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## The ethics of using scientific data obtained by immoral means

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In March 1988, scientists at the Environmental Protection Agency (EPA) reviewed a study on the effects of phosgene gas, a known carcinogen, on humans. The scientists discovered that data in the draft report cited experiments on "prisoners of war." It turned out that these data had come from Nazi experiments on unwilling victims in concentration camps.<sup>1</sup> Twenty-two EPA scientists wrote a letter to the administrator of the EPA, protesting the use of the Nazi data. The letter touched off a dispute among EPA scientists and others both about the ethics of using the results of the Nazi experiments and about the scientific validity and accuracy of the studies.

Judith Bellin, an EPA toxicologist who initiated the protest letter, called the data "valueless" with regard to their scientific quality since the experiments were flawed on several counts. Furthermore, she stated that, "No matter what the quality of the data is, the Nazi experiments were so heinous that the information should not be used."<sup>2</sup> Other scientists at the EPA argued that such data, if scientifically sound and verifiable, should be used if some good to humans can result. The EPA administrator barred the use of the data. He appointed a committee of senior scientists to formulate policy on the agency's future use of scientific data obtained by immoral means.<sup>3</sup>

At about the same time, physiologist Robert Pozos, a renowned expert on hypothermia, then working at the University of Minnesota Medical School in Duluth, was asked to prepare material for his hypothermia research. Included were the results of so-called "terminal experiments" conducted by Dr. Sigmund Rascher at the Dachau concentration camp. The experiments consisted of throwing prisoners into large vats of freezing water until their body temperatures reached 26° C. Vital signs were checked periodically, and if the prisoners did not die, various rewarming techniques were evaluated. Pozos asked the Center for Biomedical Ethics at the University of Minnesota, Dr. Arthur Caplan, Director of the Center for Biomedical

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In one of his infamous experiments, he used injections to try to change eye color from brown to blue to create perfect Aryans. "We have to keep in mind the suffering of these people," said Caplan, "these are the ghosts we have to bear."

The acts of medical experimentation and torture chronicled at the Nuremberg trials had a chilling effect on the world at large and the medical profession in particular. Lifton's<sup>4</sup> recounts in great detail the involvement of German physicians in the torture and killing of thousands of innocent human beings. The Nazis established a program of sterilization and "euthanasia" under which German physicians murdered countless children and adults. These individuals were considered unworthy of life, because they were physically or mentally ill, or socially undesirable (eg, Jews). The Nazi program climaxed at Auschwitz, where doctors chose those who were to die, supervised the killings in the gas chambers, and determined when the victims were dead. Doctors ordered, supervised, and at times carried out the killing of debilitated patients on the medical blocks. At the same time, they kept up a pretense of medical legitimacy by signing false death certificates listing spurious illnesses. Doctors helped determine how many people should be kept alive to fill the slave-labor requirements of the IG Farben enterprise at Auschwitz and gave advice on how to dispose of the enormous numbers of bodies produced by the gas chambers.

At Auschwitz, Jews, Gypsies, and others were sterilized by injection, radiation, or surgery, injected with vaccines made from dental infections, subjected to massive bleedings for blood-group experiments, brainwashed with chemicals, infected with typhus, and exposed to toxic substances. Vivisections were performed and human flesh was used for culture media as well as the making of lampshades and tobacco pouches.

In sum, doctors supervised the entire killing process at Auschwitz from beginning to end. How were physicians, sworn by oath and conviction to ease suffering, transformed from healers to systematic killers? At the Minneapolis conference, Caplan reviewed the moral rationales advanced by Nazi physicians at the Nuremberg trials. He noted that the German physicians who administered the euthanasia program, supervised mass genocide, and conducted brutal experiments on Jews and other groups in concentration camps grounded their actions on utilitarian principles. They maintained that the state was justified in sacrificing the minority to advance the interests of the majority—only those "doomed to die" anyway were selected for research involving lethal experiments.

Dr. Jay Katz, professor of law at Yale University, reviewed the atrocities perpetrated by Nazi scientists in the name of scientific research. He concluded that "the ability to undertake murderous science was grounded in five norms: obedience to authority; a commitment to racial superiority; a concern for the security and well-being of the state in time of war; a belief in the importance of scientific progress; and an ethos of (pseudo-) professionalism that held that patients' interests were best served by trusting their doctors."<sup>5</sup> When the controversy broke over the EPA study, Katz first thought that Nazi data should be used, but after greater consideration, he concluded the opposite.

The most emotional part of the conference concerned

the ethics of using data obtained from experiments on victims from concentration camps. Dr. Robert Pozos (see above) argued that Nazi research on hypothermia, while crude and often fatal, was scientifically sound and the only source of information about exposure to extremely cold temperatures; it should therefore be used. Pozos' position was heatedly and passionately attacked by two survivors of medical experiments at Auschwitz, Eva Kor and Susan Seller Vigorito. Dr. Robert Berger, Professor of Surgery at Harvard University School of Medicine and himself a survivor of the camps, questioned the scientific validity of the Nazi experiments and the claim that they are the sole source of information about exposure to cold temperatures.

No consensus emerged from the conference about the ethics of using Nazi findings. It did become clear, however, that "Nazi data and the claims of Nazi science in areas such as genetics, physiology, pathology, anthropology, and psychiatry have in the past been studied, cited, and absorbed into mainstream science with little comment."<sup>6</sup> The Dachau hypothermia experiments are often cited in the medical literature without comment<sup>6-7</sup> although an occasional article calls them "sordid investigations."<sup>8</sup>

### THE BOSTON UNIVERSITY SCHOOL OF MEDICINE CONFERENCE

On December 4-5, 1989, a conference was presented by the Law, Medicine and Ethics Program of the Boston University Schools of Medicine and Public Health in conjunction with the B'nai B'rith Hillel Foundation at Boston University. Entitled "The Nazi Doctors and the Nuremberg Code: Relevance for Modern Medical Research," the conference reviewed the inhumane Nazi experiments which left thousands of prisoners dead and many others physically and emotionally scarred.

The speakers differed about the ethical principles of the use of data from Nazi medical experiments already known to be in the mainstream. At least 45 articles, mainly on hypothermia which have been published in court documents and German medical journals, and . . . cited in mainly refereed journals.<sup>9</sup> Some researchers wanted to use this data to "salvage some good from the ashes," while at the same time indicating the monstrous manner in which the results were obtained. Others argued that there are no circumstances under which the results should be used since they are untrustworthy and cannot be applied to the general population. They argued further that even if the results were sound, they should not be dignified with scientific respectability because of the heinous manner in which they were obtained.

Conference codirector George Annas, Professor of Health Law at Boston University School of Medicine, said that the issues surrounding the Nazi data are too emotional to be fully resolved, but that "more general issues involving use of unethical research results still apply to the care of dying patients, euthanasia, trials of new drugs for acquired immunodeficiency syndrome, fetal tissue transplantation and genetic engineering."<sup>10</sup> In this regard, Dr. Marcia Angell, executive editor of the *New England Journal of Medicine*, stated that, "Unethical research is undoubtedly still being conducted but results of such studies are not accepted for publication by the

