pius XII—"the moment of death is the moment when irreparable and overwhelming brain damage occurs."[14]

Lacking a definition of death in theoretical terms, the Harvard committee report nevertheless accepts as a definition in factual terms "a *permanently* nonfunctioning brain" or lack of "discernible central nervous system activity" or coma in which "function is abolished at cerebral, brain-stem, and often spinal levels."[15] On what basis was this factual definition accepted? The report does not say. But three years later Beecher expressed his own view in a paper vigorously defending the new definition against opposing views. Asserting that death has many levels, he says:

> At whatever level we *choose* to call death, it is an arbitrary decision. Death of the heart? The hair still grows. Death of the brain? The heart may still beat. The need is to choose an irreversible state where the brain no

> longer functions. It is best to choose a level where, although the brain is dead, usefulness of other organs is still present. This, we have tried to make clear in what we have called the new definition of death.[16]

This statement makes clear that in one author's view the Harvard report was an attempt to impose one judgment of the need and of what is best upon some individuals previously classed by law as alive, and hence as legal persons with rights potentially at odds with the interests of those concerned with the usefulness of their organs.

The Harvard report itself was clear that it aimed to bring about a change in existing law concerning the definition of death. It proposed to accomplish this purpose by the adoption of its criteria by the medical community without statutory change in the law. It recommended that the judgment of the fulfillment of the criteria newly proposed be considered solely a medical issue. And it emphasized that individuals should be pronounced dead before being taken off the respirator:

> Otherwise, the physicians would be turning off the respirator on a person who is, under the present strict, technical application of law, still alive.[17]

Even if it is correct to maintain—as we shall argue—that an individual whose entire brain is dead is no longer a living person, the Harvard committee's approach seems to have involved a method in principle unacceptable: A private group here consciously attempted to effect the legal nonpersonhood of a class of individuals.[18]

The Harvard report proposed a definition of death in operational terms under the heading "Characteristics of Irreversible Coma." Absence of blood circulation or heartbeat are suggested as sufficient criteria of brain death. Given the continuation of this function, clinical (easily observed) signs were proposed:

1) Deep unconsciousness with no response to external stimuli and internal need. "There is a total unawareness. . . . "

2) No spontaneous movements and no spontaneous breathing. "After the patient is on a mechanical respirator, the total absence of spontaneous breathing may be established by turning off the respirator for three minutes and observing whether there is any effort on the part of the subject to breathe spontaneously."

3) No reflexes, except for those mediated only by the spinal cord. A flat or isoelectric EEG was suggested to be of "great confirmatory value." The depression of the nervous system by drugs or lowered temperature must be excluded. "All of the above tests," the report legislated, "shall be repeated at least 24 hours later with no change."[19]

The criteria proposed have been criticized as inadequate to establish the positive fact of brain death, although admittedly they do indicate serious

brain damage. No one can show that an unresponsive patient is unaware, that inability to react to painful stimuli necessarily presupposes lack of perception of the pain. Three minutes off the respirator is not necessarily sufficient to establish the incapacity to breathe spontaneously; a damaged brain which is not yet dead will not be killed by deprivation of oxygen for this period. Signs which infallibly indicate death under normal conditions do not necessarily do so under unusual conditions of artificially maintained respiration. Hence, a sufficient operational criterion of the death of the entire brain would seem to require the positive establishment of a condition—such as deprivation of oxygen to the brain for a period of fifteen minutes or more—known to be incompatible with its continued functioning.[20]

D. Death as Process or Event

In 1970 Robert S. Morison advanced the argument that "death" and "life" signify not realities, but only reified and even personified abstractions. Death, he maintains, is a continuous process, not a clear-cut event. As life must be reduced to objects which undergo processes of growth, reproduction, and special ways of handling energy, death must be reduced to the limits and gradual ebbing of such functions, which happens not at an instant, but by gradual diminution. The complex interactions among the cells and of the organism with the environment give rise in the case of humans to the concept of "personality." But, Morison suggests, these interactions fail gradually, not with the termination of any one vital function. Thus, he concludes, the judgment required should be based not upon a definition in factual terms, but rather upon the comparative valuations of respecting or maintaining the residual level of interaction, and of terminating or hastening the decline of the process. In support of his proposal Morison appeals to the justification of abortion by those who argued that respect for the sanctity of life required that human decisions be made regarding the relative value of the potential of incipient life.[21]

Leon R. Kass criticized Morison's paper. He points out in the first place that while "death" is an abstract concept, it signifies a very real transition, and that Morison confused this transition from the condition of a living to that of a dead body with the quite distinct *process of dying* which goes on in a living body. Kass also points out that while parts of an organism can die while the individual as a whole survives and while parts can survive when the individual as a whole dies, thus to stretch out the phenomena of necrosis, the organic individual is an integrated functional unit, which from the point of view of a pathologist is dead when irreversible changes occur in certain vital tissues, especially those of the central nervous system. Finally, Kass makes

clear that when Morison argues for the benefits of allowing the termination of life—especially the benefits to the individual involved—the argument presupposes that life still continues, although at reduced value, and that it would be justifiable to hasten a very definite terminal event: death.[22]

The distinction which Kass made clear in this argument between the parts of a human body—its various tissues and organs, which die at various times from conception until some time after the individual has died—and the whole human body is most important from the point of view of just laws. For the legal status of natural persons never has been recognized by law as belonging to any parts of a human body, whether living in the body or apart from it. Thus, for legal purposes the relevant question is not whether the heart has stopped or whether the brain is dead, but whether the human body as a whole is alive or dead. The condition of particular organs and functions is relevant only if it can be shown to provide a factual definition of the death of the whole organism.

E. A Stipulative Definition of "Death"?

In 1973 Roger B. Dworkin advanced the argument that attempts to settle a single legal definition of death were at best a waste of effort and at worst counterproductive. "Death" signifies a turning point of importance for a great many different legal purposes. The sensible thing, he urges, would be to define "death" in particular legal contexts, just as other terms are defined by law relative to the purpose of using them in each context. One might encourage transplantation of organs, if that seemed to be a desirable policy, by defining "death" broadly in the case of potential donors. Dworkin argues that the law has long recognized that death occurs at different times for different purposes. His evidence for this contention is that the laws of many states establish different presumptive death periods for missing persons for purposes of distributing their property and considering a spouse free to remarry. When these varying periods elapse, however, for each purpose an individual is legally dead—just as dead as one can be so far as the law is concerned.[23]

Alexander Morgan Capron replied to Dworkin by pointing out, in the first place, that although the law takes note of death for many diverse purposes, and although one might argue with the law's estimate of the importance of death in some cases, the law presupposes a familiar turning point called "death" and does not simply stipulate it. Further, legal *presumptions* of death are merely presumptions; they presuppose a familiar, factual state of affairs and merely indicate how to proceed when no one knows whether that state of affairs does or does not obtain. In fact, Capron points out, laws concerning the presumption of death take into account the possible counter-

factuality of the presumption by making provision for cases in which it turns out to be false. In other words, one legally presumed dead is not as dead as one can be from a legal point of view—not, for example, so dead that it would be permissible to kill such an individual.[24]

Capron's reply is effective so far as it goes. He might have pointed out further that law cannot justly approach all problems of definition as if the purposes of particular policies could be allowed to control. In many cases this approach is unobjectionable. But in defining "death" the law is settling one of the boundaries of the legal personhood of natural persons, defining the limit at which, for example, the right not to be assaulted and cut to pieces, which is defined by laws prohibiting offenses against the person, ceases and a body is no longer protected against recycling.

Persons have a peculiar status in respect to the law, because they are the only entities it must recognize, the only entities it must serve. Wherever the boundary of personhood is established by whichever definition of death, those placed beyond the boundary are mere bodies outside all the purposes of the law. If not all in the society agree where the boundary is to be drawn, someone's particular opinion will be imposed and the opinion of others set aside if a precise boundary is established by law. And if no precise boundary is established, the rights and duties of all members of the society in the vicinity of the border are left unclear, with the result that the rights of many are put at risk, and the responsibilities of others are either rendered unenforceable or made to be enforced by unpredictable ex post facto judgments.[25]

In 1975 William C. Charron expressed concern that new definitions of death requiring total and irreversible cessation of function of the entire brain can impose unnecessary burdens upon those who care for permanently comatose bodies. He urges that a purely psychological definition of death in theoretical terms as permanent loss of consciousness be accepted, and that at the factual level the destruction of the cortex be taken as sufficient to establish the death of the person. In Charron's view this or any other definition of death is an expression of choice. He maintains that no definition expresses a truth, that every definition is a convention about the use of language. To serve its purpose, such a convention must meet a number of formal requirements and must be publicly acceptable. Charron thinks that psychological death would be a good choice. Although he is aware of the implications for legal personhood of defining death, he is not concerned about the fact that the new definition he proposes would contract the boundary of personhood for comatose bodies in the interest of relieving others of duties toward them.[26]

As a matter of logic, Charron's contention that all definition is stipulative is mistaken. Some definitions attempt to state facts about the uses of words; sometimes a claim is made that certain words of the same or different languages differ in form but agree in sense. Definitions of this sort can be true.

Other definitions claim that different expressions have the same reference—for example, "Rust is iron oxide" makes such a claim, which happens to be true, while "Rust is iron carbonyl" is false.

Charron points out that no appeal to intuition, no empirical data, and no a priori reasoning could establish the definition of death which he prefers. He takes this to show that no rational grounds can be given for considering *any* definition of death true, rather than merely a good choice.[27] However, he ignores the fact that the argument about the definition of death arose from a certain situation, that this situation revealed vagueness in the received concept of death for a certain set of new cases—those in which modern techniques of care separate the close connection of the termination of the various vital functions—and that definitions purporting to remove vagueness can be shown to be false if they fail to conform to already established uses of words so far as established usage goes.

To define death as permanent loss of consciousness—or even as permanent and irreversible loss of consciousness—is to make a claim which is simply false, inasmuch as it misrepresents established usage with respect to individuals who fall into coma outside the context of modern techniques of care. People do not treat such bodies as dead, because their condition is not known to be irreversible, and because the process characteristic of dead bodies does not unfold until breathing stops. If one abandons the common sense distinction between individuals who are in coma and bodies which are dead, one will have to introduce some neologisms—such as Gaylin's "neomorts" and "cadavers"—to make the same distinction. If one wishes to argue that the law should withdraw legal personhood from those in irreversible coma or that the law should permit such individuals to be treated as if they were dead while admitting their legal personhood, then one should assume the burden of defending one's thesis, not try to evade this burden by urging others to choose a definition of death which begs the question.

Underlying the proposals of Charron and others that loss of consciousness be accepted as definitive of death is a residue of dualism between self ("soul" or "ego") and body. This dualism is generally admitted today to be indefensible in theory.[28] But it is widely assumed in the context of ethics. Joseph Fletcher asserts dualism most clearly:

> Physical nature—the body and its members, our organs and their functions—all of these *things* are a part of "what is over against us," and if we live by the rules and conditions set in physiology or say any other *it* we are not *thou*. When we discussed the problem of giving life to new creatures, and the authority of natural processes as over against the human values of responsibility and self-preservation (when nature and they are at cross-purposes), we remarked that spiritual reality and moral integrity belong to man alone, in whatever degree we may possess them as made *imago Dei*.

> Freedom, knowledge, choice, responsibility—all these things of personal or moral stature are in us, not *out there*. Physical nature is what is over against us, out there. It represents the world of *its*. Only men and God are *thou;* they only are persons.[29]

Having taken this general position, Fletcher is not inconsistent when he maintains that when cerebral function is gone, "nothing remains but biological phenomena at best. The patient is gone even if his body remains, and even if some of its vital functions continue."[30] On this view the functioning of the rest of the brain is irrelevant. A person is dead when there is "irreversible loss of whatever component in his biological system holds the essence of the person, and that component is the cerebrum in the brain, not the whole brain."[31]

Hans Jonas correctly points out that a position of this sort denies the extracerebral body its essential share in the identity of the person:

> My identity is the identity of the whole organism, even if the higher functions of personhood are seated in the brain. How else could a man love a woman and not merely her brains? How else could we lose ourselves in the aspect of a face? Be touched by the delicacy of a frame? It's this person's, and no one else's. Therefore, the body of the comatose, so long as—even with the help of art—it still breathes, pulses, and functions otherwise, must still be considered a residual continuance of the subject that loved and was loved. . . .[32]

We shall argue that the body Jonas describes is not always correctly considered to be alive. Nevertheless, Jonas seems correct—and we shall propose additional arguments showing this in chapter eleven, section H—in rejecting the dualism which identifies the person with consciousness and reduces one's living body to the status of a mere object among objects in the physical world. Only such dualism makes it seem reasonable to consider nonpersons those who fall into irreversible coma outside the context of modern techniques of care. Indeed, common sense regards even a dead human body as still partaking in the identity of the person; for this reason we do not—usually, at least, up to now—treat human bodies as mere garbage to be disposed of.

F. Robert Veatch's Analysis

In 1976 Robert M. Veatch published a book-length study on ethical and public-policy issues related to death and dying. His treatment of the problem of the definition of death shows sensitivity to all the relevant issues and distinctions we have been discussing up to this point.[33]

Veatch begins by offering a formal definition of death: "Death means a complete change in the status of a living entity characterized by the irreversible loss of those characteristics that are essentially significant to it."[34] This definition is used to shape the question which Veatch considers primary, namely the appropriate definition of death in theoretical terms. Or, as Veatch puts it, the basic definition of death is metaphysical, not factual. It is a question of ethical and other values. One must choose among the many elements which make human beings unique something whose loss amounts to the loss of humanness.

Veatch suggests four possible choices as plausible: (1) the loss of respiration and circulation of the blood; (2) the departure of the soul from the body; (3) the loss of the capacity for bodily integration; and (4) the loss of the capacity for consciousness or social interaction or both. In each case the loss must be irreversible to define a philosophical concept of death. (1) is only symptomatic; death happens to the whole organism, and particular vital functions are significant only to the extent that they indicate something about the whole. (2) cannot be translated into a definition in factual and operational terms unless it is reduced to one of the others. Besides, Veatch considers (1) to be "animalistic" and too base a function to define what is essential to the human and (2) to be a "relic from the era of dichotomized anthropologies."[35]

Veatch suggests that the capacity for bodily integration (3) includes all the integrating mechanisms possessed by the body, both for inner integration and for integrated interaction with the environment. This philosophical concept would translate into a definition in factual terms of death as the total and irreversible cessation of function of the entire brain, and Veatch tentatively accepts the Harvard criteria as indicating this factual state of affairs in operational terms.[36]

However, Veatch concludes that consciousness or the capacity for embodied social interaction (4) ought to be taken as the "truly essential characteristics." And of these, when he contrasts them, Veatch considers the capacity for embodied social interaction most important. However, Veatch does not wish to require that individuals manifest a capacity for rationality to be considered alive, for such a requirement might exclude infants, the senile, and the psychotic. One must avoid evaluating kinds of consciousness or social interaction lest one step out on the slippery slope of grading human lives by quantitative and qualitative considerations. So Veatch accepts the irreversible loss of any amount and sort of the capacity for embodied social interaction (which includes some form of consciousness) as definitive of human death.[37] This conceptual or theoretical definition translates into a definition of death in factual terms as the irreversible cessation of the functioning of the neocortex (outer surface of the upper part of the brain). Operationally, this criterion seems to translate into a flat EEG by itself as a sufficient

indicator of death.[38] Any individual in a truly irreversible coma with no detectable activity in the neocortex would be considered dead, even though the coma might have begun and continued without any intervention of modern life-support techniques, and the individual to the ordinary person would appear merely to be in a deep sleep, still breathing without attachment to a respirator or any other tubes or machines.

Veatch fully realizes that the definition he proposes is incompatible with the received conception of death. He knows it is more than the refinement of an existing concept to resolve vagueness which has appeared due to modern techniques. Knowing this, he also sees that the replacement of the old concept of death with a new one raises a moral issue, inasmuch as it means that individuals will be considered dead who previously would have been treated as alive. He does not claim certitude that the new definition is correct. How can the moral question be resolved? It hardly helps, he notices, to invoke the interests of other persons. On the one side is the right of living persons to be treated as such. But on the other side, Veatch urges, is another moral consideration: "it is an affront to the dignity of individual persons to treat them as alive if they are dead."[39] Hence, he concludes, the situation is one of genuinely perplexed conscience, which people must resolve according to their best judgment.

This ethical conclusion with respect to the moral responsibilities of individuals must be translated into a public policy which can be enacted as general legislation. Veatch holds that legislation certainly is needed; he accepts the same sort of reasoning we outlined in section B above. But he thinks that in a "confused society" it would be well to make room for individual choice. Yet one cannot allow individuals or next of kin to draw any line they wish as death for themselves or for those for whom they are responsible, since sheer arbitrariness in this matter would open the door to absurd options, which would irrationally infringe upon rights (of the individual declared dead if the line were drawn too early) and impose duties (on others if the line were drawn too late).

Hence, Veatch proposes a statute which would determine legal death by the judgment of a physician, using as criteria traditional standards if artificial means of life support are not in use, but using irreversible cessation of spontaneous cerebral functions as a criterion if such supports are in use. Veatch does not specify how the latter state of affairs is to be determined except that it be "based on ordinary standards of medical practice." But to allow for individual choice, Veatch provides that anyone while legally competent may exclude the eventual use for their own case of the cerebral-function criterion of death, and the legal guardian or next of kin may exclude the use of this criterion for those who have not done so for themselves.

Veatch also attaches an interesting provision which would exclude any

physician from pronouncing death—on any criterion—if there is significant conflict of interest with his obligation to serve the patient, such as an interest in other patients, in research, or in teaching which would benefit from pronouncing the patient dead.[40]

Veatch's treatment of the problem is sound in many respects. He rightly distinguishes the problems of theoretical, factual, and operational definition as the Harvard report did not. He also correctly insists that death is an event which happens to the organism as a whole. Seeing the ethical and legal question, he excludes the crude legal pragmatism of Dworkin and others. He does not suppose that the question of definition is a mere linguistic convention. Still, we find Veatch's treatment unsatisfactory in many respects.

In the first place, it is odd to define death formally as the complete change in the status of a living entity by which it irreversibly loses the characteristics essentially significant to it. If "essentially significant" were understood inclusively, then no organism could die, since every organism, insofar as it is a living *body,* has as its basic essentially significant characteristic bodiliness, and this is the one characteristic death does not remove.

Of course, Veatch does not take "essentially significant" in an inclusive sense; he rather means by it a characteristic of living humans which is chosen after an evaluation.[41] But then the formal definition merely becomes a vehicle for Veatch's articulation of his intuition that social interaction, even if the interaction be carried on at a level not uniquely human, is what is most significant about human persons. Moreover, even if one agrees with Veatch's choice of what is significant, one receives no reason for supposing that the loss of what is most significant about a person and the death of a person are one and the same. It would hardly be absurd to maintain that the capacity to think and to make free choices is what is most valuable about persons, but that there are many other significant aspects remaining even if this is lost. And many would hold that even an unconscious human body, which has not yet begun the process characteristic of a dead body, is an aspect of the person, partaking in personal dignity, and so deserving respect—even reverence. If they are right, no one may choose to consider such a body insignificant merely because it lacks more important human capacities.

In the second place, Veatch provides no reason for supposing that a capacity for embodied social interaction and consciousness always are lost together. It is not at all difficult to imagine a body which can no longer respond but which can still perceive—for example, which cannot move a single voluntary muscle but still can hear. This possibility cannot be proved to obtain, but neither can it be disproved. So much is this the case that some who consider the person to be a psychophysical whole and death to be loss of consciousness demand evidence of the death of the entire brain as the factual definition corresponding to their theory.[42] If incapacity for social interaction were ac-

cepted as a sufficient condition for one's death, individuals still conscious but unresponsive could become inmates of Gaylin's emporion for neomorts.

In the third place, Veatch realizes the dangers of embarking on the slippery slope of quantitative and qualitative determinations, and for this reason he is willing to settle for any minimum degree of the capacity for social interaction. However, by using the method of choosing what is significant on the basis of his own evaluation of various essential human characteristics, Veatch already has stepped onto the slope. The only way to avoid doing so—the way we ourselves adopt—is by limiting any new definition of death to a precision which respects established usage so far as it goes. Many more radical than Veatch in their views surely will demand that the function evidenced be specifically human, and the redefinition of death will become a final solution to many problems, a solution embraced without ever facing the issues which we shall argue in chapter eight. Surely if some are to be killed, the honest thing to do is to consider the question on its merits. (Veatch, himself, clearly does not disagree.)

In the fourth place, Veatch's effort to offset the moral question of the right to life by his counterconsideration—"it is an affront to the dignity of individual persons to treat them as alive if they are dead"—is very odd. Can one affront the dignity of dead persons? And if one can, does one do so by treating them as alive, provided that one does so only because one is not sure whether they are alive or dead and wishes to avoid treating them as dead if they are in fact alive? Moreover, even if there is some moral consideration here, it surely cannot be a question of justice. Hence, the law cannot reasonably take into account this odd moral consideration to offset what would seem a reasonable requirement: A human body ought to be considered alive unless one is certain beyond a reasonable doubt that it is dead. This requirement surely undergirds received standards for acting in doubtful cases—for example, seek help for accident victims (without presuming the apparently dead to be really so), give artificial respiration to those apparently dead from drowning or electrical shock, and so forth.

Perhaps Veatch's introduction of the point about the dignity of the dead is not merely odd, but even ad hoc, for he remarks: "It seems to me that only when such positive moral pressure is introduced on both sides of the argument can we plausibly overcome the claim that we must take the morally safer course."[43]

In the fifth place, Veatch's proposal that a statute allowing for cerebral death as a criterion for legal death should provide an opportunity for individuals to opt out seems to us unsound and unnecessary. It is unsound because it opens a boundary of legal personhood to an arbitrary choice which affects the rights and duties of others, and also because it requires an affirmative act to defend a basic set of rights—an affirmative act which many cannot be ex-

pected to get around to and which some, such as infants, never can do. Moreover, the limits of the option which Veatch chooses are indefensible against more radical proposals.

The statute Veatch proposes also contains a serious flaw which he very likely did not intend. Consideration of cerebral function only comes into play in the event an individual is on artificial life support. Two things follow. First, Veatch does not succeed in covering those he seems to wish to cover: cases in which respiration is spontaneous but the neocortex is nonfunctional. Second, while stating the traditional criteria, Veatch fails to take into account cases in which a patient is totally paralyzed from the neck down, but still fully conscious. Some polio and accident victims are in this condition; they need a respirator permanently. Read literally, Veatch's statute would allow them to be pronounced dead, something he surely did not intend.

G. A New Proposal for Defining Death

This brings us to our own attempt to refine the concept of death. In our view the current problem is one of vagueness in the concept which emerged when modern methods of intensive care rendered the result of using traditional criteria—the cessation of respiration and heartbeat for one-half hour or so—unclear as to its significance. If the vagueness is to be removed without radically altering the concept itself, the question to ask is: Why were these operational criteria taken to be significant? The answer seems to us to be that everyone observes the difference between a living body and a dead body, between a dying body and a decomposing body. Respiration and heartbeat are functions which are continuously present throughout life and observed from birth on. The process which is characteristic of a dead and decomposing body correlates very well with traditional criteria, not only as to occurrence but even as to temporal sequence. Clearly, something happened before the body began decomposing, at or about the time when breathing and circulation ceased. This "something" was the turning point at which a living body became a dead body. The turning point was called "death."

If we look at this situation from the point of view of biological theory, we can understand more clearly what the turning point is. Life often is said to be—in general—a certain kind of physicochemical process, and the life of an organism a collection of such processes. But an organism is more than a collection of processes; it is a coordinated system. From a thermodynamic point of view an organism is an unstable open system, but it continues because it is maintained in dynamic equilibrium by homeostatic controls. These controls are of various kinds, but in an organism which is complex enough to have a nervous system, this system coordinates and integrates the other

control systems. This system is dispersed but centered in the brain; without some brain functioning, the whole system cannot be maintained. Thus when the whole brain ceases to function, the dynamic equilibrium is lost, the materials which were unified in the system begin behaving without its control, and decomposition begins.[44]

These considerations suggest a definition of death in theoretical terms close to one which Veatch considers and sets aside: Death is the irreversible loss of integrated organic functioning. Veatch speaks of a "*capacity* for bodily integration," but this is misleading, inasmuch as what is at stake is not a capacity, not a potentiality which a living body has, but simply is the unity which the living body has and maintains in its complex physicochemical set of processes. Moreover, Veatch introduces even in this definition the idea of social interaction. Unless "social" is taken merely to mean the continuing adaptation of the organism to the environment, however, it demands something essential, not to life, but only to certain special functions of certain kinds of living things. Even a carrot lives and dies.

If death is understood in theoretical terms as the permanent termination of the integrated functioning characteristic of a living body as a whole, then one can see why death of higher animals is usually grasped in factual terms by the cessation of the vital functions of respiration and circulation, which correlates so well with bodily decomposition. Breathing is the minimum in "social interaction." However, considering the role of the brain in the maintenance of the dynamic equilibrium of any system which includes a brain, there is a compelling reason for defining death in factual terms as that state of affairs in which there is complete and irreversible loss of the functioning of the entire brain. To accept this definition is not to make a choice based on one's evaluation of various human characteristics, but is to assent to a theory which fits the facts.

Someone might object that just as the functions of other organs can be supplied artificially, so perhaps the integrating function of the brain could be replaced by a computer. If the respirator does not maintain all of the organism intact, still it does maintain most of its parts in a working system, even when the whole brain is dead.

We notice, first, that the possibility of replacing the functioning of the brain is speculative. When the respirator maintains the organism, it is questionable whether there is complete and irreversible loss of the functioning of the *entire* brain. But this is a question to be settled by empirical inquiry, not by philosophy. Philosophically, we answer the objection by saying that if the functioning of the brain is the factor which principally integrates any organism which has a brain, then if that function is lost, what is left is no longer as a whole an *organic* unity. If the dynamic equilibrium of the remaining parts of the system is maintained, it nevertheless *as a whole* is a mechanical, not an organic system.

If death can be correctly defined in factual terms as the complete and irreversible loss of the functioning of the entire brain, then this definition can be accepted and translated into operational and legal terms without any radical shifts in meaning, arbitrary stipulations, or subjective evaluations. The problem which gave rise to the debate about the definition of death can be settled, and a good reason given for not proceeding to some other definition, proposed not to resolve vagueness but rather to alter the boundary of legal personhood in cases in which it has always been and still remains perfectly clear.[45]

What is an appropriate operational definition of death if it is defined in theoretical and factual terms as we have argued that it should be?

In most cases the criteria commonly used by persons of common sense and by physicians prior to 1968 remain sound and adequate. If a body shows no signs of breathing and heartbeat whatever for one-half hour or so, then one can reasonably assume death has occurred. Lividity, frigidity, and rigidity have considerable confirmatory value.

In the absence of traditionally accepted signs of death, persons having the relevant competence might be able to judge with certainty that there is an irreversible loss of functioning which is complete and throughout the entire brain. But such a judgment should never be made unless there are signs which warrant it beyond a reasonable doubt. Since there seems to be competent disagreement about the adequacy of the Harvard criteria, they cannot be regarded as sufficient in practice.[46] They could, perhaps, be sufficient. But if any with relevant expertise—which includes not only physicians specializing in neurology but also scientists in the field of neurophysiology—consider those signs *not to be* certain evidence that there is complete loss of functioning, which is irreversible and which affects the entire brain, then the expertise of such individuals provides ground for reasonable doubt that these signs are an adequate operational standard of death. For where experts disagree, those who are not expert have reason to doubt and have no basis to proceed with confidence in a matter which requires certitude beyond a reasonable doubt, when it is not absolutely necessary to proceed. And although it may be necessary to ignore the needs of some bodies, even live ones, it never is necessary to consider any body dead who might be alive.

H. A Model Statute

If what we have said about the definition of death is correct, how can this view be expressed in a statute? A good statute will clearly define death, so that the rights of the dying as living persons will be protected, and duties toward the living will not be exacted toward dead bodies. The statute must be

drafted to clear up existing confusions as well as to provide immediate guidance for ordinary persons and physicians who must decide if someone is dead.

Thus, first, the definition of death in theoretical and factual terms ought to be stated, in order to make clear that all deaths are events of a single kind, and that the operational criteria employed should be directed toward determining the fact of the occurrence of an event of this type. Thus: "Death is the permanent termination of the integrated functioning characteristic of a living body as a whole. In human individuals beyond the embryonic stage of development death occurs when there is complete and irreversible loss of the functioning of the entire brain."

Second, the degree of certitude necessary in judging that death has occurred ought to be stated, in order to prevent injustice to those who seem to be dead but are in fact alive. Thus: "Every human body shall be considered living until it is clear beyond reasonable doubt that death has occurred."

Third, the criteria and procedure for judging death in ordinary cases ought to be stated, in order to provide clear guidance and eliminate carelessness and abuses which might exist or develop in the current atmosphere of confusion. In making this statement it is not necessary to speak about *spontaneous* functions and the absence of artificial life-support techniques, because the appearance of the normal phenomena of death are not produced, but rather are obstructed, by such techniques. A statute ought not to assume that a physician will be available to pronounce death and should not inhibit liberty unnecessarily by forbidding people to act if a physician is not available. Thus: "If during the period of one hour a body is still and unresponsive with no sign of breathing or pulsation, death probably has occurred. A licensed physician after careful examination of the body may so pronounce, and the body shall then be considered legally dead. In the absence of a licensed physician, the body should be watched for a period of twenty-four hours. If no sign of life appears during this period and if the body becomes stiff and if its temperature varies with that of its surroundings, the body shall then be considered legally dead. Death shall be deemed to have occurred at the moment when breathing stopped."

Fourth, the statute should state the criteria and procedures for judging death in extraordinary cases, in order to protect the rights of patients against application of arbitrary criteria and the use of procedures selected to further the interests of others. The statute should avoid specifying the technical methods to be used in determining that the factual definition of death is satisfied but nevertheless should regulate the activity of physicians to ensure that injustice is not done to anybody. The careful regulation of the activity of physicians does not imply that the law considers every physician to be under suspicion, but only implies that the law cannot consider every physician to be altogether

above suspicion. Thus: "Even in the absence of the usual signs of death, the complete and irreversible loss of the functioning of the entire brain sometimes occurs. A licensed physician who has the expertness necessary to diagnose the occurrence of this condition may pronounce death in such cases provided that the following conditions are met: (1) The method used to determine that complete and irreversible loss of the functioning of the entire brain has occurred must be a method which all physicians and scientists whose special competence includes knowledge of the functioning of the brain agree to be certainly adequate to determine the relevant matter of fact beyond any reasonable doubt; and (2) The physician who pronounces death in the absence of the usual signs of death must have no prospect of benefit from pronouncing the patient dead, such as the use of the body for the benefit of other patients under his care or for teaching or research in which he is engaged. Death shall be deemed to have occurred at the moment when the functioning of the entire brain is estimated to have been lost completely and irreversibly."

Fifth, a statute defining death should make clear that it does not affect existing legal provisions concerning the presumption of death in the absence of an individual presumed dead. Thus: "Nothing in this statute affects provisions in existing law according to which absent individuals may be presumed dead under specified conditions for particular purposes. Such a presumption does not constitute a judgment that the absent individual has in fact died; except as provided by law, individuals presumed dead shall be considered alive."

The handling of dead human bodies is regulated by law. This matter need not be treated in a statute defining death, but the law concerning the handling of corpses should be reviewed and amended if necessary to assure that bodies pronounced dead by direct diagnosis of brain death will be dealt with in a manner consonant with the respect due to human remains, and also in a manner consonant with the expressed wishes of the individual deceased and next of kin.

I. Criticism of Existing Statutes

From 1970 to 1977 at least eighteen states have enacted definition of death laws. How does the proposed statute compare with these statutes? It does not seem worthwhile to review all of these statutes, but a few comments are in order.

Kansas was the first state to enact a definition of death.[47] The statute attempts to legalize the use of the Harvard criteria by adding to the traditional criteria a provision that under certain conditions "A person will be considered medically and legally dead if, in the opinion of a physician, based on

ordinary standards of medical practice, there is the absence of spontaneous brain function. . . . " The statute explicitly states that death is to be pronounced before artificial life support is withdrawn and organs removed for transplant.

This statute has been widely criticized.[48] But the two most important difficulties we see in it have been noticed seldom if ever.

First, this approach does not sufficiently specify the factual state of affairs constituting brain death, namely, complete and irreversible loss of the functioning of the entire brain. "Spontaneous brain function" shows confusion in the word "spontaneous" and dangerous imprecision in the unspecified "brain function." "Spontaneous" is a sign of confusion because it is difficult to imagine what nonspontaneous brain function would be. "Brain function" without specification is dangerous because it is open to interpretation as cortical brain function and even as reversible loss of function.

Second, this statute provides no safeguards to assure that the standard for certitude appropriate for judging that a human body is dead will be met. "Ordinary standards of medical practice" assumes the existence of standards in a field in which they are not agreed upon; in practice, it permits the Harvard criteria and even other weaker criteria to be applied by any physician, even though there are competent physicians and scientists who consider these criteria inadequate.[49]

The California statute takes a different approach. It assumes the usual and customary procedures for determining death and says that a physician may use them as the exclusive basis for pronouncing death. It avoids claiming to propose a definition of death. In respect to brain death it adds a simple provision: "A person shall be pronounced dead if it is determined by a physician that the person has suffered a total and irreversible cessation of brain function. There shall be independent confirmation of the death by another physician."[50]

The word "total" is an improvement, but it would be better to say "function of the entire brain." The requirement for a second opinion shows some recognition of the need for safeguards, but it is not adequate, since what is needed is guidance as to the method of judging to be used. Any physician is likely to be able to find *some* other physician who will agree with his opinion, and this is all the statute requires.

Capron and Kass proposed a definition which was intended to improve upon the Kansas model. Their proposal was followed more or less closely by several states, first by Michigan in 1975:

> A person will be considered dead if in the announced opinion of a physician, based on ordinary standards of medical practice in the community, there is the irreversible cessation of spontaneous respiratory and circulatory functions. If artificial means of support preclude a determina-

> tion that these functions have ceased, a person will be considered dead if in the announced opinion of a physician, based on ordinary standards of medical practice in the community, there is the irreversible cessation of spontaneous brain functions.[51]

"In the community" was not in Capron-Kass but was inserted by the Michigan draftsmen. The insertion is unwelcome, for it introduces an element of relativity appropriate in malpractice law but hardly desirable in the determination of brain death.

This type of statute accentuates a general failing of the new laws: The focus is upon the physician. No provision is made for cases in which a physician is unavailable, and the assumption is made that there are ordinary standards of medical practice which are adequate. Also, the defective phrase "spontaneous brain function" is retained from the Kansas statute. Finally, this statute read literally means that persons who are totally paralyzed from the neck down are to be considered dead, although they are fully conscious, if the use of a respirator does not preclude determination that spontaneous respiration and circulation has ceased, as it usually does not.

In 1975 the American Bar Association adopted a "current" definition of death as follows:

> For all legal purposes, a human body with irreversible cessation of total brain function, according to usual and customary standards of medical practice, shall be considered dead.

The word "total" was inserted in the draft before it was adopted by the House of Delegates.[52] However, the report of the Committee on Medicine and Law, published several months later, does not take note of the insertion.[53] The chairman, McCarthy DeMere, states in this report that the phrase "usual and customary standards of medical practice" covers

> . . . the situation where the standards are even different in the same hospital. In the intensive care unit the standard of medical practice of pronouncement of death could be the "lack of brain waves by the electroencephalogram."

In other parts of the hospital other appropriate standards would be used.[54] Since EEG *cannot* by itself evidence lack of function of the entire brain, the omission of "total" was perhaps significant, and DeMere's exegesis of "usual and customary standards of medical practice" is a substantial cause for concern that the way is being paved to set new boundaries of legal personhood, and in this way to deprive some persons of all their rights, without facing up to the fact that this is what is being done.

The Bar Association's current definition was not proposed as a statute, yet it nevertheless has been enacted, first by Tennessee in 1976, fortunately with the inclusion of the word "total" before "brain function."[55]

In 1977 North Carolina enacted a bill which simultaneously deals with the "right to natural death" and with "brain death." The substantive provisions of the statute are introduced by the statement that the "General Assembly hereby recognizes that an individual's rights as a citizen of this State include the right to a peaceful and natural death." The act explicitly excludes construction "to authorize any affirmative or deliberate act or omission to end life other than to permit the natural process of dying."

The main operative paragraph concerning brain death is as follows:

> (a) If a person is comatose and there is no reasonable possibility that he will return to a cognitive sapient state, and: (1) it is determined by the attending physician that the person's present condition is: a. terminal; and b. incurable; and c. there has been an irreversible cessation of brain function; and (2) there is confirmation of the person's present condition as set out above in this subsection, by a majority of a committee of three physicians other than the attending physician; and (3) a vital function of the person is being sustained by extraordinary means; then, in addition to any other medically recognized criteria for determining death, the person may be pronounced dead.

Following paragraphs specify conditions under which the extraordinary means to prolong life may be terminated *after death has been pronounced* or may be continued to facilitate the purposes of the Uniform Anatomical Gift Act.[56]

To evaluate this statute several factors must be noticed: the context of this statute within the framework of recognition of a "right to natural death," the language drawn from the New Jersey Supreme Court decision in the Quinlan case referring to a comatose person for whom there is no likely return to a "cognitive sapient state,"[57] the extraordinary requirement of confirmation by a committee, and the special provisions for terminating or continuing extraordinary means to prolong life *after death has been pronounced.*

All these factors strongly suggest that this statute is radically redefining death and thereby legislating the legal nonpersonhood of those in irreversible coma who have suffered *some* damage to *some* part of the brain and who require *some* use of *some* extraordinary means to sustain *some* vital function. The statute requires, not that there be irreversible and complete loss of the function of the entire brain, but only that "there has been an irreversible cessation of brain function," which is true in anyone who is irreversibly comatose. Also, since the statute does not specify what extraordinary means must be in use, and since an irreversibly comatose person ordinarily is fed by tube, it could easily be argued that every such person meets the specified criteria. By this statute Miss Quinlan could have been declared dead—something no one involved in the case maintained—before she was successfully weaned from the respirator.

Some may think it would be desirable to stop the special feedings by which Miss Quinlan's life is still sustained as this is written (March 1978). They could be correct; we shall consider the question of how far the law should go in mandating care for noncompetent persons in chapter nine. Meanwhile, it is not clear that Mr. Quinlan is constrained by law to have his daughter's life maintained in this way.

Others may think it would be desirable to continue the special feedings by which her life is still sustained but to pronounce her dead and transfer this neomort to an emporion to be used in ways beneficial to others. (This could be done only if the requirement of laws relating to anatomical gifts and the disposal of bodies were met.)

For reasons developed throughout this chapter, we think it would be a grave injustice to pronounce Miss Quinlan or anyone else dead while parts of their brain continue to function, or even where it is not certain that their entire brain has irreversibly ceased functioning. Hence, regardless of the intentions of those who enacted it—which probably were above reproach—we consider this North Carolina statute to be gravely unjust, and we consider it a very serious threat to the fundamental rights which flow from legal personhood of all the citizens of that state and of other states which might follow this model.

J. A Federal Definition-of-Death Statute?

What remedy might be applied to the inadequacies in the statutes we have considered? How might the rights of all citizens of the United States be protected, while there is solved the problem raised by the vagueness of the concept of death, the cause of the current controversy.

The Fourteenth Amendment to the Constitution of the United States (section one) provides as follows:

> No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.

The same amendment (section five) provides: "The Congress shall have power to enforce, by appropriate legislation, the provisions of this article."

Since every individual's status as a legal person conditions his or her protection by all of the provisions of section one, and since any definition of death thus far enacted inadequately protects persons against a mistaken pronouncement of death which would terminate their status as legal persons, it seems to us appropriate that Congress should exercise its enforcement power

under section five to affect the protection for all legal purposes of the rights of all persons under the jurisdiction of the Constitution, as these rights were intended to be protected by section one.

It might be argued that this matter is appropriately one which should be left to the jurisdiction of the states. There are practical reasons for not doing so. A great deal of federal funding is used for medical treatment, especially for research and teaching. Congress has a responsibility to assure that such activities, in which the federal government is involved, do not violate fundamental rights. Also, dying (or dead?) bodies have been transported from state to state; uniformity in definition of death and in standards for declaring it would be desirable. But much more fundamental than these considerations is the fact that the Fourteenth Amendment obviously is intended to limit the arbitrariness of the states; section five clearly is designed to empower the Congress to preempt matters previously within the jurisdiction of the various states just to the extent necessary to protect fundamental rights.

Finally, it might be urged that if the Congress were to attempt to protect the Fourteenth Amendment rights of all persons under the jurisdiction of the Constitution by enacting a uniform, national definition of death statute to preclude the danger that persons be deprived of their legal status by being declared dead mistakenly and prematurely, such an attempt would amount to an invasion of the province of the courts—especially of the United States Supreme Court—to which the power to interpret the language of the Constitution and to limit infringements by statute upon constitutionally guaranteed rights belongs. On this view, it would be argued, Congress could not act to legislate a definition of death unless the Court first took notice that inadequate definitions of death threaten Fourteenth Amendment rights.

The Supreme Court itself has answered this objection by asserting that neither the language nor the history of section five of the Fourteenth Amendment warrants such a construction, that congressional legislation to enforce the provisions of the amendment is authorized and contemplated, that the Congress is not limited to merely particularizing the "majestic generalities" of the amendment, and that congressional action need not await judicial determination that the application of a state law which is to be blocked violated this amendment.[58]

Our conclusion,then, is that the Congress has the power and the responsibility to protect legal personhood from infringement by enacting a statute defining death and regulating the methods for judging that death has occurred. Since the threat is clear and present, the need for congressional action is urgent.