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The Total Artificial Heart and the Dilemma of Deactivation

ABSTRACT. It is widely believed to be permissible for a physician to discontinue any treatment upon the request of a competent patient. Many also believe it is never permissible for a physician to intentionally kill a patient. I argue that the prospect of deactivating a patient's artificial heart presents us with a dilemma: either the first belief just mentioned is false or the second one is. Whichever horn of the dilemma we choose has significant implications for contemporary medical ethics.

INTRODUCTION

New technology can lead us to reconsider old principles. The total artificial heart is one such technology, and the principles are two:

(DISCONTINUATION) It is permissible for a physician to discontinue any treatment upon the request of a competent patient.

(PROHIBITION) It is never permissible for a physician to intentionally kill a patient.

DISCONTINUATION enjoys wide support within the medical community. PROHIBITION is controversial—as shown by the debates over euthanasia—but also enjoys considerable support.

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Indeed, many people endorse both principles. I will argue, however, that the case of the total artificial heart presents us with a dilemma: either DISCONTINUATION is false or PROHIBITION is false. Whichever horn of the dilemma we choose has significant implications for contemporary medical ethics.

Consider the following argument, with DISCONTINUATION serving as premise 1.

1. It is permissible for a physician to discontinue any treatment upon the request of a competent patient.
2. The total artificial heart provides ongoing treatment once implanted.
3. Deactivating an artificial heart is an instance of killing rather than letting die.
4. In deactivating an artificial heart, the physician intends the patient's death.

It follows from 1 and 2 that it is permissible for a physician to deactivate an artificial heart upon the request of a competent patient. It follows from 3 and 4 that deactivating an artificial heart is an instance of a physician intentionally killing a patient. Hence 1–4 entail that it is sometimes permissible for a physician to intentionally kill a patient—i.e. PROHIBITION is false.

Below I argue that premises 2–4 are true. It follows that if DISCONTINUATION (premise 1) is true as well, then PROHIBITION is false. Equivalently, if PROHIBITION is true, then DISCONTINUATION is false.

Before presenting my arguments for premises 2–4 I discuss two preliminaries. First, I indicate how my paper relates to several others and how it advances current debates. Second, I illustrate the popular support for DISCONTINUATION and PROHIBITION.

SITUATING THE PAPER

There is a distinction between *killing* and *letting die*—or between killing someone and *allowing* them to die (Howard-Snyder 2011; Woollard 2012a, 2012b). If I push you into a lake and you drown, then I kill you. If you are already drowning and I simply refrain from saving you, then I let you die. I also let you die if I begin hauling you to shore but abandon my efforts. This latter case illustrates a general point: discontinuing life-saving aid that one is providing is often a case of letting die rather than killing. Indeed, the standard view is that a doctor who withdraws life-sustaining treatment does not kill the patient but merely allows the patient to die of the underlying medical condition.

Miller, Truog, and Brock reject the standard view, claiming that withdrawing life-sustaining treatment kills the patient (Brock 1986, 1992; Miller and Truog 2008, 2012; Miller, Truog, and Brock 2010a, 2010b). The structure of their argument can most clearly be seen in Miller and Truog's book *Death, Dying, and Organ Transplantation*. Understanding *killing* as equivalent to *causing death*, they write:

In arguing that withdrawing [life-sustaining treatment] causes a patient's death . . . we appeal to our common-sense understanding of the causes of particular events. . . . Causes are events or circumstances that *make the difference* in explaining a particular occurrence. (2012, 6)

At the same time, Miller and Truog believe that *withholding* of *initial* treatment (as opposed to *withdrawal* of *ongoing* treatment) merely *allows* the patient to die, since withholding initial treatment is an omission rather than an act (2012, 5–6). Their argument, then, is this:

withdrawing ongoing life-sustaining treatment is an *act* that *makes the difference* between the patient living and dying, and it follows from these facts that withdrawing treatment causes death, i.e. kills. This overarching argument is developed through various examples and subsidiary arguments in the first chapter of Miller and Truog's book, as well as in the papers of Miller, Truog, and Brock cited above.

That argument has been challenged by Jensen (2011) and McGee (2014, 2015). These authors follow McMahan (1993) in arguing that acts (and not only omissions) can allow a person to die. So even if discontinuing mechanical ventilation (for example) is an act rather than an omission, the *effect* of that act is that the doctor stops saving the patient—and hence the patient is not killed but merely allowed to die.

I believe that my appeal to the artificial heart resists this response to Miller, Truog, and Brock. For I will argue that deactivating an artificial heart is importantly different from discontinuing other forms of life-sustaining treatment—the former is *not* an act that merely allows the patient to die, even if the latter *is*.

By making that claim I diverge sharply from previous authors writing about the total artificial heart. Bramstedt (2003a, 2003b, 2004) and Veatch (2003, 2004) are among the very few individuals who have given extended consideration to the ethics of deactivating the artificial heart. Bramstedt claims that deactivating an artificial heart is like discontinuing mechanical ventilation and is not an instance of killing. Veatch believes that Bramstedt would be correct if death were determined by neurological criteria rather than circulatory criteria. I return to both of these points below and explain why I disagree. My point now is simply to note one way in which the present paper contrasts with previous work on the artificial heart. I argue that the artificial

heart is not like other forms of life-sustaining treatment, and that it presents a more radical challenge to contemporary medical ethics than either Bramstedt or Veatch acknowledge.

To be clear, I do *not* claim that deactivating an artificial heart differs from withdrawing other forms of life-sustaining treatment in that the former kills while the latter merely allows the patient to die. Rather, I note that *according to the standard view*, withdrawing life-sustaining treatment merely allows the patient to die; and I claim that the standard view cannot accommodate the artificial heart *even if it can accommodate* other forms of life-sustaining treatment. I will not argue that the standard view *can* accommodate other forms of life-sustaining treatment.

POPULAR SUPPORT FOR DISCONTINUATION AND PROHIBITION

Gaylin et al. write of “one of the first and most hallowed canons of the medical ethic: doctors must not kill,” where killing is understood as “the active, willful taking of life” (1988, 2139). They continue: “at least since the Oath of Hippocrates, Western medicine has regarded the killing of patients, even on request, as a profound violation of the deepest meaning of the medical vocation.” Similarly, the American Medical Association’s Council on Ethical and Judicial Affairs writes that “[t]here is a longstanding prohibition against physicians killing their patients, based on a commitment that medicine is a profession dedicated to healing, and that its tools should not be used to cause patients’ deaths” (1992, 2232). The World Medical Association likewise states that “the act of deliberately ending the life of a patient, even at the patient's own request or at the request of close relatives, is unethical” (n.d.). So PROHIBITION finds support from individual physicians as well as prominent medical organizations.

DISCONTINUATION enjoys even broader support. Truog writes of “The Great American Consensus”—the principle that patients “have a virtually unlimited right to refuse any unwanted medical treatment, even if necessary for life itself” (2008, 45). The Council on Ethical and Judicial Affairs firmly endorses this consensus: “The principle of patient autonomy requires that physicians respect a competent patient's decision to forgo any medical treatment. This principle is not altered when the likely result of withholding or withdrawing a treatment is hastening the patient's death” (1992, 2230). The same position is endorsed by the President’s Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research (1983, 72). More recently, a consensus statement from seven professional and health organizations held that a “patient with decision-making capacity has the legal right to refuse or request the withdrawal of any medical treatment or intervention, regardless of whether s/he is terminally ill, and regardless of whether the treatment prolongs life and its withdrawal results in death” (Lampert et al. 2010, 1009).

The authors quoted in the previous paragraph actually support something stronger than DISCONTINUATION. They support the position that it is *obligatory* (and not merely *permissible*) for a physician to discontinue any treatment upon the request of a competent patient. But if discontinuing treatment is obligatory then it is permissible, and so these authors must endorse DISCONTINUATION.

Some supporters of DISCONTINUATION would include an exception for public-health threats. In the case of Ebola virus, for example, perhaps individuals may permissibly be treated without their consent due to the risk the disease poses to others.

In cases where the public’s health is not at risk, however, DISCONTINUATION is not thought

to admit of exceptions. The popular support for DISCONTINUATION reflects this fact: three paragraphs back, the three quotations each speak of refusing “any” unwanted treatment.

Matters are similar when it comes to PROHIBITION. The AMA’s Council on Ethical and Judicial Affairs (1992) and the World Medical Association (n.d.) note no exception when stating their prohibitions on intentionally killing patients. Gaylin et al. are *explicit* that the prohibition is exceptionless, condemning “any and all acts of direct and intentional killing by physicians and their agents” (1988, 2140). Similarly, Pellegrino writes that physicians “must *never* kill. Nothing is more fundamental or uncompromising [than] this moral absolute” (2005, 475, emphasis added).

It is the uncompromising nature of DISCONTINUATION and PROHIBITION that allows for their stark conflict in the case of the artificial heart. Apart from the noted public-health exception, their proponents do not think these principles can yield in cases that a doctor might encounter, such as cases in which the principles conflict with each other. Indeed, it is not typically thought that these principles *can* conflict with each other. Later I will explore the implications of making an exception to DISCONTINUATION or PROHIBITION for the artificial heart.

With these preliminary comments out of the way, I turn to arguing for each of premises 2–4 from the argument presented above.

ARGUMENTS FOR PREMISES 2–4

Premise 2: The Total Artificial Heart Provides Ongoing Treatment Once Implanted

A transplanted organ becomes part of the patient’s body, and its operation does not constitute ongoing treatment. By contrast, a mechanical ventilator does not become part of the

body, instead retaining its identity as a device used to deliver treatment to the patient.

It is generally accepted that in these respects an *implanted pacemaker* is like a ventilator rather than a transplanted organ. This position is endorsed, for example, by the seven professional and health organizations in the consensus statement of of Lampert et al. (2010).

Unlike such life-sustaining devices as mechanical ventilators, an implanted pacemaker is internal to the patient's body. But as Lampert et al. state, "there is no ethical or legal distinction between a treatment that's integrated within the body, versus one which is outside the body" (2010, 1011). Similarly, Kramer, Mitchell, and Brock argue that "there is no legal or ethical basis" for distinguishing between a pacemaker and a ventilator (2012, 291). Hence I will assume that an implanted pacemaker provides ongoing treatment as does a ventilator.

Pacemakers and artificial hearts are relevantly similar. Both are implantable, inorganic devices that are used to restore cardiac function. A pacemaker replaces the activity of the heart's own pacemaker cells, while an artificial heart replaces the heart's ventricles. Because pacemakers and artificial hearts are similar in these ways, consistency requires that artificial hearts be given the same status as artificial pacemakers: if a pacemaker provides ongoing treatment, then an artificial heart does so as well.

One might object that a pacemaker does not actually provide ongoing treatment, and hence neither does an artificial heart. For one might claim that "[o]nce the pacemaker is implanted, the doctor's acts are complete," and so "provision of the treatment has been completed" (McGee 2014, 45).

In fact, the acts of doctors are not complete after a pacemaker is implanted. The pacemaker's function will be periodically checked by a doctor—and adjusted, if need be. And

while the doctor might interact in this way with the pacemaker only infrequently, the pacemaker is all the while implementing the doctor's intention to treat the patient. It is a tool being used by the doctor to manage the patient's condition, as is a mechanical ventilator during those periods when the ventilator is not being checked, adjusted, or otherwise attended to.

To be clear, I am not suggesting that a doctor's periodic checking and adjustment of a medical device are *necessary* for the device to be used to deliver ongoing treatment—but they are *sufficient*. Hence I reject the objection noted two paragraphs back; an implanted pacemaker does provide ongoing treatment once implanted. Parallel remarks apply to the artificial heart.

Premise 3: Deactivating an Artificial Heart

Is an Instance of Killing Rather than Letting Die

While both devices provide ongoing treatment, an artificial heart is importantly different from an implanted pacemaker when it comes to deactivation. According to the standard view, when deactivating a pacemaker leads to death, deactivation does not itself kill the patient but merely allows the patient to die of a preexisting condition. I will argue that no such story can be told about the artificial heart. Deactivating an artificial heart kills the patient.

Suppose that Abe's artificial heart is deactivated upon his request. If deactivation merely allows Abe to die, then what does it allow Abe to die of? What preexisting condition kills Abe?

The most obvious answer is that deactivation allows Abe to die of *heart disease* (Bramstedt 2003b, 319; 2004, 427). If heart disease kills Abe, then heart disease must produce Abe's lethal circulatory arrest. And that, in turn, requires that heart disease render Abe's heart unable to pump blood. Of course, heart disease does not render Abe's *artificial* heart unable to

pump blood. So if deactivation allows heart disease to kill Abe, then it must be that heart disease leaves Abe's *native* heart unable to pump blood.

In fact, heart disease does not leave Abe's native heart unable to pump blood—or as I will say for brevity, heart disease does not “destroy” Abe's native heart. We can see this point with the help of an analogy. Consider a terminally ill cancer patient who requests and receives a lethal injection. The patient was *dying* of cancer. The patient *would have* died of cancer, had a doctor not intervened. But the patient does not *in fact* die of cancer. The patient dies of the lethal injection. Similarly, Abe's native heart was *being destroyed* by disease. It *would have been* destroyed by disease, had doctors not intervened. But Abe's native heart is not *in fact* destroyed by disease. It is destroyed by doctors removing and discarding it. After all, Abe's native heart was functional enough to sustain life prior to surgery, but not after.

As I said above, if deactivation allows heart disease to kill Abe, then it must be that disease destroys Abe's native heart. We have just seen, however, that disease does not destroy Abe's native heart. Hence deactivation does not allow heart disease to kill Abe.

Of course, Abe's doctors remove (and hence destroy) his native heart *because* of the heart disease. This does not, however, mean that heart disease is what destroys Abe's native heart. After all, the doctor of the terminal cancer patient administers the lethal injection *because* of the cancer. Yet it is not cancer that kills the patient. To say that disease destroys Abe's native heart is like saying that the cancer patient who receives a lethal injection actually dies of cancer.

I am *not* suggesting that the removal of Abe's native heart kills him. I claim that Abe's doctors destroy his native heart, but I make that claim only in order to reject the suggestion that deactivation allows Abe to die of heart disease.

While I am not making such a suggestion, my *opponent* might suggest that the removal of Abe's native heart kills him. Then deactivating Abe's artificial heart would merely allow him to die of the surgery that removes his native heart—or, perhaps equivalently, to die of his (iatrogenic) lack of a biological heart. When Abe's doctors remove his native heart, their aim is not Abe's death. So one might think that Abe's doctors do not intentionally kill him, as there is no act that both kills and aims at death: deactivating the artificial heart may aim at death but it merely allows death, and removal of the native heart kills but does not aim at death.

The essential thought here is that removing Abe's native heart creates a threat that his artificial heart keeps at bay—so that deactivating the artificial heart allows the original threat to kill Abe. Similarly, it is often thought that mechanical ventilation keeps at bay a preexisting threat—a disease or injury that prevents spontaneous breathing—and that withdrawing ventilation allows this threat to kill the patient.

In order to evaluate this proposal, note that the treatment for Abe's heart disease involves his doctors removing his native heart and implanting an artificial heart. According to the proposal now being considered, removing Abe's native heart creates a new, lethal threat that his artificial heart keeps at bay. So according to this proposal, the treatment for Abe's heart disease involves his doctors creating a new, lethal threat and then keeping that threat at bay. This is an odd view. It is more natural to think that Abe's doctors simply treat the original threat to his health (heart disease) without creating another threat. *After a successful surgery, there is no ongoing lethal threat that the doctors have created.*

It might be objected that I have misconstrued the proposal in question. Perhaps one individual can let another die without there being a *preexisting threat* that the latter is allowed to

die of. For example, Kamm writes:

[M]ost of us have never been under threat of starvation, because we have always been provided with the food that is a defense against starvation. If the person supplying our food should stop, I suggest that he lets us die, but we face the threat of starvation for the first time. What has been already present is a need or vulnerability that would, without help, have led to a threat. (2007, 18–19)

Similarly, McMahan claims that “it is possible for an agent to allow an individual to die when the only threat the individual faces is a threat latent in his own inherent dependency on aid from the agent” (2002, 385–386; cf. 1993, 269–273).

So perhaps deactivation of Abe’s artificial heart merely allows him to die after all. There is a sense in which surgery makes Abe *dependent* on the ongoing action of an artificial heart: it is only after surgery that Abe’s life is sustained by the artificial heart. So while deactivation does not allow Abe to die of a *preexisting* threat, perhaps it allows a lethal threat to *develop*—a threat “latent” in Abe’s “dependency on aid” provided by the artificial heart (*ibid.*). This may be to allow Abe to die of the surgery that made him dependent on the artificial heart. That surgery was not performed with deadly intent, however. So, as before, there is no act that both kills and is performed with deadly intent.

The problem with this suggestion is that if one individual makes another dependent on aid, then withdrawing that aid can be an instance of killing. Consider the following example from Persson and Savulescu:

Suppose we have started a machine that regularly supplies the dying Victim with a drug

which has a good chance of being substantially life-prolonging. But this drug is such that the body thoroughly adapts to it. So, if it is withdrawn the Victim quickly dies of a sort of shock and not of the underlying disease. (2005, 17)

Persson and Savulescu conclude that to withdraw aid in this case would “clearly” be killing rather than letting die (ibid.). I believe this is the correct conclusion, and that it is not changed by supposing the drug is withdrawn at the patient’s request.

The case of the artificial heart is relevantly similar. In both cases, treatment is initiated to prolong the patient’s life. In both cases, that initial treatment makes the patient dependent on continuing treatment. (For as I have said, is only *after* surgery that Abe’s life is sustained by the ongoing action of an artificial heart.) And in both cases, I suggest, discontinuing treatment does not merely allow a latent threat to develop.

I conclude that deactivating Abe’s artificial heart kills him. In this respect deactivating an artificial heart is like administering a lethal injection that stops a patient’s biological heart.

It is important to note that my argument does not generalize to withdrawing other forms of life-sustaining treatment. For one thing, I have appealed to the fact that Abe’s native heart is not destroyed by disease. In a pacemaker-dependent individual, by contrast, disease *has* left the heart unable to function unassisted. And similarly for the lungs of a ventilator-dependent patient. Hence my argument does not apply to such cases—the artificial heart is importantly different.

Before concluding this section, there are three objections to consider. First, it might be claimed that to kill someone is to *intervene* in their life; and that deactivating an artificial heart *ends* the medical intervention; and hence that deactivating an artificial heart *cannot* be killing.

It is possible to kill by ending an intervention, however. The case from Persson and

Savulescu (“Shock”) provides one example. Here is another example. If I pick you and up carry you around, that constitutes an intervention in your life. If I release you, that ends my intervention. But releasing you might also kill you—e.g. if you fell to the ground and hit your head upon being released. This latter example is less analogous to the case of the artificial heart, but it illustrates the present point: it cannot be claimed that ending an intervention never kills, hence the objection from the previous paragraph does not succeed.

The second objection to consider is this. I have claimed that deactivating an artificial heart *kills* even if deactivating an implanted pacemaker merely *allows* the pacemaker-dependent individual to die. But deactivating the former device has the *same results* as deactivating the latter: circulatory arrest and the biochemical processes that then occur and eventuate in death. How, then, can I claim that the former deactivation kills even if the latter does not?

In a pacemaker-dependent individual, deactivating the pacemaker indeed results in circulatory arrest (and the consequent biochemical processes) just as deactivating an artificial heart does. The difference is how these events are to be explained. In the one case, it is possible to claim that deactivating the pacemaker merely allows a preexisting condition to produce the lethal circulatory arrest. After all, disease has left the patient’s heart unable to function unassisted. I have argued that, by contrast, no such claim can be made about an artificial heart. In that case deactivation itself is what produces circulatory arrest and kills the patient.

There is one more objection to consider. According to Veatch, “the conclusion that stopping [an artificial heart] is a direct killing rests on the use of the traditional cardiac definition of death. One dies according to current law when *either* the heart or the brain function ceases irreversibly” (2004, 2; cf. 2003, 309–310). But if we reject this “naive and implausible

two-pronged definition of death” and “replace it with one relying only on brain function loss,” then deactivating an artificial heart “would turn out to be no different from stopping any other life-supporting treatment.”

I have argued that deactivating an artificial heart does not merely allow the patient to die. My arguments could easily be rephrased in terms of brain death, rather than death *simpliciter*. We would then conclude that deactivating an artificial heart does not merely allow a preexisting condition to deprive the brain of oxygen. Rather, deactivation *itself* produces brain death. Hence deactivating an artificial heart kills even if we reject the cardiac criterion of death.

*Premise 4: In Deactivating an Artificial Heart,
the Physician Intends the Patient's Death*

On a traditional view, the killing of a patient can sometimes be permissible when death is not *intended* but is merely *foreseen*. For example: Perhaps adequate pain relief never actually requires a dose of opiates so large as to produce lethal respiratory depression as a side effect (Sykes and Thorns 2003). Nonetheless, it is widely held that *if* adequate pain relief *were* to require a lethal dose, administering such a dose could be permissible. And it is thought that administering such a dose could be permissible, in part, because death would at most be foreseen—unlike a case of euthanasia, where death is intended as the means by which suffering is ended (Council on Ethical and Judicial Affairs 1992, 2231). These remarks illustrate a fact about the prohibition on the killing of patients. What is prohibited is killing where death is *intended*—or “intentional killing,” as I am using the term.¹

¹ Some believe that an agent can *intentionally* kill without *intending* to kill—and hence without intending

Now consider a doctor who deactivates an artificial heart at the request of a patient. What does the doctor intend when deactivating the artificial heart, if not the patient's death? Two answers are suggested by the literature on withdrawing life-sustaining treatment. First, it might be claimed that the doctor intends to *comply with the patient's request* to discontinue treatment. Second, it might be claimed that the doctor intends to *eliminate the burdens* of treatment. I will argue that in the case of the artificial heart, a doctor who intends either of those things will also intend the patient's death.

First consider the suggestion that in deactivating an artificial heart, the doctor intends to eliminate the burdens of treatment. Some treatments are indeed discontinued because the treatment is burdensome. Discontinuing chemotherapy may improve the patient's quality of life, for example. Hence the aim of discontinuing chemotherapy can be to eliminate the burdens of treatment, with the hastening of death merely foreseen as a side effect.

An artificial heart carries some burdens, such as risk of infection or blood clots. For a patient who desires deactivation, however, the primary burden of an artificial heart is that the device prolongs a life that is independently burdensome (cf. Rhymes et al. 2000, 1062). The patient described by Bruce et al. (2014), for example, suffered from the failure of multiple organs and had to endure frequent hospitalizations. In fact, the patient stated that he would not want to live even if a heart transplant were available (628). Death is a necessary means to eliminating the burdens of treatment in such a case, since the primary burden of treatment is simply continued life. A physician who intends to eliminate the burdens of treatment will also intend the means,

death. (These are individuals who reject the so-called Simple View of intention; see Bratman 1987, ch. 8.) As I have suggested, however, that is not the sense of "intentionally kill" that is relevant to the current prohibition on the killing of patients: what is prohibited is killing while intending death. So when I say "intentionally kill" in the main text, I mean "kill while intending death."

and hence will intend the patient's death.

Next consider the suggestion that in deactivating an artificial heart, the doctor does not intend to eliminate the burdens of treatment, but intends only to comply with the patient's request for deactivation. We can proceed by comparing these two claims:

- A. In deactivating an artificial heart, the physician need not intend the patient's death, but instead can merely intend to comply with the patient's request to discontinue a medical intervention.
- B. In administering an injection of potassium chloride, the physician need not intend the patient's death, but instead can merely intend to comply with the patient's request to provide a medical intervention.

B refers to a case of euthanasia, as the injection will stop the patient's heart. Suppose the patient asks for a specific dose of potassium chloride, a dose that both patient and physician know will be lethal.

Such a physician (as described by B) would intend to comply with the patient's request for a potassium chloride injection. Would the physician *also* intend the patient's death?

According to a common view, the physician *would* intend the patient's death because the injection is in some sense "too close" to the patient's death for the former to be intended but not the latter.²

² For overviews of the issue of "closeness" see FitzPatrick (2012, §2), Nelkin and Rickless (2015). It is worth noting that Bratman's (1987) theory of intention will not yield the conclusion that death is intended by the doctor (who intends to comply with a request for a potassium chloride injection). This is because Bratman's theory is consistent with intentions being very specific (or "fine grained"); see Di Nucci (2014, ch. 6.2), Nelkin and Rickless (2015, §5).

Matters are exactly similar with respect to A. Such a physician would intend to comply with the patient's request for artificial heart deactivation. Would the physician also intend the patient's death? With just as much plausibility as before, we can say that the physician would intend the patient's death because deactivation is too closely connected to the patient's death for the former to be intended but not the latter.

In making these remarks I rely on the fact that deactivation of the one patient's artificial heart is at least as closely connected to death as is administration of a potassium chloride injection to the other patient. This indeed appears to be a fact, thanks to several comparisons between the two cases. First, deactivating an artificial heart is like administering a potassium chloride injection insofar as it is a case of *killing* rather than *letting die*. (I have argued for that point above and hence can assume it here.) Second, both deactivation and injection stop the patient's circulation, and deactivation stops circulation *directly* (without intervening events). There is also a third comparison worth mentioning, though it may not actually be relevant to determining how "close" an intervention is to the patient's death. In the one case, the patient requests a potassium chloride injection *because* it will result in death. In the other case, the patient requests deactivation for the same reason—recall that the patient described by Bruce et al. (2014) no longer wanted to live.³

I conclude that A and B are exactly similar in the relevant respects. Hence they must be

³ For the purposes of determining the doctor's intention, perhaps what is relevant is whether the doctor *believes* that these comparisons hold between deactivation and injection. If that is right, then consider a doctor who believes the comparisons hold. The argument provided in the main text suggests that deactivation will then be a case of intentional killing, yet deactivation will also be permissible (since it is permissible to withdraw treatment at the request of a competent patient). Hence the argument still secures the conclusion that there are circumstances under which it is permissible to intentionally kill a patient (assuming, of course, that DISCONTINUATION is true).

treated similarly. If we *reject* both A and B, then a physician who intends to comply with a patient's request for deactivation will also intend the patient's death, and my argument proceeds as planned. If we *accept* both A and B, then my overarching argument in this paper fails—as a physician who deactivates an artificial heart might not intend the patient's death, contrary to my premise 4. While my overarching argument would fail to establish its conclusion, accepting both A and B would secure a conclusion just as noteworthy. For if B were true, then contrary to what is nearly universally assumed, euthanasia need not violate the prohibition on intentionally killing patients. The physician would simply have to intend to comply with the patient's request to provide a medical intervention—as it happens, a *lethal* intervention—without thereby intending the patient's death (exactly as B suggests).⁴

I assume most readers will dismiss such a possibility, however, thereby rejecting B. I have argued that consistency requires these readers reject A as well. So I will proceed on the assumption that A is false—and hence that a doctor who intends to comply with a patient's request for deactivation will also intend the patient's death.

I began this section by asking what a doctor intends when deactivating an artificial heart at the request of a patient, if not the patient's death. I considered two answers: first, that the doctor intends to eliminate the burdens of treatment; and second, that the doctor intends to

⁴ Might euthanasia always involve *some* intention that makes the procedure impermissible, even if it is not always *death* that is intended? It is hard to see how that could be the case *if deactivating a patient's artificial heart is permissible*. For I have argued that deactivation and euthanasia are alike with respect to the doctor's potential intentions. (Both can be performed while intending to comply with the patient's request, and both can be performed while intending to eliminate the patient's burdens *via* their death.) So if euthanasia must always involve an impermissible intention, then why is the same not true of deactivation? One might resort to the claim that the doctor's intention *would* make deactivation impermissible *except* for the fact that deactivation is necessitated by the patient's right to refuse treatment. But see the final three paragraphs of the section "Implications" for doubts about this type of strategy.

comply with the patient's request to discontinue treatment. I have now argued that in the case of the artificial heart, a doctor who intends either of those things will also intend the patient's death.

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One might object, however, by arguing that: I have granted my opponent the claim that deactivating a pacemaker involves merely foreseeing (rather than intending) the death of the pacemaker-dependent individual; with respect to intent, deactivating a pacemaker is relevantly similar to deactivating an artificial heart; hence I cannot claim that deactivating an artificial heart involves intending death.

There are two responses to this objection. First, it is worth noting that deactivating a pacemaker might *not* be relevantly similar to deactivating an artificial heart with respect to intent. I have argued that the latter deactivation is an instance of *killing* even if the former is merely *letting die*. It might be thought that precisely because it is not an instance of killing, deactivating a pacemaker is not "too close" to death—and hence that one can intend pacemaker deactivation without intending death. If that is so, then there would indeed be a difference in intention between deactivating an artificial heart and deactivating a pacemaker.

More importantly, however, the first premise of the objection in question is false. I have *not* granted that (a) deactivating a pacemaker involves merely *foreseeing* (rather than intending)

⁵ Similar arguments can be given in response to other suggestions regarding the doctor's intent. It might be suggested, for example, that in deactivating a patient's artificial heart the doctor intends to act in the patient's interest. But while the doctor's *end* may be to act in the patient's interest, an intended *means* will be to eliminate the burdens of treatment. And I have argued that, in the case of the artificial heart, a doctor who intends to eliminate the burdens of treatment will also intend the patient's death. As a second example, it might be suggested that the doctor intends to respect the patient's right to self-determination. While the doctor's end may be to respect the patient's right to self-determination, an intended means will be to comply with the patient's request to discontinue treatment. And I have already addressed the suggestion that the doctor might intend to comply with the patient's request but not intend the patient's death.

death. Rather, I have granted that perhaps (b) deactivating a pacemaker involves merely *allowing* death (rather than killing).

Still, one might wonder whether (b) entails (a)—whether merely allowing death *entails* merely foreseeing death. There is no such entailment, however. One can merely allow death while intending death. This possibility is illustrated by Rachels' famous case of a man who allows his young cousin to drown in order to secure an inheritance (1975, 79). Hence neither do I grant (a) nor do I grant anything that entails (a). So the objection (from three paragraphs back) fails because it relies on the premise that I am committed to (a).

This concludes my defense of the premises of my argument. I turn next to the implications of the argument.

IMPLICATIONS

According to DISCONTINUATION, it is permissible for a physician to discontinue any treatment upon the request of a competent patient. According to PROHIBITION, it is never permissible for a physician to intentionally kill a patient.

Premises 1–4 yield the conclusion that PROHIBITION is false, as deactivating an artificial heart would be a case where it is permissible to intentionally kill a patient. I have provided arguments for premises 2–4. I have not argued for premise 1 (DISCONTINUATION), however, beyond noting that it currently enjoys wide support within the medical community. Some may endorse DISCONTINUATION and hence conclude that PROHIBITION is false. But others may stand by PROHIBITION and conclude that DISCONTINUATION is false. I will now consider the consequences of each of these two positions.

First suppose we conclude that DISCONTINUATION is false. We might then claim that it is obligatory (and hence permissible) for a physician to discontinue any treatment upon the request of a competent patient *unless* doing so would conflict with a more stringent obligation, such as the obligation not to intentionally kill a patient.

Adopting that position would have several noteworthy implications. First, there would then be an exception to the common claim that *withdrawing* ongoing life-sustaining treatment is permissible whenever *withholding* initial treatment would be permissible in the same circumstances (Council on Ethical and Judicial Affairs 1992, 2231; 2012, opinion 2.20). After all, with patient consent it is permissible to withhold the treatment provided by an artificial heart (by not implanting the artificial heart). But if DISCONTINUATION is false, then it is not permissible to withdraw that treatment (by deactivating the heart). The relevant difference would be that withholding the implantation of an artificial heart would be *letting die*, while deactivating an artificial heart would be *intentionally killing*.

Rejecting DISCONTINUATION would also result in a new exception to the requirement of obtaining informed consent. With few exceptions, consent must be obtained before treating a competent individual (ibid., opinion 8.08). But if a physician is not permitted to deactivate an artificial heart upon the patient's request, then the physician must continue providing treatment via the artificial heart without consent—not only *without* consent, but *against* the patient's explicit demands.

There would be a striking difference in this regard between the treatment of patients with artificial hearts and the treatment of those with artificial pacemakers (or other cardiac implants). Deactivating the former device kills the patient, while the standard view is that deactivating the

latter merely allows the patient to die (when death in fact ensues). Hence those who accept that standard view and retain PROHIBITION (rejecting DISCONTINUATION) must say that deactivating a pacemaker is permissible but deactivating an artificial heart is not, even when each deactivation would immediately lead to the patient's death. Some will find the case of the artificial heart too similar to that of the pacemaker to allow such disparate judgments. Such individuals may thus be led to accept that it is permissible to intentionally kill a patient in the case of deactivating an artificial heart.

Suppose, then, that we retain DISCONTINUATION and reject PROHIBITION. In that case, opponents of euthanasia could no longer claim that it is categorically unethical to intentionally kill a patient (see, e.g., Rigterink 1984; Gaylin et al. 1988; Kass 1989; Pellegrino 2005; Garcia 2007). For deactivating an artificial heart would be a case where such an action is ethical. Of course, it might be claimed that it is impermissible to intentionally kill a patient *unless* doing so is necessitated by the patient's refusal of treatment.

There is, however, some reason to believe that intentionally killing a patient would be permissible in other circumstances as well. For suppose that a patient does not *refuse* continued treatment, i.e. does not actually withdraw consent to treatment. Suppose instead the patient states that he or she very much *prefers* the artificial heart be deactivated but will not insist on it if the doctor objects. Some will think it permissible for the doctor to provide deactivation in this scenario, at least if the patient has a very poor quality of life and little chance of improvement. Such readers must reject the suggestion that intentionally killing a patient is permissible only when necessitated by the patient's right to refuse treatment.

More generally, such readers should be drawn to the following conclusion. If the

objections to intentionally killing a patient can be outweighed by a patient's *preferences* or *interests* with respect to discontinuing treatment—as opposed to the patient's *right* to discontinue treatment—then presumably those objections can also be outweighed by the preferences or interests of a terminally ill patient who wishes to preclude pain, indignity, or the loss of autonomy. If so, then intentionally killing a patient would be permissible in many cases familiar from the euthanasia debates—not just in the case of deactivating a patient's artificial heart.⁶

CONCLUDING SUMMARY

I have argued that deactivating an artificial heart poses a dilemma: either it is sometimes permissible for a physician to intentionally kill a patient, or it is sometimes impermissible to discontinue treatment upon the request of a competent patient. Whichever horn of the dilemma we choose has significant implications for contemporary medical ethics.

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⁶ To be clear, this is a point about the permissibility of an *individual act* of euthanasia *given specific circumstances* (e.g. unavoidable pain, indignity, or loss of autonomy). It does not address the problems that might arise from permitting euthanasia as a *general practice*. For one thing, a policy permitting euthanasia could lead to euthanasia being performed in circumstances in which it is not permissible.

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