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Brain death, cortical death and persistent vegetative state

JEFF MCMAHAN

Some of us believe that when we die we cease to exist. Others believe that we continue to exist after death, though not in, or in association with, our bodies. Most people seem to agree, however, that when we die we cease to be *here*, though normally our dead bodies remain, for a while anyway. But what is it for one to cease to be here, and how can others tell when one is gone? Again, many people share the conviction that it is necessary and sufficient for one to cease to be here that all possibility of consciousness and mental activity in one's body has been lost. To imagine oneself irreversibly losing all capacity for consciousness or mental activity is, for most of us, to envisage oneself ceasing to be. Similarly, it seems reasonable, on reflection, for those who believe in life after death to accept that one ceases to be with one's body when there ceases to be any possibility of consciousness in one's body. Since the soul is traditionally conceived as the seat of consciousness, the absence of any further possibility of consciousness in the body suggests that the soul has departed. (A conception of the soul that accepts that the soul could exist without the capacity for consciousness may be unappealing, since it raises the possibility of an afterlife devoid of consciousness.)

While we associate or even identify human death with the extinction of consciousness, we also recognize that death is a biological phenomenon that occurs whenever a living being ceases to be alive. The transition from living to non-living may be different in different sorts of living thing – organisms, organs, tissues, cells and so on. In the case of organisms generally, and human organisms in particular, it is widely accepted that death is the irreversible cessation of integrated functioning among the various subsystems that are together constitutive of the organism.

Brain death – the death of the whole brain, or the irreversible loss of functioning in the whole brain – may be understood as a criterion of human death that attempts to capture both of these essential dimensions of death: the irreversible loss of the capacity for consciousness and the irreversible cessation of integrated functioning in the organism as a whole. For the brain functions both to generate consciousness and mental activity and to regulate and integrate the systemic functioning of the organism. Thus it has seemed that, when the whole brain dies, both the capacity for consciousness and the integrated functioning of the organism must disappear without possibility of restoration.

There are, or course, other elements in the complete explanation of why brain death has replaced the irreversible cessation of cardiopulmonary functioning as the accepted criterion of death. One is that technologies developed during this century for resuscitating patients in whom respiration and heartbeat have ceased have now rendered the traditional criterion indeterminate in many cases. A person who has lost cardiopulmonary functions may not really be dead if these functions can be restored. So we need to be able to determine when the cessation of these functions can be regarded as irreversible. The best criterion seemed to be the loss of the brain's capacity to sustain them.

There were also practical reasons for the shift to brain death. Respiration and heartbeat can be sustained artificially for a certain period beyond brain death; but, during the interval between brain death and the point at which these functions can no longer be

artificially sustained, the body's organs normally deteriorate to such a degree that they become unsuitable for transplantation. The adoption of brain death as the criterion for death allowed physicians to remove patients who met the criterion from respirators, thereby making their organs available for transplantation before they became unusable.

While brain death marks a significant advance beyond the traditional cardiopulmonary criterion of death and has also served reasonably well for purposes of medical and social policy, it is open to serious objections. One significant problem, both for brain death and for other proposed criteria of human death, is that the two essential capacities of the brain noted above – the generation of consciousness and mental activity and the regulation of integrated functioning in the organism – are largely localized in different areas of the brain. It is in the 'higher brain', and in particular the cerebral cortex, which is the outer layer of the cerebrum, that consciousness and mental activity are realized. And it is primarily the 'lower brain', consisting mainly of the brainstem, that coordinates the various somatic functions of the organism. Because the brainstem can survive in a functional state even when the cortex is dead or irreversibly non-functional, the brain can continue to integrate the somatic functions of the organism even when it has lost the capacity to support consciousness and mental activity. When this happens, the organism is said to be in a *persistent vegetative state* (PVS). Similarly, the higher brain can survive and continue to generate consciousness and mental activity even when most of the functional capacities of the lower brain, including most of its regulatory capacities, have been irreversibly lost. Patients in this comparatively rare but horrific condition require intensive life-support and are sometimes described as 'locked in' (Bartlett and Younger, 1988: 205–6). If brain death is the criterion for the death of a human being, then both the patient in a persistent vegetative stage and the locked-in patient remain alive – conclusions that many will find plausible. But notice that this presupposes that neither the capacity for consciousness nor the capacity for internally regulated systemic functioning is essential or necessary for the continued life of a human being. According to the whole-brain criterion, either of these capacities alone is sufficient for continued life. Thus only the loss of *both* is sufficient for death.

One might contend that, since each of these two capacities can occur in the absence of the other, the only appropriate way to recognize the importance of each is to accept what the brain-death criterion in fact implies: for each capacity, it is not that its absence is sufficient for death, but that its presence is sufficient for life. But this misses the metaphysical significance that many of us attribute to the capacity for consciousness. We find it compelling that the capacity for consciousness is *necessary* for our continued existence and thus that when a human being irreversibly loses this capacity, he or she dies or ceases to exist. While brain death is certainly sufficient for the loss of the capacity for consciousness, it is not necessary. Damage to the higher brain can result in the irreversible loss of the capacity for consciousness even while the lower brain remains intact and functional.

The claim that brain death fails to capture the real significance of the loss of the capacity for consciousness is a major objection. Defenders of the whole-brain criterion have typically responded by contending that, while loss of the capacity for consciousness does involve the loss of all that gives life its *value*, it is not the same as the loss of life itself. For them, the continued integrated functioning of the human organism is the *sine qua non* of human life. They then identify the irreversible cessation of integrated

functioning with the death of the whole brain, since, as a presidential commission mandated to study this problem put it, 'the brain is the regulator of the body's integration' (President's Commission, 1981: 32). But in fact the irreversible cessation of integrated functioning in the organism is only contingently related to the death of the whole brain.

Brain death is neither necessary nor sufficient for the cessation of integrated functioning in a human organism. It is possible in principle that a person's brain could be surgically extracted and yet kept alive and functional – for example, by being transplanted into a different human organism – while the organism from which it was removed would die. Since in this case integrated functioning would cease even though the brain would not die, brain death cannot be a necessary condition of the irreversible cessation of integrated functioning in a human organism.

Although the brains of animals have been kept alive outside their bodies, the example of a human brain transplant is, for the present, merely hypothetical. But there are actual cases that demonstrate that brain death in human beings is not sufficient for the cessation of integrated bodily functioning. It is now well established, for example, that mechanical ventilation and other forms of support (e.g., nutrition and hydration) can sustain the functional integrity of a human organism for many months beyond a reliable diagnosis of brain death. The functions sustained are sufficiently comprehensive to enable the organism to support fetal gestation (McCullagh, 1993: 35–9).

The 'whole-brain theorists' are, of course, obliged to describe these artificially sustained organisms as ventilated or perfused *corpses* whose operations present only a simulacrum of life (Lamb, 1985: 37). These theorists effectively make it a condition of life not just that the organism function in an integrated way but also that the functions be regulated by the brain. But because new technologies can replace the regulatory functions of the brain to varying degrees, there is a problem about the extent to which the regulation must be carried out by the brain. The whole-brain theorists cannot say that a human being remains alive as long as *any* somatic functions are regulated by the brain; for even after a reliable diagnosis of brain death, the brain in a ventilated organism will continue to regulate some functions (for example, the release of certain hormones (Truog and Fletcher, 1990: 206)). Nor can they say that a human being remains alive only if *all* functions normally regulated by the brain continue to be so regulated; for a conscious patient whose brain is incapable of regulating respiration because of a lesion affecting the respiratory centre in the brainstem is clearly alive. So the whole-brain theorist has to concede that a human organism can remain alive even when the brain is incapable of regulating various important somatic functions. How far can the brain's regulatory capacities deteriorate before one must conclude that the functioning of the organism merely mimics rather than constitutes life?

Matters are brought to a crisis by the case of the locked-in patient. This person's brain lacks virtually all of the normal capacities for regulating somatic functions. It therefore seems wholly arbitrary to say that the functions of the locked-in patient's organism are regulated by the brain while denying that this is true of a ventilated organism that is brain-dead but sufficiently functional to carry a pregnancy to term. Thus, if a brain-dead but artificially sustained organism is dead, then it cannot be by virtue of his integrated bodily functioning that the locked-in patient is alive. (This would be true even if the locked-in patient's brain retains a couple of regulatory functions that a dead brain lacks. A few minor regulatory capacities do not make the difference between life and death, as

the whole-brain theorist must acknowledge, since even brains that are officially declared dead retain several regulatory capacities when 'life-support' is provided.) Rather, it is because he retains cortical functions that the locked-in patient is judged to be alive.

It is worth stressing how peculiar the position of the whole-brain theorists is. A human organism that is brain-dead but capable, with assistance, of sustaining a healthy pregnancy is held not to be a living organism. By contrast, the locked-in patient is held to be alive. But the condition of the locked-in patient's *organism* is not relevantly different from that of the brain-dead organism. Both continue to function in an integrated way, though without significant regulation by the brain. The difference is that the locked-in patient's cortex continues to support consciousness. But this cortical activity is not the cause of the integrated functioning of the organism. If the cortex were to die, the state of the organism as a whole would be unaffected. Hence it seems unwarranted for the whole-brain theorists to claim that the locked-in patient is a living organism while denying this status to the brain-dead but artificially supported organism. These theorists therefore face a serious dilemma. For one cannot acknowledge that the brain-dead organism is alive without abandoning brain death as the criterion of death. But it is impossible to believe that the locked-in patient is not alive.

Whole-brain theorists seem, in fact, to have two distinct criteria of life. They insist that, for a human organism to be alive, its various components must function in an integrated way, supervised and regulated by the brain. For this the higher brain is unnecessary. But they also acknowledge that, for an individual to remain in existence, it is sufficient that there be significant activity in the cortex. For this the regulatory functions of the lower brain are unnecessary. In short, brain-regulated, integrated functioning in the organism is sufficient for continued life; but so is the capacity for cortical function. Either is sufficient, but neither is necessary. The problem, however, is that these apparently distinct criteria of human life do not, together, seem to correspond to any coherent conception of what human beings are. What kind of thing is it that can survive as a mindless but living organism (e.g., a patient in a PVS) *or* as a mind housed in an organism that fails to meet the whole-brain theorists' own criterion for being a *living* organism (e.g., a patient who is 'locked in')?

Whole-brain theorists appear to be implicitly distinguishing between the human organism and the human subject (or self, mind or person). And they appear to be offering distinct criteria for the continued life of each (brain-regulated systemic functioning for the one, significant cortical function for the other). Finally, they seem to suggest that we are *both* these things. Yet we cannot be both if they are distinct and independent substances, which in fact appears to be the case. Imagine that your entire brain is removed from your skull and transplanted into the body of your identical twin, whose brain was irreparably damaged and has been removed. Imagine further that surgical techniques have advanced well beyond what is now possible and that all of the various connections between your brain and the nerve pathways in your twin's body have been established. Following the operation, a person is brought to consciousness in your twin's body. That person has your memories, beliefs and character traits and believes him- or herself to be you. Most of us are deeply convinced that that person *is* you. But the organism from which your brain was removed now lies across the room on an operating table. You are not now identical with that organism. But it follows from this that you never were identical with that organism, since a thing cannot cease to be itself and yet

continue to exist. (An alternative version of the case involves the transplantation only of your cerebrum, which would be hooked up to your twin's brainstem. In this version, your original organism could remain alive even by the whole-brain theorist's standard; but *you* would be elsewhere.)

Some readers may find this thought experiment too bizarre to provide a firm foundation for the claim that we are not identical with our organisms. There is, however, a very rare but real phenomenon that supports the same conclusion. 'Dicephalus' is a condition in which a human zygote divides incompletely, resulting in twins fully conjoined below the neck: two heads sprouting from a single torso. In these cases, it seems that a single living organism (perhaps with some duplication of internal organs) supports the existence of two distinct persons. It cannot be that *both* these persons are identical with the organism they share. For if *a* is identical with *c* and *b* is identical with *c*, it follows that *a* and *b* are one and the same thing. But conjoined twins are two different people and therefore cannot both be identical with a single organism. There are only two serious options. One is to claim that conjoined twins who diverge at the neck are actually two distinct though overlapping organisms. This is very hard to believe. (Could one die while the other remained alive?) The other is to conclude that neither twin is identical with the organism they share. If this is right, then there are at least some persons who are not organisms. And there is no reason to think that conjoined twins are metaphysically fundamentally different from the rest of us (i.e., that we are organisms while they are some different kind of thing).

If one were identical with one's organism, then of course its death and one's own death would be one and the same event (or process). But if one is distinct from one's organism, then one's own ceasing to exist and the death of one's organism are different. They might coincide, but this would not be a matter of necessity. Thus it is possible that one might die or cease to exist while one's organism would continue to exist and even continue to live. And it is possible in principle (as in the case of the brain transplant) – though not, I believe, in practice – that one might continue to live even after one's organism had died.

It seems, therefore, that we do indeed require two criteria: one for determining when our organisms die, the other for determining when we ourselves cease to exist. These criteria should correspond to two concepts of death (McMahan, 1995: 101–2, 116–17). How we should understand the death of a human organism is primarily a biological issue. And there is general agreement among biologists that a human organism dies when its various components cease to function together in an integrated way. This, of course, leaves certain questions unresolved, such as whether an organism that is brain-dead but continues, with mechanical assistance, to function in an integrated way is still alive. This may be a question that science cannot answer; indeed there may be no objectively correct answer. It seems that we know all the relevant facts – for example, that the organism cannot breathe on its own, but that with mechanical ventilation it will circulate blood, digest food and so on. Whether it is alive is not an *additional* fact, independent of the facts we already know, which might be discovered through further empirical investigation. But it is worth noting, for the record, that consistency suggests that we should consider such an organism to be alive. For the only reason not to regard it as alive is that its integrated functioning is not regulated by its brain. But there are other examples of human organisms that are regarded as indisputably alive even though their somatic functions are not regulated by their own brains – for example, locked-in patients and

human embryos and conceptuses. It therefore seems safe to conclude that a human organism's functions need not be regulated by the brain in order for it to be alive.

If this is right, then brain death cannot be the criterion for the death of a human organism. Relatively little hinges on this conclusion, however, since the death of one's organism is not the same as the death of oneself (though they commonly coincide). What is it, then, for one of *us* to cease to exist (or, in the case of the religious, for one of us to cease to exist in association with his or her body)? The answer to this depends on what kind of thing we essentially are. The thought experiment involving the brain transplant should convince us that we are not essentially human organisms. What, then, are we?

'What type of thing are we?' and 'What are the conditions of our ceasing to exist?' are not questions that can be answered by biological science. Science may, for example, tell us many things about human organisms, but it cannot tell us whether *we are* organisms. Many commentators have thought that, because the question 'When has a person ceased to exist?' is not a question of scientific fact, it must therefore be answered by appealing to our values. They have claimed that the question 'When should a person be considered dead?' is reducible to a set of moral questions about when it is permissible to terminate life-support systems, remove a person's organs for transplantation, bury the body and so on. But it is not a value judgement that William Shakespeare is dead. Nor is it a moral question whether the person JM, who was working on this paper yesterday, is still alive today and is the same person who is typing these words now. Similarly, whether one should fear a certain event because it will occur within one's life, or whether one need not fear it because one will have ceased to exist, cannot be determined simply by consulting one's values. Questions about one's own continued existence are primarily neither scientific nor moral. They are instead metaphysical. To answer them, one must engage in reasoning and argument that appeals to our intuitions and judgements about the sorts of changes or losses we could or could not survive, our knowledge of the facts (e.g., about the causal relations between mind and brain), our expectations, attitudes, values and so on. In what follows I will very briefly canvass certain accounts of what we are and what it is for us to die in order both to illustrate how metaphysical reasoning proceeds and to indicate what I think the best account of these matters is.

A common view is that we are souls, non-material substances that somehow inhabit and control our bodies. There are different versions of this view based on different conceptions of the soul, but there is a fairly solid consensus among philosophers that all are untenable, for reasons that are developed in the literature but cannot be rehearsed here (Parfit, 1984: chapters 11 and 12; McMahan, forthcoming, chapter 2) According to another highly influential range of views, we are essentially psychological beings whose continued existence consists in psychological continuity, or the holding of certain continuities of mental life over time. A person twenty years ago and a person today are the same person if and only if the latter is related to the former by an overlapping series of psychological connections, involving memory and the persistence or gradual evolution of a particular set of desires, beliefs, intentions, dispositions of character and so on. Some versions of this view insist that psychological continuity be causally supported by the continued existence and functioning of the same brain, while others hold that the mode of causation is irrelevant. While this disagreement makes no difference in practice, versions of the second sort have implications in certain imaginary examples that many of us find difficult to accept – for example, that one could survive the complete destruction of one's

brain if it were replaced by an exact duplicate.

Of the versions that insist that psychological continuity be maintained via the preservation of certain structures in the brain, some presuppose a strong conception of psychological continuity while others accept progressively weaker conceptions. Those based on a strong conception imply, in effect, that we are essentially *persons* – that is, self-conscious beings with mental lives of a high order of unity and complexity. To lose the capacity for self-consciousness is, on such a view, to cease to exist. Versions that deploy a weaker conception of psychological continuity accept that one could survive the loss of personhood; but even these versions hold that there is some level of psychological discontinuity that is equivalent to death. Thus all the versions imply that one could cease to exist even if one's brain were to retain the capacity for consciousness. Even the weakest versions hold that, if one were to suffer progressive dementia (as in Alzheimer's disease), there would be some point before one's brain lost the capacity for consciousness at which one would cease to exist. But, because consciousness and mental activity would persist after one ceased to exist, it seems that one would be supplanted in one's own body by a new and different conscious subject. Indeed, in cases involving radical amnesia and personality change, most versions imply that one would cease to exist and be replaced in one's body by a different *person*.

Most of us find these implications of the psychological continuity theories implausible. Most people's intuitive view is that, even in cases of dementia or of radical amnesia and personality change, one continues to exist as long as one's brain continues to be capable of supporting consciousness or mental activity. Thus if one were in the early stages of Alzheimer's, it would be rational to fear any pain that would be suffered in one's body even during the late stages of the disease. While the *contents* of the later mental life might be radically discontinuous with those of the earlier, the pain would still occur within the same consciousness or mind. From one's present point of view, that future pain would occur within one's own future life.

If this is right, then each of us continues to exist as long as his or her brain retains the capacity to support consciousness or mental activity. One's own death, or ceasing to exist, occurs when one's brain irreversibly loses this capacity. What is the criterion for determining when this has occurred? It seems clear that it is not necessary that the whole brain should die. At a minimum, it is sufficient that the cerebral hemispheres should die. It is likely, however, that the brain can lose the capacity to generate consciousness or mental activity even when certain cerebral functions are retained. Thus most experts agree that the death of the cortex – *cortical death* – is necessary and sufficient for the irreversible loss of the capacity for consciousness or mental activity. If that is right, then cortical death should be our criterion of death.

What is it that dies or ceases to exist when cortical death occurs? It should be stressed that cortical death is *not* the criterion of the death of the human organism. A human organism can remain alive, even in the absence of artificial life-support, following cortical death. It is, rather, *we* who go out of existence. It may be misleading, however, to say that cortical death is the death of the *person*, since this may suggest that we are essentially persons. But it seems that we can survive the loss of personhood (e.g., if we become demented). Similarly, it may also be misleading to say that it is the *human being* that ceases to exist. For one thing, to say that we are essentially human beings is to invite confusion between ourselves and our organisms, which are also human. And in any case

it is doubtful that we are in fact essentially human beings (e.g., one could presumably survive if one's brain were transplanted into the body of an ape). It seems that what ceases to exist with cortical death is the *mind*, and that that is what we essentially are. One cannot cease to have a mind without ceasing to exist.

It should also be noted that this account is not confined to human beings but applies to all conscious subjects. Just as I am not identical with my organism, so my dog is not identical with his. My dog will die when his brain loses the capacity to support a mental life, though it is possible that his organism could live on beyond that.

One important implication of this account is that most patients who are in a PVS are dead, though they are outlived by their organisms. There is, however, a limited class of cases in which individuals in a PVS remain alive. These are cases in which the PVS is caused by a lesion to the reticular formation, a configuration in the lower brain that functions rather in the manner of an off–on switch for consciousness. Although mental states are not themselves realized in the tissues of the reticular formation, consciousness cannot occur unless the formation is functional. When the reticular formation is damaged, consciousness is not in practice possible but the individual has not suffered cortical death and it is possible in principle that cortical activity, and therefore the person herself, could be revived. The individual thus remains in existence but, without any possibility of consciousness or mental activity, her life has ceased to be worth living and there seems to be little reason to treat this type of PVS any differently from the type that involves the ceasing to exist of the individual.

The claim that most individuals who lapse into a PVS thereby die suggests that it is permissible to treat their bodies the way we currently treat the bodies of those who are brain-dead. As opponents of the idea of cortical death have pointed out, however, this might lead to the deliberate killing of living human organisms in order to harvest their organs for transplantation. While this is initially shocking, it can, on reflection, be seen to be justified, if the life of a person could thereby be saved. For a mere organism does not have interests and cannot itself be benefited or harmed. To end its life is no more objectionable than it is to kill a plant, provided that what is done does not contravene the posthumous interests of, or manifest disrespect for, the person who once animated the organism. And, for my part, I believe that it would be no more disrespectful for physicians to stop my heart beating after I have ceased to exist than it would be for them to scoop out my organs once those organs had stopped working on their own – which is to say, not disrespectful at all. But, just as people can stipulate that their organs not be used for transplantation, so they could stipulate that their organisms not be killed so long as they continue to function spontaneously. It is, of course, a different question how long an organism in a PVS should be provided with nursing care, given that the resources this would consume could otherwise be devoted to patients who, unlike the mere organism, could benefit from them.

One important objection to treating persistently vegetative patients as dead is that there may be uncertainty about whether they really have lost the capacity for consciousness. It might be claimed, for example, that we can never know that such a patient would not, with proper care, eventually regain full consciousness. But our long experience with this condition, together with advances in techniques for monitoring blood flow to different areas of the brain, make it possible in most cases to determine with virtual certainty when recovery is impossible. There is, however, another worrisome form of uncertainty, which

concerns the possibility that cortical death is compatible with the presence in other areas of the brain of some residual, primitive form of consciousness or perhaps unconscious mental activity. If this cannot be excluded, then it is possible that the person remains alive, or at least that some vestige or remnant of the person still lingers (which might be articulated by saying that the person remains partially, though not fully, in existence; see McMahan, forthcoming).

While the possibility that some dim, flickering, rudimentary mode of consciousness might survive cortical death does provide cause for hesitation in embracing cortical death as the criterion of death, it is not a strong objection to shifting from brain death to cortical death as a matter of policy. The possibility that even intermittent, semi-conscious mental activity persists beyond cortical death is very remote. Of course, if life in that condition could be good, then even a remote possibility that it persists would be significant. (Here it is important to note that, with ventilation, various forms of activity persist in the brain even after a diagnosis of brain death; so the possibility of continued mental activity beyond whole-brain death cannot be completely excluded either.) But it is hard to believe that whatever shadowy, semi-conscious mental activity we might imagine occurring after cortical death could contribute to the good of a person's life. Indeed, there are good reasons for thinking that, for most of us, continued existence as what one commentator calls a 'manicured vegetable' would be *against* our objective interests (Dworkin, 1993: chapter 7). Since the remote possibility of life beyond cortical death is a possibility of life that could scarcely be worth living, the practical significance of this possibility is negligible.

It is worth noting, in conclusion, that a similar point has been advanced by those who believe, contrary to what I have argued, that we are identical with our physical organisms but who nevertheless reject the idea that it is necessary for a person to suffer brain death in order for it to be permissible to remove him from life-support systems, extract his organs for transplantation and so on. These people are impressed by the objections that might be urged against the mind–body dualism for which I have argued. For example, if I am not identical with my organism, then there must be two things in the chair in which I am sitting – me and my organism. Applied to all of us, and to animals as well, this reasoning seems to make the world rather more crowded than in fact it is. Moreover, unless there are two self-conscious entities, and thus two persons, where I am now, it seems that we have to deny that organisms have psychological properties. Only I, and not my organism, am conscious, have thoughts, sensations, perceptions and so on. By parity of reasoning, it may seem that it must be a figurative use of language to attribute my organism's physical properties to me – for example, when we say that *I* weigh 150 pounds. Those who find these implications of the dualism I have advocated to be unacceptable may cling to the idea that we are organisms, hoping that an adequate response to the case of the brain transplant can be found.

But this need not commit them to the view that brain death is death. It is reasonable to believe, as I indicated earlier, that a human organism can remain alive well beyond a reliable diagnosis of brain death. Again, however, this need not imply that it is morally imperative or even desirable to sustain the lives of human organisms beyond brain death, or even beyond cortical death. For, even if we are organisms and thus remain alive as long as our organisms do, our interest in continued life surely vanishes with cortical death. (Similarly, one has no interest in continued *existence* after death, though if we are

organisms we do normally continue to exist for a while, as corpses, after we die.) Thus if we choose to extend an individual's life beyond cortical death, it cannot be for his or her sake that we do so.

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