Implanted Medical Devices and End-of-Life Decisions

Draft of work in progress: please do not quote (but feel free to contact me with comments!)

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1. Introduction

It is becoming increasingly common to treat heart disease by surgically implanting devices, such as pacemakers, implantable cardioverter-defibrillators, left ventricular assist devices, and total artificial hearts. These durable circulatory support devices have had the obvious great benefit of prolonging lives. They have also raised a new question about end-of-life care: if competent patients request that physicians participate in the deactivation of these devices, should physicians always comply?

Patients and physicians currently have unsettled attitudes towards this question.[1] This unsettledness contrasts with attitudes toward the cessation of other life-prolonging treatments. There is, for instance, virtually no controversy nowadays about the legitimacy of physician participation in the discontinuation of artificial nutrition and hydration or the use of a ventilator. What explains the comparatively unsettled attitudes toward physician participation in the disconnecting of implanted circulatory devices?

With regard to the deactivation of at least two of these devices — total artificial hearts (TAHs) and left ventricular assist devices (LVADs) — I believe some have found the issue unsettling largely because the prospect of deactivation seems to give rise to a conflict between two deeply entrenched commitments of medical ethics: a commitment to the moral equivalency of withholding and withdrawing life-sustaining treatment, and a commitment to the prohibition on physicians' harming patients. I will examine this seeming conflict and look at different ways of resolving it. I will argue that the moral equivalency of withholding and withdrawing gives us a decisive reason for physicians to participate in the deactivation of a TAH or LVAD when a competent patient requests it, and the prohibition on harming patients does not constitute a reason for physicians not to participate in such deactivation. I will also argue that an understanding of why it is acceptable for physicians to participate in deactivation reveals why physician-assisted death is morally acceptable in some cases.[2]

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[1] See Goldstein, Kapa et al., and Kramer et al.

[2] If physician-assisted death for competent patients is morally acceptable — if it is acceptable for a physician to kill a competent patient when the patient requests it, or for a physician to assist a competent patient in killing herself — then it is hard to see how physician participation in the deactivation of a TAH or LVAD for competent patients could be unacceptable. In section 6, I will be trying to make plausible the converse: that if it is morally acceptable for a physician to participate in the deactivation of a TAH or LVAD for a competent patient, then physician-assisted death should be morally acceptable as well. (In

2. Two commitments of medical ethics

The commitment to the moral equivalency of withholding and withdrawing life-sustaining treatment. There was a time when many people believed that withdrawing life-sustaining treatment was morally more problematic than withholding it. But at least since the 1983 President's Commission on Bioethics, there has been widespread acceptance of the equivalency of withdrawing and withholding. As the President's Commission explains, there is no legal or intrinsic moral difference that would make "stopping a treatment … morally more serious than not starting it" (77). "Whatever considerations justify not starting [a treatment] should justify stopping [it] as well" (Ibid). The President's Commission also contends that policies that demand greater justification for withdrawing than withholding can have significantly deleterious effects on patient care. Such policies can lead to the continuation of harmful treatment beyond the point at which it poses any compensating benefit to the patient. At least as worrisome, such policies can inhibit the initiation of a treatment that could possibly benefit a patient. In the words of the President's Commission, "An even more troubling wrong occurs when a treatment that might save life or improve health is not started because the health care personnel are afraid that they will find it very difficult to stop the treatment if … it proves to be of little benefit and greatly burdens the patient" (75). It is, consequently, now widely accepted that there is an ethical and legal symmetry between justifications for withholding treatment and justifications for withdrawing it.

The moral equivalency of withholding and withdrawing would seem to apply to decisions concerning TAHs and LVADs insofar as the implantation of one of these devices is an instance of the initiation of a treatment. It's perfectly clear that physicians have an ironclad obligation to respect every patient's right to refuse the implantation of a TAH or LVAD, regardless of whether or not the treatment is necessary to sustain life. The moral equivalency of withholding and withdrawing would seem to imply, therefore, that physicians have exactly the same obligation to respect a patient's right to discontinue the treatment constituted by a TAH or LVAD. And respecting such a patient's right to discontinue treatment may very well involve participating in the deactivation of the relevant device and doing what is necessary to help the patient be as pain-free and comfortable as possible.

It might be thought that there is nothing problematic about prohibiting physicians from participating in the deactivation of devices so long as each patient is fully informed of this prohibition prior to the device's implantation. But the 1983 President's Commission's discussion of the equivalency of withholding and withdrawing explains why such a policy could have the undesirable consequence of some patients' not receiving devices even though they might have received great benefit from them. The President's Commission pointed out that when we make it more difficult (or impossible) to justify withdrawal of a treatment, we raise the specter of mandated continuation of a treatment past the point at which the patient

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Gill 2006 and 2011, I have argued for the moral acceptability of physician-assisted death on other grounds.)

believes herself to be benefited by it, which can inhibit the initiation of the treatment in the first place. If, on the other hand, withdrawing and withholding are taken to be morally equivalent, then a treatment can be initiated if there is any reasonable hope that it will benefit the patient, without such a decision's being unduly influenced by the concern that a time may come when the treatment is no longer wanted but cannot be discontinued. By the same reasoning, if we treat implantation and deactivation as morally equivalent, then a device can be implanted so long as there is a chance that it will benefit the patient. The possibility of a future wish to deactivate will not inhibit attempts to procure the possible benefits of implantation.[3]

The commitment to the prohibition on physicians' harming patients. This second commitment is often expressed by the venerable maxim "Primum non nocere," or "Above all, do no harm." And while the moral equivalency of withholding and withdrawing goes back to the 1983 President's Commission, this second commitment is typically thought to go back considerably further — to ancient Greece and "the Hippocratic tradition of medicine of not harming or killing patients" (Rady and Verheijde, 10).[4] To elucidate why it might be thought that deactivating VLADs and TAHs violates this non-harming

[3] But see footnote 18 for a consideration that may justify withholding very expensive or scarce treatments from patients who might choose later to discontinue those treatments.

[4] I think there are at least two features of the ethical prohibition on physicians' harming a patient that make it complicated to apply. First, this prohibition in its simplest form is outdated. In the past it might have made sense for physicians to take a prohibition on harm to forbid any course of action that could make a patient worse off than if she had never been treated by a doctor at all. But because of advances in medical technology, the possibility that a treatment will harm a patient is no longer a decisive reason not to undertake it. This is because doctors now have at their disposal options that both hold out the promise of spectacular improvement and carry with them undeniable risk. If someone has a serious back injury, it might be appropriate to operate even if there is some chance the patient will have less mobility as a result. If someone has cancer, it might be appropriate to treat her with certain therapy even if there is chance that the patient will die sooner as a result. Second, it is unclear how to define "harm." If a competent patient requests that something ought to be done to her, on what basis can we claim that it harms her? If the prohibition on harming is not to collapse into respect for autonomy (which is what would happen if harm is defined by whatever the competent patient wishes for herself), harm must be construed in a way that pulls apart from what a competent patient wishes to happen to her body, and it's far from obvious what the best such construal will be. Nonetheless, despite these difficulties, many people do believe that there is a prohibition on physicians' harming patients, and I think there are some cases in which it seems to make good sense of common and powerful intuitions. The prohibition on harming seems to explain, for instance, why a physician ought not to accede to a patient's request for performance-enhancing steroids or for health-destroying cosmetic surgery or to damage or amputate a healthy leg. My goal is to show that the prohibition on harming, appropriated conceived of, does not constitute a reason to oppose physician participation in the deactivation of TAHs and LVADs and certain cases of physician-assisted death.

commitment, it will be helpful to compare such deactivation to two other cases: withdrawing a ventilator, and stopping the beating of a transplanted (organic) heart.

We do not think of withdrawing a ventilator as a violation of the non-harming commitment because once the ventilator is removed the patient merely returns to her natural or non-treated state. When the patient dies, her death is caused by a pre-existing condition. In contrast, most people believe that stopping the functioning of a transplanted (organic) heart is a violation of the non-harming commitment. A heart transplant is, of course, a treatment that any patient can refuse. But the right to refuse a transplant operation is not taken to imply a right to demand that physicians nullify the effects of that operation at a future date by supplying an injection or pill to stop the transplanted heart from beating. The "withdrawing" of the benefit of a transplanted heart is not taken to be morally equivalent to the "withholding" of an operation to transplant the heart.[5]

One obvious explanation of this difference is that when a person is given a heart transplant her original heart is removed — and while it possible for humans to live without ventilators (the use of which does not involve the removing of the lungs), it is impossible for any human to live without a heart. The process of removing someone's original heart, transplanting a new heart, and then preventing the new heart from functioning will always lead to death.

Imagine that John expresses an interest in crossing an abyss and in response Mary offers to build a span for him. John may have every right to turn down Mary's offer. John may also have the right to refuse to step on the span once Mary has built it. But that does not give John the right, once he is halfway across, to demand that Mary dismantle the span. Similarly, to stop a transplanted heart is not simply to discontinue a treatment and thus return the patient to her natural state. It is not like placing John back onto the side of the abyss from which he started. It is, with absolute certainty, to bring about the patient's death. It is to put the patient in a condition in which the human organism simply cannot survive — like dropping John into the abyss.

Opposition to physician participation in the deactivation of TAHs and LVADs can be fueled by the thought that such deactivation is morally similar to dismantling a span across an abyss when someone is in the middle of it. This moral similarity is easy to see in the case of TAHs. When an artificial heart is surgically implanted the original heart is removed. To deactivate the artificial heart may thus be viewed not simply as an act of withdrawing a medical treatment and returning the patient to her natural state but rather as the final step in a process that will necessarily bring about the death of any human being.

It might not be immediately obvious how this line of thinking leads to opposition to deactivating an LVAD, but the details of how such a device is implanted reveal the connection. The key point is that even though implantation of an LVAD does not involve the removal of the patient's heart, it does alter the patient's physiology in such a way that her heart cannot function properly once the LVAD is deactivated. As Rady and Verheijde

[5] Although in section 6, I will oppose this view of heart transplantation. For a penetrating critique of this construal of the non-harming commitment, see Hopkins.

explain, "Surgical implantation of [an LVAD] permanently alters native structural and functional configuration of the heart, so that spontaneous effective systemic circulation can no longer be maintained if the device is interrupted. Prolonged LVAD support is also associated with irreversible disruption of normal heart valves" (7). Kraemer makes the same point when she writes, "Once an LVAD is implanted in a patient, he or she is not in a 'natural physiological state' any more. Already the *im*plantation of an LVAD has altered the heart's natural condition: in order to fix the LVAD, a physician has to drill a hole in the patient's heart" (145). Similarly, Bramstedt points out that "deactivating a LVAD is similar to turning off a ventilator, while leaving the endotracheal tube in place. This would make spontaneous respiration even more difficult for the patient due to the increased dead space of the tube… Similarly, leaving an implanted and yet unpowered LVAD in place actually impedes the natural heart function" (Bramstedt and Wenger, note 6, pp. 544-48).

Implanting an LVAD and then deactivating it is like Mary's placing John on a boat in the middle of the ocean and then removing the boat. John might not die immediately. But Mary's removal of the boat puts him in imminent danger of drowning, which he was not in in his previous state. Similarly, the process of implanting an LVAD and then deactivating it alters a patient's situation in a way that leads some to hold that the patient's subsequent death is most accurately attributed to the process and not merely to natural causes. For this reason, Kirkpatrick takes implanting and then deactivating an LVAD to violate the non-harming commitment, as such deactivation "can make the person worse" by "worsen[ing] the heart function." As Kirkpatrick sees it, a physician who deactivates an LVAD "is not just stopping something and letting nature take its course. [He's] actually doing harm, potentially" (Kraemer 145). Rady and Verheijde make the same point when they write, "Deactivating an LVAD … introduces a nontherapeutic lethal pathophysiology… We challenge the claim that a patient's death following LVAD … deactivation is a 'natural' death secondary to preexisting heart disease. The lethal pathophysiology in a patient who is dying naturally from heart disease and without an implanted device is different from a patient who dies after deactivating an LVAD" (7).

So that's the apparent conflict in cases in which a patient requests physician participation in the deactivation of a TAH or LVAD: the patient's right to have any treatment withdrawn seems to conflict with a physician's obligation never to cause harm. How might we try to resolve this issue?

3. Bridges and Destinations

One approach to this issue is to distinguish between *bridge treatments* and *destinations therapies*. To conceive of something as a bridge treatment is to think of it not as a permanent solution but as a temporary measure to buy the patient time while a permanent solution is sought. The typical destination for a patient with severe heart disease is an organic heart transplant. But a patient may be in grave danger of dying before she is ready for transplantation and a suitable organ can be procured. A TAH may then be implanted as a *bridge*, a way to keep her going while the measures necessary for transplantation can be completed. An LVAD can

also be implanted as a bridge, when it is thought that the patient will eventually be a suitable candidate for transplantation. Then again, an LVAD can also be implanted as a destination therapy, in cases in which the patient is not deemed suitable for transplantation.[6]

To see how this distinction between bridges and destinations might justify deactivation of a TAH or LVAD, consider the difference between discontinuing an ongoing treatment and reversing the effects of a completed treatment. After you have been successfully treated for a broken leg, it no longer makes sense to speak of withdrawing or discontinuing the treatment. The treatment is finished, over and done with. Your new status quo — your baseline — is now a state in which you do not have the broken leg. To undo the effects of the treatment (to re-break your leg) would be to drop you below your baseline. To drop you below your baseline would be to harm you. And a physician is prohibited from harming you even if you request it. This is why your right to refuse treatment for a broken leg does not imply your right to demand physician participation in re-breaking your leg. Because the treatment is over and done with, re-breaking cannot be an instance of withdrawing treatment. A physician's refusal to re-break does not violate the moral equivalency of withholding and withdrawing, because, since the treatment has been completed, re-breaking is not a case of withdrawing treatment. Similarly, we might think of a heart transplant as a completed treatment, a procedure that is over and done with, a permanent solution, a new status quo.[7] Thus, once the transplantation has been completed, there can be no withdrawing of the treatment because the treatment is no longer ongoing. It might be a bit of a stretch to say that the natural state of the transplant recipient is now that of someone with a fully functioning heart. (Can we say that the result of transplanting one person's heart into another person's body is 'natural'?) But we can say that once the transplantation has been completed, the recipient's baseline — her status quo — now includes having a fully functioning heart. To stop the heart from beating is, therefore, to drop her below her baseline, and to drop a person below her baseline is to harm her, which violates the physician's non-harming commitment. This is in contrast to the withdrawing of a ventilator or the cessation of dialysis. When someone is on a ventilator or dialysis her treatment is ongoing. Her baseline is not recovered health but rather the state she would be in if the treatment in question had never been initiated or were stopped. It thus makes perfect sense to speak of withdrawing the treatments constituted by ventilators or dialysis machines. The moral equivalency of withholding and withdrawing applies to ventilators and dialysis machines in a way it does not apply to fixed legs and transplanted hearts.

This distinction might seem to allow for deactivation of a TAH insofar as a TAH is thought of merely as a bridge to transplantation, and not as a destination. Because a TAH is

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[6] For discussion of the use of LVADs as destinations and bridges, see Dudzinski, Mueller et al., and Patel et al.

[7] For the purposes of this section, when I am trying to explain the opposition to deactivation, I will proceed as though an organic heart transplant is a completed treatment. But in section 6, I will deny exactly this, holding instead that organic heart transplants are continuous treatment.

a bridge, it constitutes an ongoing treatment. But since a TAH is an ongoing treatment, we should take the patient's baseline to be the state she would be in if that treatment had never been initiated or were stopped. To deactivate the TAH, then, is not to harm the patient because it is not to drop the patient below her baseline. To deactivate the TAH is to withdraw a treatment, which calls for a justification that is no different from the justification of the choice not to initiate a treatment in the first place. So while the moral equivalency of withholding and withdrawing does not apply to destinations like heart transplants, it does apply to bridges like TAHs. And while the prohibition against harming patients forbids the stopping of a transplanted organic heart (a destination therapy), it does not attach to the deactivation of a TAH (a bridge treatment).

This way of justifying deactivation does not stand up to scrutiny.

TAHs are currently not approved as destination therapies. A TAH is officially a bridge treatment. But the day is soon coming when TAHs will be destinations. More importantly, the distinction between bridge and destination, when its application to TAHs is examined closely, rings morally hollow. Consider a patient who is implanted with a TAH but is then later deemed an unsuitable candidate for transplantation. It is disingenuous to continue to classify the patient's TAH as a bridge treatment, as it is understood by all that the TAH is going to be the only heart the patient is going to have for the rest of her life. (If it's a bridge, it's a bridge to nowhere.) It seems morally unsupportable, however, to hold that the moment a patient is deemed unsuitable for transplantation her status changes from someone whom a physician should assist in TAH deactivation into someone whom the physician must not assist. The more coherent position is that if a suitable-for-transplant patient has the right for help with deactivation because she has the right to decide whether or not continuing with a treatment is worthwhile to her, then she will retain that right if she becomes unsuitable for transplantation. Indeed, the question of whether continued TAH-treatment is worthwhile would seem to be even more important for the patient to have the right to answer when there is no possibility of transplantation — when it becomes clear that the TAH is not merely a bridge that the patient must put up with for a circumscribed period of time but is as good as it's ever going to get for her. It seems incoherent to hold that deactivating a TAH is permissible when it is a temporary bridge and impermissible when it is a permanent destination.

For the same reasons, it is suspect to deploy the bridge-destination distinction to resolve the issue of deactivating LVADs. Consider a patient who is deemed suitable for transplantation when she is implanted with an LVAD but is at a later point deemed unsuitable. It would be ethically very dubious to hold that the very moment at which it becomes clear that the LVAD is not merely a temporary measure the patient should lose the right to request physician assistance in deactivation. If anything, it seems that the patient's right to decide whether or not to deactivate the LVAD becomes more important the moment it becomes clear that the LVAD is not merely temporary — the moment when it becomes clear that the LVAD is not merely a bridge that the patient must put up with for a circumscribed period of time but is as good as it's ever going to get for her. But if we think

it acceptable to deactivate the LVAD of a patient with no prospect of transplantation, then it seems that coherence demands that we also hold it acceptable to deactivate an LVAD when it is a destination therapy. It seems incoherent to hold that LVADs may not be deactivated when they are thought of as permanent but may be deactivated when they are thought of as temporary.[8]

4. Four distinctions

A number of commentators have identified certain features of TAHs and LVADs that distinguish them from ventilators, feeding tubes, and other life-prolonging technologies, and some seem to think that the presence of these features makes deactivation of TAHs and LVADs impermissible even while it is permissible to discontinue ventilators and feeding tubes. Commentators have identified the following four features that distinguish TAHs and LVADs from other life-sustaining technologies.

1. The devices are *inside* the body, while the other technologies are outside the body.
2. The devices are *fixtures* in the body ("biofixtures") while the other technologies are not.
3. Patients come to identify the devices as *parts of their selves*, while they do not think the same thing about the other technologies.
4. The devices *replace* a body's organic way of performing a function while those other technologies merely regulate the body's way of performing a function.

Each of these proposals has been developed in ways that raise intriguing ideas about how new technologies are challenging traditional views of medicine, health, and self. I submit, however, that none of these distinctions supports the view that physicians ought not to participate in the deactivation of TAHs and LVADs.[9]

It is hard to see why 1 or 2 — the devices being *inside* or *fixtures* of the body — should morally distinguish TAHs and LVADs from ventilators, feeding tubes, and the like.[10] The physical placement of a machine that is delivering a medical treatment has no intrinsic

[8] Others have also argued that we ought not to take into moral account the distinction between bridge treatments and destination therapies. Teuteberg et al. write, "Our data highlight the artificial dichotomy of the currently accepted implant strategies of [bridge treatment] and [destination therapies], which are increasingly less representative of the clinical circumstances in which [a TAH or LVAD] is used… Additionally, we have shown that the initial implant intent is dynamic, with some patients becoming more likely to be transplanted and others becoming less likely to be transplanted or changed to a strategy of [destination] (374). Fang and Stehlik write, "Is it even relevant to have a strategic intent at the time of LVAD implant other than to extend survival and improve quality of life?... The distinction between transplant and nontransplant candidates is arbitrary and poorly defined by hard evidence. The condition, advanced heart failure, is the same; the affected populations are not distinct" (380).

[9] For a searching discussion of the difficulties of trying to apply these distinctions in medical contexts, see Jansen.

[10] For discussion of the wyas in which our judgments can be affected by a medical technology's "aesthetic" appearance, see Hopkins 36.

moral importance. The moral principles that are crucial to the question before us are the principle that a patient should have the right to decide what treatments are performed on her own body and the principle that a physician ought not participate in the harming of a patient. Physical placement on its own doesn't tell us how to apply these values or balance them when they seem to come into conflict. My hunch is that the distinctions described by 1 and 2 will eventually be viewed in much the same light as we now view the distinction between withdrawing ventilators and withdrawing feeding tubes. There was a time when many people thought that it was morally permissible to withdraw life-sustaining ventilators but morally impermissible to withdraw life-sustaining feeding tubes. Since the 1980s, however, it has become widely accepted that the differences between ventilators and feeding tubes are irrelevant to the moral question of whether a patient has the right to request physician participation in the withdraw of treatment. There are certainly physical differences between ventilators and feeding tubes, but we no longer take those physical differences on their own to cut any moral ice. Similarly, I believe, once we become more accustomed to the technologies that are currently new to us, we will come to think of the mere physical differences between internal or fixed devices and external or removable devices as on their own morally insignificant.[11]

It is plausible that 3 — conceiving of devices as *part of one's self* — can influence a patient's decision about whether or not to request deactivation. But once again I don't see how it bears on the moral question of the permissibility of physician participation in deactivation.[12] If a patient conceives of a device as part of her self, she may be less likely to request deactivation. It seems very unlikely, however, that every patient will view a device as being as part of her self in exactly the same way as every other patient. More plausible is that there will be variation, with some patients conceiving of devices as more integral and other patients conceiving of them as less. And I cannot see how it could be that any policy concerning physicians' obligations should track those thoughts of the patients. If it's unacceptable for a physician to participate in deactivation, then a patient's contention that the device is not part of her self seems morally irrelevant. Some people may come to think of one of their limbs as being a foreign body, not part of themselves, but that does not imply that it is acceptable for physicians to accede to their request for amputation. Conversely, if it is acceptable for a physician to accede to a request for deactivation, then the fact that other patients identify a device as part of their selves is simply beside the point. We can imagine a patient with a cancerous leg who identifies so completely with her limbs that she refuses amputation, but that has absolutely no implication for whether or not a physician ought to accede to the request of another patient to have her cancerous leg amputated. The question of the extent to which individuals might end up identifying with machines implanted in their bodies is a fascinating one. I just don't see how it bears on the question of what policy physicians ought to follow with regard to deactivation.

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[11] For insightful discussion of this kind of view, see Paola and Walker.
[12] See England et al., Kraemer, and Simon.

Those who find distinction 4 compelling claim that it is permissible to discontinue a technology that *regulates* the body's performance of a function but impermissible to discontinue a technology that *replaces* an essential feature of the body.[13] On this way of thinking, it is permissible to discontinue the merely regulative technologies of a ventilator or dialysis machine, but impermissible to discontinue the replacement technologies of a transplanted organic heart. It is problematic, however, to use this distinction to oppose deactivation of a TAH or LVAD. A plausible case can be made that organic heart transplants are *more* of a regulative technology than TAHs and LVADs. Rady and Verheijde write, "[A] transplanted heart is immunologically incompatible and the recipient is dependent on regular intake of immunosuppressive medication and expert supervision to prevent biological rejection, making it less likely that the criteria of a replacement treatment have been met… In contrast, an implanted LVAD/TAH is immunologically compatible, physically integrated in the body, capable of intrinsically responding to the changing body demands" (6). But the advocates of the distinction between regulation and replacement do not intend to show that it is *more* permissible to discontinue the functioning of a transplanted organic heart then to deactivate a TAH or LVAD. Indeed, Sulmasy, who has done the most to develop the regulation-replacement distinction, is coauthor of an article that argues that LVADs should not be thought of as replacement therapies because they do not respond "to the host's physiologic changes" and are not "independent of external energy sources and the control of an expert" (Mueller et al.).

It is unclear, moreover, how strong the general distinction between regulation and replacement even is. Dialysis is taken to be an uncontroversial case of regulation, not replacement. But if a person's kidneys are truly non-functional, and if a dialysis machine is performing the function of removing waste from the blood, then it is difficult to see what principled reason there can be for classifying dialysis as merely regulative. It's true that the dialysis machine is outside the body, unlike an organic heart transplant. But the inside-outside distinction is different from the regulative-replacement distinction. When pressed, the latter distinction is not supposed to collapse into the former.

I suspect that some judgments of the impermissibility of deactivation are responsive to a technology's being *both* a replacement *and* inside the body. If a technology is a replacement but outside the body — such as dialysis — then deactivation seems permissible. If a technology is inside the body but regulative — such as a pacemaker — then deactivation seems permissible. But if a technology is both a replacement and inside the body — such as a TAH — then deactivation seems impermissible. However, if something's being inside the body does not on its own impart negative moral weight to its deactivation, and if something's being a replacement does not on its own impart negative moral weight to its deactivation, why should the combination of being a replacement and inside the body impart negative moral weight to a technology's deactivation? That is not a rhetorical question. It can be the case that two features, each of which in isolation imparts no moral weight, can in combination carry a lot of moral weight. But I do not see why we should believe that the

[13] See Kay and Bittner, Simon, Sulmasy, Lampert et al., Zellner et al.

combination of being a replacement and being inside the body is such a case. Until such a case is made, I do not think we have good reason to base opposition to deactivation on that combination.

5. Why physician deactivation does not harm patients

As we saw in section 2, some believe that physician deactivation of a TAH or LVAD is morally impermissible because it constitutes harming a patient. In this section, I will argue that most cases of physician activation do not harm the patient and thus are morally permissible.

Here is Rady and Verheijde's way of putting this opposition to deactivation: "Deactivating an LVAD or TAH introduces a nontherapeutic lethal pathophysiology related to device type and implantation surgical procedure. Surgical implantation of durable MCS [mechanical circulatory support] devices permanently alters native structural and functional configuration of the heart, so that spontaneous effective systemic circulation can no longer be maintained if the device is interrupted. Prolonged LVAD support is also associated with irreversible disruption of normal hearth valves (e.g., aortic valve) and introduces new lethal pathophysiology upon device deactivation in some patients" (7).[14] It is, however, problematic to characterize the deactivation of an LVAD or TAH as the introduction of a new nontherapeutic, lethal pathophysiology. If a patient's TAH or LVAD is deactivated, she will die very quickly. But the quickness of her death cannot be the reason for the impermissibility of deactivation. Some patients will die very quickly if they are taken off a ventilator but that is not taken to imply the impermissibility of ventilator discontinuation. The claim we are examining is that what makes deactivation impermissible is that it, unlike the withdrawal of a ventilator, harms a patient because it "introduces new nontherapeutic lethal pathophysiology." The problem comes in thinking of deactivation of a device that is already implanted in a patient as the "introduction" of something "new."

Typically, we say Person A *introduces* something *new* to Person B only if A brings B into contact with something B previously did not have contact with. A TAH or LVAD that would be deactivated is already inside the patient. So in what sense would the physician's deactivation be the introduction to the patient of something new?[15]

[14] See also Wu.

[15] One could argue that because deactivation leads to patient's death, and the patient's death is a new state, deactivation does introduce something new — the state of death of the patient. The problem with this argument is that it turns "the introduction of something new" into too wide a notion to do the work of morally distinguishing between deactivation of a TAH or LVAD, on the one hand, and the withdraw of a ventilator, on the other. If we take the state that follows from any action to be something new that that action has introduced, then the withdrawal of a ventilator from a ventilator-dependent patient will introduce the state of the patient's death. But it is a fixed point in this discussion that it is not wrong for a physician to participate in the withdrawal of a ventilator. So those who want to hold that there is something wrong with deactivation but not with withdrawal of a

Neither implantation nor deactivation considered on its own can sensibly be described as the "introduction of a new nontherapeutic lethal pathophysiology." Implantation on its own is neither lethal nor nontherapeutic. Deactivation is not the introduction of something new. But the combination of implantation and deactivation is lethal: a person cannot long survive if she is implanted with a TAH or LVAD *and* that device is deactivated. And the combination of implantation and deactivation is the introduction of something new: a person with a TAH or LVAD is not in her natural state but has been significantly altered by medical procedures. So the conduct that constitutes a harmful introduction of something new and lethal must be the combination of the act of implantation and the act of deactivation. The scope of the action under evaluation (i.e., the act that is the introduction of something new and lethal) must include both implantation and deactivation.

On this way of thinking, when a patient whose TAH or LVAD has been deactivated dies, the cause of her death is not the cessation of the patient's natural heart function. The cause of her death is, rather, the combination of acts that include both the alteration of the patient's natural heart function and the stoppage of the functioning of that alteration. The scope of the action that causes her death includes implantation and deactivation. On this way of thinking, as we put it in section 2, a physician who implants and then deactivates a TAH or LVAD is morally similar to someone who builds a bridge over an abyss and then dismantles it while someone is standing in the middle.

This way of arguing for the impermissibility of deactivation — *implantation + deactication = introduction of new nontherapeutic lethal pathophysiology* — is cogent when applied to a certain kind of case. But it is not cogent when applied to the majority of cases of deactivation that actually occur.

Here is the kind of case in which it is cogent to base moral opposition to deactivation on the impermissibility of introducing new nontherapeutic lethal pathophysiology. On January 1, a patient with heart disease who without treatment will die in six months is implanted with a TAH or LVAD. On January 14, the patient requests deactivation. Her physicians comply. On January 15, the patient dies. Had the physicians not performed the action whose scope encompasses both implantation and deactivation, the patient would have been alive on January 16. As a result of the physicians' actions, the patient has died earlier than if they and the patient had never interacted.

Here is the kind of case in which it is not cogent to base moral opposition to deactivation on the impermissibility of introducing new nontherapeutic lethal pathophysiology. On January 1, 2014, a patient with heart disease who without treatment will die in six months is implanted with a TAH or LVAD. On January 1, 2015, the patient requests deactivation. Her physicians comply. On January 2, 2015, the patient dies. Had the physicians not performed the action whose scope encompasses both implantation and deactivation, the patient would have died before January 2, 2015. As a result of the

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ventilator cannot construe "the introduction of something new" as widely as the causing of a state.

physicians' actions, the patient has lived longer than if she and the physicians had never interacted.

The difference is obvious. In the first case, the conduct of the physicians that is the object of evaluation (*implantation* + *deactivation*) has shortened life. In the second case, the conduct of the physicians that is the object of evaluation has not shortened life. And it must be the combination of implantation and deactivation that is the object of evaluation, for as we have seen, neither implantation nor deactivation on its own can coherently be characterized as the harmful introduction of a new nontherapeutic lethal pathophysiology. If person A harms the health of person B, then (ceteris paribus) the health of person B will be worse as a result of A's conduct than if A and B had never interacted. In the first case, if the physicians had not interacted with the patient, the patient would have lived longer. Because of the physicians' conduct, the patient has died earlier than she otherwise would have. It is, therefore, cogent to claim that the physicians have harmed the health of the patient in the first case. But in the second case, if the physicians had not interacted with the patient, the patient would have died sooner. How can the physicians' conduct be construed as harming the patient's health when the patient would have died sooner had they and the patient never interacted?

One might object that the argument I've just presented has an absurd implication. Consider the case of a patient whose leg has been so badly damaged on 1 January 2014 that he can no longer walk. On 2 January 2014, a physician performs an operation that fixes the leg. On 1 June 2014, the patient's leg is completely recovered and he can walk normally. On 1 January 2015, the patient requests that the physician damage the leg, and the physician complies. On 2 January 2015, as a result of the physician's action, the leg is damaged badly enough so that the patient has a pronounced limp and needs a cane to walk. It certainly seems that what the physician did on 2 January 2015 harmed the patient's health. But (so this objection goes) my argument implies that there has been no harm, for the combination of the acts of fixing the leg in January 2014 and of damaging the leg in January 2015 leaves the patient's health better than it would have been if he had never interacted with the physician at all. There must be something wrong with my argument, therefore, as it bases judgments about whether a physician physically harms a patient by comparing a patient's health after his interaction with the physician to what the patient's health would have been had he never interacted with the physician.

This objection fails because of a crucial difference between damaging the leg and deactivating a TAH or LVAD.[16] The physician who damages the patient's leg negates a

[16] One could argue that damaging the leg is an act of commission while deactivating a TAH or LVAD is an act of omission. I myself do not want to place moral weight on the commission-omission distinction (a point to which I'll return in section 6). Anyone who does want to rely on that distinction, however, will hold that damaging a healed, perfectly-functioning leg is an act of commission. Anyone who relies on that distinction as it is typically deployed in the context of medical ethics will also hold that discontinuing a ventilator or withdrawing artificial nutrition and hydration is an act of omission. And the act

completed medical treatment while the physician who deactivates a TAH or LVAD discontinues an on-going medical treatment. In the leg-case (as we constructed it), the physician acts on the patient after the patient has been healed. By the time the physician damages the leg, the patient is no longer a patient. When a patient receives a TAH or LVAD, in contrast, she continues to be a patient. It is not the case that someone who is implanted with a TAH or LVAD needs only to be given moderate post-op care and can then be sent on her way. A person with a TAH or LVAD requires continual medical attention. Her way of life is permanently, constantly, profoundly affected. Her treatment is not a discrete event but a persistent condition.

Physicians must respect every fully competent person's decision to refuse any medical treatment. That's because every fully competent person has the inviolable right to determine for herself whether the benefits of a proposed medical treatment are worth the costs. Moreover, patients do not lose the right to determine for themselves whether the benefits of a proposed medical treatment are worth the costs the moment after the treatment has begun. They retain that right — the right to decide whether to submit to any procedure on their own bodies — while the treatment is on-going. Indeed, it may only be after the treatment has begun that they are in the best position to decide whether they wish to submit to it.

Because the treatment constituted by a TAH or LVAD is on-going — because a person with a TAH or LVAD requires continual medical attention, because the treatment constituted by a TAH or LVAD is a persistent condition rather than a discrete event — a patient's decision to deactivate a TAH or LVAD should have the same moral status as a patient's decision not to be implanted with a TAH or LVAD. Physicians should treat a patient who opts for deactivation just as they would a patient who opts not to receive a TAH or LVAD in the first place. The moral equivalency of withholding and withdrawing should

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of deactivating a TAH or LVAD is like discontinuing a ventilator and withdrawing artificial nutrition and hydration, and not like damaging a healed, perfectly-functioning leg. In the case of the ventilator, artificial nutrition and hydration, and the TAH or LVAD, the act in question is the turning-off of an introduced life-sustaining technology. There are differences, of course, between a TAH or LVAD and those other life-sustaining technologies, as we saw in section 4. But those differences do not bear on the question of whether the act of deactivation taken on its own is the stoppage of the functioning of an invasive medical treatment. Now I should point out that Rady and Verheijdge say, "Deactivating a cardiac device is viewed medically and legally as an act of commission rather than an act of omission" (4). But their only support for this claim is a reference to three articles, and none of those articles endorses characterizing the deactivation of MCS as an act of commission. Indeed, as the authors write in one of those articles, "In the context of ethical principles, regardless of the fact that [an MCS][16] is a constitutive therapy without the continued operation of which the patient may not survive, it still represents an artificial life-sustaining treatment that the patient has the right to refuse at any time. Furthermore, established case law holds that patients have the right to refuse or request the withdrawal of any treatment and have repeatedly held that no single treatment holds unique moral status" (Kapa et al).

apply to the implantation and deactivation of TAHs and LVADs. Moreover, the on-going character of TAH- and LVAD-treatment is the fundamental reason deactivation does not violate the prohibition on physicians' physically harming patients.

A treatment harms a patient when it lowers the patient below her baseline. How do we determine a patient's baseline? If a treatment has not yet begun, the patient's baseline is the state she would be in if she never began the treatment at all. If the treatment has been completed, the patient's baseline is the state she is in after the treatment's completion. What if the treatment is on-going, if the patient is in the midst of it? The moral equivalency of withholding and withdrawing — the fundamental ethical mandate to allow every patient to decide for herself whether the benefits of a treatment are worth the costs — requires that we conceive of the baseline in a case of on-going treatment not as the state the patient would be in if she continued with the treatment but rather the state the patient would have been in if the treatment had not been initiated in the first place.

Why hold that the baseline in a case of on-going treatment should be thought of not as the state the patient would be in if she continued with the treatment but rather the state the patient would have been in if the treatment had not been initiated in the first place? Consider the alternative, which is to take the baseline to be the state the patient would be in if she continued treatment. This alternative is unacceptable because it implies that when physicians withdraw a ventilator from a ventilator-dependent patient, they harm the patient (by lowering her below her baseline) and thus are doing something morally impermissible. But it is a fixed point that it is not wrong for physicians to accede a competent patient's request for the withdrawal of a ventilator, even if the patient is ventilator-dependent. The reason it is permissible for physicians to accede to such a request, even though it will lead to the patient's death, is that the treatment constituted by the ventilator is on-going, and every competent patient has the inviolable right not only to refuse but also to discontinue any treatment on her own body.[17]

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[17] Lynn Jansen has raised an interesting objection about the account of a baseline and harming that I use here. On that account, if a treatment is ongoing, then the patient's baseline is the state she would have been in before the treatment began, and thus, physicians harm a patient only if they lower her below the state she was in before treatment began. But imagine that there is a treatment that is necessary to keep a patient alive; if the treatment had not been initiated, the patient would have died. Now imagine that the patient wishes to continue the treatment but that the physician discontinues it, against the patient's wishes, and the patient subsequently dies. It might seem that my account commits us to saying that the physician has not harmed the patient, because the patient is no worse off than she would have been if the treatment had not been started in the first place. But, so this objection goes, we have the strong intuition that the physician has harmed the patient. I think the best response to this objection is to hold that the wrong the physician has committed is violating the patient's right to determine for herself what happens to her body, not harming the patient's health by lowering her below her baseline. If there is a harm involved, it is not that of lowering the patient's health below her baseline but of failing to respect the patient's wishes about how she wants to be treated. Lynn Jansen has also raised the interesting

The treatment constituted by a TAH or LVAD is persistent, on-going. The baseline in the case of a patient with a TAH or LVAD should therefore be conceived of as the state the patient would have been in had she never been implanted with the device in the first place. So deactivating a TAH or LVAD harms a patient only if lowers her below the state she would have been in if she had never been implanted with the TAH or LVAD in the first place. If as a result of the treatment constituted by a TAH or LVAD a patient has already lived longer than she would have lived without it, then deactivating the TAH or LVAD, even though she will die shortly thereafter, does not lower the patient below her baseline. When physicians participate in deactivating a TAH or LVAD in such cases, they do not harm the patient.

The same point can be put in terms of the scope of the medical action that is the object of evaluation. The moral equivalency of withholding and withdrawing requires that if a treatment is on-going, the scope of the medical action to be evaluated is the set of acts that began with the initiation of the treatment and continue to the present moment. So if the treatment constituted by a TAH or LVAD is persistent and if a patient has lived longer with a TAH or LVAD than she would have done with it, then the medical action that includes deactivation does not lower the patient below her baseline. The medical action that is the objection of evaluation is the one whose scope encompasses both implantation and deactivation, and that action has prolonged the patient's life.

A patient should have the right to decide not merely between the following two options: [1] no treatment and imminent death, and [2] treatment that will prolong life and must continue indefinitely. A patient should also have a third option: [3] treatment that will prolong life but that may be discontinued when the patient wishes. Once you board an airplane, you lose the right to choose for yourself when to end the ride. My point is that the decision to be implanted with a TAH or LVAD should not be like the decision to board an airplane.[18]

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complication that there is often a continuum between a treatment that is on-going and a treatment that is finished, not a clear line. What if the person who has had his leg fixed still needs to rub an ointment in every night for a year, and needs to see the doctor once every six months to get a prescription for the ointment? If the leg is otherwise healthy, it seems incorrect to say that the patient is not physically harmed if the physician re-breaks the leg because the patient is still receiving some care from the physician. But it also seems ad hoc to say that the treatment is *completely* finished. I will proceed as though we are discussing only cases in which we can draw a clean line between on-going and completed treatments. It might be, however, that there is a continuum of harming that tracks the extent to which a medical treatment is on-going: the more significant and life-affecting a treatment is at a particular moment, the less of a harm it is for a physician to return the patient to the state she would have been in if she had never interacted with the physician.

[18] An important issue that I cannot discuss here is the scarcity of resources. The implantation of a TAH or LVAD is an expensive, resource-intensive treatment. In the world of medicine today, there clearly is an obligation to husband our medical resources as efficiently as possible. Might this imply that we develop selection criteria for TAHs and LVADs such that we only implant them in people whom we have compelling reason to

6. Deactivation of TAHs and LVADs and physician-assisted death

Our focus up to now has been the question of whether it is permissible for physicians to participate in the deactivation of TAHs and LVADs. In this final section, I will suggest how the previous points may be extended to the question of the permissibility of physician-assisted death.

Let's start with the case of a person who has received an organic heart transplant. Up to now, we have used the case of a physician who stops the beating of a transplanted organic heart as an example of a violation of the prohibition on physician harming. But in light of our discussion of deactivating TAHs and LVADs, we need to reassess the moral status of a physician's stopping of the beating of a transplanted heart.

Receiving a transplanted heart and being implanted with a TAH or LVAD are similar in this important respect: both treatments are persistent conditions, not discrete events. A transplant recipient does not stop being a patient after the operation any more than someone with TAH or LVAD does. As Rady and Verheijde put, "[A] transplanted heart is immunologically incompatible and the recipient is dependent on regular intake of immunosuppressive medication and expert supervision to prevent biological rejection" (6). Living with a transplanted heart is not like living with a leg that was broken and is now healed. As with a TAH or LVAD, one's life is permanently profoundly affected. Physician participation in the stopping of a transplanted heart need not, consequently, be conceived of as the harming of a patient. If the patient has already lived longer than she would have had she not had the transplant, and if the patient judges that the costs of the transplant are no longer worth the benefits, then physicians who participate in the stopping of the

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believe will continue to live with them for as long as possible? We already have in place such criteria for organ transplantation. Whatever we might think about a person's right to hasten her own death, donated organs are in such short supply that it is widely accepted that we ought to transplant them only in people who will get the most possible life out of them. A patient who is likely to live significantly less time than otherwise equivalent patients, either because her medical prospects are bleaker or because we believe she very well may decide in the near future that she prefers not to live any longer, is less likely to receive a transplanted organ than those others. Should we screen potential TAH and LVAD patients in the same way, so that we do not implant these very expensive devices in people if we suspect that they may later decide that they want the devices deactivated, reserving the devices and the resources needed to develop them for those patients who will use them to live as long as possible? Can we legitimately enforce an informed consent-type contract that the patient signs and that forbids future deactivation? How would this square with the President's Commission's admonition against withholding possibly beneficial treatment because of the specter of future decisions to withdraw? I think these questions are important and that answering them warrants a thorough investigation of its own. I am arguing here that there is nothing intrinsically wrong with physician participation in the deactivation of TAHs and LVADs. But that leaves open the possibility that there are consequentialist considerations and contingent features of resource allocation that imply weighty reasons not to implant these devices in patients whom we have reason to believe will request deactivation.

transplanted heart can be conceived of as respecting the patient's wish to discontinue treatment and not as harming the patient by dropping her below her baseline. The physicians' actions in such a case include in their scope both transplantation of the heart and participation in the stoppage of the heart. And when the physicians' actions are taken to have this scope, they do not harm the patient because they do not lower her below her baseline. Were it not for the physicians' actions, the patient would have died sooner rather than later.

Of course TAHs and LVADs are mechanical while transplanted hearts are organic. But that distinction in material constitution does not imply any moral difference. What matters morally is that the thing is performing a certain function, not how it was made. As Hopkins explains, "What is significant about lungs is not what they are made of, but rather simply their functional role in the development and behavior of the human body. Whether made of synthetic polymers, metal, genetically engineered tissue, or genetically inherited tissue, lungs are significant for what they do — gas exchange — not for some essentialized composition. The same is true for hearts, livers, or any other organ. After all, why does a lung or a heart ever figure as valuable in the first place? … Is it because they are made of biological tissue? ... In fact, the reason hearts and lungs and livers and kidneys are valued and their malfunction met with great concern is not because of what they are made of, but because of what they do… Irrespective of its genesis, developmental history, or molecular structure, any object that performs the same function as a heart, lung, or liver actually is a heart, lung, or liver" (Hopkins 34-5). If a person wishes to continue living, whether one of the organs keeping her alive is composed of organic or inorganic material is morally irrelevant to our obligation to respect her wishes. And if a person wishes to discontinue treatment that is maintaining one of her life-sustaining organs, that organ's material composition is equally morally irrelevant.

One might object that there is another morally crucial respect in which physician participation in deactivating a TAH or LVAD differs from physician participation in the stopping of a transplanted heart: deactivating a TAH or LVAD is an act of omission, while the stopping of a transplanted heart is an act of commission. Of course the question of the viability and relevance of the omission/commission distinction is a massive one, and I do not wish to take on the issue here. But let me briefly sketch why I believe the distinction does not establish a moral difference between physician participation in deactivating a TAH or LVAD and physician participation in the stopping of an organic heart transplant.

Let us say that a TAH or LVAD is implanted in such a way that its operation can be discontinued by pressing a small button on the device itself. The button has become inaccessible from the outside of the patient. But it can be pressed by inserting a needle under the patient's skin, and by the needle's being guided to the button. Let us also say that there is another TAH or LVAD that can be stopped if a certain "chemical button" on it is pushed — i.e., it can be stopped if the patient takes a pill that releases an ingredient that causes the device to cease its operation. Consider as well a third TAH or LVAD that can be stopped only by waving a powerful magnet across the patient's mid-section. These three

types of TAH or LVAD differ from the typical TAH or LVAD in that the typical TAH or LVAD can be stopped by manipulating a bit of machinery outside the patient's skin. But that difference does not have moral significance. If you believe it is morally permissible to discontinue the operation of a TAH or LVAD by pressing a button outside of the patient's body, then you will also accept that it is morally permissible to discontinue its operation by pressing a button underneath the patient's skin, or by activating a chemical button, or by waving a magnet. The mere physical differences between these methods of stopping a TAH or LVAD bear no moral weight. There may be some sense in which using a needle or a pill or a magnet is an act of commission, but whatever sense there may be in that, it does not reverse the moral status of deactivation from permissible to impermissible. But if the change from flipping an external switch to inserting a needle or administering a pill or waving a magnet does not invert the moral status of deactivating a TAH or LVAD, why should the physical characteristics of inserting a needle or administering a pill or waving a magnet make it impermissible to stop the operation of an organic rather than an artificial heart? There may be a sense in which stopping the functioning of a transplanted heart by discontinuing immunosuppressive medication is an act of omission and stopping the functioning of a transplanted heart by inserting a needle or administering a pill or waving a magnet is an act of commission. But if the physical differences between these types of acts have no moral significance in the case of a TAH or LVAD, then this difference should have no moral significance in the case of a transplanted heart either.

If the idea of conceiving of physician participation in the stopping of a transplanted heart as the cessation of treatment and not as the lowering of the patient below her baseline continues to seem counterintuitive, it might be because our thinking is influenced by an antiquated view of medical treatment. On this antiquated view, when a person becomes gravely ill, she is given a treatment that either succeeds or fails. If the treatment succeeds, the patient recovers health and is no longer a patient. If the treatment fails, the patient dies. But in fact heart transplantation, the implantation of TAHs and LVADs, and many other current treatments do not fall into either of these categories. Advances in medical technology have created a new category, that of patients whose continued existence requires persistent medical treatment, patients for whom medical care enables them to live with disease as opposed to either overcoming or succumbing to it. The treatments involved in such persons' care can keep disease at bay but not entirely defeat it. Persistent medical care sustains the patients, but does not cure them. The diseases are parried, not defeated. We can keep the diseases from killing people, but we cannot restore the afflicted to health. The afflicted live with the treatment and the disease. They become persistent patients. Both disease and treatment are ongoing.

We have already discussed how heart transplant recipients and those with TAHs and LVAD fall into this category of persistent patients. There are other examples as well. Consider kidney disease. In the past, those with severely compromised kidney function died in a matter of weeks or months. But now, as a result of the development of dialysis, someone with minimal kidney function can live for many years. But receiving dialysis

several times a week and controlling for the other symptoms of kidney disease significantly alters one's life. These are not merely trivial inconveniences. The way someone with kidney disease lives today is very different from — much more bound up with illness and treatment than — the way anyone lived a hundred years ago. The same is true of the long-term discomfort of someone who has a cancer that cannot be eliminated but can be kept at bay through continual rounds of radiation or chemotherapy. Or of someone with ALS, who has been kept alive much longer than she would have been without medical treatment but who as a result lives with severe respiratory discomfort that ALS patients in the past would never have experienced.

None of this is meant to denigrate the great benefits of the medical advances that have extended life for people with heart disease, ALS, kidney disease, cancer, and the like. They are clearly glorious achievements we should all be grateful for. As a result of these advances, people spend more of their lives being sick, but that is because people now live longer. At the same time, these treatments do result in patients' having deleterious experiences that they would not have had if they had never interacted with physicians at all. Those deleterious experiences are side effects of the treatments, not merely natural aspects of living and dying. When a patient whose life has already been extended asks a physician to help her hasten death in order to eliminate those side effects, she is asking for assistance in acting on her judgment about the balance of costs and benefits of a treatment. She is not asking the physician to lower her below her baseline.

The crucial distinction here is between two types of people who ask physicians for assistance in a course of action that will lead to their death. The first type is not undergoing medical treatment. The second type is undergoing medical treatment, and that treatment has already extended her life beyond the point she would have lived without it. If physicians accede to the request of the first patient it may be correct to characterize what they do as participating in a course of action that physically harms a patient by lowering her below her baseline. But if physicians accede to the request of the second patient, what they are doing is enabling the patient to act on her own judgment of the balance of costs and benefits of continuing a treatment. What they are doing is respecting a right that encompasses the freedom both to refuse to begin any medical treatment and to discontinue any medical treatment that has already begun.

Some current medical treatments for heart disease, cancer, ALS, and the like continue indefinitely. They are not discrete events. The side effects of those treatments continue indefinitely as well. Indeed, even after the physical interventions have been stopped, patients can continue to experience deleterious side effects. Even after the physical interventions have stopped patients can continue to have painful experiences that they would not have had if they had not begun the treatments in the first place. A person facing a situation with this potential outcome should be able to choose between three options: [1] no treatment at all, [2] treatment that continues as long as it is physically possible, and [3] treatment that continues right up to the point at which the patient deems the harms of the side effects no longer worth the benefits of the treatment. To respect a patient's decision to

choose [3], a physician might have to undertake a course of action that involves treating a patient for a time and then participating in a procedure that leads to the patient's hastened death. For in some cases, it is only by physicians' participating in hastening death that deleterious side effects of medically prolonging life can be avoided.

The view I've just sketched has two consequences that are worth underscoring. First, physician-assisted death is morally acceptable for some competent patients but may not be morally acceptable for all competent patients. It is acceptable for a competent patient whose life has been prolonged by treatment that is persistent and has deleterious side-effects, but it may not be acceptable for a competent patient who is not sick. Second, physician-assisted suicide may not always have been morally acceptable but has become so as a result of developments in medical technology. The crucial aspect of these developments is the creation of situations in which we can prolong life but only by having patients submit to persistent medical treatment with deleterious side-effects. Both of these consequences are welcome. What's right for physicians to do for one patient may be wrong for physicians to do for another patient. And changes in technology can create new situations that do not fit neatly into previous moral categories. We cannot decide what to do in situations saturated by new technology simply by applying the moral wisdom of times before that technology existed. The ethics of nuclear weaponry cannot simply be read off the rules of medieval warfare. The ethics of internet privacy and copyright cannot simply be read off rules of book and magazine publication. And the ethics of physician-assisted death for patients whose lives have been prolonged by persistent, invasive, technologically-intensive treatment cannot simply be read off the medical rules from times before those treatments existed.

7. Conclusion

In section 1, I maintained that there is uncertainty about the moral status of physician participation in the deactivation of TAHs and LVADs. In section 2, I tried to make plausible the idea that this uncertainty is due to the apparent conflict between two fundamental principles of medical ethics: the moral equivalency of withholding and withdrawing treatment, and the prohibition on physicians' physically harming patients. In sections 3-5, I argued that in most real-life cases this conflict is only apparent, not real; when physicians participate in the deactivation of a TAH or LVAD in a patient who has already lived longer as a result of being implanted with the device, they are acting in accord with the moral equivalency of withholding and withdrawing and are not violating the prohibition on harming patients (when that prohibition is properly conceived of). In section 6, I pointed to the similarity between TAHs and LVADs and other treatments that prolong life without curing the underlying disease at which they are directed. I argued that when a treatment is a persistent condition (not a discrete event), when that treatment has already prolonged life, and when continued prolongation of life involves more hardship than benefit, physician participation in the hastening of death is morally equivalent to physician participation in the deactivation of a TAH or LVAD. In such cases, physicians respect the moral equivalency of withholding and withdrawing and do not violate the prohibition on harming. This is

because the physicians' actions in such cases have already prolonged the patient's life, and because the hardships the patient is facing are side-effects of medical treatment and not merely natural consequences of the progression of a disease.

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