

IS 'BRAIN DEATH' ACTUALLY DEATH?

Critique of Redefinitions of Man's Death in Terms of 'Brain Death'

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The 1968 statement of an 'Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death' has given rise to a virtually world-wide movement towards a new conception of death as brain death.¹

The question 'what is death?' is by no means exclusively or primarily a question of medical science. It is, in the last analysis, a philosophical (and, if divine revelation is accepted, a theological) question. The philosopher's role in the discussion of death is twofold: On the one hand, he has to explore those highly intelligible and essentially necessary aspects of death which no other human science investigates² This task includes a phenomenology of life and death, an ontology and metaphysics, as well as a philosophical anthropology of death.³ It likewise includes an analysis of the language of death and life and of the logical structure of the arguments used in the debates about life and death. On the other hand, the philosopher has to warn representatives of other disciplines against concluding too much from the little they know and extending their methods to areas where they are not appropriate. Careful reflection on both philosophical knowledge and philosophical ignorance concerning death shows, I shall argue, that the definition of death in terms of 'brain death' ought to be rejected.⁴

1. WHAT IS 'BRAIN DEATH'?

Brain death is defined in confusingly different ways. Some have spoken of brainstem death, sometimes excluding the possibility of verifying the death of the whole brain. Others prefer to speak of 'whole-brain death'. Still other authors want to replace a definition of whole-brain death by 'neocortical death' as a sufficient definition of human death.⁵ The latter term risks the additional confusion between 'brain death' and the 'vegetative state' (which is also called 'cerebral death'). Several authors have extended the category of cortically dead humans or 'anthropoid animals' further and even feel entitled to accept the death by starvation and dehydration in 'hopeless cases' which they do not regard as live human persons but only as live human beings. In May 1987 doctors at the University Hospital Münster had transplanted successfully organs (kidneys) from anencephalic children to children and adults. Professor Fritz Beller justified this by a logical application of the criterion of cortical brain death, saying: "The anencephalic child is being developed, not born - for he does not live." The irony is that these children precisely do have brainstem activity - dysfunction of which (brainstem death as such or as part of whole-brain death) constitutes in many legal systems today the criterion of brain death. Yet other definitions of death and brain death do not directly refer to the brain at all, but make explicit reference only to

¹ Various bodies in Denmark and Japan have thus far rejected the new definition of brain death and insisted on a definition of death in terms of irreversible cessation of cardio-pulmonary and cerebral functions. See The Danish Council of Ethics: 1989. On Japan, see A. Anderson: 1989.

² See on this Adolf Reinach 1989; Dietrich von Hildebrand 1991; Josef Seifert 1973, 1987.

³ One may think here of Kierkegaard's investigations in *Sickness unto Death*, of Heidegger's analyses of 'Angst' and of works like Dietrich von Hildebrand 1989.

⁴ See Josef Seifert, 1889 a, 2. Other thinkers both in medicine and philosophy (P.A. Byrnes, S. O'Reilly, P.M. Quai, C.P. Harrison, N. Fost, B.S. Currie, A.J. Weisbard, S.J. Youngner, and others), have reached similar conclusions or have at least recognized the same problems. Most powerful are the objections of Hans Jonas who has the distinction of having raised them in the 'first minute' (1968) when the Harvard proposal was published.

⁵ For - partly critical - discussions of the notion of 'neocortical' and 'cortical death' see, for example, Hans W. Pia, 1985, pp. 217-253. The same author, 1986, pp. 1-11, esp. p. 3. See also C. Pallis, 1983, pp. 32-37, esp. p. 34.

See also J.M. Nolan-Haley *et al.*, 1987, pp. 100-110. See also J.R. Stanton, 1985, pp. 77-85.

consciousness or to mental activity.⁶ Some relativistic definitions of brain death leave it entirely up to a society to decide what definition of brain death it wants to accept.

The lack of clarity in the public debate on 'brain death' extends not only to the question of what constitutes 'brain death'; the confusion also involves the question of concrete medical criteria for brain death. The Harvard statement suggested 1968 the cessation of neocortical activity as one important criterion for brain death.⁷ In this whole-brain-plus-spinal-cord death and in the associated criteriology, it was believed that a completely flat EEG was necessary for the diagnosis of brain death. Only one year later, however, this view was revoked by another Harvard report.⁸ This report, and other subsequent ones in many countries, spell out many and partly contradictory medical criteria for brain death.

In the discussions about medical criteria of brain death, there are also clearly absurd criteria which are frequently used in brain death discussions - e.g., that a brain-dead patient is really dead when he cannot breathe spontaneously and respiration will cease within minutes when disconnected from a machine. If this dependence meant death, many persons who depend on dialysis, heart-machines, etc. for reasons other than brain death would likewise be dead. The question whether such a dependence is irreversible or not makes no difference. Would a man whose lungs are irremediably paralysed and who remains conscious be dead because he needs ventilation? Although the argument is indeed obviously fallacious, it is still being defended.⁹

We must certainly expect that the set of medical phenomena which are declared to be death, are clearly and carefully spelled out. This is in no way the case. And in fact, it cannot be the case as long as it remains unclear what brain death means.

The new definition of 'death' is still more devoid of philosophical clarity as to what exactly 'brain death' means: First, it could mean merely the breakdown of the diverse functions of the brain. Then we could with the same right call an irreversible breakdown of the functions of the liver or of the kidneys 'liver death' or 'kidney death'. Second, the term 'brain death' could mean the 'death of the whole human being because of the complete irreversible breakdown of brain-function'. Some authors have pointed out the unwarranted transition from the first to the second definition of brain death (Byrne, P.A., *et al.*: 1982/83, p. 453 ff.). One could, third, suggest (with Engelhardt, 1986) that, in the event of 'brain-death' neither the human being nor just the brain but the human person has died, implying a dualism between human person and human being.

An equally profound methodological confusion, linked to the different meanings of brain-death, surrounds the concept of a purely medical confirmation of 'brain death'. There is no doubt that medical staff is competent in principle to diagnose the total brain infarction or other physical states which are called 'brain death'. But if brain death as actual death is introduced by a mere medical 'determination' of the physical states called 'brain death', the weighty philosophical issue as to whether or not a human being is dead just because his brain is destroyed by brain-infarction while other vital functions continue is decided not by scientific knowledge and careful analysis but by a mere (and possibly arbitrary) 'pseudo-philosophical decree', using confused medical and legal definitions. This is wholly inadmissible.

More serious still is the lack of clarity about the reasons for which the irreversible loss of brain-functions or the destruction of the brain is defined as death, as we shall see.

A first observation, then, on brain death definitions and criteria of actual human death, refers to the inherent ambiguity of the notions, definitions, criteria and reasons attached to the definition of death as brain death. This profound ambiguity, however, is intolerable in such an important matter as the question of the medical-philosophical determination of life or death, especially when one incurs the serious risk of killing human persons - based on entirely confused notions and arguments.

Therefore it is irresponsible to 'redefine' death in legal systems all over the world without introducing first a clear notion of what constitutes 'brain death' and without providing cogent arguments for why 'brain death' should be considered as 'actual death'.

In the following, I shall argue that no defense of brain death definitions given thus far has provided the necessary clarifications. Furthermore, no argument has yet shown that the state of irreversible dysfunction or destruction of the brain is actual death. Moreover, I shall try to prove that it is intrinsically impossible to provide both clear and cogent reasons in favor of 'brain death' because both

⁶ See Ingvar, 1986, pp. 65-74. See likewise P.D.G. Skegg, 1984, pp. 183-227, esp. p. 180 ff., pp. 202 ff.

⁷ See *Journal of the American Medical Association* 1968, pp. 205, 337.

⁸ See H.K. Beecher, 1969, p. 1070. See also H.K. Beecher 1976, pp. 1068-1071.

⁹ See on this Skegg, 1984, p. 202.

the premises and/or logical inferences of the arguments in favor of brain death contain errors and faults. And falsity cannot be proven true by evidence or cogent argument. 3

2. CRITIQUE OF THE PRAGMATIST DEFINITION OF DEATH

The new definition of death has a pragmatic motivation, without providing any theoretical justification for identifying 'brain death' with actual death. The phenomenon itself which is designated today as 'brain death' was scientifically explored in France by P. Mollaret and M. Goulon in 1959. This state (under the name '*coma dépassé*') was not equated at that stage with death, but was proposed as a criterion for death only in 1968. One finds in the original proposal and in the statements describing brain death as criterion of death chiefly two - purely practical - reasons for introducing this new definition of death? 1. the desire for a clear moral and legal ground for disconnecting patients from artificial life support systems; and 2. the need to have a moral and legal justification for heart-transplants, which had become possible in 1967, as well as for other organ-transplants.

Only the second motive presupposes the acceptance of the new definition of irreversible *coma dépassé* as (brain) death. For among moral philosophers and also Catholic moral theologians it has been long accepted (at least since the declaration of Pius XII in 1957) that there was no absolute obligation to prolong the life of a patient by extraordinary means. Thus one might accept the view that the irreversible breakdown of the function of the brain is in itself sufficient ground to discontinue extraordinary means of life support. Yet this does not necessitate calling this state death. Often this is recognized by defenders of brain definitions of death when they demand that 'brain-dead' patients should be allowed to die. A dead man cannot die anymore, as Wikler and Weisbard (1989, p. 2246) recognize with reference to the contradiction contained in the notion that one should have to declare patients dead in order to have a right to let them die.

The only cogent pragmatic motive for introducing the criterion of brain death is its purpose of allowing organ-transplantations without the need to commit active euthanasia or manslaughter by killing persons who are still alive.¹⁰

I do not assert that this pragmatic reason could not be brought forward in defense of something objectively true. But this would have to be shown by other, non-pragmatic, arguments. The fairly obvious origin in practical purposes and the simultaneous absence of a deeper scientific and philosophic reflection on the nature of death - in the original texts that introduced 'brain death' definitions - render the new definition of death as brain death suspect. For it does not seem to be the question of the truth about the nature of death which gives rise to this new definition,¹¹ but rather usefulness. And then, not this usefulness as such but the consequent and well-nigh invincible influence on falsifying the judgment on the true nature of death or the openly pragmatist substitution of truth by usefulness are to be feared.¹²

3. CRITIQUE OF THE 'ACTUALISM' AND MATERIALISM INHERENT IN MANY 'BRAIN DEATH' PHILOSOPHIES

It does not require great power of mind to see that the nature of human death depends very much on the nature of human life. If a man identifies human life primarily or exclusively with the organic life of the human organism taken as a whole, he will identify death with the end of man's bodily life.

If, however, human life is seen by someone to involve primarily man's higher consciousness, thought, will, action, speech, etc., he is faced with having to choose between different replies to the question, 'What is death?', mainly between: (A) Either the human mind as subject of man's higher consciousness

¹⁰ After the Japan Federation of Lawyers' Associations and the Japanese Society of Psychiatry and Neurology had rejected the redefinition of death in terms of brain death in 1988, a University of Tokyo's patients' rights group filed legal action for murder against those responsible for a kidney transplant in a brain-dead person (A. Anderson, 1989).

¹¹ See the excellent critique of this point in the article of Jonas, 1985, pp. 219-241, esp. p. 225. For an earlier English version of this paper, 1974. See also H.T. Engelhardt, Jr., 1986, p. 208 f.

¹² See H. Jonas, 1974, p. 133: "... pure as this interest, viz., to save other lives, is in itself, its intrusion into the *theoretical* attempt to define death makes the attempt impure."

is inextricably bound to neo-cortical and other bodily functions and has its ontological bearer in the brain; or (B) there is a mind which possesses existence in itself as well as some independence from the body in virtue of its rational acts (cognitions, decisions, etc.) which can have conditions but cannot possess efficient causes in the brain.

According to (A) there is no mind distinct from the body. In this case, the 'mind' is either identical with the body or it is some effect or epiphenomenon thereof. The second alternative (B) is defended by philosophies which assert the reality of the mind; these are either idealist philosophies according to which matter exists solely as object of the mind, or realist philosophies which admit the full reality of the body but assert the existence of a mind (soul) which is really and substantially distinct from matter.

From the materialist-monist position (A) it follows necessarily that 'brain death' is indeed the destruction of any person or self in man because, according to it, the very seat, origin, or subject of thought is nothing but those neo-cortical functions which are irreversibly lost after total brain-infarction. The view is not basically different when the mind is conceived, as by T. Engelhardt, as identical with the body and as only categorially and experientially distinct from it.

Those who admit position (B) and insist that there is a human mind distinct from matter, might still defend brain-death, but for other reasons; they might hold, with Eccles, that the mind leaves the body when the bodily instruments of the mind, the cortical hemispheres of the brain, irreversibly cease to function.

Many adherents of position (B), however, hold that the mind leaves the body when biological life ends. In other words, those 'dualists' who defend a mind which has being in itself - as ultimate subject of consciousness and not only as a side-effect or accident of matter - have a sound philosophical basis for rejecting the identification of the irreversible termination of brain-function with death. For according to them, human life and human mind do not have their primary seat in the body or brain. The brain is not cause or subject of the being and of the rational acts of the human person, but at most their condition; it is not even their absolutely necessary condition but only their empirical and extrinsic condition in intramundane life. According to their philosophical understanding, the mind (soul) exists and has its own life in itself.

Of course, many a reader will not agree that man has a spiritual or rational soul or mind; possibly, ninety-nine per cent of my readers will disagree. Yet, while I plan to offer, in summary form, the strongest proofs for the real existence of the mind, I wish to make clear from the very beginning one important point: When it comes to organ-explantations on the basis of diagnoses of brain death, the burden of proof lies with those who deny the autonomous reality of the mind and defend 'brain death', not with those who assert it. For those who justify the explantation of organs, if they are wrong, promote manslaughter. Thus they must be quite certain of their position and offer refutations of the opposite position.

Even if 99 % of the readers were to disagree with the following defense of the reality of the mind, the burden of proof would still lie with them, regardless of how great their majority and how pluralistic our society. For the question as to who has the burden of proof does not depend on majority opinion but on the kinds of action someone defends, on the one hand, and on the kind of evidence he offers or combats, on the other. As we shall see later, the slightest plausibility of the truth of what I am going to expound about the reality of the mind must be refuted by the defender of brain death who admits organ-explantation.

As a matter of fact, however, we do not deal here with mere probabilities but the proofs for a soul or mind possess apodictic certainty and scientific-philosophic evidence. The following critique of the 'actualism' involved in brain death definitions is based on philosophical arguments for the substantiality of the mind which were expounded elsewhere,¹³ and of which four shall be summarized in the following.

1. With Aristotle, we can understand that any conscious thinking or willing as such does not exist as a thing, or better, as an entity which stands in itself; it is not a subject but an activity (accident) which requires a substance. Thinking or willing are 'in another entity' and require a subject which is not like these activities, an attribute of another thing, but stands in itself; this is what Aristotle means by substance. 'Substance' in this sense has nothing to do with a thing (*res*) as opposed to a person but indicates only the irreducible trait of 'standing on its own feet in being' as opposed to inhering in another entity. Thought and any conscious act require such a substance-subject. The mind as subject of thought, however, is an absolutely indivisible, simple subject that cannot be observed by the senses. Now the brain and any other bodily organ possesses billions of non-identical cells and parts, into which - as Leibniz remarks in the *Monadology*, n. 17 - we could enter, if they were enlarged, and which we could

¹³ Hölscher 1986, Seifert 1989, and others.

observe through the senses, whereas we understand clearly the non-sensible nature, the simplicity 5
and the absolute indivisibility of the I-subject of thought.

2. Another argument for the reality of the mind is based on two evident premisses: first, on Aristotle's intuition that the subject (substance), as that which supports in being every attribute inherent in it, constitutes the primary reality of a thing and surpasses in 'actuality of being' (in reality properly speaking) that which just exists in dependence on it; for it is the supporting ground of being for everything in it. The subject (substance) is the most real part of an entity. The second premiss is this: while small physical causes suffice to kill man, man is still nobler and possesses an incomparably superior reality than the whole universe of bodies. By knowing and also in virtue of his free acts and moral conscience, man surpasses in reality the entire cosmos of physical substances, including the perennial mummified existence of our body. Conscious and rational experience possesses an actuality of life and contains a self-possession of being compared to which the universe of material substances is like nothing. As a matter of fact, for the conscious life of the I to be reduced to the being of a material substance would be equivalent to its annihilation.

From these two premisses it follows that the incomparably higher life of the spirit, which is more properly real and of greater dignity than all material substances of the universe, cannot possibly be a mere function or accident of one of them, the brain. If the substance is the most real entity in the world, that which is primary being, as Aristotle holds, then the conscious self whose reality surpasses that of all material bodies put together (which are mere 'nothings' compared with it), cannot coincide with the material substance of the brain and even less with some accidents or epiphenomena of it.

3. A third argument in favor of the mind is based on the specific essence of certain acts. Knowledge, for example, in order to be knowledge, must depend in its content on the nature of that of which it is knowledge. Its subject mentally grasps the nature and/or existence of that which he knows; and in certain knowledge, such as that he himself exists, this subject can be equally certain of his own receptive mental grasping that he truly exists and is a subject. Knowledge exists only to the extent that someone grasps that or how something is - because it is and is in a certain way. Cognition possesses an intentional relationship to its object and is characterized by a receptive transcendence of the subject in the cognitive contact with the object of cognition. Knowledge must not only be formed objectively by the nature of the object, as a piece of wax can be objectively formed by a mould which forms it, but it must mentally reach this object, cognitively touch it in such a way that it discovers that and how something is. Cognition would therefore be impossible if knowledge were just dependent in its content on brain-functions which are subject to causal laws and are entirely determined by external material causes which have nothing to do with the true nature of the objects of knowledge. As it is impossible that a computer could know or check its own program in any real and ultimate way, so man could never know anything if his knowledge were causally dependent on material processes and their causal connections, and if he did not have a mind distinct from matter and its causal effects. But man knows with certainty some things. Therefore he has a mind. Moreover, any assertion including that of radical skepticism, even the most radical doubt, is absolutely impossible without cognitions such as that I exist, that I doubt, that I am aware of objects, that I pose a question, that the two contradictory states of affairs which I consider in doubt cannot both be, etc. Furthermore, these and countless other such things not only *can* be known but they *are* known by all of us. We claim and possess such knowledge inevitably in any assertion or thought. Hence any assertion of the identity of knowledge with brain-processes or of its causal dependence on the brain is self-contradictory.

The same could be shown regarding freedom, promising, etc. Jonas (1981) has demonstrated the absurdity of Helmholtz' and his friends' mutual promise to promote materialism. They pledged to promote a theory of the power of matter over mind but presupposed, in the very assumption that their promise could and would be kept, an original power of the mind over matter and its independence from chemo-electrical processes in the brain. A promise or any other free act is necessarily impossible, nay absurd, if such an act is identical with, or determined by, material or organic evolutionary processes. Moreover, every man presupposes some free acts such as searching for truth, asserting, promising, etc., even when he resolves to investigate or to defend materialism. Hence he contradicts his own theory in every moment in which he - inevitably - presupposes his freedom. Yet we deal here not with a mere inevitable subjective presupposition à la Kant but with an evident datum of the essence of freedom and of its real existence in us. When we act in a way which implies the free initiating of acts which do not proceed from another cause but from the self itself, these acts would not exist if we had not willed them

to be and they involve the fact that we are master over their being or non-being. And this datum of freedom refutes materialism, according to which free acts could not exist.¹⁴

Cognition and free actions contradict their being an epiphenomenon of, let alone their being identical with, the brain or its functions. Thus to explain such acts in terms of a psycho-physical identity or radical causal dependence involves a necessary contradiction to their nature and, in addition, leads anybody who asserts this position into a self-referential contradiction.

4. Possibly the most striking argument for the reality of the mind is taken from a reflection on the immediately experienced 'I' which 'accompanies' all our experiences and which is their self-conscious subject. In this 'I', we encounter a subject which we do not have to *infer* as the cause of our acts but which we experience immediately as subject and which we understand to stand in itself and to act. This subject of consciousness, which we encounter not less immediately in our experience than our acts and experiences themselves, has a set of predicates which differ from those of any conscious experience as such: not our experiences are conscious of each other, but we as subjects are consciously living them; not they can reflect upon themselves and know themselves, but we as subjects can reflect both on them and on ourselves, etc.

When I consider carefully the self-given subject of consciousness, however, then I discover that this 'I' not only shows itself to differ from any mere function of another thing or of a brain and is immediately given *as substantial subject*, but that the human mind possesses each trait of substance in an incomparably superior way to the weak and analogous manner in which material entities can be substances. This can be seen from the following considerations? The mind is not only the ultimate subject of acts, as thing-substances are of accidents, but it is a consciously living subject; it is for this reason that we reserve today the term subject, which originally designated all substances, for persons only. The subject is not an 'it', but a 'he' or 'she'. The person's acts do not merely 'inhere' in a mind-substance but are performed and lived by the mind-subject. As one single, non-composite self and as conscious of himself, the person stands in himself and is 'this single substance-subject' in a way which is quite incapable of being matched by the material world where accidents inhere in various parts and appearances of bodies and not in one single material subject. In sharp contradistinction to this, my identity as one simple (non-composite) 'I' - the subject of myriads of experiences - is given to me. And this character of the self as indivisible substantial subject involves its difference from the brain and from any totality that consists of non-identical distinct parts. Material things are neither indivisible nor do they possess an inner unity of substance comparable to that of the mind. The personal subject also possesses other traits of substance, identified by Aristotle, more properly speaking than any material substance could possess them: lasting identity throughout many states and accidental changes, reality in the proper sense of this term, and individual thisness. Material things lack individual thisness in the sense of the absolutely indivisible, irreplaceable and incommunicable identity of the sort that is found in the personal self that can think, and act freely, and love. While also material things or Rembrandt paintings possess these traits in some way, each material substance and each part thereof can be replaced by another one, without this 'making a big difference', whereas persons cannot be replaced or substituted by others. Even masterful paintings could conceivably be replaced by a perfect copy. Moreover, in material things the different traits of substantiality are somewhat separate from each other. Their individual thisness and distinctness stems from an external form which does not coincide with their self-standing substantiality. Again, what is lasting in them is not the material substrate of body cells which are entirely renewed every seven years. In the conscious subject the various traits of substantiality are united: the same subject lasts, is substance, is an individual self, etc.

From these considerations it becomes evident that the mind cannot be a supervenient attribute or epiphenomenon of brains, and that the 'rational substance' of the self-experiencing mind possesses traits which make it necessarily different from the brain with its billions of replaceable cells, and from each one of these with its countless non-identical parts and with its poor embodiment of the general traits of substance.

If we distinguish carefully this distinctness of mind and body - which is, I would submit, indubitably demonstrated through the arguments sketched here - from any separation, keeping also apart entirely different senses of 'dualism', we shall find that the unity of man as consisting of body and soul is not threatened or rendered impossible by the mind but that the difference of the mind from the body constitutes the only conceivable basis for doing justice to the unity of man, in whom body and soul are joined to form a much more unified being than two sorts of matter - or a material thing and its accidents

¹⁴ Of course, also philosophies which recognize the existence of a soul, can embrace determinism but materialistic philosophies must inevitably do so.

- could ever constitute. For then it becomes evident that only a mind distinct from the body can become 'form' and animating spiritual principle of the body, in sense perception, in action, in speech or in love, etc. 7

The unquestioned manifold dependence of the mind on the body, and particularly on the brain, too, is by no means incompatible with the superior actuality, life, and reality of the mind. Moreover, neither the psychophysical dependence on the body nor the manifold dependence of bodily movement and action, speech, expression, etc. on the life of the soul are incompatible with the unity of man. For as the union of two persons who love each other requires the duality of persons and as the unity of the word requires the radical distinctness of its meaning from its audible *Gestalt*, so that of man requires the duality of body and mind.

Another significant discovery concerning substances will help us, finally, to understand why the subject of consciousness cannot be the brain, and why the person who cannot exercise his faculties - because of brain infarction or because of a dysfunction of the cortical hemispheres - can still be a live human person. Every arising of accidents in a substance presupposes some real potentiality in that same subject. For example, acts of understanding cannot arise from nowhere but presuppose a faculty of intellect, etc. Of course, the being of potentialities, faculties, potencies etc. differs very much in nature according to the kind of subject and of activation of which one is speaking. The 'passive potency' of a destructible piece of wood that can take on billions of forms differs from the inherent, active, and essential potentialities of the person. Some of these potencies and faculties are inseparable from the substantial being of the mind and are not mere inborn capabilities of immanent activation but are 'transcendent potencies': they open the cognitive, volitional, and affective powers of the person to the world, to all beings.¹⁵

We are now able to see that even if the irreversible loss of brain-function and the consequent irremediable loss of consciousness in 'brain-dead' human beings were proven beyond the shadow of a doubt, it would still not be justified to call the irremediably unconscious state of a patient 'brain death'. For such a designation implies that he and not only his brain is dead and presupposes - leaving aside the theory of a migration of the soul ? a pure 'actualism', in which the actual state or at least the actual capacity of conscious activity is identified with the reality of the subject of (real or potential) consciousness. It is then a priori and dogmatically excluded that man may exist as a person, that he, as a subject, with the potentiality of consciousness, may continue to exist even though an irreversible breakdown of central brain activity has taken place.

The 'actualism' hidden in the brain death ideology omits the insight that all actualizations of consciousness presuppose a subject that has the potencies and real faculties for rational acts - even when they cannot actually be exercised. The consequent idea of brain death will more often than not be based on a materialism which considers human consciousness either as identical with brain functions or as an epiphenomenon of the brain. It is then quite logical to consider the irreversible breakdown of brain-functions as identical with death.

To reject the 'actualistic' and materialist identification of the person with the ability to actualize his being consciously, it is sufficient to refer to Boëthius' discovery of the person as 'individual substance of rational nature' (Boëthius, *Contra Eutychem* iii) and to refer back to our arguments for the existence of a substantial mind.¹⁶ Since the reality of the self-existing mind can be established by the above arguments, the brain function is seen to be neither the subject nor the cause of consciousness. It is an empirically necessary condition for the activation of consciousness but certainly not an absolutely necessary one, given the substantial character of the mind. Hence the mere irreversible loss of the ability of activating the brain as the extrinsic physiological condition of exercising such faculties in no way implies that the subject of these faculties is not still present and existent. (It does not even prove that 'extraordinary' forms of exercising mental faculties are impossible.) If, however, the existence of a substantial mind or human soul is known or even considered as a possibility, then one is not justified in identifying the irreversible collapse of the whole cerebral activity or of brainstem activity with death. For then the personal mind can be present in the body and exist, with its rational nature and faculties, even if all brain activity has irreversibly stopped and even in the absence of the real ability to evoke thoughts and to perform conscious and free acts.

¹⁵ On potencies, see Seifert, 1977, pp. 379-385.

¹⁶ See Josef Seifert, 1989, ch. ix; Ludger Hölscher, 1986; see also J. Seifert, 1989² a.

4. BRAIN DEATH AND THE UNITY OF MAN: A FURTHER CRITIQUE

The question of human death, as it enters into the bioethical discussion and the examination of brain death, moves primarily on two levels. On the one hand, in view of the philosophically evident distinction of body and mind, we recognize that the individual human personal life on earth objectively begins when the spiritual human soul is present in the human body, that it continues as long as the mind is united with the body, and that our bodily mundane life objectively ends at the moment when the human mind definitively leaves the body and the latter becomes a soul-less material thing. We thus follow Plato and a long tradition, defining death as 'the separation of the soul from the body'. Of course, this 'definition' as such does not do justice to a phenomenology of death (Hildebrand, 1989), yet it also does not contradict it. This separation could occur, in principle, in a moment of annihilation of the spiritual soul. Upon recognizing, however, that a spiritual substance, the mind, cannot be destroyed in death and that it must continue to exist consciously after death, the 'separation' is a departing of the rational soul from the body. Death could still be variously understood: as a gradual temporal process of dying, or as the definitive moment in which the spiritual subject which is necessarily presupposed for conscious and intellectual acts of man, is no longer present in the body.

Although we do insist on the objective correctness of the definition of death as separation of the soul from the body, it cannot be that definition of death which medical science uses. For the soul is not directly perceptible, nor is its leaving of the body. For this reason, medicine needs to use another, and more empirically accessible, notion of death. This is not so difficult to find. For mundane human personal life is obviously intimately tied up with the biological life of man.

But is it not obvious that there must be some distinction between biological and personal human life - especially in view of the divisibility and lack of strict individuality of biological life-processes and genetic codes versus the absolute indivisibility of the mind? There is indeed a distinction here. Yet admitting this difference does not force us to admit the separability of man's soul from his vegetative and sensitive life and to assume living human vegetables whom the soul has left. On the contrary, the close union between personal human life and the biological life of the human organism as a whole is obvious. As long as the biological life of man as a whole is present, we have, in virtue of the unity of body and soul in man, and in virtue of the profound formation of the human body by the human spirit, the best reason to assume the presence of the personal human mind. In fact, death in the biological sense is without any doubt intimately tied up, either as its cause or as its consequence, with the parting of the mind from the body. Since biological human life is so closely united with man's personal life and since it can be more directly observed, it is this which must serve as our criterion in medicine.

Yet this does not sufficiently solve the problem of what 'biological human life' is. We must indeed consider this life as the life of the human organism as a whole, and not just as the life-processes in a single isolated organ. Thus if one can keep 'alive' some cells in a cell-culture, these certainly do not possess the biological life of the human organism as a whole, they do not possess human life in the sense of the life of a man. Organs and cells can outlive their master. Thus the death of the 'human organism as a whole' cannot be identified with the death of the 'whole human organism' including all its organs and cells.

Does it follow that the brain-dead man is dead as man? Before answering this question, we have to consider two extremely important factors for the determination of human biological life: 1) its 'integrated wholeness' and 2) the question of the 'mind-incarnating tissue'.

In no man are all vital functions fully integrated into a functional whole. As long as essential parts of the integrated dynamic structure of the biological life of a human organism are present, however, we must assume, at least as highly probable, that this man's personal human life is present, too.⁷ We may characterize life as a unique form of being which dynamically brings itself forth, generating and regenerating itself? through growth, nutrition, regeneration, and through procreation. As long as some of these occur together (albeit externally supported), the essential self-engendering character of life is preserved. As long as the human body as a whole is kept from disintegrating, from putrefaction, from collapsing into mere inorganic substances, as the body-temperature and the processes that are conditions of it, and a number of other signs of life are still preserved throughout the organism, it seems to be wrong to declare a 'brain-dead' person in irreversible coma actually dead. There is no sound and certainly no cogent reason for this. In an actually dead man none of these things will happen, however many machines we use on him, and only when they have ceased can we declare that a given man is dead.⁷ It is thus this life which appears as condition and criterion of the life of the human person.

The second related factor to consider is the difficulty of determining the 'mind-incarnating tissue' ⁹ in the human body. Evidently, there is some such 'mind-incarnating tissue' in contradistinction to other parts of the body which are not indispensable for the presence of the person. Certain extremities and organs of the body can definitely show signs of organic life without the human person being alive to whom this body tissue belongs or belonged. The same body-parts can be removed or die without causing the death of the human person. Hence some parts (tissues) and/or functions of the body must be essential, others inessential for the life of man. The question, however, as to which tissue exactly is the seat of the life of the human person and the indispensable core of the body - while the rest of the body would be something like 'secondary additions' - is very difficult to settle. These parts of the body do not coincide with the totality of the parts which are necessary for the 'unaided' continuation of life. For some of these, including the heart and lungs, can be removed or replaced.

One cannot successfully defend the view that this 'mind-incarnating tissue' or this 'body within the body' simply coincides with the brain or that the cortical functions are the 'mind-incarnating functions'. For? a) The minor hemisphere of the brain can easily be removed surgically without killing or gravely influencing even adults; in small children up to 5, the non-dominant cerebral hemisphere can, in the case of total hemispherectomy of the dominant hemisphere, even assume the latter's role and this shows a remarkable plasticity of the brain.¹⁷ b) Some human beings (embryos in the early stages) certainly live without a brain. c) There are cases of implantations of brain tissue without transfer of a person. And d) the empirical basis for determining the exact locus and limits of the mind-incarnating tissue or of the mind-incarnating functions in the body cannot be established with certainty as long as not all necessary experiences and experiments have been made, scientifically explored and philosophically interpreted.

Nobody knows exactly which parts of the body and of the brain are the mind-incarnating tissue one is looking for. This is one of the great difficulties with thought-experiments concerning decapitated persons or transplanted brains (Shewmon, 1985). To call brain death "physiological decapitation" (Pallis, 1983, p. 34) does not acknowledge the difference between an integrally preserved and a truncated body. The brain-dead human may live for days or even for months (the longest survival period of a brain-dead human being on record known to me being 201 days); decapitated men will cease to move or to show signs of life almost immediately. In the decapitated man the function of the whole brain and the other organic functions in the head and trunk will cease within a very short time; even the most rudimentary integrity of the human living body as a whole is destroyed. None of this applies to the 'brain-dead' human organism. In addition, one cannot exclude with certainty that the decapitated man continues to live for the short time during which the life-processes in his body as a whole continue to go on. One might object that the famous experiments performed by Dr. Robert J. White on cephalic exchange transplantation in monkeys prove that the mentioned distinctions between decapitation and brain death are not significant.⁷ Such an empirical argument, however, does not even prove that the biological life in the isolated monkey brain continues to be the seat of the monkey-identity. Is the human person after decapitation present in the head (brain) only? Or in the relatively integrated trunk? Or in neither one of them? Or in both? (If one does not hold a primitive materialism or body/mind identity theory, it is not evidently wrong to imagine that in a decapitated man the mind's presence continues for a short time in both parts of the body. For the indivisible self of the human person being present in an immaterial and conscious way in the many different parts of the body, the possibility of such a non-physical presence of the mind in locally and physically separated limbs must not be excluded absolutely.)

In view of the considerable measure of integrated wholeness of the body and of life in brain-dead humans, and in considering the difficulty of determining the mind-incarnating tissue in the body, it can thus well be argued that brain-dead persons are in fact alive.

All of these conclusions could be denied by either one of two theories: namely by a radical materialism or by a new form of Cartesianism. Both of these postulate the separability of biological human life from human personhood. If the mind coincides with, or totally depends in its existence on, higher brain functions, then of course the mind cannot survive irreversible dysfunction of the brain (H.T. Engelhardt, 1973, 1986). For then the mind is either nothing but these functions themselves, albeit perhaps experienced in different categories, or it is some set of effects or epiphenomena of brain processes. Thus a materialist and monistic ontology of the mind logically leads to a radical dualism between biological human life and human personhood in the sense that many live 'human beings' are not 'human persons' and that, in fact, all those whose brain does not function cannot have a mind or be

¹⁷ Popper-Eccles, 1977, pp. 330-333, 350 ff.

persons. And those whose brain will never function again, even if they are biologically clearly live humans, will never again become human persons.

Not only materialist ontologies divorce human life from human personhood in this way. A similar dualism also follows from versions of dualist body-soul theories according to which 'ensoulment' takes place only when the brain is formed and/or the soul leaves the body at the moment of irreversible brain damage. According to some such theories, before rational life begins in a member of the species man by a late infusion of the soul, the embryo or baby is an 'anthropoid organism' but no person. Similarly, some defenders of such a dualism deny personhood to man after his rational life irreversibly ends, when this happens prior to the end of the biological life in the body as a whole. Then we have an animal or vegetable in front of us which was deserted by his rational soul. Aristotle held the late ensoulment thesis, Shewmon only the early desoulment thesis.

By assuming, however, that personal life leaves the body when cortical brain-activity has irreversibly come to an end, this theory introduces a strange version of dualism.⁷ In effect, there are two dualisms to be found here. The first denies the substantial unity of man with respect to biological and rational-spiritual life. The other even denies the unity between the principle of sensitive and that of rational life. The latter contradicts the experience and evidence of the identity of the subject of sensation and intellectual life in man. It is difficult, however, to maintain any form of strict identity of rational soul and the principle of vegetative/biological life, because biological life does not require one identical and indivisible subject. It is found in each organ and cell which can be isolated in cell-cultures, etc. (The 'live heart' can be preserved after the obvious death of the patient.⁸ Thus, at least on the level of single biological life-processes, strict identity of the subject which gives rational and vegetative life to man seems impossible to maintain. In this sense we recognize a real difference between the human soul and biological life-processes.

However, any claim of a real divorce in man of these elements and any failure to recognize the striking - though composite - unity of the human being as a whole, constitutes an inadequate dualism? the biological life of the human organism as a whole cannot be separated from a deeper unification and integration of the life-processes; and the ultimate principle of their unity and integration either consists in their being informed by the mind, and their essential contact with it, or at least proceeds in man from the single, indivisible rational soul. Thus, just as we never find signs of the presence of a human mind in a corpse deprived of organic life, no man may be declared dead as long he - as a whole - is biologically alive.

The very notion of 'brain death' implies a strong dualism between personal and biological life. Since few thinkers today will defend a theory of successive ensoulment in a Thomistic sense, we can safely assume that in most authors a body-mind identity theory or an epiphenomenalism constitute the philosophical basis for having introduced the criterion of brain death and thus a new dualism between biological and personal human life. It can be shown, however, - against the materialist-monist versions of the man-person dualism - that accounts of the human mind as a brain function or epiphenomenon or as 'a different categorial structure of the body' are incorrect. But then the identification of the cessation of brainstem activity or of the brain function with death has to be abandoned. Also if, against the Neo-Cartesian dualism of entrances and exits of substantial souls in human bodies, we recognize the profound unity of man's rational and of his biological life, we must assume that, as long as a man is biologically alive, he also lives as a human person. And in any case, whether its philosophic background is materialism or the theory of desoulment, an unbearable dualism (which separates the spiritual-personal life of man from the biological life of the human organism as a whole) is contained in the idea of 'humanoid animals', i.e., of living human embryos or of adults whose bodily and biological integrity and life are preserved but whose personal life or soul is absent.

5. CRITIQUE OF TWO BIOPHILOSOPHICAL ARGUMENTS FOR BRAIN DEATH

There are at least two different lines of thought - rooted in philosophical ideas about the role of the brain for biological human life - which are used in order to defend the idea that the biologically live human body of the brain-dead is not a living human person. The first group of arguments claim that the brain-dead human is only a collection of live organs and not any more a human organism and human being. These arguments rest on the distinction between the life of individual cells and organs and human life understood as the life of the human organism as a whole.

The second group of arguments, based on the idea of 'stages of human ontogeny' (Engelhardt, 1977), supports the thesis that a live human organism (human being) can be admitted but that this brain-dead

human being is not a human person any more - just as the zygote, according to this view, was no person. We shall turn to these arguments separately: 11

The biological life of man has the character of a life stream that can go on in different cells or organs, even though the organism as a whole is dead. Hence it would not be absurd in principle to suppose that we have in front of us a corpse in which single cell-cultures or organs are artificially kept alive. We must, therefore, distinguish the single functions and the life of individual cells or cell-cultures, from the life of the organism as a whole. While it is quite easy, however, to apply this distinction to living cell-cultures outside of the human body, it becomes extremely precarious to apply it to persons whose whole body is, from the point of view of the man in the street, alive.³ I do not say that it is absolutely impossible that the whole body of the brain-dead man is a mere colossal 'cell-culture' and that he himself is dead. I argue here only from strong plausibilities to the contrary.

How can one claim that a body that can still be fed intravenously and accepts nourishment is dead? How can one claim that an organism - as a whole - is dead when most of its organs function completely or partially? How can one justifiably call someone dead who actively produces procreative cells? How is a mother dead who can carry her child to term?¹⁸ The dynamic self-generation of the organism? through regeneration, growth, metabolism, and procreation is the most central of the exclusive marks of a living being. But all or some of the basic marks of this dynamic self-generation are preserved in the brain-dead patient.

Some argue that life must be rethought completely in terms of 'dynamic auto-organization and integration of the whole living organism'. Yet what else - if not some dynamic auto-organization and integration of the whole living organism - would keep the countless substances contained in his body from disintegrating, what else would keep the body from rotting? Moreover, the ability to maintain a body temperature and to run a fever and other vital processes are - in brain-dead patients - not only intact in one single organ but in the whole body, even though elements of such an integrated body-system, such as central and spontaneous regulation of body-temperature, are impeded. The fact that the organism cannot survive without mechanisms to sustain respiration and to reinstate cardiac functions, has nothing to do with the question of his being alive, "for such assistance is not that much different from assistance given to the bodies of persons considered unambiguously to be alive" (Engelhardt, 1977, p. 18).¹⁹

There are two further arguments against the biophilosophical reasons for identifying the irreversible cessation of brain function with death: 1? Does not the human embryo live before he gets his brain? Thus his identity cannot be situated in the brain. 2? Moreover, nobody has as yet proven the impossibility in principle of implanting into a 'live body' a new artificial or live brain which will then be used by the same person whose brain has been destroyed? (We have seen that even now the same small child, after hemispherectomy of the dominant hemisphere of the brain, uses the other one for the same functions.? The injection of fetal brain tissue from aborted embryos is even now possible - without transfer of the person - in such a way that the person who receives the brain tissue uses it for *his* memory. While I condemn these operations - when they involve abortion - from an ethical standpoint, do they not prove that a brain-dead person might regain his consciousness if the progress of science led to the possibility of more sophisticated brain-transplants or injections of brain-cell solutions? There are also more recent and ethically neutral experiments which show that neuron-cell-cultures can be made to grow outside the body.³ But if we must not dogmatically exclude brain-implantations as a serious scientific project for the future, we cannot exclude the presence of the same person in the brain-dead man now.

As we have seen, the facts show how difficult it is to ascertain on which functions or tissues of the brain exactly the presence of the mind depends. Maybe there is not even such a magic tissue and the presence of the person in the body is to be conceived more holistically. It is clear that there is not enough philosophical and not even scientific reflection present in the foundation of this new definition of death to exclude all this. But if this so, then the 'collection-of-organs-argument' for the brain death thesis collapses.

¹⁸ The claim that brain dead persons can be kept alive maximally for a few days is hardly defensible in the light of the facts. See the case of a pregnant woman with total brain infarction whose circulation was maintained for nine weeks in order to secure viability of her fetus described in Field *et al* 1988. See also the description of another case of a brain dead person who was kept alive for 68 days in Parise *et al*, 1982. See likewise the case of somatic survival for 201 days of a whole-brain dead child described in Rowland *et al.*, 1983. The child showed no cortical or brain stem functions during the entire 201 days.

¹⁹ The arguments from beheaded torsos that are 'kept alive' and from 'transplanted brains' refer still to science fiction and do not constitute decisive objections, as we have seen.

If the function of the brain is deemed to be so decisive for the life of the body that on it alone shall depend whether a person is dead or alive, it seems that a small and very partial sphere of phenomena related to human life is taken as identical with the biological life of the whole organism. This seems entirely unjustified in view of the nature of biological life. Moreover, this position fails to recognize that the brain is biologically a late result of embryonic life, is preceded by the living organism without a brain and must already for this reason not be regarded as the center of the unity of the organic life of the organism.

A variety of authors would recognize all this and develop precisely an ontogenetic argument for brain death on the basis of the parallelism between 'brain death' and 'brain birth'. They argue that a human mind does not exist without higher brain activity. Only through the development and functioning of the brain does the live human organism become a person. As the person comes to be through brain birth, so he ends after brain death (D.G. Jones, 1989, pp. 173-178).

H.T. Engelhardt would agree with our arguments for the biological life of the 'brain-dead' human being and with the critique of the first biophilosophical argument. He would admit that the brain-dead human being is not dead in the sense that he would no longer be a live man, a living human organism. But he would claim that he is not a human *person* any longer. For personhood requires consciousness and self-consciousness, language, etc. (Engelhardt, 1977).

This position makes sense in terms of Engelhardt's substance-less concept of the ego as identical with the operating brain (although it is, according to his Neo-Hegelian materialism, categorially distinct from it). Space limits do not permit me to examine in detail this and similar other positions which distinguish a live 'humanoid animal' from a human person. However, all the preceding arguments in favor of the human mind and against actualism, as well as the following arguments from the incalculability of the exact moment of death and others deal with Engelhardt's position by implication.

6. OBJECTIONS AGAINST BRAIN DEATH FROM CERTAIN THEORETICAL AND PRACTICAL CONSEQUENCES

The following arguments could convince someone for mere consequential reasons to reject the definition of death in terms of brain death. They can also bring out the philosophical falsity of the theory which leads to them.

If brain death is accepted as death, it is logical to say that 'to be a human person' is totally inseparable from 'having a functioning brain'. Then, however, it becomes equally logical to say that embryos are not yet human persons as long as they do not yet possess brain activity. Even children who possess a functioning brainstem may be called 'dead' if, by 'brain', we mean the functioning neocortex.

Of course, one could object and claim that no such consequence must be drawn from the criterion of brain death. For in the embryo from the first moment of conception there is a dynamic unfolding of life that will give rise to the formation of a brain. In the brain-dead person, on the contrary, there is no such potentiality.

This objection is valid if irreversibility as the mere 'fact of never possessing brain-activity again' is the reason for the declaration of brain death. However, if the reason for the new definition of death in terms of brain death lies in the idea that brain activity is equal to (personal) life, then it is perfectly logical to say that as long as no brain exists and operates, we have biological human life but no personal human life. Then it would not only be consistent to say that anencephalic children but also that patients in the 'vegetative' or 'apallic' state, who can live for years, are 'brain-dead'. Yet many individuals and legal systems today will reject this consequence (Pallis, 1983, pp. 32-37.). But then all those who acknowledge the personhood of embryos should reject the notion of brain death.

Hans Jonas and other authors unfold before us the gruelling vision of what might - quite logically - follow from accepting the new definition of death? vivisection on brain-dead patients, their use as organ-banks, as research objects with infectious diseases, etc.²⁰ Such gruelling visions are even now being seriously proposed. All of these seem brutal violations of human beings and until now are, as a matter of fact, forbidden in all countries. Present laws prove that the law-makers do not consider 'brain-dead' persons really dead. For if they were nothing but corpses, it would make no sense to forbid, for example, their being dissected. But does not anybody's intuition and humanity revolt against such

²⁰ See H. Jonas, 1974, pp. 136-138.

consequences? Should we then not reject the notion of brain death if we reject the moral and legal consequences which follow logically from it?²¹ 13

7. LINGUISTIC AND LOGICAL ARGUMENTS AGAINST 'BRAIN DEATH'

It is quite natural to assert that the brain-dead people should not be 'artificially kept alive' and it is even claimed that artificially keeping them alive violates their fundamental human rights. One certainly presupposes hereby that they are still living persons. For a dead man can no longer be the subject of rights.²² The same applies when one argues that the brain-dead persons are in such a state that their process of dying should not be prolonged unnecessarily. A process of dying can occur only in a living being. A corpse cannot be in the process of dying. German law prescribes that brain-dead persons must not be 'kept alive'. Lawyers defend the rights of their clients to die. In using this terminology, and people do so quite inevitably in order to voice their concern, even the strongest defenders of brain death definitions reveal their awareness that the subjects of this 'death' are still alive. Such language contains a contradiction in terms and presupposes what the users of such language seek to deny: namely that human persons also exist even when they are 'brain-dead'. Moreover, the very ground of the moral objection against keeping 'living corpses' alive proves that one regards them as a human being and not as an anonymous cell-culture.²³ People do not object against kidneys being kept alive too long.

One could say that this linguistic-logical argument against the definition of death in terms of brain death is, interpreted more deeply, an argument which shows that in the use of language and in various other legal and medical considerations even the adherents of the criterion of brain death still have a clear prephilosophical awareness that brain-dead human persons are still alive. It is a Socratic-maieutic argument which brings to light the intuitive evidence common-sense possesses about the life of the 'brain-dead' - prior to all theories to the contrary.

8. ARGUMENT FROM THE ABSENCE OF 'MORAL CERTAINTY' OF BRAIN DEATH

One might argue against what we have said thus far by remarking that our position presupposes a Cartesian quest for indubitable certainty in the sphere of human actions, a mathematical certainty which indeed is absent with respect to the real death of brain-dead individuals. But all that is required for political and moral actions, one might argue, is some lesser, some practical certainty. For moral actions no mathematical and metaphysical certainty, no absolutely indubitable cognition is called for. It is enough to be 'morally' or 'practically' certain that certain facts exist and that they have certain morally relevant or moral natures.

The principle enunciated in this objection must be granted. An indubitable Cartesian evidence for each action is impossible. To seek it would give rise to eternal scruples and to a stifling of any action. We have to act even when we are less than indubitably certain about what is the best thing to do. If it turns out impossible to reach moral certainty about the death of 'brain-dead' individuals, a position which acknowledges the degree of moral certainty required for a given action demands that we refrain from actions which risk killing a human person. There are, however, at least four ways in which false diagnoses of brain death can be arrived at:

1. It is widely recognized that doctors who are interested in transplantations may be easily influenced in their diagnoses of brain death in concrete cases by their own or their colleagues' practical purposes.

2. Widely discussed incidents of patients who awoke from 'brain death' have led to an intense discussion, and for a time to a virtual cessation, of organ-transplants. Such cases are well documented.[?] Recent findings (Youngner *et al.* 1989, p. 2208) show that "only 35% [of the surveyed physicians responsible for identifying 'brain-dead' patients and declaring them dead] both knew the whole-brain

²¹ See Adolf Laufs, 1985, p. 400.

²² The respect owed to his last will refers to legal obligations proceeding from actions performed during this person's life-time. Even if the obligations following from the will of the deceased person shall arise only after that person's death, they do not seem to possess a corresponding present right of the dead human. Rather, this person had a right during his life-time that his will *will* be respected even after his death. But his legitimate claim in this direction, at least if we do not conceive of him as still living in the other world, can hardly be considered as a present right or claim of his. The obligation refers here to a past right the deceased person had during his life-time. I do not claim here to solve the whole difficulties of rights of deceased persons.

²³ See Field *et al.*, Parise *et al.*, 1982. See likewise Rowland *et al.*, 1983.

criterion of death and were able to apply it correctly to identify the legal status of patients A and B.? This means that more than 60 % of all examiners of 'brain death' neither know the criteria well nor apply them correctly.

Even if there were no more fundamental reasons against identifying 'brain death' with death, this reason alone should suffice to put a halt to using brain death criteria until an acceptable percentage of the staff can understand and apply them correctly.

3. It is doubtful whether the complete cessation of all cortical activity or of all brain stem activity can be proven as long as the human organism as a whole lives. It is even more doubtful whether the irreversible cessation of all cortical activity can be secured with moral certainty sufficient not to risk committing manslaughter when killing the 'living corpse' of a 'brain-dead' human being.

How do we know that in more than ten billion neurons, and billions more synapses, brain-modules and patterns of brain-activity all activity has irreversibly stopped? Even if this were knowable in principle, for example indirectly (by knowing for certain how long the oxygen-flow had been arrested), the tests presently required by the law in most countries refer at most to flat EEG's and to the total absence of reflexes and life-signs which are not even located in the neocortex but in the brain stem. Prominent doctors and defenders of lower brain death definitions, however, admit cortical functions in some brain stem dead persons, and nevertheless extend their primary tests only to the brainstem, which mainly controls the connection of the brain with the rest of the body, not neocortical activity itself.

Thus all the refined, revised and corrected criteria proposed in Australia and many other countries do not even prove the decisive point of 'brain death', namely the actual and irreversible cessation of brain-activity in all those modules and neurons the activity of which is directly associated with consciousness. Yet this is the center of the medical condition referred to as neo-cortical death or total brain-infarction and 'whole-brain death'.

4. Furthermore, as long as the very definition of the medical state of 'brain death' is unclear, one cannot devise any method adequate to confirm 'brain death'. Yet even if the medical condition of 'brain death' were clearly defined, and if the presence of this state in the concrete case were established beyond the shadow of a doubt, the actual death of a man because of this condition would not have been verified concretely. This is simply the consequence of the discussed lack of adequate theoretical reasons which prove that the medical condition designated as 'brain death' coincides with actual death. The only cogent reason for this assumption lies in a materialist philosophy of the mind, according to which the functioning of the upper cerebral hemispheres is the necessary condition for being a person. But this, I submit, has been proven false. As a simple consequence of the invalidity of the reasons offered for identifying brain-infarction with the actual death of the patient, the death of the patient because of brain infarction can also not be diagnosed concretely with any certainty.

Engelhardt (1986, p. 207 ff.) admits this. He speaks, however - in what appears to be an improper and all-too light tone - of "living and dying with less than absolute certainty," belittling the tremendous negative importance of the fact of eventually false concrete diagnoses of brain death leading to manslaughter by organ-explantations. He (Engelhardt, 1986, p. 207) suggests that it is of little interest whether the person still lives because "a possible survivor with severe brain damage may not have a life worth living.?" Here the real possibility that organ-explantations involve manslaughter is openly admitted.

It is clear that in our moral life we do not need an absolute mathematical or metaphysical evidence and certitude in order to act. It is enough that we are 'morally certain' about morally relevant facts (such as the life or death of someone) or about the moral permissibility of an act.

This so-called 'moral certainty' can be purely subjective: our own 'feeling certain' - for good or bad reasons - that we are allowed to commit an act or that the objective morally relevant factors are such and such. This subjective moral certainty can at most - when it is the fruit of a sincere search for the truth - provide a purely subjective moral justification for an act. Of course, someone may be morally certain in this sense that 'brain death' is actual death and that organ-explantations from 'brain-dead' persons are permitted. The existence of such subjective moral certainty does nothing but justify or excuse an act subjectively. It can exist even with respect to obviously immoral acts.

'Moral certainty' can also refer to an objectively well-founded conviction which, while being less than indubitably certain, provides objectively a *moral* justification for a certain action even if the underlying conviction is in fact false. If this moral certainty does not exist, then an action (such as harvesting organs from 'brain-dead' persons or shooting at a moving object which might be a man) may be morally wrong even if the conviction itself is correct. This objective 'moral certainty', - in contradistinction to the purely subjective and ill-founded one - is required for the objective moral justification of an action (e.g., by the moral philosopher). Therefore, even if a brain-dead 'living corpse'

were *in fact* nothing but an organ-bank, this hypothesis would be probable at best, and thus oblige 15 us to treat this alleged 'organ-bank' as possibly a living person, as Jonas points out.

Recognizing the distinction between mathematical-metaphysical certainty and moral certainty, we must say? We do not possess any moral certainty, not even a moral probability, that brain death is actually death. As a matter of fact, both the theoretical philosophical arguments sketched above and the practical difficulties of diagnosis of 'brain death' prove that no well-founded moral certainty as to the actual death of 'brain-dead' individuals is available. Also, uncertain philosophical opinions about the only relevant meaning of brain death - namely: actual death of a human being in virtue of irreversible breakdown of brain-function - can never provide a moral justification for actions which constitute manslaughter if the victim of such actions is still alive.

In addition, different kinds of action demand different degrees of moral certainty. Even a low moral probability of success can suffice to justify an action which might save a life. To commit an action which risks killing a person, however, takes the highest degree of moral certainty. And such a certainty is not only completely absent in the case of brain death but all the evidence points in the opposite direction. Therefore even if the defenders of the brain death definitions were theoretically right, they would still be morally wrong.²⁴

Many laws forbid absolutely the killing of a being of which we have at least no moral certainty in excluding that he might be a living human being. All these laws show that the mere probability and plausibility of there being a human person present is sufficient to forbid morally and legally to kill such a being. We propose to apply the principle underlying these laws to the issue of brain-dead persons who are biologically alive.

9. THE MOMENT OF DEATH - 'CALCULABLE PROBLEM' OR MYSTERY?

Brain death fulfills a set of biological and medical criteria which, as soon as they are established, lead to the assumption of death. The consecutive performance of explantations presupposes that it can be firmly established and 'calculated' when death has occurred, prior to the setting in of the phenomena of natural death. For only if this is possible may one assume that one does not risk killing a living person by explantation of his organs.

Death in the classical sense does not pose any of these problems. It does not just involve irreversible cardio-pulmonary arrest and cerebral dysfunction but is accompanied by many other well-nigh indubitable signs? from the cessation of all vital functions to the deathly pallor and the *rigor mortis* of the corpse to the actual decomposition of the body.

To declare death when the first undoubted marks of death set in, is not presumptuous. Yet to act or to dissect a corpse on the first declaration of clinical death is presumptuous. It is much more pretentious, however, to determine the occurrence of death by means of a mere set of scientific facts and theories about the portion of body-tissue which contains the person, while the body as a whole still lives. Since human death, by its own objective essence, consists in the mystery of the end of that union of life, soul, and body which constitutes personal human life, it becomes quite unjustifiable to declare, in terms of various brain death criteria of external and philosophically irrelevant nature, that the death of the individual who is biologically alive has occurred prior to the occurrence of irreversible clinical death.

In the past, even after a person was declared clinically dead, it was customary not to bury him nor to dissect him immediately, for the reason that - in view of the mystery concerning the exact moment of death - there is a certain risk of taking apparent death for real death. There is likewise the custom in the Catholic and in the Orthodox Church to allow the last rites, which are permitted for living persons only (i.e., for the dying), for some minutes after the first signs of 'clinical death'. This was done undoubtedly for the reason that it is not immediately clear whether the mystery of death itself takes place only after the symptoms of clinical death have occurred.

In the light such traditions which confess man's not knowing the exact moment of death, the situation in which a transplantation team jumps on the biologically live 'warm corpse' ought to strike

²⁴ We must also remind ourselves of an empirical argument for the uncertainty of our knowledge concerning the time of death. Think of the 'life after life' experiences of people who were declared clinically dead and still had all sorts of experiences associated with their body. Could not brain-dead persons be in a similar state prior to the occurrence of actual death? See the completely reliable report on such experiences by an author I knew very well: Hellmut Laun, 1983. Limits of length put on this essay forbid the required lengthy discussion of the epistemological value of such experiences.

any civilized man as an incredible barbarism. This human ignorance constitutes another reason to reject the definition of brain death.

10. CONCLUSION AND SUMMARY

Thus we are led to the conclusion that this new definition of death ought to be rejected by any legal and medical code and that its introduction by many states lacks a sufficient philosophical basis. In the light of philosophical considerations about life and death the criterion of brain death must even be dismissed as an aberrant new definition of death.

I realize that the derivation of legal and ethical norms from reason contradicts Engelhardt's opinions about a public ethics for 'moral strangers' - "individuals who do not participate in a common moral vision" (Engelhardt, 1989) - when they meet in a pluralistic, non-coercive society. Engelhardt would say that the preceding reflections propose outdated ethical standards, which he labels as 'modern' public standards born from the spirit of enlightenment and from a rationalist philosophy which believed in the universal appeal of a reason capable of informing public social and political life. Such a spirit looked for rational social, ethical and legal standards which seek to recover universal values, rights, or ontological truths by means of human reason. The hopeless postmodern relativism and pluralism of our present society, however, render dreams of this sort obsolete, so that we should develop postmodern standards in a pluralist society, which - "since we cannot derive moral authority from God or reason"²⁵ - "can only be derived from the agreement of the individuals who join in a moral undertaking".²⁶

This position is neither logically consistent nor plausible nor compatible with rational evidence. It is inconsistent because it is obvious that Engelhardt accepts quite a few principles as rational and reasonable with which not everyone agrees? namely all those principles which he defends as ground-rules of an ethics in a pluralist society and which happen to coincide with the most liberal standards of a non-coercive, libertarian American society. They contain such values as 'non-coerciveness', 'mutual respect', liberty as absence of attempts to impose private morals on public society, etc. Other ethical tenets of 'the public ethics for moral strangers' include a theory of justification of abortion and infanticide. Each of these elements contains a great number of further presuppositions of ethics, epistemology, ontology, and legal philosophy. On each of these many individuals do disagree, even though a majority of Americans today might give their consent to most of them. Hardly any of these norms is object of universal consensus, some - for example Engelhardt's ideas about infanticide - not even of majority opinion. Thus either he has to claim that these principles derive their justification from 'reason' or he has to abandon them and has in fact nothing left as content of his 'postmodern ethics'. The position is also implausible in that it forgets that man has always lived in a pluralist society. Relativists and disagreement existed since millenia. Why should the power of human reason be trusted less today than before? There is no evidence to support such a thesis, except perhaps Engelhardt's own despair of objective rational knowledge, and his skepticism which itself happens to be contradictory and to presuppose - as does any conceivable skeptical doubt - quite a number of evident truths and alleged evident truths. On the other hand, public ethics and law were always the result of some consensus of some segments of society.

But this does not liberate men from the duty to base their consensus and norms, as far as possible, on truth and knowledge. Engelhardt's position contradicts the evidence that even public ethics can never derive its justification from consensus but has to be guided by all available objective knowledge as to the nature and sources of moral and legal norms. To bring to appropriate evidence the real goods, obligations, and legal norms is, I submit, the only legitimate way of influencing public ethics.

Hence I dismiss objections from the side of a relativistic 'postmodern public ethics' and strongly advocate a return to the metaphysical investigation of the nature of death as expression of an important objective side of the essence of death. The metaphysical notion of death as the separation of the soul from the body has to guide our action, in that any reasonable doubt as to its occurrence must forbid operations which might bring it about. On the other hand, as to the medical concept of death or of its basic signs, I defend the notion that death has occurred when 'a complete and irreversible cessation of all central vital signs (including cardiorespiratory activity and total brain infarction)' have taken place. I argue not in favor of conceivably limited and outdated notions of clinical death (from which awakening is possible) but defend just the datum of death which begins with irreversible cardiac-pulmonary arrest

²⁵ Engelhardt, 1989, p. 33.

²⁶ *ibid.*

and is often designated as 'clinical death'. This notion of an 'irreversible clinical death' corresponds 17 to the classical medical criteria of death which, prior to 1968, were universally accepted.

Every layperson knows the main signs and consequences of this death. Certainly, we can no longer share the unquestioning simplicity with which the classic German jurist Friedrich Carl von Savigny wrote in 1840? "Death, as the end of the natural capacity of being the subject of rights, is such a simple natural event that, like birth, it does not require an exact determination of its elements.? Nonetheless, we argue for a critical return to the datum of this 'simple natural event' of death and against the sophistry of dissolving the unity of personal and biological human life and the 'simple' notion of death or of reducing it to partial aspects. The question 'what is death?' is, moreover, not a matter of 'normative convention' but of finding what it truly is. As A.M. Capron says: "Calling a person dead does not make him dead". (*American Medical News*, April 17, 1987, p. 1). I must discover the nature of man and of his biological and personal life and being. Only from this perspective of the truth about man and human life can I determine the objective nature of death and the criteria by means of which death can be ascertained.

The only acceptable medical criterion for personal human life, we conclude, is biological human life - i.e. life of a human organism, as it exists from conception on. Accordingly, the only acceptable criteria for death are the irreversible end of the biological vital functions of the 'organism as a whole' and the phenomena following thereupon.

If biological human life is accepted as the only viable criterion of personal human life, such an acceptance has of course tremendous consequences for medicine and for the political and legal order:

1. While it allows reference to 'brain death' (total brain-infarction) as a reason for stopping extraordinary means of life-support, it forbids the use of the criterion of brain death for the justification of organ donation and explantation.

2. With the necessary restrictions (incalculability of the moment of 'objective death', etc.) and additions (e.g., taking into consideration the distinction between 'live cell-cultures' and live human organism, and the possibilities of modern resuscitation techniques), the customary criterion of irreversible clinical or 'natural' death of the organism as a whole should be reintroduced as the medical and legal criterion chosen for the determination of death.

What are the reasons for this proposal?

A. In the first place, all the other definitions and criteria of man's death are arbitrary, disputable, and ambiguous, while the end of biological human life is a non-arbitrary, non-disputable, and unambiguous criterion of human death. It is highly arbitrary to identify the end of human life with the destruction of the neocortex, with the irreversible non-function of the brainstem, of the whole brain, while other vital organs are still alive.

The natural death of the organism as a whole, however, is a clearly and unambiguously marked end of human life. Everyone will agree that after the end of the biological life of the human organism as a whole there is no human life present in the body. Thus it fits excellently as a standard in the kind of pluralist society and argument which Engelhardt relates to the postmodern age. A complete consensus is possible with regard to the thesis that no human life is present before the beginning or after the end of the biological life of the human organism. No similar consensus can be achieved with respect to any other limit. Therefore, this most natural, unambiguous definition and criterion of human death - which has full consensus in the sense described - is preferable to any other criterion or definition of death.

B. Secondly, any other criterion is unsafe, because as long as the human organism lives personal human life at least could in principle, and does with great probability, exist. Since there are many reasons for, and at any rate no clear reasons against, the assumption that human life and personal human life begin together and that the human person (soul) is present in man from conception until death, one might at least possibly kill a human person when one kills a biologically living human being, even in the earliest stages of embryonic development and in the latest phases of human life. Hence it is at least 'unsafe' to take the organs from a 'brain-dead' but otherwise biologically living being.²⁷ The mere probability of a human person being present and the absence of moral certainty of his death make it morally and legally wrong to kill him.

C. Thirdly, the best theoretical understanding of man commends the criterion of biological human life as indicator of personal human life - in view of the unity of body and soul and of the human being as a whole.

²⁷ This same argument from the uncertainty is defended by H. Jonas, 1974, p. 138? "We do not know with certainty the borderline between life and death, and a definition cannot substitute for knowledge... In this state of marginal ignorance and doubt the only course to take is to lean over backward toward the side of possible life."

In order to see clearly the wrongness of the brain death definitions of actual human death, one has first to cease regarding this matter as an issue to be resolved by medical scientists primarily. It is decisive that it be recognized that the key issue at stake in the brain death discussion is purely philosophical, not medical. Persons who agree on all medical facts and evidences disagree on this issue for purely philosophical or religious reasons.

Given the immense practical pressure (from the established centers of organ-transplant medicine) on each institution regarding this matter, and given the duty towards the truth, we must certainly refuse to adapt to prevailing modern opinion on death simply because it prevails. Each one of us must resist the temptation to adjust his position on any issue in accordance with social expectations and desires of hospitals. Rather? we have the task to speak out on the truth in season and out of season, while undertaking every effort to make the truth understood and accepted by men.

In the light of the preceding reflections, I can only recommend that anyone explicitly reject the identification of death with brain death - for good reasons, both theoretical and practical-tutoristic in nature.

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