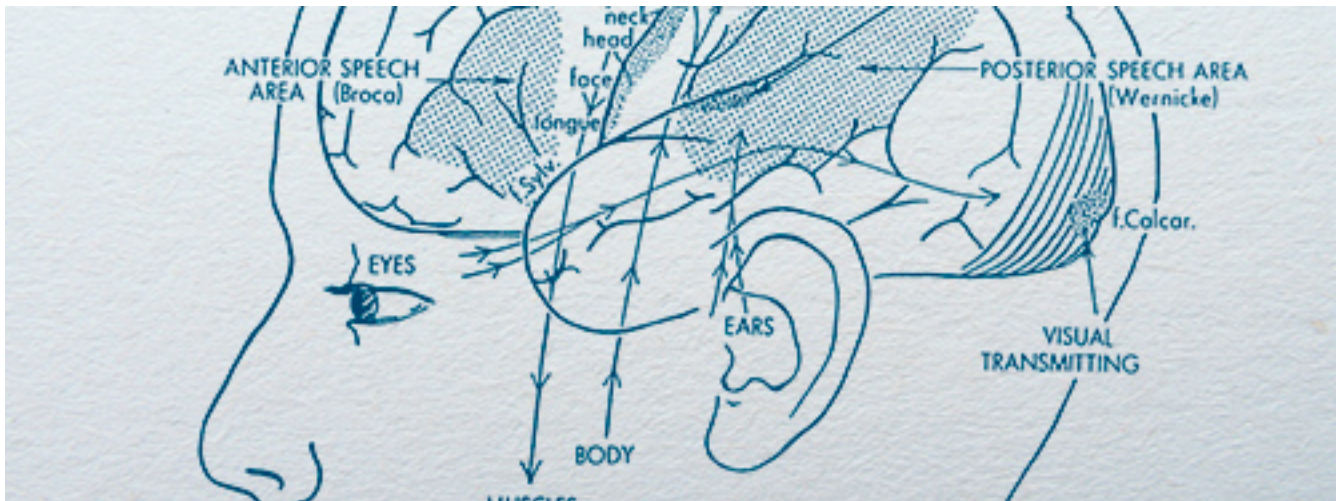




The Determination of Brain Death and its Relationship to Human Death



In 1985 the Pontifical Academy of Sciences held a Working Group to study the problems deriving from the use of artificial methods for the prolongation of life on a purely scientific level; such means have been made possible by progress in science and technology. The Working Group attempted in particular to provide a definition of the exact moment of death.

This latter point was particularly delicate in its repercussions not only in a juridical and theological sense, but above all in the determination of the legitimacy of removing organs for transplants, generally before such organs have suffered damage.

The group of scientists who participated in that Working Group un-animously affirmed that death has taken place when:

- a) Spontaneous cardiac and respiratory functions have irreversibly ceased, or
- b) There has been an irreversible cessation of all brain function.

The Final Statement of the Working Group stressed the fact that brain death is the true criterion for death, given that the complete cessation of cardio-respiratory functions very quickly leads to brain death. The document also contains other points to indicate how to establish the cessation of brain activity, and deontological and ethical norms for organ transplants.

The Proceedings and conclusions of that Working Group were published in 1986 and enjoyed general agreement among doctors and scientists as well as among those who saw the beneficial aspects of organ transplants. However certain moralists and philosophers responded with questions and even strong opposition. For this reason, following the suggestion of the

Congregation for the Doctrine of the Faith, the Academy decided to convene another meeting in December 1989, with the participation not only of medical scientists, but also of philosophers, theologians and legal experts. The meeting aimed to study the scientific principles more in detail, within a wider cultural context which would take into account the special nature of the human person.

On this occasion, in his address to the participants, Pope John Paul II stressed that medical scientists have the task and responsibility of indicating with certainty the signs of death. This teaching is in the line of Pius XII who, during an audience with anaesthetists in November 1957, stated that: "It is the task of the doctor ... to give a clear and precise definition of 'death' and of the 'moment of death' of a patient" (AAS 49 [1957] p. 1031).

The 1989 meeting involved the direct encounter of philosophers, theologians and moralists with doctors. At the scientific level, four years of study and research completely confirmed the conclusions proposed in 1985, that brain death was the death of the human being. It was observed, however, that it is more accurate to speak of state of death rather than the exact moment of death. The medical scientist can clearly ascertain the state of death, while it is practically impossible to establish medically the beginning of this state or the moment of death. It is in this context that the conclusions and Proceedings of the 1989 meeting were entitled "The De-termination of Brain Death and its Relationship to Human Death".

There has been a more in-depth evaluation of the philosophical, legal and normative consequences of this question, as seen for example in the legislation of various States. Certain contrary opinions which emerged in the discussion opposing the agreed medical definition of the state of death came mainly from the philosophical sector. Some philosophers think that total brain infarction is not a certain sign of death; they would add that they have great reservations concerning transplants. These opinions do not undermine the definition which represents the consensus of the international scientific community.

The group of philosophers, legal experts and theologians who took part in the meeting with their papers and discussions, made the following comments:

- It has been confirmed that the spiritual element, the soul, is the form of the human subject which unitarily determines all its physical and spiritual functions. Death is the separation of the spiritual principle from the body. In the Christian tradition, this is a sorrowful mystery which is linked to sin. Such a separation cannot be perceived by any of the senses, but there are visible signs which give moral certainty that it has taken place. In the light of current knowledge, besides such signs which are universally known and accepted, the complete destruction of the encephalon has been indicated as capable of excluding any doubt, uncertainty or ambiguity since there is no further possibility of organic or vital functions. The medical practitioner's task is to inform the patient's relatives that such an event has been verified. It is also his or her task to establish and notify such an event, in these cases suspending the use of instruments in keeping with ethical and solidarity principles.
- The dignity of the human body as deriving from its profound relationship with the soul and its ultimate resurrection was also confirmed. From this flows the deep respect due to the human

body even after death, being a symbol of the person and an object of love for his or her relatives and many others. As regards the practice of transplants, the solidarity aspect on the part of the donor is to be emphasised. It therefore follows that authorization for the transplantation of organs is not at variance with the principle of respect for the body but is rather an act of profound human solidarity. Nevertheless, legal regulations are necessary. Respect for human life prohibits any act directed at bringing about or speeding up death as well as any omissions that may result in death. The sign that the medical practitioners present have set forth to indicate death has been considered to be in line with the general criteria of certainty in moral order.

- The importance of defining correct criteria regarding death is further re-inforced by their fundamental relation with morality and theology. These latter disciplines must be utilized in connection with medical deontology to establish when it is permissible to interrupt artificial support measures, including artificial respiration systems. The participants suggested certain easily detectable clinical signs and specific forms of instrumentation for confirmation as criteria for documenting the state of death of persons under reanimation. It was agreed that such criteria take on an added ethical dimension in establishing death in the case of organ transplantation, when the lives of many suffering people would be extended through organ donation.

We wish to emphasize that it would not be appropriate to apply the criterion of brain death developed for the adult as the criterion of death either in the case of human infants born with central nervous system malformation (for example, anencephalic babies) or in the case of aborted fetuses. Many related questions were not addressed during this Working Group's deliberations, not to mention the multiple ethical aspects which characterize organ transplantation itself. Such issues remain as matter for experts in ethical and moral theology and lie, above all, within the competence of the Church's Magisterium.