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# Should the Nazi Research Data Be Cited?

*by Kristine Moe*

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The gruesome medical experiments that Nazi doctors conducted on unconsenting prisoners in concentration camps in World War II are notorious. The revelations at the Nuremberg "doctors' trial" in 1946-47 sparked intensive discussion of how to protect future research subjects from improper and even criminal actions. One tangible

result was the Nuremberg Code, which is one of the major sources of the current federal research regulations in the United States.

Debates have also raged over whether to allow publication of the results of research that have been deemed unethical. Not as much attention, however, has focused on what to do about research, now labeled unethical, that has already been published. Should the work ever be cited?

The issue may strike some as merely an academic exercise, a case of pursuing an argument to a logical but absurd extreme. Yet a research article is only as strong as the data that support it. The long lists of monotonous references at the end of an article generally elicit a dispassionate response. Imagine my consternation, then, when I found in an otherwise conventional 1983 review on hypothermia—the effects of cold on the body—a citation to the Dachau experiments in a Nazi report that had been published in the proceedings on the Nuremberg war trials.

And this is not an isolated instance. At least forty-five research articles published since World War II draw upon data from the Nazi experiments. Most of these articles are in the field of hypothermia research. The articles quote the measurements collected by Nazi doctors when they plunged Dachau prisoners, usually naked, into tanks of ice water and left them for two to five hours to shiver and often die.

The issues surrounding the use of Nazi data are similar to the concerns regarding the original publication of unethical research. The Nazi experiments, however, have already been published in court documents and even some German medical journals. In both published and unpublished cases there are questions of the scientific validity of the data and of the propriety of referring to it. If the experiments were conducted in an unethical manner, can the results be considered reliable? If the results are useful, can we afford to ignore them? Does the use of the data imply an endorsement of the methods by which they were gathered, and provide a justification for further unethical research?

### Is the Conventional Wisdom Wise?

Most people assume that the Nazi experiments were not only criminal and morally repugnant, but that they yielded nothing of scientific value. Brig. Gen. Telford Taylor, chief counsel for the prosecution in the Nuremberg trial, claimed in his opening statement: "These experiments revealed nothing which civilized medicine can use." During the trial, Taylor successfully challenged the Nazis' defense that their actions were scientifically useful. Fifteen of twenty-three defendants were convicted; seven were sentenced to death by hanging, and the others to long prison terms. Most commentators on the Nazi experiments, if they even raised the issue, have echoed or supported Taylor's contention.

This denial of scientific validity to Nazi research may have become entrenched partly to distance the Nazi doctors from postwar researchers, who argued that the medical profession could regulate itself to ensure good science and good ethics without needing participation of government and lay people. The Nazi doctors' failure to do so was an awkward hole in their argument, so researchers willingly agreed with Taylor that the Nazi doctors were simply exceptions, out of the mainstream of science. Now, as it has become more accepted for lay people to participate in medical research review—through regulations, institutional review boards, and other policies—this argument has become less important.

Despite the conventional wisdom, many of the scientists I spoke to regard the Nazi data as useful and necessary to their work. Typical was the comment by John S. Hayward of the University of Victoria in British Columbia, who uses the Nazi measurements of the rate of body cooling in cold water: "I don't want to have to use this data, but there is no other and will be no other in an ethical world. I've rationalized it a little bit. But to not use it would be equally bad. I'm trying to make something constructive out of it. I use it with my guard up, but it's useful."

Much of his hypothermia research involves testing cold-water survival suits that are put on on fishing boats in Canada's frigid ocean waters. He uses the Nazi cooling curves to extrapolate how long the suits would protect people at near-fatal temperatures—information used by search-and-rescue teams to determine the likelihood that a capsized boater is still alive.

Hayward says he wouldn't trust any of the other information from the Nazi hypothermia reports. For example, the Nazis documented the specific temperatures at which the prisoners became unconscious, had irregular heart beats, or died. Those data are not of general value, he says, since they were measurements of emaciated individuals with

little insulating body fat. Even though the specific temperatures are not reliable, Hayward says, the general linear shape of the cooling curve as a person nears death appears to be consistent with the cooling curve at warmer temperatures. Therefore he believes it to be valid.

After the war, Leo Alexander, a major in the US Army Medical Corps, evaluated the Nazi experiments on hypothermia and concluded that the experiments appeared to have been conducted in a reliable manner. He wrote a classified report on the experiments entitled, "The Treatment of Shock from Prolonged Exposure to Cold, Especially in Water," in which he stated that the experiments on humans had been unnecessary since earlier studies with animals showed the same results.[1] He also described Sigmund Rascher, the chief orchestrator of the hypothermia experiments, as a man who "wallowed in blood...and in obscenity." Nonetheless, Alexander declared that most of the Nazi hypothermia data "satisfies all of the criteria of objective and accurate observation and interpretation."

Now a psychiatrist near Boston, Alexander told me recently that scientists using information from the Nazi experiments were "overimpressed with the originality of the research. I've never believed there was any original contribution the Nazis did. If they had never done these experiments, science would be no different today." His report, declassified after the war and now available through the National Archives, has been the source of most of the modern references.

Robert Harnett of Louisiana Technical University, another hypothermia researcher who has cited the Nazi data, admits that they are weak. He uses them only to corroborate more reliable experimental results and case reports of accidental hypothermia.

This grudging acceptance of the usefulness of the Nazi data is countered by a more clear-cut opposition. The Nazi experiments "are such a gross violation of human standards that they are not to be trusted at all," Arnold Relman, editor of the *New England Journal of Medicine*, asserts. That view is echoed by other scientists and Holocaust scholars. "I wouldn't trust the man who produced the data; how can you trust a man who would do that?" said Seymour Siegel, executive director of the US Holocaust Memorial Council. Commenting on the link between bad ethics and bad science, philosopher Allen Buchanan of the University of Arizona said: "I found that in the vast majority of cases [reviewed in five years of work on a human subjects review committee at the University of Minnesota], the experiments that are ethically unsound are also scientifically unsound. Very rarely have I seen an experiment that is very good and valuable that had serious ethical problems. Most of the time if there was an ethical consideration, it could be eliminated without destroying the scientific value."

The debate over the validity of the Nazi research data raises the more general question of what standards a journal ought to apply in judging the ethical acceptability of research. The late Henry K. Beecher argued in a classic article that information obtained in an unethical manner should not be published lest there be "an odor of hypocrisy" in medicine.[2] He drew an analogy between the publication of unethically obtained data and the inadmissibility in court of unconstitutionally obtained evidence (although a recent Supreme Court decision on the "exclusionary rule" weakens that analogy). "Even though suppression of such data (by not publishing it) would constitute a loss to medicine in a specific and localized sense," Beecher wrote, "this loss, it seems, would be far less important than the far reaching moral loss to medicine if the data thus obtained were to be published."

> "The two most important and useful sources of information on lethal limits of hypothermia for unanesthetized man are: first, the literature search by Britton of cases reported to 1930...and, second, the Alexander Report of experiments conducted at Dachau during World War II. The former are cases of accidental exposure to subfreezing air temperatures, suffered predominantly by inebriates, whereas the latter deal with cold-water immersion...."
> Albert H. Hegnauer, *Annals New York Academy of Science*, Sept. 1959, Vol. 80, p. 315-319.

The military officers who decided to declassify Alexander's report apparently thought publication of the Nazi data would have value. The Army and Navy Office of the Publication Board included this statement on the cover of the document: "The Publication Board, in approving and distributing this report, hopes that it will be of direct benefit to US science and industry." The scientific standards of the *New England Journal of Medicine* would prevent citation of the Nazi hypothermia experiments, according to Relman. References must come from peer-reviewed journals; the hypothermia information comes from Alexander's

military report. However, some of the modern references to the Nazi data could escape detection under that rule. Some scientists published information collected second-hand from Alexander's report, by citing other journals that had cited Alexander's directly. For example, Nazi data are included in several citations to the *Journal of the American Medical Association* and the *Annual Review of Physiology*.

Relman's guidelines are further complicated because some of the Nazi experiments were published in German wartime medical journals. These reports concerned the Nazi experiments with typhus and malaria vaccines, in which prisoners were deliberately infected and left untreated to serve as a control group. The journal articles do not say the research was conducted on prisoners, or that the subjects often died. However, at least one of the scientists who used the information in a 1948 article—John P. Fox of the University of Washington—said he suspected the source of the data at the time he used it.

"I was very much interested in it because of the great problem in getting evidence...of the effectiveness of typhus vaccines," Fox recalled. "The information...was later verified by information gathered legitimately. But at the time, it was of some value in reassuring western investigators" [of the vaccines's value].

The camouflaged nature of the German articles is reason enough to be suspicious of citations to any German wartime medical journal, Relman cautions. He adds that even if the references passed scientific standards, his journal's ethical standards would not allow citations to the Nazi work. "Obviously, the Nazi work is notorious; that would concern me. I would allow references to it only if it were an article *about* ethical research," he said. Regarding other unethical research, he said, "I could imagine some extreme hypothetical circumstance in which the information was obtained in ways considered trustworthy, but without attention to all the legal and ethical niceties, and we would not want to throw away the information because it was so valuable. But that would have to be an unusual circumstance. In general, we editors have to be prepared to enforce certain ethical standards."

Robert J. Levine, chairman of the Human Investigation Committee at Yale University School of Medicine, takes a somewhat different view. He declares: "If in the judgement of an editor an article is scientifically sound but ethically questionable, the decision should be to publish the article along with an editorial in which the ethical questions are raised. The author should be notified that this is what is to be done and invited to prepare a rebuttal to be published simultaneously."[3] In Levine's view, the harmful consequences of such an "acceptance" policy would be less than those of a "rejection" policy, which creates the "false illusion that no unethical research is being done."

In fact, many journals have no policy at all regarding the publication of unethical research or the citation of research considered to be unethical. In 1980 Yvonne Brackbill and the late André Hellegers surveyed the editors of major medical journals and found that a majority did not either "instruct reviewing editors to judge manuscripts on the basis of ethics as well as substantive material, methodology, and style" or "require authors to submit evidence of IRB approval along with their manuscripts."[4]

Buchanan says that from a practical standpoint, there would be no easy way to consistently eliminate references to unethical research. "If you exclude from use all the experiments now viewed as unethical, you'd have to tear up half the medical textbooks. There may have to be some kind of concession here to the fact that we are evolving standards of acceptability."

How unethical would research have to be before a person should avoid any reference to it? "Is there some kind of 'line of horribleness' over which you don't cross? I don't think there's any kind of formula you can give," Buchanan said. "Even with the Nazi work, if you came across some experimental data that you thought would save lives right now, then you could say: As a general rule we shouldn't use it, but in this particular case the benefit would be so great, and after all, we're not in any danger at this point of becoming Nazis. You have to look at the data in the political context. In some countries, using that kind of data might be more dangerous than in others."

Another important consideration is the tone in which the unethical work is cited. Some of the modern citations to the Nazi data include comments about the "infamous," "criminal," or "gruesome" experiments. One report describes at length how "(t)hese sordid investigations proved to the satisfaction of the executioners that the best method of resuscitating hypothermia prisoners was by rapid and intensive rewarming."[5]

Most of the articles, however, offer no opinions or qualifiers about the manner in which the information was obtained. They

present straightforward scientific citations. Harnett, for example, directly quotes the Nazi doctors: "The Dachau experiments report: 'A great number of experimental subjects showed profuse oversecretion of mucus, with vesicular foam at the mouth reminiscent of that seen in pulmonary edema.... It had no prognostic significance with regard to the fatal or non-fatal outcome of any one experiment.' "[6]

The lack of moral apology for using the Nazi data is disturbing to many people, such as Ronald Banner of the Jewish Ethical Medical Study Group in Philadelphia. "I'm not against someone citing [the experiments], but I'm chagrined that someone would refer to those experiments without mentioning something about the way the information was gained. It shows a lack of conscience. There are times that something, morally, stinks so bad that you have to hold your nose even while you refer to it," he said.

Harnett explained why he didn't include words of censure in his article. "We concluded we didn't think it was necessary to tell people we don't condone murder as a way to get data. We think it is self-evident to a rational person." Banner counters by saying that an author cannot presume the readers have sensitivity to that issue. "The reason this has to be expressed in the scientific journal is because some people read those journals and nothing else. Scientific journal writing is always so cold and calculated to begin with," he said.

## Salvaging Some Good

Uncritical censorship is not the answer, though. That would raise a regrettable parallel with a tactic of the Nazis themselves. According to the Berlin correspondent for the *Journal of the American Medical Association* in 1939, medical students in Germany were forbidden from citing Jewish sources in their doctoral dissertations unless the citations were "indispensable."

Scientists have learned from other ugly moments in history. Jewish doctors imprisoned within the walls of the Warsaw ghetto in World War II kept extensive clinical notes on how the residents, many of them children, died of starvation. The notes were smuggled out of the ghetto and now are published as a landmark study on hunger disease.[7] The survivors of Hiroshima and Nagasaki provided a tragic opportunity to understand more about radiation sickness.

To justify the use of Nazi data in a research article, I would expect scientists to use the findings only in circumstances where the scientific validity is clear and where there is no alternative source of information. With the volumes of data involved, a layman cannot know what can be considered scientifically valid among all the Nazi experiments. However, the experts in each field should critically evaluate the data before using it.

Apparently, many of the data have not undergone that scrutiny, according to Roger Goodman, editor of the desk diary of the Chief Judge of the Nuremburg "doctors' trial."[8] He wrote in the introduction to the book that he checked with the German archives where the original Nazi reports are kept, and found that the experimental data had not been touched: "Perhaps it was the brutality and horror occasioned by the events surrounding these experiments that precluded their scientific exploitation. For no effort was made in the postwar years to mine the thousands of research findings for the benefit of peacetime medicine."

A decision to use the data should not be made without regret or without acknowledging the incomprehensible horror that produced them. We cannot imply any approval of the methods. Nor, however, should we let the inhumanity of the experiments blind us to the possibility that some good may be salvaged from the ashes.

### REFERENCES


1. **Combined Intelligence Objectives Subcommittee,** *The Treatment of Shock from Prolonged Exposure to Cold, Especially in Water*, Item No. 24, Office of the Publication Board, Department of Commerce, Washington, DC, Report No. 250, 1946.
2. **Henry K. Beecher,** "Ethics and Clinical Research," *New England Journal of Medicine*, Vol. 274 (1966), pp. 1354-60.
3. **Robert J. Levine,** *Ethics and Regulation of Clinical Research* (Baltimore, MD: Urban & Schwarzenberg, 1981), p. 20.
4. **Yvonne Brackbill and André Hellegers,** "Ethics and Editors," *Hastings Center Report*, April 1980, pp. 20-24.
5. **John P. Fernandez, et al.,** "Rapid Active External Rewarming in Accidential Hypothermia," *Journal of the American Medical Association*, 212 (April 6, 1970) 153-56.
6. **Robert M. Harnett, et al.,** "A Review of the Literature Concerning Resuscitation from Hypothermia: Part I—The Problem and General Approaches," *Aviation, Space and Environmental Medicine* 54 (May 1983), 428.
7. **Myron Winick,** ed., *Hunger Disease* (New York: Wiley, 1979).
8. **Walter B. Beals,** *The First German War Crimes Trial* (Salisbury, NC: Documentary Publications, no date).