

# The Moral Tension of the Physician-Scientist

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The place of the physician in Western society has changed remarkably over the last century. The physician has been transformed from a respected and trusted healer of the sick to just another “healthcare provider,” viewed with some suspicion by the government, the insurance industry, hospital administration, and patients alike.<sup>1,3</sup> How did we get here?

The answer is surely complex, but I would argue that physicians themselves are partly responsible. The twentieth century was replete with shocking moral and ethical failures perpetrated by physicians, leading to loss of patient trust and markedly increased oversight and control of the patient-physician relationship by governments, for-profit entities, self-appointed watchdogs, and the like. Implicit in most of these failures is a deep-seated confusion between the role of the physician as healer and the more modern role of the physician as scientist. The current emphasis on evidence-based medicine, with its focus on large-scale clinical trials rather than the individual patient, serves to further increase this confusion.

One useful tool we can use to appraise the differences between the scientist and the healer is to consider the ends or goals that each has in view. The physician, in the Hippocratic tradition of Western medicine, is a healer of the sick. The physician uses a body of knowledge, acquired during a long period of apprenticeship and study, to benefit individual patients under his care. The goal of the Hippocratic physician is the health and welfare of the physician’s individual patient. As is clear from the Hippocratic code, and from later ethical statements such as those of John Gregory in the 1770s,<sup>4</sup> the welfare of the patient should take precedence over all other considerations.

In contradistinction to the ancient role of the physician as healer, the physician-scientist serves the ends of science. In Aristotle’s view, science is a path to immutable, infallible knowledge—to Truth. Though the means employed have differed, this older perception of science changed little through the centuries, extending down to Ernst Mach in the 19<sup>th</sup> century and the logical positivists in the 20<sup>th</sup> century—until recently. Now, most scientists, and nearly all philosophers of science, have abandoned the Aristotelian goal of science. The less grandiose view, which I will take for the purposes of this essay, is that science has two basic ends: to explain, and to make accurate predictions.<sup>5</sup>

These two goals are not directly applicable to medicine; no one will agree that the purpose of medicine is purely to explain disease or to predict its outcome. So then what is the goal or purpose of science in medicine? Medicine, according to the modern scientific view, would be best thought of as an applied science, or scientific methodology and knowledge applied in an attempt to solve a particular set of problems—those having to do with the cure and prevention of disease.

Because of the very nature of scientific inquiry, only very limited types of experiments can be performed on individual patients. In order to advance the science of medicine, most experimentation needs to be performed on groups of patients so that appropriate control groups can be utilized and so that statistical analysis can be performed. Clinical trials are conducted without the intent or expectation of direct benefit to the patients enrolled in such trials, but rather with an expectation of benefit to other, future patients. The goal of the physician, acting as scientist, becomes the increase of the public health. Such an increase may not involve the healing of individual patients. Usually, theories are not devised and experiments are not performed to assist in the cure of a particular patient.

Inherent in the idea of the “science” of medicine is a utilitarian ethic that strives for the greatest good for the greatest number. Implicit in the utilitarian ethic is a violation of the Kantian moral injunction against the use of other persons as means to suit our ends. In order to benefit “society,” or the “public,” or the state, the physician-scientist may need to act in such a way as to harm an individual patient under his care. In other words, a physician who sees himself primarily as a scientist may act in a way directly contrary to his moral duties as a healer. This has in fact happened repeatedly during the last century. It is the failure to recognize the distinctness of these roles, and the contradiction between them, that has led to the great moral failures of modern medicine.

The more sensational examples of reprehensible human medical experimentation performed under the National Socialist regime in Germany, or the Tuskegee syphilis experiments performed in the United States, have attracted the most attention. But even more important is the Beecher exposé of American and British medical research, published in 1966,<sup>6</sup> because it demonstrates the ethical practices of what, at the time, was considered not only perfectly ordinary, but even exemplary medical research. Beecher’s 22 examples demonstrate how pervasive utilitarian thinking had become in the field of medical research

from 1945 to 1965. What is common to all of the examples cited by Beecher is the gross violation of the trust that patients place in their physicians. The patients in these studies were under the impression that they were being treated by a physician-healer, who was concerned primarily with their welfare, whereas in fact, they were the experimental subjects of a physician-scientist, who was perfectly prepared to sacrifice their well-being, if necessary, at the altar of the Greater Good.

The studies listed by Beecher include retarded children who were intentionally infected with hepatitis A, patients whose left atrium was directly punctured during bronchoscopy without their knowledge, and patients who had strain gauges sutured to their left ventricle without their knowledge or consent. These studies were all conducted by physicians who went on to distinguished careers.

While a great many material improvements have been made in the ethical practice of medical research since 1965, the fundamental ethos of human medical research remains unaltered. Utilitarianism remains implicit throughout the medical field, particularly in the fields of epidemiology, public health, and health policy. Even the cost-benefit measures employed in the literature contain hidden, and often questionable, utilitarian assumptions.<sup>7</sup>

In some respects, the modern physician-scientist has come full circle. The more circumscribed Hippocratic role of healer was in contradistinction to role of the pre-Hippocratic physician as priest or shaman, who, in many cultures, is a person of great societal status and power. The shamanic healer, however, serves not only the sick individual, but the society and culture as a whole, and it is from his place as the guardian of the health of the community that he draws his power. The shaman's medicine may not only heal the sick, but may also intentionally kill, if this death is perceived to benefit the community. Many in the world of science are more comfortable as shamans than healers, and we see the public beginning to react to physicians as one would react to the local medicine man—with a combination of need and dread, instead of the comfort and trust that once existed.

Our profession needs a much more explicit understanding of the differences between the two roles, and when it is appropriate to switch from being a healer to being a scientist. While science is used to heal, it is important that the physician not imagine that the ends of science and the ends of the healing art are the same. Often, a physician's actions in a particular case are justified in the physician's mind by a vague sense that he is "doing good"—without reflection on the fact that the actions are not at all good for the patient directly affected by them.

It was not until the Declaration of Helsinki in 1964 that the differences between medical research, which may or may not benefit a patient, and patient care were formally recognized by research institutions, long after the damage to patient trust and the physician's profession had been done. Worse, simple observation suggests that most physicians still do not appreciate the

fundamental difference between our two roles, but blur them together under the "doing good" rubric. For example, most patients entering a clinical trial, despite a rigorous, mandated process of informed consent, retain markedly exaggerated notions that the research being conducted will be of direct benefit to them.<sup>8</sup> In large part, this reflects the great psychological difficulty both physicians and patients have in extracting themselves from the customary therapeutic or healing model of their relationship.

Physicians need to consider more carefully their changed relationship with their patients when they are conducting clinical research. While Miller et al. have discussed the moral conflict that arises between the investigator as clinician and the investigator as scientist,<sup>9</sup> they fail to note that physicians have already begun to think and act outside of the Hippocratic ideal as soon as they begin to consider themselves as investigators. If we have the privilege of teaching medical students or residents, we must strive to teach the importance of the healing paradigm, and must train young physicians to understand clearly when one is operating outside of that paradigm. A good physician-scientist may be able to serve two masters—but cannot serve them both at the same time.

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