
Whole-brain death reconsidered

Alister Browne *Department of Philosophy, University of British Columbia*

Editor's note

The author, a philosopher, suggests that the concept of death should be left as it is 'in its present indeterminate state', and that we ought to reject attempts to define death in terms of whole-brain death or any other type of brain death, including cerebral death and 'irreversible coma'. Instead of 'fiddling with the definition of death' clear rules should be established specifying 'what can be appropriately done to whom when'.

A commentary by a neurological expert on brain death follows this paper.

An enormous amount of energy has been spent on the question of when a person is dead. Of all the proposals that have emerged, the so-called 'whole-brain' definition has been by far the most popular: a person is dead if and only if all that person's brain functions have irreversibly ceased functioning. This definition differs from the definition, long accepted by the courts, of *Black's Law Dictionary* that death is 'the cessation of life; the ceasing to exist; defined by physicians as a total stoppage of the circulation of the blood, and a cessation of the animal and vital functions consequent thereon, such as respiration, pulsation, etc.' (1) – in that it takes only spontaneous heartbeat and respiration to be indicative of life. When those functions occur, but are artificially sustained, the whole-brain definition forces us to say that what we have is a corpse being ventilated, not life being maintained. And the definition differs from the so-called 'cerebral-death' definition of death in that whereas, according to the latter, a person is dead as soon as he is irreversibly comatose – a state which occurs as soon as the neocortex is permanently non-functioning – whole-brain death requires, in addition, that spontaneous heartbeat and respiration have also permanently ceased – a state which does not occur until the activity of the brain stem, as well as that of the neocortex, has permanently shut down (2).

The whole-brain definition of death has been

endorsed by a number of medical associations, including the World Medical Association, the Canadian Medical Association, the American Medical Association, and the American Electroencephalographic Society. It has passed into law in the majority of European countries, Australia, 18 states of the United States (Alaska, California, Georgia, Idaho, Illinois, Iowa, Kansas, Maryland, Louisiana, Michigan, Montana, New Mexico, North Carolina, Oklahoma, Oregon, Tennessee, Virginia, and West Virginia), and the Province of Manitoba. It is also currently being considered by Great Britain, and has recently received the endorsement of the Law Reform Commission of Canada.

However, in spite of its great popularity, and what might seem to be its judicious attempt to steer a middle course between unacceptable twin extremes, I do not think the definition ought to be adopted. What I want to do in this paper is to say why. I shall argue that not only is the whole-brain definition inadequate, there is neither any necessity for, nor advantage in, redefining death in any other way either.

Let me begin by raising what might seem at first to be an artless question: 'Why should anyone bother redefining death at all?' The standard answer to this is that death is a time of great behavioural significance. It is commonly thought that we can do things such as withdraw all life-support systems, mine an organ donor's body for transplantable organs, use the body for certain experimental and instructional purposes, initiate burial procedures, and proceed with an autopsy, if, but only if, the person is dead. Thus, insofar as it is unclear when a person is dead, as it is, it will likewise be unclear when it is appropriate to do these things.

But even granting that the present concept of death is indeterminate, that important legal, moral, and medical consequences flow from the determination of death, and that it is undesirable to be left in limbo on these matters, it still does not follow that we ought to precise the definition of death. ['To precise' – 'to make precise', according to the *Shorter Oxford English Dictionary* – Editor]. There remains the alternative of leaving the definition of death in its present indeterminate state, and going on to specify what can be appropriately done to whom when. Thus, for example, we could have rules such as: 'No transplant proceedings can be initi-

Key words

Whole-brain death; death; brain-death; philosophy; medical ethics.

ated until all spontaneous and non-spontaneous respiration and heartbeat have irreversibly ceased'; 'Life-support systems may be routinely removed as soon as an individual is irreversibly comatose, even if spontaneous respiration and heartbeat still occur'; 'Any person who intentionally causes another to lose his capacity to function as an integrated conscious being shall be punished by the most severe sanction available in this jurisdiction'; and so on. I do not want to insist that these particular rules ought to be adopted; my point is only that we can remove any uncertainty in practical affairs without fiddling with the definition of death (3).

Is there, then, any advantage in precisising the definition of death? The temptation to solve the practical problems by precisising the definition of death surely rests on the assumption that it is possible to find some time at which most traditional death-behaviour becomes appropriate, and which can be unobjectionably pegged as the moment of death. If such a time can be found, there will be considerable utility in redefining death to coincide with it. But if it cannot, there is no advantage in redefining death. For then any redefinition of death will have to be accompanied by a disclaimer that certain behaviour becomes appropriate at that time, or only at that time. And there is no clear advantage in redefining death and then going on to say that most behaviour, traditionally thought to be appropriate if and only if a person is dead, is now appropriate at a particular time before (or after) that event, over leaving the definition of death alone, and going on to specify when certain behaviour would be appropriate. Indeed, on the face of it, the advantage seems to run the other way. Thus, whether the whole-brain definition is acceptable depends on whether it coincides with a time which has behavioural significance. I shall now argue that it does not.

It is natural to regard the whole-brain definition as being at once too conservative and too radical. If we treat the time of death as the earliest time one can withdraw (or even routinely withdraw) all life-support systems, then the proposed pegging of the time of death seems excessively conservative. It is plausible to suggest that the limit of the value of life is set by the possibility of having experiences; once an individual no longer can have experiences, his existence no longer has any value for him, and hence there is no point in preserving or extending it. But since one can be irreversibly comatose without having suffered whole-brain death, to hold up whole-brain death as the earliest time life-support systems can be withdrawn or routinely withdrawn is to mis-time that event.

In another way, however, the definition may seem to be too radical. If we treat the occurrence of death as justifying the excision of vital organs from donors for transplant purposes, the performance of an autopsy, the initiation of burial procedures, and the use of the body for teaching or experimental purposes, then it is arguable that the whole-brain death definition permits these activities too soon. There may be nothing in-

appropriate about switching off the respirator once whole-brain death occurs, and then initiating these activities. But insofar as the person is to be declared dead even while on the respirator, as the definition in question has it, there is no need to shut it off: we can commence these activities while heartbeat and respiration, albeit artificially supported, still occur. That, one may claim, is inappropriate. Again, if an organism may be declared dead and yet have its vital functions maintained by various devices, it may seem both tempting and permissible to use it as a self-replenishing blood or skin bank, a reservoir of transplantable organs kept in the freshest possible condition, a plant for manufacturing biochemical compounds, and so on (4). And these may likewise be claimed to be inappropriate things to do.

Now maybe proponents of the whole-brain definition have the above implications firmly in mind, and, contrary to the suggestions above, think they are acceptable implications. If so, however, we are surely owed some weighty moral arguments. But it has not been characteristic for advocates of that view to acknowledge, let alone defend, those implications. Perhaps, then, they do not want to endorse them. But if not, just what implications for behaviour the determination of death has needs to be made clear. Otherwise we are exchanging a situation in which we know pretty well what is supposed to follow upon the determination of death, but do not know exactly when death occurs, for one in which we know exactly when death occurs, but do not know what follows from that. And there is no gain there. My own view of this matter is that it is impossible successfully to argue that the implications for behaviour yielded by the whole-brain definition are acceptable. I think the only plausible choice is between the ordinary view expressed above, and a more radical view to be discussed below. And neither of these positions supports a whole-brain definition of death. I will now try to make out these claims.

If one has what I take to be the natural reaction to the definition then one will say that the whole-brain definition of death must be accompanied by a denial that certain traditional death-behaviour (burial, experimentation, etc) becomes permissible if and only if a person is dead. But if one does say this, and claims that we can in some circumstances withdraw all life-support systems *before* a person is dead, but cannot use a body as a reservoir of transplantable organs or for information-seeking or teaching purposes until *after* a person is dead, then the only significant effect of updating death to whole-brain death is that it allows one to offer the 'death-justification' for terminating treatment earlier than we currently can. This does not mean that we can terminate treatment any earlier, for whether or not we update death, we already can and should agree that all health-care services can be routinely terminated (at least) by the time whole-brain death has occurred. It only means that we can offer a different *justification* – the death-justification – for doing so. And the possibility of being able to give that justification at that time

comes at the cost of having to deny that certain behaviour, traditionally thought to become appropriate at the time of death, does become appropriate at that time. The question now arises as to whether there is sufficient utility in this to warrant updating death. I do not think there is.

There are two advantages that can be alleged for updating the death-justification. First, one may claim that it allows us to withdraw all health-care services from patients without, at the same time, having to deny the view that doctors ought to do all they can for their patients until they are dead. Second, one may claim that it is easier on grieving relatives and friends to hear that treatment was discontinued because their loved one was dead, rather than because he was in a state deemed not worth preserving.

Both of these purported advantages, however, are highly contentious and require considerable defence. It does not take much to show that this is so in the case of the first. A common reason for wanting to preserve that dogma is to resist euthanasia. But insofar as we *update* death, we let through the back door what we exclude from the front, and why that should be thought an advantage needs to be explained. The most plausible rationale consists in appealing to the second 'advantage' above, which will be discussed in a moment. But there is something else which needs explaining as well: why euthanasia should be resisted at all. If one only wants to resist non-voluntary euthanasia, then, insofar as the definition of death falls short of cerebral death, one needs to explain why exactly it would be wrong to terminate the lives of those who, like Karen Ann Quinlan, are irreversibly comatose; and also why it would be wrong to bring about the death of those who are incapable of requesting it, but are in such a bad way that they can only look forward to a life of pain interrupted by one medical crisis after another. And if one, in addition, wants to oppose voluntary euthanasia, one needs to explain why an individual in extreme and permanently unrelievable pain should not be entitled to receive death on request (5).

Not only is it questionable whether there is any advantage in preserving the doctrine that doctors ought to give their patients optimal care until the end; that doctrine cannot, in any case, be maintained by any proponent of a whole-brain definition of death who makes the above judgments about when certain behaviour is appropriate. For on the above account, it is appropriate to withdraw all health-care services at the time of cerebral death; so the most that could be claimed in this regard is that updating the death-justification reduces the number of cases in which that doctrine is infringed.

The utility of updating the death-justification in the way in question may be thought to lie in the second alleged advantage (that it makes things easier for grieving relatives and friends). But that too rests on a dubious doctrine. Judgments of death seem to be cold, hard, scientific facts. That, no doubt, is why they are

easier to accept than their alternative, the making of fallible value-judgments about the worth of lives. But it is not a biological fact that one who has suffered whole-brain death is dead. One can say that it is a biological fact that if such a person is not on a respirator – if blood is not circulating, food metabolising, wastes being eliminated, etc – than that person is dead. But if he is on a respirator, and these processes are occurring – albeit artificially supported – then, while one may want to say the person is dead, one cannot claim this to be a *biological* fact. Biology, and science in general, are quiet on the question of whether vital functions must occur naturally if an organism is to be counted as alive. The only plausible rationale for such a judgment, it seems to me, is that since it is inappropriate to exhibit towards this person any of the behaviour traditionally associated with living human beings, and is appropriate to exhibit towards him or her behaviour associated with dead human beings, we can fittingly classify the person as dead. But if this is the basis, then the judgment that a person who has suffered whole-brain death is dead encapsulates certain value-judgments. The 'advantage' in question can now be seen to come from passing off a value-laden judgment as a value-free one. To defend that, we need to defend a version of medical paternalism; specifically, we need to defend the view that misrepresentation is sometimes justified on the ground that it reduces suffering. I have yet to see any clear-cut defence of this position, and suspect that none can be provided (6). That defence, however, is something which must be produced before the whole-brain definition can be accepted by anyone who makes certain judgments about when traditional death-behaviour becomes appropriate. For until it is, we are still in need of a demonstration that there is any legitimate gain to be made by adopting that definition.

Of course, one may not accept the common judgments on which the above critique is based. One may claim that it is only misplaced aesthetic sensibilities that cause one to say that we must wait for heart-lung death before we can begin transplant proceedings, use a body for certain information-seeking purposes, and so forth. After all, so the argument might run, there is no more reason to wait until all artificially supported respiration and cardiac activity have stopped than there is to wait until all cellular activity has stopped. There is a good deal to be said for this view, and I incline towards it myself. But one of the things that cannot be said is that it gives any support to a whole-brain definition of death. If one is prepared to say that we can initiate the above sorts of behaviour on a person who is irreversibly comatose but has artificially supported respiration and heartbeat, it is going to be difficult to explain why such behaviour would be inappropriate in cases in which the person is irreversibly comatose and displays *spontaneous* respiration and heartbeat. It is hard to see what of moral relevance can be said for supporting action in the former case that will not also support it in the latter. And if we can get over our squeamishness in the case of the one, we should be able

to get over it in the case of the other. But if one cannot argue that there is a relevant difference between spontaneous and artificially supported respiration and heartbeat, then any behaviour deemed appropriate at the time of whole-brain death will also be appropriate at the time of cerebral death. Thus we are, once again, left with the conclusion that no significant death-behaviour is uniquely correlated with the time of whole-brain death; and with that, the disutility of having to accompany the whole-brain definition with the denial that certain traditional implications for behaviour hold. And since there is nothing new that can be provided by way of compensating advantages, our judgment on that definition must be as before.

For the above reasons, I want to reject a whole-brain definition of death. But I do not want to do that because I think there is some other way of precisising the definition that ought to be adopted; rather, my view is that death should not be redefined at all. To give some substance to this view, I will end with some remarks on the problem of defining death.

When we say that a person is dead, this implies two things: 1) that it is now appropriate to initiate certain behaviour, and 2) that the person is now in a certain physiological state. It is not easy to say exactly what behaviour is wedded to judgments of death, nor exactly what the physiological state referred to is. But serious distortion would be done to the concept of death if it were defined so that no traditional death-behaviour became appropriate when it occurred, or if it were made to refer only to certain physiological states, for example, to those in which cellular death had occurred, or to those in which the organism still displayed spontaneous heartbeat and respiration. The problem of redefining death is that of trying to find a precise point that will enable us to keep these implications without at the same time incurring overwhelming disutilities. I want to suggest that this cannot be done.

If we define death to coincide with the time of cerebral death we have a point which, depending on certain evaluations we make, coincides with some or all traditional death-behaviour. But even if it turned out that all death-behaviour coalesces at the time of cerebral death, it does not follow that we ought to adopt a cerebral death definition of death. For such a definition has the disadvantage of being off the scale of physiological states encompassed by the ordinary concept of death, and thus we would be faced with a conceptual crisis: the half of the concept of death relating to appropriate behaviour would incline us to that definition, whereas the half which refers to the state of the organism would incline us against it. On the principle that the burden of justification lies on the proponents of change, it is up to one who wishes to advocate the cerebral death definition in this situation to show the benefit of adopting it. No support, however, can be drawn from ordinary language, for it is not a part of the

ordinary concept of death that the behavioural component is dominant. Nor do pragmatic considerations help. For here we seem thrown back on appealing to the importance of holding the line on euthanasia – only now it is a different line one must want to hold, one that makes substantial concessions to proponents of non-voluntary euthanasia – and of easing burdens on others. As we found, both these appeals are suspect. So even in circumstances maximally favourable to a cerebral death definition, I do not think it ought to be adopted. On the other hand, it will not be helpful to move to the other end of the scale and select a heart-lung definition of death. Depending on certain evaluations, that time will coincide with more or less death-behaviour; but even supposing it to be more, that definition gives rise to an odd situation. Since people in that state are already acknowledged to be dead, the effect of such a definition would be to declare those in what is currently a twilight zone between life and death alive. One may claim that that is a salutary effect in underscoring the fact that we cannot do certain things to persons in such states. However, any advantage one may see there is offset by another consideration. No one wants to say that the lives of such individuals ought to be preserved indefinitely, and so this definition of death must be accompanied by a euthanasia policy to allow for that. But it must now appear somewhat perverse to declare people alive in one breath, and then, in the next, proceed to say that their lives can be routinely terminated. One may reasonably think that any advantage of so defining death could be secured in simpler ways. Finally, to select a point on the scale between these extremes, as do proponents of the whole-brain definition, is, as I have argued above, to select a point at which it is inappropriate to initiate any traditional death-behaviour.

It thus appears that any way of precisising the definition of death we select will be attended with certain serious disutilities; the only question being whether any will also have compensating utilities. I do not think that any will; certainly one cannot quickly point to such undisputed advantages. In the light of this, my suggestion is that we should first settle the question of what behaviour becomes appropriate when. That is a question which, in any case, has to be settled independently of the question of when a person is dead. But once we have settled that question, there is no need to go on to redefine death. For while we may not know whether a person is dead, we will know, as well as can any redefiner, how it is appropriate to act. Knowing the latter, however, makes it unnecessary to know the former, and by declining to decide the former, we thereby avoid the disutilities discussed above.

(A commentary on this paper follows overleaf. For references and notes see page 44).

- (13) See reference (12): 2. Other moral rules include interdictions against 'killing, causing pain (physical or mental), disabling, depriving of freedom opportunity or pleasure, deceiving, breaking a promise, or cheating'. See also, Gert B. *The moral rules*. New York: Harper, 1975.
- (14) Gert B, Culver C. Paternalistic behaviour. *Philosophy and public affairs* 1976 Fall; 6/1: 45-57.
- (15) See reference (14): 53.
- (16) See reference (10): 119 for a discussion of 'future-oriented consent'. See also Rawls J. *A theory of justice*. Cambridge: Harvard University Press, 1979: 249.
- (17) Marsh F H. An ethical approach to paternalism in the physician-patient relationship. *Ethics in science and medicine* 1977; 4: 135-138.
- (18) Siegler M. Search for moral certainty in medicine: a proposal for a new model of the doctor-patient encounter. *Bulletin New York Academy of Medicine* 1981 Jan/Feb; 57: 56-69.
- (19) American Medical Association code of ethics, 1847. In: Reiser S, Dyck A, Curran W, eds. *Ethics in medicine*. Cambridge: MIT Press, 1977; 26-33. In this code physicians are instructed to 'minister to the sick with due impressions of the importance of their office . . . They should study also in their department so they unite tenderness with firmness and condescension with authority'. In turn, a patient's obedience should be 'prompt and implicit. He should never permit his own crude opinions . . . to influence his attention . . .'
- (20) Lain-Entralgo P. *Doctor and patient*. New York: McGraw-Hill, 1969.
- (21) Veatch R. Models for ethical medicine in a revolutionary age. *Hastings Center report* 1972 Jun; 2: 5-7.
- (22) For example, Waldman A. Medical ethics and the hopelessly ill child. *Journal of pediatrics* 1976; 88: 890-892.
- (23) Veronesi U, Saccozzi R, Marcella D, et al. Comparing radical mastectomy with quadrantectomy, axillary dissection, and radiotherapy in patients with small cancers of the breast. *New England journal of medicine* 1981; 305: 6-11. See also, Kraft R B. The breast cancer controversy and its implications for the informed consent doctrine. *Journal of legal medicine* (Chicago) 1980 Oct; 2: 47-84.
- (24) Parsons T. *The social system*. London: Free Press of Glencoe, 1961: 440-441.
- (25) Kass L. Professing ethically: on the place of ethics in defining medicine. In Dyer A R, ed. *The humanities and the profession of medicine*. Durham, NC: The National Humanities Center, 1982.
- (26) Pellegrino E. Toward a reconstruction of medical morality: the primacy of the act of profession and the fact of illness. *Journal of medicine and philosophy* 1979; 4: 32-56.
- (27) See reference (24): 446.
- (28) Interestingly, Mill applauds despotism where it is designed to help the governed eventually to fulfill their potential for autonomy. This applies in particular to British imperialist rule over primitive societies, reminiscent of paternalism towards children. See reference (5): 136.
- (29) See Veatch R. Three theories of informed consent: Philosophical foundations and policy implications. In: *Ethical principles of guidelines for the protection of human subjects of research*. Washington, DC: 26; 1-26; 66 Department of Health, Education and Welfare, 1978. Veatch writes that, 'if the right of self-determination [autonomy] . . . is taken seriously the instances where that right should be compromised on paternalistic grounds will be extremely limited, if not non-existent'.
- (30) Siegler M. The physician-patient accommodation. *Archives of internal medicine* 1972; 142: 1899-1902.
- (31) Szasz T, Hollender M. A contribution to the philosophy of medicine: three basic models of the doctor-patient relationship. *Archives of internal medicine* 1957; 97: 585-592.
- (32) Cassidy P S. Cooper v Roberts: A 'reasonable patient' test for informed consent. *University of Pittsburgh law review* 1973, Spring; 34: 500-509.
- (33) Goldman T A, ed. *Cost-effectiveness analysis: new approaches in decision-making*. New York: Frederick A Praeger, 1967.
- (34) See reference (12): 6.
- (35) See reference (26): 45.

(continued from page 31)

References and notes

- (1) *Black's law dictionary*, revised 4th edition. London: A and C Black, 1968: 488. A proponent of this account is Jonas H. Against the stream: comments on the definition and redefinition of death. In: Beauchamp T L, Walters L, eds. *Contemporary issues in bioethics*. Encino, California: Wadsworth Publications, 1978: 262-267.
- (2) This redefinition of death is advocated by Veatch R. The whole-brain-orientated concept of death: an outmoded philosophical formulation. In: Beauchamp and Walters, see reference (1): 267-276.
- (3) This alternative to redefining death is proposed by Dworkin R. Death in context. *Indiana law review* 1973, Summer; 48: 623-646. The above examples of how the law could be reformulated come from him.
- (4) These further possibilities are suggested by Jonas H. In: Beauchamp and Walters, see reference(1): 265.
- (5) Objections to the practice of euthanasia are, in my view, convincingly dealt with by: Flew A. The principle of euthanasia. In: Downing A B, ed. *Euthanasia and the right to die*. Los Angeles: Humanities, 1969: 30-48; Williams G. 'Mercy-killing' legislation - a rejoinder. *Minnesota law review*. 1958; 43, No 1: 1-12; Rachels J. Euthanasia. In: Regan T, ed. *Matters of life and death*. New York: Random House Inc, 1980: 28-66.
- (6) A full-scale refutation of medical paternalism lies outside the scope of this essay, but I think the essential weaknesses of that position have been ably exposed by Beauchamp T L. Paternalism and biobehavioural control. In: Beauchamp and Walters, see reference (1): 522-529; and Buchanan A. Medical paternalism. *Philosophy and public affairs* 1978, Summer; 7, No 4: 370-390.