

# Wilder Penfield - Bioethicist

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**ABSTRACT:** Bioethics is a new discipline which developed as modern medical and scientific breakthroughs surpassed the ability of traditional medical ethics to contend with unique ethical dilemmas. It evolved into an interdisciplinary discourse regarding the ethical and societal implications of medicine and the biomedical sciences. Wilder Penfield (1891-1976), celebrated neurosurgeon and neuroscientist, is rarely thought of as a “bioethicist,” and his mention in texts on the history of bioethics is little more than a footnote. However, he appears to have contributed to the field of bioethics in a number of ways: through his solutions to the ethical problems posed by the unique form of surgery he developed; through his recognition of the limitations of traditional medical ethics; through his involvement of the public and other disciplines in ethical discussions; and through the impact that his work still has today in the area of bioethics termed “neuroethics.”

**RÉSUMÉ:** Wilder Penfield, bioéthicien. La bioéthique est une nouvelle discipline qui s’est développée alors que les percées dans le domaine médical et scientifique moderne dépassaient la capacité de l’éthique médicale traditionnelle à faire face à des dilemmes éthiques uniques. La bioéthique a évolué vers un discours interdisciplinaire relatif aux implications éthiques et sociétales de la médecine et des sciences biomédicales. Wilder Penfield (1891-1976), un neurochirurgien et un neuroscientifique célèbre, est rarement considéré comme un bioéthicien et la mention de son nom dans les écrits sur l’histoire de la bioéthique se résume à une note en bas de page. Cependant, il semble avoir contribué de plusieurs façons au domaine de la bioéthique : par les solutions qu’il a proposées aux problèmes éthiques particuliers rencontrés dans le type unique de chirurgie qu’il a développé, par sa reconnaissance des limites de l’éthique médicale traditionnelle, par son invitation du public et d’autres disciplines que la sienne à s’impliquer dans les discussions éthiques et par l’impact que son œuvre a encore aujourd’hui en « neuroéthique », une branche de la bioéthique.

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Bioethics is a new discipline which developed as modern medical and scientific breakthroughs surpassed the ability of traditional medical ethics to contend with unique ethical dilemmas. However, the development of bioethics to its current state has involved the “slow accumulation”<sup>1</sup> of public discussion and scholarly literature over several decades. It evolved into an interdisciplinary discourse regarding the ethical and societal implications of medicine and the biomedical sciences. Wilder Penfield (1891-1976), celebrated neurosurgeon and neuroscientist, is rarely thought of as a “bioethicist,” and his mention in texts on the history of bioethics is little more than a footnote.<sup>1</sup> However, he appears to have contributed to the field of bioethics in a number of ways: through his solutions to the ethical problems posed by the unique form of surgery he developed; through his recognition of the limitations of traditional medical ethics; through his involvement of the public and other disciplines in ethical discussions; and through the impact that his work still has today in the area of bioethics termed “neuroethics”. Although Penfield is now a historical figure, he left behind many writings and other records of his work which illustrate his impact on the field of bioethics.

Wilder Penfield worked in a period of extremely rapid scientific growth, both during and after the World Wars. He was

a noted expert in neuroscience, neuropathology, neurology, and neurosurgery, and established the renowned Montreal Neurological Institute (MNI), one of the first institutions worldwide to provide expertise in all aspects of clinical and research-oriented neuroscience. He developed a number of surgical techniques, especially regarding the surgical treatment of epilepsy and cerebral localization. However, his medical and scientific investigations also spurred him to consider the ethical implications of his work.

## A Basis in Traditional Medical Ethics

The basis of Penfield’s ethical thought was clearly grounded in traditional medical ethics. He was influenced by Osler during

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his time at Oxford, and also derived his traditional ethic from the works attributed to Hippocrates and the Hippocratic Oath. He illustrated this influence in his fictional account of Hippocrates, in which he emphasizes the creation of the Oath and the elevation of medicine over other professions.<sup>2</sup> Jonsen postulates that, although the Oath is an example of deontological ethics, the rest of the ethical injunctions in the Hippocratic Corpus are merely examples of good business and deal with “building a reputation as a trustworthy and skilled healer.”<sup>3</sup> Penfield would have disagreed. In his novel, *The Torch*, the fictional Hippocrates states that “In future years the art of medicine will change, but not the need for the oath. Discovery will alter the practice of medicine, but not the oath, for in it there are eternal values that time can never change.”<sup>2</sup> As Kao notes, oaths continue to be an important part of medical education today, although their content has changed.<sup>4</sup> Although historically inaccurate and a work of fiction, Penfield’s novel illustrates his views on medical ethics, specifically the importance of deontological ideals and the Hippocratic Oath, and the written record of his views allows examination by the modern reader. However, in spite of his veneration of the traditional ethics of medicine, Penfield also developed new ethical standards to fit his unique surgical innovations.

### Unique Clinical Dilemmas

Penfield’s work on the surgical treatment of epilepsy built on the developments of others before him, but his new invasive treatments, which affected patients’ ability to think and control their bodies, led to new ethical dilemmas such as patient autonomy in decision making for surgery and the acceptability of risk versus benefit. Pinkus has postulated that examples of early cases in neurosurgery, particularly those of Cushing and Dandy, represent a traditional paternalism with regard to medical decision making based upon the presumed best interest of the patient.<sup>5</sup> Penfield’s approach appears to be different from that of his predecessors in that he often considered the patient’s own goals of treatment,<sup>6</sup> a concept mentioned by Rothman as being revolutionary in the medical field even until the 1970’s and 80’s.<sup>7</sup> Penfield accomplished this through intensive interviewing of his patients, and states in a direct quote from his clinical notes: “Chester Ames wanted to be free of his epilepsy and wanted a stronger right hand so he could milk better.”<sup>6</sup> This recognition of the patient’s autonomy and treatment goals prior to undertaking a new and dangerous form of treatment such as brain surgery seems essential today, but was highly innovative at the time.

His careful clinical assessment did not stop with his preoperative evaluation; meticulous record keeping, post-mortem examinations of patients who died, and hospital stays for weeks after surgery to continue assessment and treatment of complications were commonplace. The careful follow-up allowed Penfield to assess surgical efficacy and complications, and he established this as a standard of care at a time when post-operative follow-up was far from universal.<sup>8</sup> These innovations are taken for granted today, but are necessary for the safe advancement of clinical practice. Fins notes that surgical innovations, such as those developed by Penfield, are developed in the careful balance of what he terms a precautionary principle contrasted with the need for expanding medical knowledge.<sup>9</sup> Penfield appears to have used such a process for surgical

decision making and Fins uses both Penfield and Cushing as examples of this balance.<sup>9</sup>

### An Interdisciplinary Approach

In addition to Penfield’s innovations relating to the ethics of his own clinical practice, he understood the limitations of the traditional approach to medical ethics, and was among the leading clinicians of the time in recognizing the value of interdisciplinary discourse regarding the ethical implications of new medical advancements. An inherent aspect of bioethics is its interdisciplinary nature, in which experts of medicine, science, religion, philosophy, and the social sciences work simultaneously. Penfield recognized early on that his questions regarding the larger meaning of his work were not only a topic for science, but also for religion and philosophy, and he himself has been termed a philosopher because of his active tackling of these issues.<sup>10</sup> He presented his work on the mind and consciousness during an address to the American Philosophical Society in 1973, and later expanded it into a philosophical treatise entitled *The Mystery of the Mind*.<sup>11</sup> In this short work, he explained his thoughts on the mind-brain duality based upon his own clinical observations during surgery.<sup>11</sup>

In bioethics, it has been suggested that a successful interaction between disciplines requires “reciprocal literacy.”<sup>12</sup> Fins makes the point that Penfield possessed such reciprocal literacy and explains that both he and his mentor, Osler, were humanists as well as scientists.<sup>13</sup> Examination of Penfield’s work demonstrates that, not only did he possess such a quality, but advocated its development in others. His book, *The Second Career*, is a collection of speeches and short written pieces produced during what he labels his “second career” as a writer and historian, and he advocates developing a form of reciprocal literacy for all people.<sup>14</sup>

Perhaps because of his ability to cross fields, Penfield recognized a need for the interdisciplinary discussion of ethical issues in medicine, which may represent his key contribution to the new field of bioethics. He participated in a number of conferences exploring the ethical dimensions of medical and scientific progress, which Jonsen asserts “prepared the materials for the emerging bioethics.”<sup>1</sup> One was the Dartmouth Convocation on Great Issues of Conscience in Modern Medicine in 1960, in which Penfield contributed alongside such figures as Aldous Huxley and René Dubos. This, Jonsen believes, represented one of the first attempts at scholarly discussion of the ethical issues surrounding biomedical science.<sup>1</sup> This conference dealt with a number of topics, including pollution and overpopulation.

According to René Dubos, chairman of the conference, the purpose of the conference was to “air problems” rather than solve them.<sup>15</sup> However, of the solutions proposed, none seemed to point to the interdisciplinary discourse of bioethics except for that of Penfield. In his address, Penfield touched upon the ethics of science and control of the mind. In a direct quote from his address, he noted that “the code of medical ethics and the conscience thus created is not enough to guide the race of man, now moving so swiftly in the stream of social evolution.”<sup>16</sup> He realized that science was not able to provide morality, and in fact “philosophical and religious thought has been retarded by the general impression that science had proven something in this

sphere.”<sup>15</sup> He then called for these disciplines to weigh in on important ethical dilemmas raised by scientific advances, recognizing that ethics “comes not merely from the profession but from a more basic source.”<sup>16</sup>

In contrast, solutions proposed by the other speakers to the problems under debate were heavily biased toward their own fields or science in general: René Dubos called for an “economic revolution.”<sup>15</sup> Brock Chisolm, first director of the World Health Organization, identified education and eradication of poverty to be key solutions.<sup>15</sup> Hermann Müller, noted zoologist and geneticist, advocated eugenics to solve many societal problems.<sup>15</sup> Ambassador Chagla, Indian Ambassador to the United States and Mexico, believed population control through contraception to be important.<sup>15</sup> Aldous Huxley advocated a combination of education and population control.<sup>15</sup> Ralph Gerard, behavioral scientist, believed advances in his own field comprised a solution;<sup>15</sup> similarly, Sandor Rado, a psychiatrist, advocated “adaptational psychodynamics.”<sup>15</sup> Of all the speakers, only Wilder Penfield pointed to the need for a discourse such as that of bioethics today. This precedes Jonsen’s explanation of progress in bioethics after the Dartmouth conference: “The more mature bioethics, still a decade in the future, will invite more participants from the humanities, who will employ the methods of the moral sciences to analyze problems and who will be less confident in the ability of scientists to solve the problems of their own making.”<sup>11</sup> This conference, thought to be a turning point in the history of bioethics, demonstrates a defined contribution made by Penfield, which surpasses that of other neurosurgeons of the time as well as thinkers in other disciplines on the topic of ethics and medicine.

Although this conference in particular is mentioned by Jonsen, Rothman, and others in relation to the development of bioethics, Penfield participated in a number of other conferences which were held in the same “decade of conferences.”<sup>1</sup> In 1950, he participated along with several other scientists and philosophers in a BBC program on the “Physical Basis of the Mind.”<sup>6</sup> A year after the Dartmouth conference, he spoke at a symposium in California entitled “Man and Civilizations: Control of the Mind,”<sup>6</sup> and in 1964 participated in a symposium of the Pontifical Academy of Sciences in Vatican City regarding “Brain and Consciousness.”<sup>6</sup> These speaking engagements exploring the ethical issues of science and medicine were of such importance to Penfield that he favored them over medical or scientific ones. He cancelled plans to attend a meeting of the International Neurological Congress to participate in a symposium entitled “Mankind in the Atomic Age.”<sup>6</sup> Although he spoke generally on topics which had bearing upon his own research and practice, his wife Helen wrote that at least one of these addresses was regarding euthanasia.<sup>6</sup> Through his participation in these conferences, he attempted to engage other disciplines in the dilemmas created by medical and scientific advances.

### The Public Intellectual

A further area of emphasis in bioethics is the involvement of the public in bioethical issues, and Penfield seems to have understood its importance as well. Parsi has advocated that bioethicists serve as “public intellectuals” because the questions they address are of “great relevance for the general public.”<sup>17</sup>

Veatch seems to agree, as he states that “society will be the authority that controls and shapes medical ethics.”<sup>16</sup> Being a public intellectual may have come naturally to Penfield as a consequence of his well-known scientific work.<sup>6</sup> Starr notes that in the past, early physicians who were well-respected in their own communities had “broader personal authority” over a variety of issues,<sup>18</sup> and this was true of both Penfield and Cushing. Penfield was both featured in, and contributed to, popular magazines, and traveled the world meeting such figures as Mao Tse-Tung.<sup>6</sup> Although the impetus for such importance was his scientific and medical background, he strove to bring to public attention ethical and societal issues, such as scientific openness with the Allied Forces in World War II and the importance of the family.<sup>6</sup>

In Penfield’s “second career,” he hoped to use his writing as a social critic, with an ambitious goal to “change the course of civilization.”<sup>6</sup> He contributed to public discussion of myriad issues through a number of formats. His book, *The Mystery of the Mind*, was written “in simple style for those of various walks of life.”<sup>11</sup> He expanded his authorship to novels for a popular audience, including two works of historical fiction and a biography, as well as his own autobiography, each with their own ethical message. He gave numerous addresses to colleges and universities, as well as to lay organizations such as the Canadian Club of Montreal, The Women’s Canadian Club, and church groups.<sup>14</sup> The topics about which he chose to speak were of such varied subjects as the history of education, Greek philosophers, creative writing, and learning languages.<sup>14</sup> In his role as a public intellectual he demonstrated a consistent engagement of the public on important issues, both in his home of Montreal and worldwide.

All of these examples illustrate that Wilder Penfield was able to anticipate the need for, and to some extent to fill, the roles which would be later adopted by the bioethicist in the development of the field, while adapting his own ethics to solve the new dilemmas he himself was creating. However, Penfield continues to have lasting influence in the field of bioethics today. Because most of his scientific and medical study, and subsequently his ethical questions, were centered on the neurosciences, the new field of neuroethics in particular continues to be influenced by his work.

### Neuroethics

Neuroethics is considered a subfield of bioethics concerning the ethical issues of manipulating the brain.<sup>19</sup> It deals especially with issues of neuroimaging and deep brain stimulation to alter or enhance brain function. Penfield’s contributions to this area are wide-ranging, the most basic of which stem from his scientific breakthroughs and writings concerning philosophy of the mind. His treatises on memory and cerebral localization continue to be cited in the field of neuroethics because they form the basis of many new neurosurgical and neuroimaging developments. Furthermore, many of the conferences at which he spoke regarding the mind, or its control by medical practices, reflect debates still ongoing today.

A clinical area still of importance today in the field of neuroethics is that of psychosurgery. Penfield astutely recognized the implications of this form of neurosurgery, which are still under intense debate, but only recently studied in a

systematic fashion.<sup>20,21</sup> He realized that his own work carried a risk of profound changes to the personalities and abilities of his patients. Brenda Milner, a noted experimental psychologist who worked with Penfield notes that she got her first job to study the psychological effects of Penfield's surgery at the MNI after two of his patients developed memory deficits post-operatively.<sup>8</sup> She notes that, after two of these instances, Penfield told her, "You have to come to the Neuro, we need you!"<sup>8</sup> Furthermore, the intentional surgical alteration of personality or the individual psychology of a patient was unacceptable to Penfield, who never pursued this area in spite of his generally aggressive surgical treatments, even though these procedures were widely performed by such figures as William Scoville and Walter Freeman.<sup>6,8</sup> In a conversation with Freeman, the prolific lobotomist, Penfield asked, "Don't you realize that you're doing a very dangerous thing?"<sup>6</sup> Penfield's grandson remarked in his biography of Penfield, "Something Hidden", that he "was fundamentally opposed to altering the functioning of a physically healthy brain, whether it was the brain of a child molester or mass murderer. Surgery of the brain was... a cure, not a punishment."<sup>6</sup> Although Levine has stated that the debates on psychosurgery "have been resolved and that infamous procedure ceased to be performed,"<sup>22</sup> new neurosurgical procedures for the treatment of severe depression and even overeating have since been developed and are currently under debate.<sup>23</sup>

An important criticism of neuroethics by those within the field as well as in other areas of study is its potential lack of clinical applicability. Recently, in a call to make neuroethics more clinically applicable and open to innovation, Joseph Fins has used Wilder Penfield as an example of achieving an appropriate balance between caution regarding ethical implications and continued medical progress.<sup>19</sup> He states that Penfield's ethic "was a pragmatic one, with experiential and theoretical elements, which advanced, rather than feared, incremental therapeutic engagement."<sup>19</sup> Penfield's involvement in ethical issues may not be just a historical curiosity, but continues to impact the field of bioethics today.

## CONCLUSION

Rothman comments upon the struggle created between doctors and "outsiders" regarding the ability and justification to comment on medical breakthroughs.<sup>7</sup> Penfield's unique methods of investigation into the larger implications of his work, using an interdisciplinary process and inviting public participation, were unusual among surgical specialists of the time. In this, he was in conflict with other contemporary neurosurgeons, who still depended heavily upon traditional medical ethics and claimed supremacy of decision-making. John Shillito, one of Penfield's contemporaries, adhered to the traditional medical ethics on the issue of transplantation, by stating that each doctor should advocate for his patient alone, both transplant recipient and donor respectively, and debate the possible transplantation using a method similar to that of lawyers.<sup>7</sup> Another neurosurgeon, Orlando Andy, claimed the privilege of unilateral responsibility for the decision to perform psychosurgery.<sup>7</sup> Adherence to traditional medical ethics was commonplace and few among surgical specialists welcomed a new approach, making Penfield's openness all the more revolutionary.

Pinkus has used Harvey Cushing and Walter Dandy as illustrations of a "tacit component" of ethics present within the field of neurosurgery during its early development.<sup>5</sup> Clearly both of these founders of neurosurgery had an impact on its ethical as well as its technical advances. However, Wilder Penfield may be unique among early neurosurgeons in that his contributions extended into the nascent field of bioethics. While he never articulated a 'system' of ethics, his own ethical decision making is evident in the careful record keeping of his clinical practice, and in his lasting discussion of ethical issues with other disciplines and the public. Penfield will forever be recognized most prominently for his discoveries in the neurosciences, and he himself expressed concern that his "social-philosopher role had cast a shadow over his reputation as a scientist."<sup>6</sup> However, his forward-thinking approach to the ethical dilemmas in his own practice, his recognition of the limits of traditional medical ethics, and his role as a public intellectual to engage society in the ethical issues which troubled him seem to anticipate the development of bioethics ahead of many other academic figures. Furthermore, his contributions continue to have an impact on neuroethics today, both because of his work regarding the nature of the mind and its alteration by surgical intervention, and through his example of clinical advancement while incorporating a careful assessment of the ethical implications of his work.

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