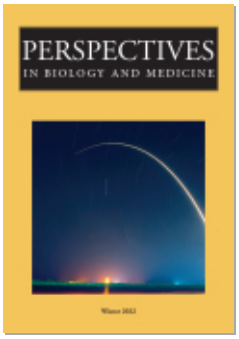
Expanding the Social Status of "Corpse" to the Severely Comatose: *Henry Beecher and the Harvard Brain Death Committee*



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Perspectives in Biology and Medicine, Volume 65, Number 1, Winter 2022, pp. 41-58 (Article)

Published by Johns Hopkins University Press
DOI: *https://doi.org/10.1353/pbm.2022.0002*

Expanding the Social Status of "Corpse" to the Severely Comatose

Henry Beecher and the Harvard Brain Death Committee

Michael Nair-Collins

ABSTRACT This essay examines the development of the seminal report, "A Definition of Irreversible Coma," by the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death in 1968. Detailed examination of original documents archived in the Henry K. Beecher Papers at Harvard's Countway Library reveals a variety of concerns and values at play in the development of the report, along with disagreement on a few key points among Committee members. One important goal of the Committee was to render treatment removal from patients in severe coma mandatory—not merely permissible—and without need for permission or consultation with the patient's family. Protecting and supporting organ transplantation also played a significant role in the Committee's writings and deliberations. Multiple concepts of death and justifications for brain death can be found, most of them inconsistent with each other and offered without a clear rationale. The essay emphasizes what is perhaps the most important aspect of this period in history: this is the moment when, without clear physiologic justification, the social and legal status of "corpse" became compulsorily applied to living human bodies.

The 1950s and 1960s saw the emergence of several disruptive technologies that have played a key role in the development of the concept of "brain

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Perspectives in Biology and Medicine, volume 65, number 1 (winter 2022): 41–58.

death." One example is the positive pressure mechanical ventilator, a descendant of the "iron lung" that was invented in the 1920s for use with patients afflicted with polio. With this technology, physicians could ventilate the lungs of patients with severe lung disease, as well as severe neurological injury or illness. Whereas previously patients who were unable to breathe on their own due to brain injury would have died within minutes, they could now be kept alive for sustained periods of time. Around the same time, modern techniques in organ transplantation were being developed, and early human-to-human renal, hepatic, and cardiac transplants also took place. Finally, the electroencephalogram (EEG), which had been in research use since the 1920s, was beginning to find regular clinical application in a search for clinical signs or correlates of consciousness (Belkin 2003, 2014; De Georgia 2014; Giacomini 1997; Jonsen 1998; Pernick 1999; Stevens 1995).

All of these technologies contributed to a perceived need to address a number of ethical, clinical, and legal questions, including when it would be permissible to remove vital organs for transplant; when it would be permissible to remove life-sustaining treatment from severely comatose patients, with or without consent of the family; whether clinical and electrophysiological criteria could be developed that would predict a coma that was so severe that it was irreversible; and the emerging concept of "brain death."

While several conferences and organizations addressed these and related questions, one of the most influential moments in the development of the concept of brain death was the convening of a small committee at Harvard Medical School in the late 1960s, known as the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death (alternatively, "the Brain Death Committee"). This Committee completed its work with the 1968 publication of a seminal manuscript, "A Definition of Irreversible Coma," in the *Journal of the American Medical Association* (hereafter referred to as "the Report").

The primary purpose of the Report was "to define irreversible coma as a new criterion for death" (337). The reasons a new criterion was needed, according to the Committee, were two. First, patients who suffered such severe brain injury that was thought to result in an irreversibly comatose state created a burden: on hospital resources, on other patients in need of access to hospital care, and on the emotional and financial resources of their families. Second, "obsolete criteria for the definition of death can lead to controversy in obtaining organs [from these severely brain-injured patients] for transplantation" (337).

The Report laid out specific medical criteria that defined the new category of "irreversible coma," or "brain death." In summary, these criteria included no movements or breathing, lack of responsiveness, and lack of specific brainstem reflexes. The use of the EEG was recommended but not mandatory; when it was used, the EEG should be isoelectric, or "flat." In a very brief time, these criteria for irreversible coma came to constitute a new standard of practice for the

determination of death. This new practice standard was not intended to replace the older—and far more common—criterion of irreversible cardiopulmonary arrest as death; instead, it offered a second pathway in which a specific subset of comatose patients—who were not dead under the more common standard of cardiopulmonary arrest (their hearts were still beating)—could nonetheless be declared to be dead by the new criterion, while remaining on mechanical ventilation. Some time later, the Uniform Determination of Death Act (UDDA) was promulgated in the United States, essentially endorsing the core ideas of the Brain Death Committee, and defining death as "the irreversible cessation of circulatory and respiratory functions, or, the irreversible cessation of all functions of the entire brain, including the brainstem" (President's Commission 1981, 2).

The Chair and originator of the Brain Death Committee was anesthesiologist Henry Beecher (1904–1976). Beecher completed his undergraduate medical degree (MD) at Harvard Medical School (HMS) in 1932, followed by graduate medical training with a two-year surgical residency at Massachusetts General Hospital (MGH). In 1936, he was appointed to a faculty position at HMS, where he was charged with developing a research program in Anesthesiology, with a joint appointment as Chief of Anesthesia at MGH. Beecher remained affiliated with HMS through the rest of his career, eventually being named the Henry Isaiah Dorr Professor of Anesthesia Research. He formally retired from Harvard in 1969 (Belkin 2003), though he remained involved in academic activities for several years after his retirement.

In this article, I focus specifically on the development of the landmark report, "A Definition of Irreversible Coma." The methodology is based on close examination of the drafts of the Report, correspondence among Committee members, and other relevant source material preserved in the Henry K. Beecher Papers at the Francis Countway Library of Medicine, Harvard University.[1] Examination of these original sources reveal several concerns, priorities, and values involved in the work of the Brain Death Committee, not all consistent with each other, but which Beecher and the Committee were trying to make fit together in a satisfactory way. Furthermore, the Committee was no monolith: members expressed disagreement on several critical points, and not all members participated equally; however, it appears that Beecher was a strong leader, and the ultimate decision-maker on the wording of the published Report.

[1]Henceforth I cite materials from the Beecher Papers according to Box and folder location.

"PROBLEMS CREATED BY THE HOPELESSLY UNCONSCIOUS PATIENT"

On October 19, 1967, Beecher presented "Ethical Problems Created by the Hopelessly Unconscious Man" to the Standing Committee on Human Studies at HMS.[2] Two months later, prior to the organization of the Brain Death Committee, he delivered the Fifth Bernard Eliasberg Memorial Lecture at Mount Sinai Hospital in New York City, titled "The Right to be Let Alone; The Right to Die: Problems Created by the Hopelessly Unconscious Patient."[3] Material from the Eliasberg Lecture formed one of the core parts of the Committee's Report.

Regarding ethical problems posed by "hopelessly" unconscious patients, Beecher had several concerns and questions. First, when is life support no longer obligatory? Beecher phrased his question thus: "Under what circumstances, if ever, shall extraordinary means of support be terminated, with death to follow?" In another passage he wrote, "When it becomes evident that the brain is dead, there is an obligation to discontinue extraordinary supports."[4]

Beecher posed three further questions: (1) is there adequate evidence now that the "'moment of death' should be advanced to coincide with brain death while the heart continues to beat?"; (2) when is it right to use the organs of a hopelessly unconscious patient for transplantation?; and (3) "Can society afford to discard the tissues and organs of the hopelessly unconscious patient when they could be used to restore the otherwise hopelessly ill but salvageable individual?"[5] Beecher certainly thought that the answer to this last question was no. In a Letter to the Editor of the *New York Times,* dated January 22, 1968, Beecher wrote, as the second of two "major conclusions": "A strong case can be made that Society can ill afford to discard the tissues and organs of hopelessly unconscious patients so greatly needed for study and experimental trial to help those who can be salvaged."[6]

Turning back to the Eliasberg Lecture of December 1967, Beecher discussed what he considered harmful consequences of allocating resources to hopelessly unconscious patients: "It is not, I insist, crass to speak of money in such a situation: Money is human life in a hospital. If we had more money we could save more lives . . . . Are we obliged to treat [a hopelessly unconscious] individual when he can be kept 'alive' only by extraordinary means?"[7] Finally, Beecher spent a comparatively short amount of time in the presentation discussing the nature of death and of life, suggesting that death occurs at several levels (cellular,

[2]Letter from Beecher to Robert Ebert, Oct. 30, 1967, Box 6, folder 17.
[3]Typescript of "The Right to be Let Alone; The Right to Die," Box 13, folder 24.
[4]Typescript of "The Right to be Let Alone; The Right to Die," pp. 7–8, 15, Box 13, folder 24.
[5]Typescript of "The Right to be Let Alone; The Right to Die," p. 8, Box 13, folder 24.
[6]Box 13, folder 14a.
[7]Typescript of "The Right to be Let Alone; The Right to Die," p. 1, Box 13, folder 24.

organ, individual), and that he was concerned with death of the individual. This will be discussed in the following section.

Beecher felt that there was an urgency to addressing the problem of brain death: "The ever-broadening experimentation in the transplantation of tissues and organs has already led to the use of organs of hopelessly unconscious patients while their hearts were still beating. The ethics of this have been questioned. There is, therefore, some urgency to face up to the problems [stated—pencil markup]." Additionally, "The lack of an accepted definition of death handicaps many of the activities within the hospital, cf. the cadaver transplant problem."[8] This urgency would translate to the speed with which the Brain Death Committee did its work, to which we now turn.

"A Definition of Irreversible Coma"

Shortly after his presentation to the Standing Committee on Human Subjects in October 1967, Beecher wrote the Dean of HMS, Robert Ebert, suggesting that a special meeting be called to consider the definition of brain death: "the time has come for further consideration of the definition of brain death . . . . Every major hospital has patients stacked up waiting for suitable donor kidneys. If any group is competent to make a statement concerning brain death as death indeed, I believe the faculty of the Harvard Medical School is better equipped to do this than any other single group."[9] It should be emphasized that the goal Beecher proposed in his letter was not to investigate, evaluate, or decide *whether* "brain death" was death. Instead, the task he proposed for the yet-to-be-formed committee was "to make a statement concerning brain death as death indeed." Beecher's conclusion was reached before the Brain Death Committee was even formed.

Ebert was immediately supportive of the idea, and he assisted Beecher in selecting membership of the Brain Death Committee. In letters of invitation to prospective members, distributed in January and February 1968, Ebert emphasized the importance of brain death to transplantation: "As you are aware, many of the ethical problems associated with transplantation and other developing areas of medicine hinge on appropriate definition [of brain death]." He repeated Beecher's assertion of the unmatched expertise of HMS: "With its pioneering interest in organ transplantation, I believe the faculty of the Harvard Medical School is better equipped to elucidate this area than any other single group."[10]

The roster for the Committee was finalized shortly thereafter. With Beecher as Chair, it included: Raymond Adams (neurologist), Clifford Barger (neurologist), William Curran (health law professor), Derek Denny-Brown (neurologist), Dana

[8]Typescript of "The Right to be Let Alone; The Right to Die," pp. 8, 10, Box 13, folder 24.
[9]Letter from Beecher to Ebert, Oct. 30, 1967, Box 6, folder 17.
[10]Essentially identical invitation letters to Joseph Murray (Jan. 4, 1968) and Ralph Potter (Feb. 2, 1968) are preserved in Box 6, folder 17. The quotes in the text are found in both letters.

L. Farnsworth (psychiatrist), Jordi Folch-Pi (neurologist), Everett Mendelsohn (history professor), John P. Merrill (internist), Joseph Murray (kidney transplant surgeon), Ralph Potter (theology professor), Robert Schwab (neurologist), and William Sweet (neurosurgeon). The Committee met to discuss Beecher's first draft of the report in March 1968 (Belkin 2003). At least five drafts of the report were distributed and commented on by various members of the Committee in the months that followed,[11] with final revisions made by Beecher in response to feedback from Ebert. The finalized manuscript was published in *JAMA* on August 5, 1968. All told, it took a mere six months to produce and publish an extraordinarily ambitious—even audacious—document whose self-proclaimed goal was to redefine death itself: to define "a new criterion for death."

The speed with which the document was produced was deliberate. Curran, Schwab, and Murray all wrote to each other and to Beecher urging all reasonable speed; as Murray put it, "The problem is critically urgent and should be settled shortly."[12]

The basic elements of the early drafts, much but not all of which were retained in the final version, included language from Beecher's Eliasberg Lecture; prior research and publications by Robert Schwab that developed and refined clinical and electroencephalographic criteria for irreversible coma (Belkin 2003); and a review of legal issues regarding death prepared by William Curran, with which I begin.

In a document prepared for Committee discussion, "Some Notes on the Legal Meaning of Death," Curran reviewed relevant cases in the United States and Great Britain and offered a general interpretation of the "state of the law" regarding death—namely, that up to that point courts had uniformly interpreted death as an uncontroversial matter of fact, with no need to make law regarding the definition of death nor to choose between conflicting definitions of death. "We on this committee are thus faced with this legal environment for our work," Curran observed. Immediately following this statement, he wrote: "The question before this committee cannot simply be to define brain death. This would not advance the cause of organ transplantation since it would not cope with the essential issue of when the surgical team is authorized . . . in removing a vital organ (not merely the removal of one of two functioning kidneys, for example)." Furthermore, Curran noted that there were conflicting values involved in preserving the life of a severely comatose patient as opposed to using their organs as a resource to

[11]Memorandum from Beecher to members of the Committee, June 13, 1968, Box, folder 18.

[12]Letter from Murray to Beecher, March 28, 1968, Box 6, folder 21; letter from Beecher to Schwab, March 29, 1968, Box 6, folder 23. In a letter dated March 28, 1968, Curran wrote to Schwab: "I agree fully with your conclusions in your letter of March 25th to Harry Beecher. I hope very much that we can proceed quickly with this Committee . . . . Personally, I am very much concerned with the possibilities of unfortunate and perhaps even dangerous legal action which may be taken if responsible groups do not report within a reasonable time and thus provide grounds for effective action" (Box 6, folder 23).

attempt to save another patient: "The conflicting values here may be the 'vegetable existence' of one person as against the full life of another. The courts may well be willing to find greater value in saving the life of the donee."[13] Most of the basic points of Curran's document were retained in the final draft of the Report. However, the passages quoted just above were removed by the time the drafts had crystallized into the final version.

The discussion of the proper use of the EEG, drawn from Schwab's previously written work, remained largely the same from the early drafts to the final version. By contrast, discussion of clinical criteria underwent several revisions, largely based on feedback from Raymond Adams. This feedback did not change the core content from Schwab's earlier discussion: lack of movement or breathing, lack of reflexes, and unresponsiveness all remained. However, Adams's revised language introduced greater clarity and specificity about how to perform the clinical tests, including greater detail about which reflexes should be tested and how.[14]

Early drafts incorporated language from Beecher's Eliasberg Lecture on the nature of death, though much was eventually removed. For example, the draft of April 11, 1968 includes text regarding the nature of life and death as existing at several levels, which is drawn nearly verbatim from the lecture. Beecher discussed the idea that life and death can occur at the cellular level, at the level of organs, at the individual level, and even at the societal level: [there is] "intellectual death, spiritual death and social death . . . [and] life of the individual as a member of the community." However, for Beecher (at least in this passage), the most important question was one of physiology: "However it is phrased, our basic concern is with the presence or absence of physiological life, especially neurological life."[15] This discussion of different kinds of death, and different levels of life and death, was eventually removed from the final draft.

The justification for considering irreversible coma to be death that remained in the published version is an appeal to differences between "ancient times" and the present (the late 1960s). Specifically, "the criterion of no heart beat as synonymous with death . . . is no longer valid when modern resuscitative and supportive measures are used" and "These improved activities can now restore 'life' as judged by the ancient standards . . . even when there is not the remotest possibility of an individual recovering consciousness following massive brain damage" (Report, 339).

Another part of the Eliasberg Lecture that was used in the Committee's drafts is the discussion of a brief address given by Pope Pius XII in 1957 and published in 1958, "The Prolongation of Life" (Pope Pius XII 2009). In this address, Pius discussed ethical questions regarding end-of-life treatment. In accordance with Catholic tradition, he drew heavily on the distinction between "ordinary" and

[13]Curran, "Some Notes on the Legal Meaning of Death," p. 8, Box 11, folder 18.
[14]Handwritten markups on draft of June 3, 1968, from Raymond Adams to Beecher, Box 6, folder 18.
[15]Draft of April 11, 1968, pp. 3–4, Box 6, folder 19.

"extraordinary" treatment and concluded that ordinary means of preserving life must always be used to save or prolong the patient's life. By contrast, extraordinary means were not always obligatory: when a patient is believed to be hopelessly unconscious, and when only so-called "extraordinary" means are possible to preserve life, it is not obligatory to continue the use of such means. Beecher's discussion of this papal advice remained largely the same from the Eliasberg Lecture to the published version of the Report.

Finally, the Report specified that when a patient met the criteria defining the subset of coma that was identified with "irreversible coma" or "brain death," the views of the family, or the community with which the patient might have identified, were not to be considered. Instead, the physician should inform the family and all participating health-care providers of the patient's condition, declare death, "and *then* [turn] the respirator . . . off. . . . It is unsound and undesirable to force the family to make the decision" (Report, 338, original emphasis).

COMMENTS FROM COMMITTEE MEMBERS AND FROM DEAN EBERT

Comments on developing drafts from members of the Committee, which are preserved as handwritten comments on circulated drafts or as letters written to Beecher, provide further insight into the Committee's deliberations.

I begin with Robert Schwab, the neurologist who wrote most of the language defining clinical and electrophysiologic criteria for irreversible coma. Interestingly, Schwab disagreed with the very core of the project to define brain death "as death indeed." Instead, he was interested in discovering the clinical and electrophysiological criteria that would accurately predict those comatose patients who would not recover to a state of consciousness. In the most compelling evidence of his dissension from the goal of establishing brain death as death, Schwab sent a handwritten note to Beecher, attached to the draft of April 11, 1968:

> It is not necessary to change definition of death or to define Brain Death. If we establish the concept of irrevsable [sic] coma with cessation of function at all levels of the C.N.S., it will not be difficult for those in charge (Doctor or team of doctors) to with-hold or discontinue mechanical, electrical, or pharmacologic aids which then is followed in a minute or two by cessation of the pulse and this is the moment of death.[16]

Schwab also wrote a letter to Beecher in May of that same year, responding to the draft of April 26:

[16]Box 6, folder 23.

> I believe that we are all in agreement at the present time that there is no need to define death but to establish the concept of irreversible coma. If this is established and agreed upon, then the physicians in charge of the patient may withdraw mechanical and pharmacological extraordinary means of maintaining cardiac circulation and allow the heart to stop, which is the moment of death.[17]

Clearly, Schwab did not agree that his criteria for irreversible coma were criteria for death—he said as much, more than once. Instead, he believed that the "moment of death" occurred when the heart stops. On these grounds, Schwab also would not have agreed with the justification for accepting brain death as death that was included in the published version—that "ancient" criteria for death were no longer valid in the context of mechanical ventilation. Quite to the contrary, he stated that the patient died precisely when those "ancient" criteria held, namely, after life-sustaining treatment was stopped, "which then is followed in a minute or two by cessation of the pulse and this is the moment of death."[18] Schwab's disagreements on this core point were not addressed in the published version of the Report, nor in any draft. Nonetheless, he signed on as an author of the Report.

An interesting contrast to Schwab is transplant surgeon Joseph Murray. Murray urged Beecher to drop the term "brain death," and instead use "death." For example, in a March 28 letter, Murray wrote to Beecher, "The term 'brain death' should be eliminated. Death is what we are talking about, and adding the adjective 'brain' implies some restriction on the term as if it were an incomplete type of death."[19] He marked up the draft of April 11, several times crossing off "brain death" and "irreversible coma" and writing "death" in its place, or writing in the margins "delete the adjective [brain]."[20] These proposed changes were not made either.

One section of the April 11 draft stated, "All of the above tests [for determining irreversible coma] are to be repeated 24 or 48 hours later and even 72 hours later." Murray circled "and even 72 hours later" and commented in the margin: "Does this mean we must wait 72 hours?" [21] The published version states, "All of the above tests shall be repeated at least 24 hours later with no change [in the findings]" (Report, 338).

Murray also made a noteworthy comment on a section of the early drafts based on Curran's document. With respect to Curran's language—"The question before this committee cannot be simply to define brain death. This would not advance the cause of organ transplantation"—Murray included a handwritten note to Beecher, as a markup in the margin: "Why not? Once death is defined

[17]Letter from Schwab to Beecher, May 14, 1968, Box 6, folder 23.
[18]Handwritten note on Draft of April 11, 1968, from Schwab to Beecher, Box 6, folder 23.
[19]Letter from Murray to Beecher, March 28, 1968, Box 6, folder 21.
[20]Murray's markup of Draft of April 11, 1968, Box 6, folder 21.
[21]Murray's markup of Draft of April 11, 1968, Box 6, folder 21.

medically, the legal machinery is activated."[22] Hence, Murray thought that once a new definition of death was established within medicine, this would advance the cause of organ transplantation.

Murray believed transplantation and the definition of death were distinct issues. In a letter of October 27, 1967, just prior to the establishment of the Brain Death Committee, Murray wrote to Beecher: "The subject has been thoroughly worked over in the past several years, and by now areas for action are crystallized into two categories. First is the dying patient, and the second, distinct and unrelated, is the need for organs for transplantation." Nonetheless, his focus on organ transplantation remained clear: "The next question posed by your manuscript, namely, 'Can society afford to lose organs that are now being buried?', is the most important one of all."[23]

On the penultimate draft distributed on June 13, 1968, Raymond Adams returned a handwritten note to Beecher: "Dear Harry. This seems alright as it stands. I object to using the need of donor organs as a valid argument for redefining cerebral death. This is another problem though one which is influenced by our definition."[24]

It is interesting to note that two of the more influential and contributory members who were trained in neurology objected in some substantial ways to the developing manuscript. Schwab disagreed that they should redefine death at all; instead, he thought that the criteria that he offered defined irreversible coma, but that death remained what it always was. Adams expressed his disagreement that the need for donor organs should be provided as a justification for establishing criteria for brain death. By contrast, the health law professor, Curran, was quite explicit that their task was to "advance the cause of organ transplantation," and Murray appeared to agree, in part, by noting that developing criteria for brain death would advance the cause of organ transplantation.

John Merrill, an internist and cardiorenal specialist, was quite enthusiastic and supportive. He had one specific suggestion that made its way into the published version: "It might . . . be well to stress the fact that the decision to turn off the respirator should not include an opinion by a member of the transplant team. . . . Although it is not always possible to do this for obvious reasons, it would be ideal."[25]

Everett Mendelsohn, the historian on the Committee, apparently played a less active role than some of the Committee members, as his travel schedule precluded him from participating in some of the meetings. However, he did suggest an edit in the opening paragraph of the penultimate draft, to clarify that tissues

[22]Murray's markup of Draft of April 11, 1968, Box 6, folder 21.
[23]Letter from Murray to Beecher, Oct. 27, 1967, Box 6, folder 21.
[24]Handwritten note from Adams to Beecher on Draft of June 13, 1968, Box 6, folder 18.
[25]Letter from Merill to Beecher, June 5, 1968, Box 6, folder 20; compare with passage in published Report, p. 339.

and organs were needed more generally, and not only from hopelessly comatose individuals. He also noted that one reason in favor of brain death as death "is our recognition of functions which the brain carries out which were not realized . . . at earlier periods of history. We might almost say then that we want to bring our definition of death into line with modern physiology." He was prepared to sign on as an author without seeing the final draft: "I am . . . in enough agreement with the statement as it stands . . . to have my name used in whatever way seems appropriate . . . . I will look forward to seeing the final draft at a later date."[26]

Ralph Potter, theologian on the Committee, also appeared to play less of a role in drafting the manuscript. Like Mendelsohn, his travel schedule interfered with his ability to attend some of the meetings, as he spent May and June 1968 in Moscow and Leningrad. Existing correspondence from Potter in the Beecher Papers mostly consists of his thanking Beecher and expressing enthusiasm for the project, as well as inquiring when final copies of the report will be available for distribution to colleagues.[27]

After five drafts and considering comments and suggested edits from committee members, Beecher finalized the penultimate draft and submitted it to Robert Ebert for final review on June 13, 1968. Ebert was highly supportive and thanked Beecher for his work, suggesting, "It is an excellent report and may well be an historic document for the more precise definition of death. By all means, have it published as soon as possible."[28]

Ebert offered one significant piece of feedback. The penultimate draft (and several earlier drafts) contained the following language: "An issue of secondary but by no means minor importance is that with increased experience . . . in transplantation, there is great need for the tissues and organs of, among others, the patient whose cerebrum has been hopelessly destroyed in order to restore those who are salvageable."[29] Ebert suggested that "the connotation of this statement is unfortunate, for it suggests that you wish to redefine death in order to make viable organs more readily available to persons requiring transplants. Immediately the reader thinks how this principle might be abused." Instead of the statement above, Ebert suggested "Would it not be better to state the problem, and indicate that obsolete criteria for the definition of death can lead to controversy in obtaining organs for transplantation?"[30]

Beecher took Ebert's advice, editing the statement in question to read: "Obsolete criteria for the definition of death can lead to controversy in obtaining organs for transplantation" (Report, 337).

[26]Letter from Mendelsohn to Beecher, June 5, 1968, Box 6, folder 24.
[27]Letters from Potter to Beecher, May 17 and July 8, 1968; Box 6, folder 22.
[28]Letter from Ebert to Beecher, July 1, 1968, Box 6, folder 17.
[29]Draft of June 13, 1968, p. 1, Box 6, folder 18.
[30]Letter from Ebert to Beecher, July 1, 1968, Box 6, folder 17.

FURTHER CORRESPONDENCE

In works and correspondence discussed thus far, Beecher defended brain death as death on a few different grounds, including the idea of death occurring at different levels and that cardiopulmonary arrest is no longer valid in the context of mechanical ventilation. Shortly after the Report's publication, Beecher offered new justifications for brain death. A brief presentation of this is important, to round out the picture of the early development of the concept of brain death from the perspective of Beecher and the Brain Death Committee.

In 1970, the Research Group on Death and Dying of the Institute of Society, Ethics, and Life Sciences was working on an anthology of collected chapters on the theme of "Freedom, Coercion, and the Life Sciences."[31] As a member of this group, Beecher penned a chapter for the anthology titled "Freedom and Coercion Implicit in the New Definition of Death." In it he offered a defense of brain death in terms of personhood, writing that "the basic question" is whether hopelessly comatose patients are still alive. They are not, Beecher wrote, because "the individual's personality, his conscious life, his uniqueness, his capacity for remembering, judging, reasoning, acting, enjoying, worrying, and so on, reside in the brain." Furthermore, "when the brain no longer functions, when it is destroyed, so also is the individual destroyed; he no longer exists as a person: he is dead."[32]

In the same typescript, Beecher also claimed that death is a matter of social choice, one that should be made with a view to consequences for use of hospital resources and in facilitating organ transplantation:

> The choice of the criteria of death is arbitrary: many possibilities for defining death exist. But some choices have much more value than others in terms of consequences, in terms of usefulness. It is therefore important to make a strategic choice. . . . Many other arbitrary choices could be seized upon, but their consequences would not be adequately rewarding. . . . What we want is . . . a decision at no cost to the subject, but one containing rich rewards in terms of life-saving possibilities for others in need of organs.[33]

Beecher had earlier emphasized that death was a matter of physiology, and Curran made it very clear that, in law, death had always been considered a matter of fact, a matter of biology,[34] and one that was not controversial. The shift that Beecher makes here, from approaching death as an uncontroversial matter of fact

[31]Box 16, folder 19.
[32]Beecher, "Freedom and Coercion Implicit in the New Definition of Death" (1970), p. 2, Box 16, folder 19.
[33]Beecher, "Freedom and Coercion Implicit in the New Definition of Death" (1970), pp. 3–4, Box 16, folder 19.
[34]Curran, "Some Notes on the Legal Meaning of Death," March 14, 1968, Box 11, folder 18.

to suggesting it is a matter of social choice to be made in view of which alternative will have more advantageous consequences for facilitating organ transplantation research and for use of hospital resources, is quite dramatic.

Treatment Removal, Organ Transplantation, and Views on Death

The records preserved in the Beecher Papers provide a valuable glimpse into the work of the Brain Death Committee and its chair, Henry Beecher. In examining these records, three themes arise which warrant emphasis or brief interpretive comment: mandatory treatment removal, organ transplantation, and the Committee's views on death.

The withdrawal of treatment played a significant role in Beecher and the Committee's writings and deliberations. Their goal was not merely to establish that withdrawal of treatment, such as mechanical ventilation, should be *permissible* in patients with severe coma: their goal was to render treatment removal *mandatory*, for all patients meeting the new criteria for irreversible coma, unless they were to be organ donors. Input from the family was neither sought nor allowed. In this way, Beecher and the Committee played a significant role in establishing a new medicolegal praxis that might be called a "mandatory death policy": patients meeting the newly codified criteria were required to have mechanical ventilation removed (if they were not to be organ donors), and were thus mandated to become *actually* dead—or at least dead in the usual sense that had long preceded the novel criteria recommended by the Committee.

Beecher frequently appealed to Pope Pius XII as providing justification for his views on treatment withdrawal in severe coma, particularly the claim that ceasing "extraordinary" means of life-sustaining treatment was permissible. However, Pius's writings did not support Beecher's views in the way that Beecher seemed to think they did. In particular, Pius did not claim that it was *obligatory*, only that it was *permissible*, to withdraw extraordinary treatment. Furthermore, the Pope set up the questions he was addressing in terms of cases when *the family* sought the discontinuation of treatment—not whether the physician may unilaterally cease treatment without consulting the family, as the published version of the Report recommends (338).

Pius (2009) asked: "Does the anesthesiologist have the right, or is he bound, in all cases of deep unconsciousness . . . to use modern artificial respiration apparatus, even against the will of the family?" (330). Answering this question, he stated that both doctors and families were obliged to use ordinary means to preserve life. However, "if it appears that the attempt at resuscitation [by which he included mechanical ventilation] constitutes in reality such a burden for the family that one cannot in all conscience impose it upon them . . . [the family] can lawfully insist that the doctor should discontinue these attempts, and the doctor can lawfully

comply" (331). Thus, Pope Pius's advice amounted to the claim that families may insist on withdrawal of treatment, and physicians would not commit a moral violation in complying with this request. This is a far cry from mandatory treatment withdrawal, without permission or even input from the family.

A second key theme is transplantation. Some contemporary scholars question or minimize the role that organ transplantation played in the development of the Report. For example, Belkin (2003) has argued that transplantation was "a distraction and certainly not the central concern of this report" (329, fn. 13). Going even farther, Wijdicks (2017) brazenly claims that "transplantation was not specifically mentioned [in the drafts], and correspondence suggests that there was appropriate sensitivity by the committee not to link this work to transplantation" (10).

Attempts to deny or minimize the role of transplantation in the Brain Death Committee's work distort the historical record. As detailed above, Beecher and the members of the Committee discussed the importance of brain death to organ transplantation many times, and it was a key aspect of their deliberations and developing drafts of the Report. Again, the Committee was not unanimous: Adams thought that the need for organs should not be provided as a reason for defining irreversible coma, while Curran thought that "advancing the cause of organ transplantation" was an important goal of the Committee.[35] Furthermore, while frequently discussing the perceived need for the organs of the "hopelessly" comatose, the Committee also sought to distance itself from transplantation, such as by insisting that transplant professionals should not have a say in the determination of brain death (Report, 339), and in Ebert's feedback that the draft language explicitly discussing the need for the organs of the hopelessly comatose had an unfortunate connotation, suggesting instead a revision to a vague statement that "obsolete criteria" for death could create controversy.[36] Thus, while organ transplantation played a significant role in the Committee's deliberations, it was not the only factor motivating their work, and there was ambiguity in their efforts to embrace and protect transplantation while simultaneously distancing it from the published version of the Report.

Finally, it is of interest that a multitude of justifications for accepting brain death as death, and different concepts of death, can be found in Beecher's and the Committee's papers and correspondence. First, in the 1967 Eliasberg Lecture and in early drafts of the Report, Beecher mentioned that death occurs at different levels, and that he was interested in physiological death: "There is 'physiological' death when the vital activities have ceased; that is, death occurs when integrated tissue and organ functions cease." In this formulation, physiological death involves multiple tissues and organs functioning together in an integrated way;

[35]Handwritten note from Adams to Beecher on draft of June 13, 1968, Box 6, folder 18; Curran, "Some Notes on the Legal Meaning of Death," p. 8, March 14, 1968, Box 11, folder 18.
[36]Letter from Ebert to Beecher, July 1, 1968, Box 6, folder 17.

this level of organization is higher than the level of the functioning of individual organs, including the brain. Beecher continued in the same paragraph: "There is subcellular and cellular life, life of organs, life of the individual. . . . However it is phrased, our basic concern is with the presence or absence of physiological life, especially neurological life."[37] The clause "especially neurological life" in this context refers back to "physiological life," suggesting that neurological life is a form of, or an example of, physiological life, which Beecher just defined in terms of multiple organs and tissues functioning together, not reducible to the functions of an individual organ.

Second, Beecher several times described treatment removal from "brain dead" patients in a way that is inconsistent with conceiving of them as already "dead indeed" while on the ventilator. For example, in a typescript of "The Right to be Let Alone; The Right to Die," Beecher stated that "When it becomes evident that the brain is dead, there is an obligation to discontinue extraordinary supports. But one must remember that the termination of extraordinary care even for just reasons, *with death to ensue*, can have a shocking effect on observers" (emphasis added).[38] If the hopelessly comatose, or brain dead, were "dead indeed," then death could not ensue from the removal of ventilation, as the patient would already be dead.

Third, Beecher argued for a personhood concept of death: brain death is death because the capacities for which consciousness is necessary are lost, thus rendering the *person* (not necessarily the body or organism) no longer living. Fourth, he argued that death is an arbitrary social choice, one that should be made in view of consequences for facilitating transplantation and use of hospital resources.[39]

In the published Report, the Committee justified their new criterion for death based on the idea that the "ancient" criterion of cardiopulmonary arrest was no longer valid in the context of mechanical ventilation (339). However, they offered no justification for why this criterion was no longer valid. Murray thought that "brain death" or "irreversible coma" were inadequate terms to describe the condition they were defining, which is death simpliciter, while Mendelsohn suggested that accepting brain death simply meant updating our concept of death through a consideration of new knowledge in physiology, though he did not elaborate.[40]

Finally, Schwab thought that death occurred at the stoppage of the heart, after mechanical ventilation was removed.[41] Despite the clarity of Schwab's remarks

[37]Draft of April 11, 1968, pp. 3–4, Box 6, folder 19.
[38]Typescript of "The Right to be Let Alone; The Right to Die," p. 15, Box 13, folder 24.
[39]Beecher, "Freedom and Coercion Implicit in the New Definition of Death" (1970), pp. 2–4, Box 16, folder 19.
[40]Letter from Murray to Beecher, March 28, 1968, Box 6, folder 21; Murray's markup of the draft of April 11, 1968, Box 6, folder 21. Letter from Mendelsohn to Beecher, June 5, 1968, Box 6, folder 24.
[41]Handwritten note on Draft of April 11, 1968, from Schwab to Beecher, Box 6, folder 23; letter from Schwab to Beecher, May 14, 1968, Box 6, folder 23.

to Beecher, ambiguity and conceptual inconsistency can be found in Schwab's views as well. In a passage from a draft manuscript reproduced in Belkin (2003), Schwab recalled a patient in 1954 whose breathing had stopped during surgery. An EEG was recorded, showing no electrical activity. "The question was, 'is this patient alive or dead?'" In the absence of reflexes or breathing, and a flat EEG, "we considered that this patient was dead in spite of the presence of an active heart maintaining peripheral circulation. The respirator was turned off and the patient pronounced dead" (Belkin 2003, 333). Of course, it is not possible for this patient to have died twice, as the quote seems to suggest. Perhaps Schwab felt that the patient died while on the ventilator, but legally he could not "pronounce" death until the heart stopped. Either way, the belief that the patient died despite preserved circulation is inconsistent with his views quoted above, that the "moment of death" occurs at the stoppage of the heart. Notably, this case occurred 14 years prior to the publication of the Committee's Report, and it is possible Schwab's views changed.

For a published article in a leading medical journal regarding such an important intellectual and social project, whose primary goal was to propose a new criterion for death, one would think to find a clearly articulated explanation of what death is, why the currently accepted criterion for death is problematic, and a clear justification for accepting the new criterion. Instead, we find among the drafts, correspondence, and published report a wide range of hastily gestured at ideas, usually asserted without a clear rationale, and most of them inconsistent with each other; combined with internal disagreement among some of the Committee members that was not resolved or, apparently, even discussed (at least according to archived correspondence records). And yet, the resulting published manuscript is considered an authoritative statement that irreversible coma is a valid criterion for death.

For Beecher at least, it seems that he had bureaucratic goals—to protect and support transplantation, and to render removal of life support mandatory from a certain subclass of comatose patients—and appealed to whatever arguments or tactics seemed useful, regardless of whether they were consistent with each other, scientifically rigorous, or conceptually sound. As Pernick (1999) puts it, Beecher "focused on the practical problems created by transplant and resuscitation technologies, while he largely ignored the more abstract conceptual uncertainties revealed by these same technologies" (10–11). Yet it is precisely those "abstract conceptual uncertainties," specifically a justifiable scientific understanding of death, that lie at the core of the profound moral and practical difficulties Beecher and colleagues were attempting to address, and which remain to this day.

Conclusion

What does it mean to propose irreversible coma as "a new criterion for death"? Essentially, Beecher and the Brain Death Committee were advocating that *a specific subset of comatose patients*, who were hitherto recognized as alive, should henceforth be treated as if they were dead bodies, as corpses, as cadavers—with no change in their physiology whatsoever. Nothing intrinsic to these patients or their physiological functioning changed, before and after the establishment of a new criterion for death. Instead, this subclass of comatose patients simply became "dead" by redefinition, due to the invention of a new criterion that was intended to address social and legal problems, particularly the perceived need to make treatment removal mandatory for these patients, and to protect and promote organ transplantation.

The project of "redefining death" was supposed to make a series of ethical and legal problems more tractable. Whether it did or did not, this moment in history signaled a profound, and deeply troubling shift in how we relate to each other, especially to those of us who are severely cognitively disabled or near death. Just as importantly, it signaled a profound shift in how we relate to such patients' families, and to their cultural and religious communities. It signaled the moment when the social and legal status of *corpse* became compulsorily applied to living human bodies.

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