

ANIARTI 2009

Bologna - 26 novembre 2009

**The President's Council on Bioethics:
Controversies in the determination of death.**
nuovi razionali, stimoli, quesiti aperti

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morte cerebrale

- morte del cervello
(perdita irreversibile di tutte le funzioni endocraniche)
- morte del paziente, diagnosticata con criteri neurologici

All'inizio,
vennero descritti i fatti.

Riishede J, Ethelberg S: Angiographic changes in sudden and severe herniation of brain stem through tentorial incisure; report of five cases. AMA Arch Neurol Psychiatry 1953; 70:399-409.

Löfstedt S et al: Intracranial lesions with abolished passage of X-ray contrast through the internal carotid arteries. Opusc Med 1956; 1: 199-202

Jouvet M: Diagnostic électro-
souscorticographique de la mort du SNC au cours
de certains comas. Electroencephalogr Clin
Neurophysiol 1959; 3:52-53.

Mollaret P, Goulon M: **Le coma dépassé** (mémoire préliminaire). Rev Neurol 1959; 101: 3-15.

Wertheimer P, Jouviet M, Descotes J. A propos du diagnostic de la mort du système nerveux dans les comas avec arrêt respiratoire traités par respiration artificielle (**Concerning the diagnosis of death of the nervous system in coma with respiratory arrest treated by ventilatory support**). Presse Med 1959; 67: 87-88

Poi i fatti vennero interpretati.

“... where the anoxia was so long that destruction to the respiratory centers and higher nervous system occurred, but where cardiac function was restored (...) a human heart-lung preparation results that may be viable for many days.”

RS. Schwabs, Electroencephalogr Clin Neurophysiol, 1963

A definition of irreversible coma: Report of the Ad hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death, JAMA 205: 85-88 1968

Our primary purpose is to define irreversible coma as a new criterion for death. There are two reasons why there is a need for a definition.

1) Improvement in resuscitative and supportive measures have led to increased efforts to save those who are desperately injured. Sometimes these efforts have only a partial success so that the result is an individual whose heart continues to beat but whose brain is irreversibly damaged.

The burden is great on patients who suffer permanent loss of intellect, on their families, on the hospitals, and on those in need of hospital beds already occupied by these comatose patients.

2) Obsolete criteria for the definition of death can lead to **controversy** in obtaining organs for transplantation.

Ad hoc Committee of the Harvard Medical School
to Examine the Definition of Brain Death, 1968

“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.”

(H. Beecher, 1971)

“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.”

(H. Beecher, 1971)

Here we arbitrarily accept as death,
destruction of one part of the body.(...).
Dying is a continuous process; while
death may occur at a discrete time, we
are not able to pinpoint it.

(H. Beecher, 1971)

1968, una **proposta morale**: nel processo del morire, è possibile identificare clinicamente un momento in cui tale processo è sufficientemente ed irreversibilmente *avanzato* - anche se non *compiuto* con sicurezza - da permettere la sospensione di ogni supporto vitale ed il prelievo di organi.

Death is the permanent cessation of functioning of the organism as a whole.

Bernat, 1981

The criterion of permanent loss of functioning of the entire brain is perfectly correlated with the permanent cessation of functioning of the organism as a whole because the brain is necessary for the functioning of the organism as a whole. It integrates, generates, interrelates, and controls complex bodily activities. ...

Bernat et al, 1981

A patient on a ventilator with a
totally destroyed brain is merely
a group of artificially maintained
subsystems since the organism as a
whole has ceased to function.

Bernat, 1981

In all cases, despite the most aggressive support, the adult heart stops within one week, and that of the child within two weeks.

Thus, when the organism as a whole has ceased to function, the artificially supported 'vital' subsystems quickly fail.

Bernat, 1981

In adults who have experienced irreversible cessation of the functions of the entire brain, this mechanically generated functioning can continue only a limited time because the heart usually stops beating within two to ten days.

The President's Commission, 1981

1981: la morte cerebrale,
da questione di valore,
fatto morale,
diventa un dato scientifico,
oggettivo, dimostrabile
su un piano fisiopatologico.

... 67 documented survivals of at least 2 weeks, 32 at least 4 weeks, 15 at least 2 months, and 7 at least 6 months (the longest survival being up to 14.5 years)

Shewmon AD. Chronic brain death. Neurology 51:1538-45, 1998

This patient experienced a cardiac arrest in January 2004, more than twenty years after the diagnosis of brain death.

S. Repertinger et al., “Long Survival Following Bacterial Meningitis-Associated Brain Destruction” J Child Neurol 21(7): 591-5, 2006

... the longest period of support
was 107 days.

Powner DJ. Extended somatic support for pregnant women after
brain death. Crit Care Med 31:1241-49, 2003

... the brain dead girl was sent home on a ventilator; she suffered a conclusive heart attack **four months later.**

Appel JM. J Med Ethics 31:641-642, 2005

The point is simply that the orthodox,
physiological rationale for BD is precisely
physiologically untenable.

Shewmon A., 2001

La morte cerebrale sembra tornare
ad essere una **questione di valore**.

the President's Council on Bioethics

Controversies in the
determination of death

Washington, December 2008

http://www.bioethics.gov/reports/past_commissions/defining_death.pdf

Chapter 1 - Introduction

- history of the neurological standard for the determination of death
- aims and rationale of the report
- organization of the report

Chapter 2 - Terminology

whether patients in this condition are,
in fact, dead, is the central uncertainty
addressed by this report;
therefore, a term employing the word
“death” [...] is prejudicial to the aims
of an open inquiry.

Different Terms for One Clinical State

terms	sources
Whole Brain Death	Term commonly used
Coma Dépassé	Mollaret and Goulon, 1959
Irreversible Coma	Harvard committee, 1968
(Total) Brain Infarction	Ingvar, 1971 (Shewmon, '97)
Irreversible Apneic Coma	Zamperetti, et al., 2004
Brain Arrest	Shemie, et al., 2006
Total Brain Failure	Report's preferred term

Chapter 3 - The clinical presentation and pathophysiology of total brain failure

- vital functions (breathing / circulation) in health and after brain injury
- diagnosis of total brain failure
- patho-physiology of total brain failure
- empirical findings in total brain failure
- total brain failure and vegetative state

The destructive storm that leads to ‘total’ brain failure can leave **certain areas of the brain intact**. (...). In some cases, the preserved tissue in a body with total brain failure actually does support **certain isolated functions of the brain**.

Signs of isolated brain function do not settle the fundamental issue: *Is the organism as a whole still present?*

There is some degree of somatically integrated activity that persists in the bodies of patients who have been declared dead according to the neurological standard.

This point deserves emphasis because in the history of the debate (...) certain **exaggerated claims** have been made about “the loss of somatic integration” that occurs in a body with a destroyed brain.

The **claim** that the body of a patient diagnosed with “whole brain death” is a mere “group of artificially maintained subsystems” was **repeated often enough** to become established in the United States as the **standard rationale** for equating brain failure with human death.

... caution and skepticism toward
sweeping claims about the total
instability of the “brain dead” body
and the imminent collapse
of the body’s systems.

Chapter 4 - The philosophical debate

... a more **compelling account of wholeness** that would support the intuition that after total brain failure the body is no longer an organismic whole and hence no longer alive

... reliance on the concept of
‘integration’ is abandoned and with it
the false assumption that the brain is
the ‘integrator’ of vital functions.

Determining whether an organism remains a whole depends on recognizing the persistence or cessation of the fundamental vital work of a living organism - the work of self-preservation, achieved through the organism's need-driven commerce with the surrounding world.

To preserve themselves, organisms
must - and *can* and *do* - engage in
commerce with the surrounding world.
It is what an organism “does” and what
distinguishes every organism from non-
living things. And it is what distinguishes
a *living* organism from the dead body
that it becomes when it dies.

The work of the organism depends on ...

- Openness to the world, that is, **receptivity to stimuli and signals** from the surrounding environment
- The **ability to act upon the world** to obtain selectively what it needs
- The **basic felt need** that drives the organism to act as it must, to obtain what it needs and what its openness reveals to be available

If there are no signs of **consciousness**
and if **spontaneous breathing** is absent
and if the best clinical judgment is that
these neuro-physiological facts **cannot**
be reversed, [all this] would lead us
to conclude that a once-living patient
has now died.

Chapter 5 - Implications for policy and practice

Chapter 6 - NHBOD

Chapter 7 - Summary of the council's debate on the neurological standard for determining death

The nature and significance of the problem [of determining death] have changed over time, especially in the wake of **technological advances** that enable us to sustain life, or perhaps just the appearance of it, **indefinitely**.

Given these changes and others that are yet to come, the Council believes that it is **necessary and desirable to re-examine our ideas** and practices concerning the human experience of death in light of new evidence and novel arguments.

Until now, **two facts** about the diagnosis of total brain failure have been taken to provide fundamental support for a declaration of death: first, that the body of a patient with this diagnosis **is no longer a ‘somatically integrated whole’**, and, second, that the ability of the patient to maintain **circulation will cease** within a definite span of time.

Both of these supposed facts have been
persuasively called into question.

... a **new argument** to support the declaration of death following a diagnosis of total brain failure. It is one that many members of the Council find **both sound and persuasive**, for it appeals to long recognized facts about the condition of total brain failure, while doing so in a way that is both novel and **philosophically convincing**.

substantial **reassurance** as to the
ultimate validity of the standard

La morte cerebrale diventa quindi
insufficienza cerebrale totale.

La corrispondenza con la morte della
persona è una **questione di fatto**,
in quanto corrisponde alla cessata
capacità di assicurare il “**fundamental**
vital work of a living organism”