



PHILOSOPHY AND THEOLOGY

Given the increasing desire for life-saving transplantation, proposals aiming to bridge the gap between supply and demand of donated organs continue to be circulated. “The greatly enhanced technical ability to transplant organs has also led to an ever-increasing need for transplantable organs. The explosive growth in the demand for and the marginal increase in the supply of transplantable organs have together been characterized as an ‘evolving national health care crisis.’”¹ In the United States alone, approximately one hundred thousand patients are on transplant waiting lists, but each year only ten to twenty thousand receive organs (Thomas D. Harter, “Overcoming the Organ Shortage: Failing Means and Radical Reform,” *HEC Forum*, June 2008).

One way in which this gap could be narrowed is by making more use of organ donation after cardiac death (DCD). “Many patients in the intensive care unit will die of these very same neurological diagnoses but never satisfy criteria for brain stem death. It is by utilizing this new population of potential donors that NHBD [non-heart-beating-donation] may substantially increase the organ donor pool.”² M. D. Bell estimates that the organ pool could be increased by 25 percent through DCD, a possibility which generates considerable pressure to increase DCD.³ As J. L. Verheijde, M. Y. Rady, and J. McGregor note, a “federal mandate requires hospitals as of January 2007 to design policies and procedures for organ procurement in DCD

¹J. L. Verheijde, M. Y. Rady, and J. McGregor, “Recovery of Transplantable Organs after Cardiac or Circulatory Death: Transforming the Paradigm for the Ethics of Organ Donation,” *Philosophy, Ethics and Humanities in Medicine* 2.8 (May 2007): 1.

²D. Gardiner and B. Riley, “Non-Heart-Beating Organ Donation: Solution or a Step Too Far?” *Anaesthesia* 62.5 (May 2007): 431.

³See M. D. Bell, “Non-Heart Beating Organ Donation: Old Procurement Strategy—New Ethical Problems,” *Journal of Medical Ethics* 29.3 (June 2003): 177.

to increase the rate of organ donation and recovery from decedents to 75 percent or greater.”⁴

Concerns about whether neurological criteria can properly define death also drive interest in DCD as an alternative to transplantation following brain death (see D. Alan Shewmon, “Brain Death: Can It Be Resuscitated?” *Hastings Center Report*, March–April 2009). The early years of organ transplantation made use of cardiopulmonary criteria in determining death. Following the 1968 Harvard Medical School Ad Hoc Committee report, death began to be defined in terms of loss of brain function, either whole brain or even just higher-brain function. Even though in current practice the majority of transplantation comes from donors declared dead by the use of neurological criteria, organ donation still takes place through the application of cardiopulmonary (circulatory-respiratory) criteria in determining death. However, if we are to retain the dead-donor rule and if the critics of brain death are correct, then the use of circulatory-respiratory criteria to determine death becomes not just a possibility but a necessity for organ donation purposes. (For a critique of brain-death criteria, see Franklin G. Miller and Robert D. Truog, “The Incoherence of Determining Death by Neurological Criteria: A Commentary on *Controversies in the Determination of Death*, a White Paper by the President’s Council on Bioethics,” *Kennedy Institute of Ethics Journal*, June 2009.)

Unfortunately, three sorts of ethical questions have been raised about DCD itself. First, is there a necessary conflict of interest between providing optimal care for the patient donating organs and looking to benefit the organ recipient? Second, is it permissible to alter care for the donor prior to death solely for the sake of the organ recipient or are such interventions in violation of the maxim always to respect humanity as an end in itself and never use any person simply as a means? Third, at what point can we declare death by means of circulatory-respiratory criteria?

The first question is whether there is a necessary conflict of interest in DCD between providing the best care for the organ donor and looking after the interests of the organ recipient. The potential for conflict is certainly possible, since a physician may neglect to properly care for, or even kill, one patient in order to get viable organs for another patient. Transplantation practices in Sweden may provide a model for resolving potential conflicts of interest. (See K. Zeiler et al., “The Ethics of Non-Heart-Beating Donation: How New Technology Can Change the Ethical Landscape,” *Journal of Medical Ethics*, July 2008.)⁵ In Sweden, medical professionals are strictly forbidden from asking about or discussing the donor status of a patient (whether pro or con) during the course of treatment. After death is declared, the health care team checks the national registry for advance directives to find out whether the patient consented to organ donation. This way of proceeding avoids

⁴Verheijde, Rady, and McGregor, “Recovery of Transplantable Organs,” 2.

⁵In the Swedish approach, the individual decision whether or not to be an organ donor takes precedence, but in cases in which there is no directive either for or against donation, the presumption is that the person would consent to organ donation and donation is done unless the family objects.

conflicts between providing the best care for the dying patient and looking to secure organs for needy organ recipients. Since the donor status of a patient is unknown prior to death, physicians and others have no incentive to provide less than optimal care for donors. A physician in such a case simply does not know whether the patient is a potential organ donor, so considerations about benefiting a potential recipient cannot cloud the physician's judgment.

A second question relevant for DCD concerns antemortem interventions. In the case of antemortem interventions, the patient is still alive but is given treatments in order to prepare his organs for transplantation to benefit the organ recipient. Is it ethically permissible to perform procedures on the donor while the donor is still alive solely for the sake of the organ recipient? Such inventions are possible only in controlled DCD, for in uncontrolled cases of DCD the patient has already died. The ethical concern with antemortem interventions is that it is morally wrong for one person (the donor) to be used simply as a means to aid another person (the organ recipient). DCD would seem to violate the widely held maxim that humanity, whether in one's own person or in another, is always to be respected as an end in itself and never used simply as a means. If DCD is permitted, basic treatment needed to sustain life may be withdrawn, simply to secure more organs.⁶ Nancy Valko suggests that the patients may be pressured into "pulling the plug" so as to make themselves useful as sources of organ donation. There is an apparent conflict between implementing the Swedish protocol just described and doing any antemortem interventions whatsoever. However, if we modify the Swedish Transplantation Act to say that no inquiry may be made into donor status until the patient has died or the patient has decided to remove life-sustaining treatment, this difficulty is avoided, as are Valko's concerns of Valko. However, in cultural contexts such as our own, in which the basic human dignity of all human beings is frequently denied, this concern—that DCD dehumanizes patients in their final hours—are serious.

These concerns are amplified by the views of some (but not all) advocates of DCD. For example, James F. Childress considers such people "better off dead than alive with severe pain and discomfort."⁷ Childress's view is undifferentiated. Severe pain and discomfort are evils—evils that exist only in living beings. However, it does not follow from this that life itself is evil, or that people in severe pain would be better off dead. Life is an intrinsic good, because bodily life is a constitutive element of what it is to be a human being, and to be a human being is always good. Similarly, knowledge of a painful truth causes suffering and hardship, but it does not follow that people would be "better off without intelligence" or that intelligence itself is sometimes an evil, even though it is true that in eliminating human intelligence certain kinds of suffering would thereby also be eliminated. Human life is good, it is not

⁶See Nancy Valko, "Ethical Implications of Non-Heart-Beating Organ Donation," *Human Life Review* 28.3 (Fall 2002): 109.

⁷James F. Childress, "Non-Heart-Beating Donors of Organs: Are the Distinctions between Direct and Indirect Effects and between Killing and Letting Die Relevant and Helpful?" *Kennedy Institute of Ethics Journal* 3.2 (June 1993): 204.

an evil or not worth living, even though human life is a necessary condition for pain and suffering, and even though in some cases the burdens of some life-sustaining treatment outweigh its benefits.

Childress wonders whether a patient may turn down treatment in order to aid an organ recipient. "One unresolved question is whether altruistic patients who want to increase the chances that their deaths will produce usable organs may choose to alter the care provided in the last few hours of their lives."⁸ However, in medical practice, a competent patient may always refuse medical treatments. Therefore, if a competent patient chooses to discontinue or refuse a treatment that in the patient's view was not worthwhile, in order to help an organ recipient, this is not *prima facie* legally or ethically problematic. To refuse continued life-sustaining treatment is not morally wrong so long as it is not chosen precisely as a means to suicide.

Zeiler and colleagues argue that a patient should be treated only for his or her own sake; therefore the use of anticoagulants and other drugs for the sake of the person receiving the donation is prohibited. However, presuming informed consent, neither forgoing treatment judged burdensome by the patient nor taking on bodily risks for the sake of benefiting someone else violates the Kantian maxim of respecting all persons, including oneself, as ends in themselves and never using them simply as a means. In the case of kidney donation, for example, the donor freely chooses to undergo risks of various kinds—including surgery and future reliance on a single kidney—in order to aid another person, yet because this sacrifice for the good of another is freely chosen, it embodies rather than undermines innate human dignity. Using a person simply as a means treats the human person as a mere tool or biological material to be manipulated, but in giving free consent the donor acts as an autonomous person. Of course, not every autonomously chosen action is compatible with proper self-regard. For example, suicide committed to provide organs for another is morally impermissible, for it is making use of oneself simply as a means as if every innocent human life were not inviolable. However, risking one's own well-being to help another is heroically generous. By contrast, committing suicide in order to give non-duplicate vital organs to another violates the principle that every innocent person, including oneself, should not be intentionally killed.

But perhaps precisely this principle can be used to argue against antemortem interventions in DCD cases. If one may not intentionally kill or hasten death, even to aid another person, then if DCD necessarily involved either, it would be wrong. In uncontrolled cases of DCD, these issues are not relevant, since it is impossible to kill, or hasten the death of, an already dead patient. However, in controlled DCD cases, one could argue that removal of life support is intentional killing or intentional hastening of death.

The removal of life support may indeed, in some cases, violate the sanctity of life, but it need not in all cases be intentional killing. If the removal of life support is simply the means chosen to kill the patient, it would indeed be wrong and simply a form of euthanasia. However, if the life-supporting treatment is removed because

⁸Ibid., 210.

the treatment, not the patient, is judged more burdensome than beneficial, then such removal is moral. Removal of life support in such cases does not involve a homicidal intent, even if it is certain the patient will die. If removing life support even in cases where death will certainly follow can be permissible, how much more is the administration of antemortem interventions, which may only risk hastening death permissible. Typical antemortem interventions in DCD cases include the administration of heparin or phentolamine, and cannulation. I could find no conclusive evidence that these interventions necessarily hasten death in potential non-heart-beating donors. However, many authors point to the risks of such interventions, perhaps even lethal risks.⁹

Assuming that antemortem interventions risk death, they may still be justified by double-effect reasoning. First, it is not intrinsically evil to do an action that risks death, including fighting fires, serving in the military, or taking a potentially lethal medication to preserve life or health. Second, if death comes about, the death in the DCD case is not a means to the end of helping the organ recipient, since the hastened death is not what makes the organs suitable for transplantation. True, the patient must be dead if the dead-donor rule is to be respected, but the timing of the death is not normally essential to the organ donation. In other words, if the organ donor dies a few minutes sooner rather than a later, this timing of death is not a means to the organ donation but a side-effect of preparing the organs for donation. Third, the evil of hastened death is not intended as either a means or an end in itself. In other words, the physician is not necessarily seeking, endeavoring, or willing the early death of the patient so as to facilitate organ transplantation. Again, the timing of the death of the donor is not relevant for successful organ transplantation. Finally, there exists a serious reason for allowing the possible evil effect, namely, saving the life of the organ recipient.

Steinberg objects that “the principle of double effect can be manipulated because the notion of what it intended is both malleable and subject to the whims of human consciousness. The same act may be permissible or impermissible depending on what enters a physician’s consciousness.”¹⁰ In other words, double-effect reasoning leads to ethical doublethink, in which what is wrong is made right simply by power of mind.

Steinberg’s objection does not adequately capture double-effect reasoning properly understood.¹¹ If an agent literally is unaware of an aspect of an action, if this effect is not at all a part of the agent’s plan or even consciousness, then the agent

⁹See Bell, “Non-Heart Beating Organ Donation,” 179; and David Steinberg, “The Antemortem Use of Heparin in Non-Heartbeating Organ Transplantation: A Justification Based on the Paradigm of Altruism” *Journal of Clinical Ethics* 14.1–2 (Spring–Summer 2003): 19.

¹⁰Steinberg, “Antemortem Use of Heparin,” 20.

¹¹Perhaps the best single resource for this understanding is Thomas Cavanaugh, *Double-Effect Reasoning: Doing Good and Avoiding Evil* (New York: Oxford University Press, 2006).

is ignorant of that effect. Ignorance, of course, comes in two varieties—culpable and inculpable. If the agent is inculpably ignorant of an evil effect, then no moral guilt is incurred and the action as performed by the agent is not morally defined by that effect. If the agent is culpably ignorant, then the agent is ethically responsible for what occurs, for the agent could have and should have been aware of the effect. However, what is intended or not intended does not shift simply as a result of one's mental focus. What is knowingly chosen as a means to an end or as an end in itself is always intended—regardless of what narrative the agent constructs to somehow transform a means into a side-effect, regardless of which effects the agent was “focusing” on in consciousness, regardless of whether the agent regrets or delights in the given effect. What an agent intends corresponds to the actual means and actual ends chosen as a part of agent's practical reasoning.

A third question facing controlled DCD is, when does irreversible loss of cardiopulmonary function take place? No single, universally accepted standard exists for the determination of death by cardiac criteria. Patients are declared dead in less than two minutes of asystole (cardiac standstill) in many intensive care units. The Pittsburgh protocol for DCD insists on two minutes; the Institute of Medicine five minutes, and the Maastricht protocol ten minutes. The foremost critic of brain death, D. Alan Shewmon, believes that normally the “point of no return” is twenty to thirty minutes following loss of circulation.¹²

If we adopt the most demanding standard, twenty to thirty minutes, then we have greater assurance of not violating the dead-donor rule. Adopting this standard may also increase the likelihood of public confidence that transplantation itself does not kill donors, a perception that may increase the number of people who are willing to be donors. By contrast, less demanding standards may increase public perception that organ transplantation kills one person to aid another, driving down the number of willing donors and further exacerbating the organ shortage.

Is the demanding standard of twenty to thirty minutes compatible with retrieving viable organs for donation? DCD most often involves the donation of kidneys and livers.¹³ Fortunately, these organs remain viable for donation, “up to forty minutes after cessation of heartbeat. (Kidneys and livers are more resilient to oxygen deprivation than other organs).”¹⁴ DCD can also be used for lung transplantation: “The gas exchange system of the lungs can tolerate one hour of warm ischemia after circulatory arrest without significant loss of functional capacity.”¹⁵ What about DCD for heart

¹²See D. Alan Shewmon, “Brainstem Death, Brain Death, and Death: A Critical Re-Evaluation,” *Issues in Law & Medicine* 14.2 (Fall 1998).

¹³See Roger Herdman, Thomas L. Beauchamp, and John T. Potts, “The Institute of Medicine's Report on Non-Heart-Beating Organ Transplantation,” *Kennedy Institute of Ethics Journal* 8.1 (March 1998): 86.

¹⁴Phyllis L. Grasser, “Donation after Cardiac Death: Major Ethical Issues,” *National Catholic Bioethics Quarterly* 7.3 (Autumn 2007): 541.

¹⁵Axel Carlberg, “Transplanting Lungs from Non-Heart-Beating Donors,” *National Catholic Bioethics Quarterly* 2.3 (Autumn 2002): 378.

transplantation? “Recently the Papworth hospital group described the first case of functional recovery in a human deceased donor heart following in-vivo perfusion of the coronary circulation with normothermic blood using an extracorporeal circuit. After twenty-three minutes of warm ischemia the asystolic heart was perfused and reverted into sinus rhythm.”¹⁶ Even with the demanding standard, livers, kidneys, lungs, and perhaps even hearts can be retrieved in cases of DCD.

This raises a problem, for if kidneys, livers, lungs, and maybe also hearts are all still viable for transplantation after twenty to thirty minutes of asystole, then the patient would seem to be still alive. In taking the patient’s vital organs, we violate the dead-donor rule. However, if we wait until an hour or two passes, then the patient is certainly dead but the organs commonly retrieved in DCD are not longer viable.

This is a false dilemma. The fact that an organ or even many organs may function well in a donor’s body does not mean that the organ donor is not yet dead. Life consists not in having various organs that can function outside the context of the organism, but rather in the integrated functioning of the organism as a whole. Imagine a special disintegrating machine that destroyed every cell in the human body except for the liver, lungs, heart, and kidneys. A human being disintegrated in such manner is obviously dead, but the organs are nevertheless viable. In a less imaginative example, a human being is no longer alive shortly following decapitation, but the organs of such a person may very well remain viable for transplantation. Organic life consists not in possessing organs that can function in other contexts, but rather in being an organism with integrally functioning organs.

In this essay, I have attempted to briefly answer three main ethical questions arising from DCD. These include concerns about a conflict of interest between providing the best treatment for potential donors and facilitating organ transplantation, worries about the use of antemortem drugs to facilitate organ transplantation, and uncertainties about determining death by means of cardiopulmonary criteria. These reasonable concerns should give pause to advocates of DCD, but the ethical difficulties appear to be surmountable. Properly carried out, DCD is, in my view, ethically permissible even if it remains from a medical point of view technically difficult to successfully perform.

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¹⁶ Ashley Laboratory, “Deceased Donor as a Source for Organs for Heart Transplantation” (2009), Stanford University School of Medicine, http://ashleylab.stanford.edu/projects/physclin/non_heart_beat_donor.html.