

Science, Technology, Society: Prologue

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As everyone knows, the death of a human being, the demise of his or her body, is a process. The hair, teeth and nails continue to grow even after the cardiovascular system has shut down. This ancient understanding of death as a long and complex process has informed countless mythologies, not to mention modern-day horror stories, and has its own scientifically precise equivalent in modern medicine. Until the late nineteen-fifties, the main criterion for establishing exitus was the cessation of heartbeat. The introduction of a completely different indicator in the nineteen-sixties, that of brain function, however, went almost unnoticed by the public at large. Defined in 1968 by a panel of doctors, lawyers, and ethicists at Harvard University, 'brain death' is now an accepted criterion of death in almost every country in the world except Japan and India. How can this be explain?

First, the use of modern life-support technology made it possible for the body to be kept animate even after the heart had stopped beating. But as this could not be done in all cases, if only on grounds of cost, there was clearly a need for a criterion that would provide a medical and ethical justification for switching off all the expensive and sophisticated machinery at some point. Modern technology had rendered the old criterion obsolete with the result that the process of dying could now be prolonged almost ad infinitum.

There was a second reason, however, which was to become even more important than the first: methods of transferring organs from one person to another, the practice known as homo- or allotransplantation, had made such progress by then that there was a worldwide shortage of organs, specifically of living organs with an intact blood supply. Such preconditions, which are key determinants of the successful outcome of a transplant procedure, are best met if the donor is 'dead' but his or her body still 'alive'. The candidates most likely to fulfil these seemingly contradictory requirements are those who have been declared brain dead. The time of their death can be defined with such precision that the organs required can be removed while still 'alive' even though the donor him- or herself counts as 'dead'.

A distinction is drawn between 'partial brain death' and 'whole brain death'. People who are 'partially brain dead' may be able to breathe spontaneously and hence remain alive even after life support has been removed. Those who are 'wholly brain dead', on the other hand, have to be respirated, as was the case with Marion Ploch of Erlangen, a pregnant woman whose heart continued to beat – since heartbeat is not controlled by the brain. The Harvard panel chose 'whole brain death' as its criterion for brain death, although the decision was not without controversy. The crucial factor in every case is that the essence of being human presupposes at least some, minimal brain function, measurable by electroencephalogram. Or, to put it another way: capacities mediated by the brain (cognition and consciousness) are an essential condition of personhood. The irreversible failure of these capacities can thus be equated with the death of the person to the extent that it spells the end of her/his identity. What counts is not the death of bodily integrity, but the death of personality, as defined by brain activity: 'As soon as a human is no longer a person, his or her death is no longer that of a human being, but on the contrary the death of a thing'. Death is thus regarded as the loss of what defines the essence of a person: namely cognition. Each individual is thus split into a 'biological-somatic' and a 'mental-emotional' existence, and human existence itself narrowed down to brain function. Yet people who have been declared brain dead do not have anything in common with conventional perceptions of the dead: they are warm, they breathe (with the aid of a machine), and they make noises.

There is still plenty of scope for interpretation, as became apparent at an international ethics congress held recently. Here it transpired that a person who in Germany can be declared dead and have his or her organs removed, would in Denmark be considered a living human being. In the USA, on the other hand, death can be declared much sooner than in Germany, where the consent of the individual concerned – in most cases an accident victim – as well as the next-of-kin is required before organs can be removed (the consent system). This contrasts with Austria where everyone counts as a potential organ donor unless he or she specifically opts out of the system; silence in this case counts as consent (the opt-out system).

What is worrying here is not that advances in technology have now come to define what it means to be human; after all, it is not the first time in human history that this has happened. Nor should we be alarmed at the emergence of a scientific discipline whose raw material is human organs; this, too, is a logical consequence of our historical development. A definition of death which allows a person who is dying to be declared dead in part because his or her organs are needed elsewhere may seem dubious; but not even such a consensus decision reached by doctors with a specific goal in mind can be faulted on ethical grounds. What is worrying, or even alarming, is something else. The remarkable advances made in intensive medicine in recent years have generated a demand for transplantable organs. Whereas this is a purely medical problem, at least on the surface, organ transplants and death are ultimately a political problem. What is ultimately concerning about this utilitarian redefinition of death and dying is that despite being a development that is likely to be irreversible, it has taken hold without receiving much, if indeed any, attention from society at large. The questions now on the agenda, such as that regarding the criteria by which organs are to be allotted, should be decided by society as a whole and not by a small coterie of scientists: How many organs may a person lay claim to in the course of a life? Should a healthy lifestyle be made a precondition to qualify for an organ? Should one person or group of people be given precedence over another? Should an alcoholic be given a new liver? Can the manufacturers of pharmaceuticals, which damage the kidneys thus necessitating kidney transplants, be called to account? As the answers to those questions have potential to affect us all, these very concrete questions as well as a range of similar issues have to be debated in the public domain.

Since it is technology that enables doctors to keep a body animate even after the vital organs have failed, it is technology that is now forcing us to rethink death and to engage in discourse of unprecedented scope and depth.

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