The Nazi Data Debate:
Historical Discourse and Use of Unethically Obtained Medical Data

By

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# The Nazi Data Debate: 
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INTRODUCTION

“This is the most tremendous thing I have ever gotten into. It is overwhelming; the wealth and importance of the material, from all points of view – medical, historical, psychological – is enormous.”

Leo Alexander, an Austrian Jewish émigré to the United States, wrote to his wife, Phyllis Harrington Alexander, on December 18, 1946 while participating as a medical expert, investigator and consultant at the Nuremberg Trials.

Alexander’s quote introduces important and complex changes that were occurring during the Nuremberg Trials. Writing in the immediate aftermath of World War II and assigned the task of recovering a presenting Nazi medical data to the War Crimes Trials at Nuremberg, Dr. Leo Alexander found himself at the center of the controversies concerning the actions of Nazi doctors, the experiments they performed, and the resulting data. These concerns would become important aspects of understanding and defining medical ethics. Over the course of his involvement, Alexander changed his mind about the acceptability of Nazi data use in medical research, first being in favor of use, later condemning all association and use of the data. Alexander’s struggles exemplify the larger issues and discourse that would become important in the medical ethics in the following decades, continuing into the present. His reports would also prove to be the single greatest source of that data at the center of these discussions.

The atrocities that occurred during the Holocaust, especially involving human experimentation, led to a fundamental shift in the way the world and the medical community thought about medical ethics and experimentation. The Nuremberg Trials occurred from 1946-1947 and focused on the Nazi medical perpetrators. They were an attempt to bring about

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justice, offer some resolution, and find some understanding of how the atrocities could have been allowed. They began the processes moving forward. However, the trials’ scope was limited. The trials did not and could not deal with the products produced from the experiments. The world – and the Western medical community in particular – had to figure out want to do with scientific data generated within the context of such horrific events. In the years that followed Nuremberg, there has been extensive research and writing concerning experimentation using human subjects; from the historical interpretations of its antecedents and the actual acts, to the development of ethical codes and standards in the medical, biomedical, and scientific community. However, less consideration or resolution occurred regarding the products of Nazi research; the medical knowledge and data that resulted from the Nazi human experimentation. Experimentation involving human subjects and the complex ethical dilemmas that surround it are not new to science. The Nazi experimentation is simply the most extreme example because of the stark dichotomies presented: the abhorrent acts that were perpetrated, which can never be justified, and the resulting long, if subtle, life the data has had in subsequent medical research. It is this data, produced during the Nazi hypothermia experience in the Dachau concentration camp, which will be at the center of this thesis.

This thesis will look at Nazi medical data that resulted from human experimentation performed at concentration camps, the ensuing use in citations, and the impact on the medical community after this data and experimentation evidence was released. It will address the following questions: how has the Western medical community incorporated and acknowledged this data in subsequent research; and what has been the discourse in the medical and ethics communities concerning the use of this data?
First, it will be shown that some Nazi data was and is still being cited in medical literature, with various degrees of acknowledgement to the Nazi source. Despite any controversy, Nazi data has and is in fact being cited. Possible explanations for various levels of acknowledgement in citations during different time periods will be given after specific citations are discussed.

Second, this thesis will examine the medical community’s reaction to and use of the data and what has shaped these subsequent debates. This will involve the examination of discourse within the Western medical and ethics communities regarding the use of this data, which will enhance understanding of why there are varying levels of acknowledgment regarding continued citation. Additionally, understanding the discourse surrounding the use of the data can shed light on understanding how the medical community has attempted to interpret and come to terms with what supposed colleagues did during the Holocaust.

The question of whether to use products that came from the Nazi experiments in an attempt to heal others is at the heart of the debate over the use of the data. Can the ends (the data) and the means (the doctors) be separated? The discussion that has surrounded these different but intricately intertwined topics has changed as greater understanding of the Nazi doctors and the power of their data is investigated. Discussion surrounding these topics in the greater medical community helps shed some light onto the aftermath of the Holocaust, and the attempts of a community to make sense of horrific events perpetrated by its own members. The medical community’s reaction to the Nazi doctors and medicine’s role during the Holocaust shaped the debate about the use of the resulting medical data.
Historiographical Background

The data’s existence, the long silence surrounding it, rejuvenation of controversy, and discourse throughout can now be examined by historians; filling gaps in understanding the full and continuing ramifications of human experimentation during the Holocaust. However, since the end of the Nuremberg Trials to the present, there has been little discussion by historians about the medical data that was collected by the Nazis during the Holocaust and spread throughout the medical and scientific world. Until recently, no field had deeply looked at the data, its dissemination, validity, standing or use in current medical research. Beginning in the 1980s there was renewed controversy and discussion in the medical and biomedical ethics fields concerning this issue. These fields have subsequently produced the most literature concerning this topic.

There is a long history of medicine and its practitioners using any means necessary to advance the discipline or explore scientific taboos. The drive to enhance medical knowledge is particularly evident in the controversies and changing norms surrounding experimentation on humans. This practice, in various forms, is probably as old as the field of medicine itself.

Andrew Goliszek highlights in, *In the Name of Science: A History of Secret Programs, Medical Research, and Human Experimentation*, “Although sporadic, vivisection was practiced by the ancient Greeks and Romans to augment their knowledge of science and medicine. In the third century B.C., vivisection was performed on condemned criminals. Persian kings also allowed physicians to experiment on criminals, as did Egyptians who made great advances in
medicine, no doubt because of human experimentation.” In the nineteenth century, body snatchers would steal corpses that were then sold primarily to medical schools for use in learning anatomy or to be used in experiments. Because most of the beneficiaries of this practice were medical students, the unethically obtained knowledge and data gathered from this practice undoubtedly influenced and advanced the field of medicine in general. In the United States throughout the twentieth century, experiments were conducted on humans without their consent or full understanding of the ramifications. The most famous of these is the Tuskegee Syphilis experiments, in which the course of untreated syphilis was tracked in African American men without their full understanding or consent from 1939 to 1972, but there have been many others. Subsequently, the methods of the Tuskegee experiments have been condemned but the data was used. The information gathered in these experiments has influenced and enhanced many other areas of medicine.

While in most cases improved techniques, hindsight, or abhorrence to immoral means has led to the condemnation of these as unethical practices and relegated them to the past, there has been less thought given to the lasting contributions and ramifications that the data resulting from these practices has contributed to the advancement of knowledge and medicine.

One of the most ancient and oft cited ethical standards in medicine is the Hippocratic Oath. While extolling the virtues and standards for doctors to follow, it is a popular

2. Andrew Goliszek, In the Name of Science: A History of Secret Programs, Medical Research, and Human Experimentation. (New York City: St. Martin's Press, 2003), xi.


misconception that the Hippocratic Oath contains the phrase, “First do no harm.”\(^5\) Both ancient and modern versions of the Oath, which many physicians swear (although not required), contain many of the responsibilities and attributes that are ascribed to medicine.\(^6\) However, the understanding of what is harmful, and how to best preserve and enhance life, are still things debated in the medical community. The Hippocratic Oath is the standard by which most individuals and actions in medicine are held. These values of a physician and of medicine are the very things that are most challenged when looking at the results of medical data accumulated under the Nazi regime.

While historians have had little to say about the afterlife of Nazi data collected in the medical experiments on human subjects, there has been a great deal of writing about human experimentation and Nazi medicine in general; its antecedents, perpetrators, and effects on the larger medical community. This thesis is primarily concerned with the reaction to and use of the data and uses the literature produced by Western writers in medicine and history beginning at the Nuremberg Trials and onward. Therefore, this thesis will only briefly analysis the general historical writings concerning the background of experimentation, rise of Nazism, or evolution of the Nazi’s views on science.\(^7\)

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6. See Appendix at the end of this thesis.

Historical research that looks at Nazi medicine generally falls into two categories: focusing on analyzing or explaining either, the individuals (victims, doctors, leaders) and specific case studies; or looking at the larger structural influences that allowed and shaped Nazi medicine.

The focus on the culpability of individuals was most prevalent immediately after the Nuremberg Trials but continues to be a major source of historical explanation. The focus on individual responsibility is exemplified in works such as historian Robert Jay Lifton’s book, *The Nazi Doctors: Medical Killing and the Psychology of Genocide*, published in 1986. This focus on individuals as a form of interpretation is a result of the Western medical communities’ attempt to condemn and distance itself from Nazi medicine in general. This censure of Nazi medicine, while trying to save the face of medicine in general, led to initial writings in history, medicine, and other fields primarily focused on the doctors themselves or other individuals, ostensibly to provide rationalization, but often to simply assign blame.

Other forms of historical evaluation tend to focus on the complex, higher-level factors that played a role in the development, escalation, and perpetration of Nazi science and medicine. These often take “functionalist” or “structuralism” perspectives. This means that instead of just looking at individuals, events and history are looked at as being a function of, or resulting from, the structure of such things as: society, different power groups, authority, and a great variety of other dynamics that are all mechanisms of change, instead of just individuals. The body of work that encompasses this perspective has become the dominant standpoint, both

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in quantity and amount referenced by others.\textsuperscript{9} For example, historian Detlev J. K. Peukert offers great insight into some of the larger root antecedents and influences that shaped Nazi science. In the essay, “The Genesis of the ‘Final Solution’ from the Spirit of Science,” Peukert shows the complex and contradictory factors, from political terror and distribution of power to health policy and the redefinition of “normal,” that lead to the “Final Solution,” of which human experimentation seems to have played a part.\textsuperscript{10} Peukert offers comprehensive insights into the seemingly endless and nuanced factors that contributed to the rise and fall of Nazi science. As will be seen, these factors, and many others, are later used by the Western medical community to rationalize or discredit any Nazi scientific or medical programs, including the resulting data.

Regardless of level, type, or focus of interpretation, the scope of information and investigation for previous historical works usually covers the time period before and during Nazi rule, typically ending with the Nuremberg Trials. Little is said about the subsequent, long term ramifications of Nazi medicine, especially its products. Instead there is a focus on understanding and explaining why the Holocaust medical atrocities happened and establishing principles to ensure it never is repeated. While these works provide a necessary and comprehensive understanding about the background, influences, structures, and actions that facilitated the rise and fall of Nazi medicine, there is a lack of historical writing addressing the data produced from Nazi experiments on humans and its long term ramifications in medicine.


Scholarship concerning the history of human experimentation and specifically about the resulting information and its role in medicine are found in a wide variety of publications, few of which are strictly historical. Nazi data produced in human experimentation has been dealt with to the greatest extent in fields of medical and bio ethics. It is the extensive and various writings, standards, and conferences from these fields that this thesis will examine in greater detail later in the thesis as evidence of the emerging and changing discourse about the topic. The depth and vehemence of discourse has lead to a large body of writing and research, but only beginning in the late 1980's. There is a larger period of silence or minimal, superficial acknowledgements of the issues across most disciplines. It is the lack of discourse for a long period of time and then its emergence that is now of interest and relevance to historians.

There are two other areas of research and writing that are important to discuss in regards to this topic. First, concerning other writings about Dr. Leo Alexander and, second, research about parallel cases of unethically obtained scientific data and its use that affected the general discussion of medical ethics around the same time as early discussions of the Nazi data was occurring.

There have been some very brief biographical sketches and notes about Alexander’s contributions to medicine and ethics, but there has been little extensive historical evaluation.11 The principle examination has come from historian Ulf Schmidt’s 2004 book, Justice at Nuremberg: Leo Alexander and the Nazi Doctors’ Trial.12 Schmidt recounts the life and work of Alexander during his long role as medical consultant at the Nuremberg Trials, highlighting


his significant contributions in bringing about prosecution of the war criminals. Schmidt’s focus, however, is on the moral imperative and Alexander’s crucial role in the trial itself, culminating in Alexander’s participation in writing the Nuremberg Code. While there is important information about Alexander’s background, life, and role up to the end of the trials, there is less insight into the role of Alexander and his prolific writings in the realm of medical ethics that continued well after the writing of the Nuremberg Code. Schmidt highlights only one facet of Alexander, albeit a large and important one, but Alexander’s role in the discussion surrounding the use of Nazi data is another, uninvestigated aspect. Alexander’s story, as one of the primary disseminators of the information that became so controversial while having conflicting personal feelings on the subject, is an important framework for understanding the complex, contradictory nature of the information itself and how it has been handled.

In addition, there are a number of other human experimentation controversies that have been treated in the writings of medical ethicists, and more recently of historians. While the events and analysis differ in nature, scope, and geography, and will not factor further into the main arguments of this thesis, it is important to be aware of their existence. These other cases often play a part in medical ethics discussions in general and have affected the professional codes and ethical standards written to address human experimentation and the resulting data.  

The most famous of these cases involving experimentation on human subjects is the Tuskegee syphilis experiments which occurred from 1936 to 1972. In these experiments syphilis was left untreated and its course studied, leading to some deaths, in rural black men

who did not know of their diagnosis. Along with this, many other controversies have haunted American medicine. Additionally, recent investigations have focused on experimentation and other medical and scientific atrocities that were performed by the Japanese on prisoners of war during World War II. The Japanese case provides the most similarities and parallels in effects on worldwide medicine and ethics, but historical analysis of this case is only recent. More research is necessary on specific scientific practices and the products of such experiments. As new cases involving unethical treatment and experimentation come to light, the way medicine is viewed and operates thereafter forever changes.

While substantial research has gone into understanding the causes and effects of the medical atrocities perpetrated during the Holocaust, there have only been partial investigations into the full aftermath of the Holocaust. The study of the resulting data has yet to be thoroughly explored. This topic is also important because how the data has been used and discussed provides great, often contradictory, insight into medical history and the development of medical and biomedical ethics. Study across the disciplines of history, medicine and ethics can also help encourage greater discussion and understanding as new controversies are discovered and publicized.


Methods

Hypothermia experiments and data were chosen as the primary type of information analyzed in this thesis because of the large amount of recovered data from these experiments. This data has also subsequently been the most widely cited and is the center of debate within the community. There has been enough written using this data and about the ethics of using this particular data, to warrant a thorough investigation. The hypothermia experiments are also significant for a number of other reasons.

The specific hypothermia experiments in question took place in Dachau during the Holocaust. The Nazis produced and gathered a massive amount of meticulously detailed about the hypothermia experiments. These experiments were so extreme that the results were only found because of the abhorrent means, often involving death of the participants. Because of the extreme nature of the experiments, much of this data cannot be reproduced, leading to the inability to confirm or discredit the data. The use of this particular set of information has received the most attention, and its use is the most controversial. As a result, there are a greater number of resources related to the hypothermia experiments to draw upon for evidence in the thesis.

This thesis uses articles published in medical and academic journals as both primary and secondary sources. These articles where analyzed for the level and language used, if any, in acknowledging the true source of the data they are citing. Additionally, articles that related to specific positions in the debate on the use of the data are used as both primary and secondary sources.
Citation aggregators report that at least 80 publications or articles cite *The Treatment of Shock*. This number, however, is an overestimate of the true number of unique cases where *The Treatment of Shock* is cited. Duplication of articles in the count as a result of cataloging errors or system flaws is one reason it may be artificially high. A number of articles were also reported that did not actually cite Alexander and should not actually be included in the total. For this thesis a total of 20 articles that cite Alexander’s report were found and used to inform the conclusions. This does not reflect the full number of available articles, and is primarily a result of limited time and resources for acquiring some of the articles, some of which appear in obscure or foreign publications. Adequate representations of the types of sources that have cited *The Treatment of Shock* were found.

The primary archival collection used in this thesis is the papers of Leo Alexander in the Harvard University Law Library Special Collections. This collection contains papers of both a personal and professional nature. The vast majority of material relates to Alexander’s time spent working on the Nuremberg Trial. This collection contains the original and full report, *The Treatment of Shock from Prolonged Exposure to Cold, Especially in Water*. One limitation of this source is that much of the trial material and some correspondence is in German. However, almost all the trial material that was eventually used as evidence has English translations. The majority of Alexander’s professional writing and correspondence, as well as that to his wife and children were written in English.
CHAPTER ONE
Leo Alexander and the Nuremberg Trials

The work of one individual produced during a particular time is the framework used to understand and offer evidence in this thesis. Leo Alexander’s participation in the Nuremberg Trials, his reports that document the Nazi hypothermia experiments, and his shifting opinions on the ethical use of that data provide the most concrete and exemplary evidence. Throughout the rest of the thesis, his writings and report will be used to highlight the most important aspects of the evidence being presented.

Leo Alexander

Leo Alexander, born in Vienna, Austria on October 11, 1905, came from a distinguished line of physicians and intellectuals and was well grounded in the theory, principles, practices, and ethics of medicine. His father, Gustav Alexander, was a prominent otolaryngologist (an ear, nose, and throat specialist) and personal physician to Emperor Franz Joseph. His mother, Gisela Rubel Alexander, was one of the first women to earn a PhD from the University of Vienna. After earning his doctorate in medicine from the University of Vienna in 1929, Leo Alexander taught at the Peking Union Medical College in China. What was initially only supposed to be a temporary absence from his native land, turned into exile, as Alexander, an Austrian Jew, was unable to return to a promised appointment at the University

of Frankfurt. In 1934, Alexander immigrated to the United States, having obtained an appointment at the Massachusetts Mental Hospitals in Worcester and Boston. He married Phyllis Harrington in 1936; eventually having three children; Gustave, Cecily, and Jonathon.\(^2\)

Alexander was inducted into the U.S. Army in 1942, but did not engage in combat. His greater contribution, and the start of his work that would become so important to medical history and ethics, came when he transferred to the Combined Intelligence Objective Subcommittee of the European Theatre of Operations at the end of World War II. Because of his unique set of qualifications – he spoke both English and German fluently (as well as Chinese, French, Spanish and Italian), being of Austrian, Jewish origin and now a American, having served in the U.S. military, and being a physician and highly regarded member of the medical community – Alexander was appointed as a medical consultant by both the Secretary of War and the Chief Counsel for War Crimes at the Nuremberg War Crimes Trials.\(^3\)

In this position as consultant, which he held throughout the Trials, Alexander had unprecedented access and exposure to the many details, actions, and individuals involved in the Trials. As he put it in 1949, “the evil aberrations in medical research with accompanied [human experimentation].”\(^4\) His friend H. Tomas Ballantine wrote after Alexander’s death: “This chilling experience aroused in Alexander an interest in the philosophy and morality of human experimentation and the safeguards that must be taken to protect human experimental

\(^2\) Ibid.


\(^4\) Ibid.
Throughout his life Alexander felt that one of the main purposes for his involvement in the Nuremberg Trials was, “to inform and educate the German people.” Alexander’s central role during the Trials not only educated the German people – as well as the rest of the world - but, as will be seen, his work and writing about ethical standards for human experimentation, and his role in the distribution of the Nazi data, had long lasting repercussions.

The Nuremberg Trials

The Nuremberg Trials, or Doctor’s Trials, were trials of German doctors charged with war crimes that the United States authorities held after World War II. In these trials doctors were accused of human experimentation and genocide. Only seven of the 23 people on trial were acquitted. The rest received the death penalty or various prison sentences for war crimes and crimes against humanity.

The Nuremberg Trials looked at a number of different types of experiments and atrocities. This thesis will focus on the hypothermia experiments in particular, but there were many other shocking experiments and practices that took place. In his notes, Alexander offered the following detail from his investigation:

The experiments fall into the various types as follows: a. Infection experiments. They began on August 1, 1942. The last infection experiments...carried out in March 1943. b. Bone experiments. They started a few weeks after the infection experiments and ran parallel with them until March, apart from one group which was done in August 1943 in the bunker. c. Muscle and nerve experiments. They began about the turn of the year

5. Ibid.
1942-1943 and also ran until March 1943. d. Special experiments, namely removal of whole extremities.\(^7\)

The Trials examined atrocities of a scale that had not been previously imagined possible in the modern era. As historian Andrew Goliszek writes, “Human experiments in places like Auschwitz were efficient, systematic, and incredibly cruel. From practice surgeries without anesthesia to massive infections that led to gangrene and amputations to excruciating high-pressure, freezing, and heat experiments that often ended in death, the Nazis…took human experimentation to a new level.”\(^8\)

The Nuremberg Trials were an attempt to make rational and find meaning from the anomalous actions that occurred during the Holocaust. It was the first, and maybe only, time that answers could be sought. Instead, it raised more questions and brought to light the variety of data that would foster more complicated debates. Because the trials could not fully address the shear enormity and magnitude of the horrible acts, those seeking greater comprehensive answers instead focused on the individual doctors and their guilt. As writings on the trial proceedings point out:

Only the guilt of the accused was a criterion for the decision adopted by the Court. It was not the mission of the Court to overcome the past, nor to establish the purposefulness of the trial itself. ‘As far as the problem of guilt was concerned the Court could only establish the criminal guilt, i.e. the guilt within the frames of the penal code. Guilt in the political sense or in the moral and ethical sense was not the subject of the deliberations of the court.’\(^9\)


\(^8\). Goliszek,. In the Name of Science. xi.

The limited scope of the courts left the task of understanding to the medical community itself. Because individuals were the focus in the trials, it was easier to for the medical community to emphasize the guilt of these individuals and claim that the atrocities were performed by just a few doctors working alone. It was the doctors who were abhorrent, not the medicine and its ethics. Deviant actions were not extrapolated to reflect on the medical community in general.

However, other statements made during the Trials point out larger, more complex influences. During the trial, presiding Judge Walter Beals expressed:

These experiments were not the isolated and casual acts of individual doctors and researchers working solely on their own responsibilities; but were the product of coordinated policy making and planning at high governmental, military and Nazi party levels, conducted as an integral part of the total war effort.  

While the entire Nazi system could not be put on trial, it was recognized that greater factors had led to, allowed for, and spurred on the experiments.

As part of his involvement in the Nuremberg Trials, Alexander was one of the first to investigate the collection of material found in a cave that was believed to be Heinrich Himmler’s secret S.S. records. In addition to ample correspondence detailing the establishment of the human experimentation procedures and expectations, the evidence collected in the cave provided some of the most concrete and damning evidence against the doctors on trial.

Another significant product that Alexander contributed to, and was a direct result of the revelations of the Nuremberg Trials, was the Nuremberg Code.  

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11. See Appendix at the end of this thesis.
principles and standards for human experimentation that would become the foundation for medical ethics thereafter.

One of the main objectives of the Nuremberg Code was to establish guidelines for future research and human experimentation. Western medicine and research had to come up with some way of addressing what had happened to medicine during the Holocaust and establish standards so that it would never happen again. There had to be some why for Western medicine to differentiate itself from what had gone on in the concentration camps if it wanted to continue without huge public backlash. The product was the Nuremberg Code, which set forth ten principles for ethical human experimentation. As the historian Paul Weindling states, there had to be “discrimination between war crimes and politically sanctioned racial atrocities, on the one hand and legitimate scientific inquiry, on the other…The Nuremberg Code’s ethical guidelines reaffirmed the legitimacy of clinical experiments, while providing certain safeguards for the experimental subject.”\footnote{12} In order for medical research to continue, especially involving human subjects, there had to be explicit and clear guidelines established. The hope was to prevent anything like the atrocities that the Nazis committed from ever happening again. However, the Nuremberg Code did not address the products that had already been produced and the acceptable use of these products in future research.

In addition to the Nuremberg Code, there were other products that came out of the Nuremberg Trials. These have also had long lasting effects on the medical community. During the course of the trials, information about the doctors, practices, and medicine was collected for evidence. Alexander had been tasked with covertly reported to the U.S. government any

information that may benefit the efforts of the U.S. military. These reports contained a
tremendous amount of data, which has since influenced other medical research and been at the
center of ethical controversy. One report in particular is the center of the data use and
discussion that has occurred in the years following the end of the Nuremberg Trials.

*The Treatment of Shock*

Alexander’s role in the Nuremberg Trials was crucial for the discovery and evaluation
of the evidence that was used to bring to light the atrocities that had taken place. It also allowed
him unique access to medical and scientific data that was being uncovered. However, it was not
simply access to information and Alexander’s subsequent writings alone that shaped later
beliefs and understanding about human experimentation. Alexander was responsible for
compiling and disseminating for the single most comprehensive source of hypothermia data
that resulted from Nazi experimentation. The report would become the center of most of the
ensuing citation and controversy.

During the Nuremberg Trials Alexander was placed in charge of collecting and
presenting evidence about specific goals, methods, and results of human experimentation that
had taken place in concentration camps during Nazi rule. He examined documents, interviewed
surviving witnesses, “culprits”, and many others. Alexander’s investigations led to the
preparation of hundreds of pages of documents; from survivor interviews, and experimentation
site visits, to reporting documents contained in Himmler’s secret archive found in a cave. Most
significantly, Alexander submitted five detailed and comprehensive reports for the Combined

Intelligence Objective Sub-Committee; each of substantial volume and detail. These all were initially classified and to be used for the benefit of the U.S. Military.

This thesis will focus on one of those reports; Alexander’s *The Treatment of Shock from Prolonged Exposure to Cold, Especially in Water* (hereafter, *The Treatment of Shock*). This report was completed by Alexander and first submitted to the Combined Intelligence Objective Sub-Committee in 1945 but was classified, and therefore only available to United States military and government interests. The report was declassified in 1946 after the conclusion of the Nuremberg Trials. It then became widely accessible to the public and of specific interest to the Western medical community.

*The Treatment of Shock* documents in great detail Alexander’s processes of investigation and the evidence gathered concerning the hypothermia experiments that occurred primarily at the Dachau concentration camp. Information in the report was gathered through extensive investigation and work with documents. Alexander had also interviewed Nazi doctors directly involved in the experiments, as well as secondary participants, informers, and bystanders. *The Treatment of Shock* serves as the most comprehensive reporting and reproduction of actual Nazi scientific data. Over half of this nearly 200 page document is dedicated to the simple reproduction of the meticulous records and data collected by Nazi doctors in the processes of performing the hypothermia experiments.

Alexander focused much of his report on Dr. Georg August Weltz and Dr. Sigmund Rascher. Both were instrumental in the background, set up, and facilitation of the hypothermia experiments at Dachau concentration camp during the Holocaust. His discussion of these two physicians highlighted many of the areas that would later be used in the debate about the
culpability and responsibility of individuals or the Nazi system in human suffering. It also offers background of these experiments and some processes in Nazi medicine.

Alexander’s goes into great detail about his investigation into the step-up, process, results, and responsibility in the hypothermia experiments. He interviewed a number of individuals who participated or witnessed the origins of some of the Nazi medical research. He tells of Dr. Weltz and his team, who began their experiments into hypothermia on animals and made some “startling and useful [discoveries] which seemed to contradict some of the older experiences and ideas on the treatment of life-threatening emergencies due to exposure to cold.”  

Alexander goes on to recount his investigation of Dr. Weltz and the further experiments that were performed, eventually leading to the experiments on humans. After further investigation, Alexander notes that after many interviews and visiting the sites of experiments, which were claimed to always and only involve animals:

In spite of the denials, however, I came away from all these interviews with the distinct conviction that experimental studies on human beings, either by members of this group themselves, or by other workers well known to and affiliated to the members of this group, had been performed but were being concealed.

After gathering most of his evidence through interviewing perpetrators, victims, and witnesses, by coincidence, Alexander learned of the human experimentation that had occurred at the Dachau concentration camp. The evidence he found showed experiments in which prisoners were placed in tubs of ice water and their reactions to the cold and rewarming recorded. Alexander then concludes. “The description of the experiments as given by the prisoners and

14. Ibid. 4.

15. Ibid. 12.
related to me…was strikingly similar to the animal experiments performed by Dr. Weltz and his group.”

Even with all the revelations about the hypothermia experiments, Alexander wanted to find more evidence related to the hypothermia experiments. To achieve this, Alexander is one of the first to investigate a collection of material that was found in a cave thought to be Himmler’s secret S.S. records. This was a vast amount of material of miscellaneous nature, but proved to be highly valuable. Included was correspondence between Himmer and Dr. Rascher which extended “from 31 October 1939, when Dr. Rascher was commissioned as Untersturmführer in the S.S., until March 1944, when arrangements were made to have him ‘habilitated’ in secret session by the University of Strasbourg, which was an all S.S. University and therefore considered capable of passing on top secret research.” This process of investigation and all that was found against the doctors was reported in The Treatment of Shock and eventually was used as evidence in the Nuremberg Trial.

With the accumulation of evidence, Alexander assigns the direct of responsibility of beginning and directing the hypothermia experiments to Dr. Rascher. Alexander writes: “The idea to start the experiments with human beings in Dachau was obviously Dr. Rascher’s...He requested that Himmler place ‘professional criminals’ at his disposal for this purpose, since it was expected that nobody would volunteer for such experiments in which ‘the experimental subjects might die.’” On May 20, 1942 Himmler authorized cold experiments, to be carried

16. Ibid. 13.
17. Ibid. 18.
18. Ibid. 20.
out by Dr. Rascher, and Dr. Weltz.\textsuperscript{19} This straight forward reporting and assignment of initial blame may have helped support later arguments about the individual responsibility of the actions.

While investigating, Alexander found that even within a community sympathetic to the Nazi experiments there was discomfort and disapproval about the means that had been used to gather the data. Even with Dr. Rascher’s enthusiasm to begin the experiments, there was some concern in other participants about the nature of the hypothermia experiments. Those involved may have known that the justification of saving German pilot’s lives would not be enough. Even with the Himmler’s sanction, Dr. Weltz withheld some of the technical aspects of the experiments from Luftwaffe authorities and delayed the start of the experiments because he feared they might consider such experiments “amoral”\textsuperscript{20}.

In latter letter, there is more evidence of the disunited opinion about these experiments, it is asked of Himmler by an unnamed S.S. doctor, “there must be a stop to these experiments by Dr. Rascher. They cannot be allowed to go on much longer.”\textsuperscript{21} It was reported by another S.S. doctor that Rascher had “made a lot of enemies through his objectionable character and also because his methods were considered unacceptable.”\textsuperscript{22}

Alexander reported Rascher saying to a group of physicians: “You think you are a human physiologist…but all you ever did was work on guinea pigs and mice. I am the only one in this whole crowd who really does and knows human physiology because I experiment on

\begin{itemize}
\item \textsuperscript{19} Ibid. 20-21.
\item \textsuperscript{20} Ibid., 20.
\item \textsuperscript{21} Ibid., 32.
\item \textsuperscript{22} Ibid., 39.
\end{itemize}
humans, and not on guinea pigs or mice.” Rascher then wrote to Himmler on October 24, 1942: “People who to-day still disapprove of experiments on human beings, but who prefer to let brave German soldiers die from the consequences of intense cold, are to me nothing but traitors to their country, and I shall not hesitate to supply the names of these people to the authorities who are in a position to take action against them.” These statements demonstrate the irrationality of Rascher’s behavior and the exceptionality of his work. He often had to defend himself even while among other Nazi doctors.

Despite any qualms, cold water experiments commenced and new medical staff and administration was added to support the increased work. Multiple and varied versions of cold water immersion were tried; from different amounts of clothing to different parts of the body being submerged, to different lengths of time.

The end of Rascher and the hypothermia experiments reveal that even Nazi officials thought him dangerous. Alexander reports that Himmler ordered the execution of Dr. Rascher and his wife by the S.S. two weeks before the liberation of Dachau. Himmler felt that Rascher talked too much and should not be allowed to fall into the hands of the Allies. Possibly in an attempt to discredit his work and distance the Nazi party from the human experimentation, Rascher was stripped of his S.S. rank and badges, and he and his wife were executed in a strong room at Dachau.

Alexander demonstrated throughout the report that the actions of one individual, primarily Dr. Rascher, a member of the medical staff of the S.S., could be seen as the driving

23. Ibid. 16.

24. Ibid. 25.

25. Ibid. 37.
force behind the experiments in general. While in *The Treatment of Shock* Alexander discussed the role and responsibilities of Himmler – a military commander and a leading member of the Nazi Party, and other influential and powerful Nazi individuals – the greater societal and structural Nazi systems, which may have played a role in the Nazi medical community, are not analyzed. This is not true of later writings by Alexander, as will be discussed in Chapter Three, but in his initial reporting there is no mention of fault within the general Nazi party or its structure.

This investigation of Rascher lent considerable weight to the understanding of the Nazi medical system that was in place that allowed for the human experimentation to occur, while still maintaining the focus on the individual. Alexander’s evidence against Rascher, and other doctors, was used in later arguments throughout the medical community to create distance in morality from the evil works that occurred in the Holocaust. This was done by pointing out that it was the work of a few immoral individuals who were responsible for the atrocities, rather than the fault of medicine in general. This ultimately allowed for the distancing of modern medical identity from individuals such as Rascher.

*The Treatment of Shock* also explicitly conveyed and highlighted the findings of the hypothermia research. Detailed and elaborate instructions for the care of German soldiers, sailor, and aviators were reported based on the cold experiments performed by the Nazi doctors. These experiments were viewed by the Nazi doctors as directly providing and enhancing the German war effort. Regardless of the actual data produced, many new advances occurred; new clothing was produced, new procedures for soldiers in cold were developed, and rewarming and medical care for hypothermia practices were changed and enhanced. For many
of the doctors involved in the experiments, these practical applications proved the worth of the experiments.\textsuperscript{26}

In the conclusion of the report, Alexander evaluated the scientific applicability of the hypothermia research data that was found in the course of the investigation. He addressed both the flaws and positive implications to what was discovered through the human experimentation in an objective and technical manner. Alexander maintains that the Nazi data has value to the treatment of hypothermia and future medical research. This is notable because as will be seen in Chapter Two, \textit{The Treatment of Shock} was and is the report that is used and cited in other hypothermia research.

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26. Ibid. 20.
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CHAPTER TWO

Data Use and Citation Tracking

The effects of the Holocaust and the Nuremberg Trials signified a dramatic shift in the understanding of ethics in the Western medical community of the 1950s. It also presented an unparalleled amount of medical data that resulted from the Nazi experiments, specifically those involving hypothermia. How the medical community reacted to and incorporated the Nazi medical data into future research illustrates the complexity of ethical understanding within the field, and, as will be seen in Chapter Three, directly reflects on the discourse that occurred within the medical and ethical community about the appropriate use of the data. The use in subsequent medical literature of one specific document, which was the original source for reporting the Nazi data about the hypothermia experiments, is much more prevalent that is generally acknowledged. This thesis will also highlight the ambiguity of disclosure. As will be seen in Chapter Three, this ultimately fueled the controversy and debate surrounding the ethical use of this data.

The Treatment of Shock

Alexander’s *The Treatment of Shock* can be used to examine how the medical data related to the hypothermia experiments was initially used, and offers enlightenment about the use of this data in subsequent medical research. Originally produced in 1945 as a classified government publication for purposes of informing the United States military, it has since become a cornerstone in the controversy of data use. It also has also been, and continues to be,
cited in medical research. *The Treatment of Shock* did not specifically address the ethic issues of using the data it contained. Rather, it served as one of the most complete accounts of the investigation into the hypothermia experiments that occurred at Dachau, finding the Nazi medical data, and identifying responsible participants. It is also the primary work that directly records, uses, and references Nazi medical data which came from hypothermia experiments. Robert Berger maintains that it is, “essentially the sole original source material about the Dachau hypothermia experiments.”¹ The majority of the information in report is the actual Nazi data. Over 100 pages in the report are simply reproductions of the graphs, data, charts, and reports that were produced by the Nazi doctors during the hypothermia experiments. It is this data that has subsequently been cited in other publications.

When *The Treatment of Shock* was declassified in 1946 and made available to the Western medical community, there was initially little concern about the morality or ramifications of publishing the data that came from the experiments. The report, originally produced for Combined Intelligence Objectives Sub-Committee, was declassified with a note on the publication stating, “The Publication Board, in approving and disseminating this report, hopes that it will be of direct benefit to U.S. science and industry.”² While most of the report is spent condemning the actions and methods of the scientists that were investigated, it was still deemed appropriate and useful to release the data that had been discovered. There was no debate specific to the use of the Nazi hypothermia data. Rather, it was cited with various degrees of acknowledgement without ethical comment from other researchers or writers.


Alexander’s own conclusions in *Treatment of Shock* are complicated and contradictory, but ultimately the report advocates for the use of some of the Nazi data. This passage from the summary of evidence in the report demonstrates Alexander’s own reluctant decision making process that led to his final acceptance of the information:

For although it must be admitted that in principle the performance of voluntary experiments involving suffering and death in human beings may be justified in matters of military-medical importance in a National Emergency, it is nevertheless beyond doubt that in this case these experiments were not voluntary and were performed with a callous waste of unnecessarily large numbers of human lives, such as for instance in the senseless “serial experiments” on the question wither the times required to kill people by exposure to cold varied in people of different constitutional type. On the other hand, it must be admitted that Dr. Rascher, although he wallowed in blood (“immediate autopsies of the freshly killed”) and in obscenity (allowing frozen people to die in bed with naked women in order to demonstrate the relative ineffectiveness of that method of rewarming, while standing ready to measure the rectal temperature of those who recovered sufficiently to carry out sexual intercourse under those circumstances), he nevertheless appears to have settled the question of what to do for people in shock from exposure to cold. At this point, of course, the question of his reliability comes up, especially in view of the fact that he was later unmasked as faker, in relation to another series of experimental studies, and also in view of the fact that a good many of the finer details of the preliminary work in animals, by Weltz and his group, especially Lutz, are not quite sound, both from the viewpoint of experimental technique and of interpretation. Thorough scrutiny of the main data, however, weakens and even eliminates this objection; and satisfies all the criteria of objective and accurate observation and interpretation, despite the fact that precise numbers and percentages are not given. The relatively higher quality of this report may be due to the fact that the senior author, Holzlohner, was a well-trained physiologist. Spot-checking of the data presented in this final report against our own experience, which is of course only fragmentary because it was derived entirely from victims rescued from the sea, likewise support the validity of the important physiologic data presented.3

Alexander dismisses the Nazi scientists as a weak, with little morality toward humans or the scientific process. The methods and practices are so abhorrent to any medical standard that they should not be viewed in the light of competent science. Alexander then questions the validity of the data itself by indicating flaws in methodology and inconstancies in gathering, reporting or other practices. However, he then points out that this data has been compared to other known

3. Ibid. 67.
information and used to influence treatment choices. Even with all the qualifications and hesitations about the data, Alexander finally concludes, “The method of rapid and intensive rewarming in a hot water bath of 45°C (40°C – 50°C) of people in shock from exposure to cold, especially in water,” the method used and studied most intensively by the Nazi doctors, “should be immediately adopted as the treatment of choice by the Air-Sea Rescue Service of the United States Armed Force.” This promotion of use, as well as the great detail in research findings that are contained in the report, lent considerable weight to the perceived appropriateness for subsequent use of this data in other research. There was a vast amount of information presented that could be obtained in no other way, and its use was recommended. With these two conditions, other researchers found the value in this information and decided to take advantage of its availability.

There is great variation in how subsequent research incorporated the information found in Alexander’s report. Some acknowledge to original sources. Many works, however, make no mention of the source. The information is either integrated in the general background understanding of the current hypothermia research, or the data points are incorporated into comparison figures. In many cases, regardless of how heavily the data is used, there is no mention of the Nazi source or of the controversy surrounding this data other than citing the Alexander article in the bibliography. This information seems to be important to medical research but there are explicit or implicit attempts to obfuscate the true source. This is evidenced by the following examples from articles and texts of how the data was incorporated in the writing.

4. Ibid. 68.
Early examples of scholars citing *The Treatment of Shock*, and the data it contains, indicate there has always been reluctance to point out the Nazi source of the hypothermia data. A few examples omit any indication that the data came from Nazi medicine. Some only mention the Dachau concentration camp, where the experiments took place, but, not the explicit implications of Nazi data use. Until the 1980s this continued citation was not realized or acknowledged. Regardless, it is a fact that this data has, and is, being cited in medical literature.

Possibly the first article to use Alexander's report was George Molnar’s "Survival of hypothermia by men immersed in the ocean." published in 1946 in the prestigious *Journal of the American Medical Association*. This was immediately after the declassification of Alexander’s report. The article incorporated hypothermia information from people lost at sea and Molnar’s own experiments. Additionally, the data from the Nazi hypothermia experiments found in Alexander’s report is heavily incorporated into all of the figures and calculations throughout the text. Molnar writes, “Immersion experiments done on prisoners at the Dachau concentration camp have been reported by Alexander. Appendix 7 in his report contains photostats of three tables and several graphs from which conditions of survival can be obtained. These data are considered as objective and valid.” Molnar then details the experimental conditions and the specific data taken directly from the Nazi data reproduced in Alexander’s report that Molnar uses to support his research. Molnar supports the scientific validity of the


6. Ibid. 1047.
data and its appropriateness of use. This may have lent credibility to future citations of the Alexander or Molnar articles. Molnar does not address any questions of ethics in using the data from Alexander’s report. This may be because Alexander’s own conclusions advocate for use, and there was no discussion yet in the medical community about the ethics of using the data. Ultimately, Molnar clearly felt the data in Alexander’s report was valid and worthy of inclusion.

Molnar’s article is not only the first but also one of the heaviest incorporations of Nazi data into research. Many of the facts, figures and finding in it are dependent on the use of the Nazi data. Molnar’s article has also been subsequently cited by numerous other hypothermia related articles, most of which do not acknowledge any connection to Nazi experiments. This has lead to an intricate web of derivative works actually using the data, while to original source has been come increasingly obscured.

One other early example which provided a detailed description and explanation of the experiments and resulting data, come from the 1959 article, “Lethal Hypothermic Temperatures for Dog and Man.” In this article, Albert H. Hegnauer writes:

7. For example, the following articles are a few that cite Molnar, use his data or conclusion, and make no mention of a Nazi connection to any of the data:
Important and useful sources of information on lethal limits of hypothermia for anaesthetized man are...the Alexander Report of experiments conducted at Dachau during World War II, [which] deal with cold-water immersion. In the Dachau experiments, 7 subjects were chilled to death, by intent, to determine the LT60 (TABLE 3). A value of 27°C. was obtained with a range from 24.2° to 29°C. and a mean exposure time of 65 min. to water of 4° C. (an eighth subject survived a rectal temperature of 25.2° C. and an immersion of just under 3 hours). In another series of 57 experiments in which primary interest was directed elsewhere and in which chilling was routinely to a temperature below 30° C., there were an unstated number of deaths at unstated temperatures. Whether these deaths would elevate the value above the 27° C found previously cannot be decided. 8

This is a rare example of both using the data and providing a detailed explanation of the experiments, albeit in scientific language. There was still no mention of any ethical considerations in using the data. This is probably due to the lack controversy about the use of this specific set of information. Conversely, by only addressing the scientific validity issues, not ethical, there is the appearance of presupposed acceptability.

Most other works in the 1950s and 1960s that use the Nazi data do not disclose the source, but often refer to a war time connection. For example, an article published by the Journal of Physiology in 1949 acknowledges that the information was reported by Alexander, but simply says the information is from, “wartime experiments.” 9 In the medical text book, Clinical Hypothermia, published in 1964, the use of the Nazi data is only referenced in passing

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9. E. M. Glaser, "The Effects of Cooling and of Various Means of Warming on the Skin and Body Temperature of Men." Journal of Physiology 109 (1949): 366. “These authors also suggested (1936) that warming by air which was at a higher temperature than that of the body was insufficient to raise the rectal temperature of men who had been previously cooled, and a similar view was reached in wartime experiments reported by Alexander (1945).”
as, “war casualties in cold climes.”

There are many explanations for why early works hesitated to reveal the Nazi source of data. Chapter Three will show how these articles were being published at the same time major medical organizations and journals were condemning the publication of data from unethical sources. There were also attempts within Western medical communities to distance themselves from any connection with Nazi medicine. Finally, the horrors of the Holocaust and what the Nazi doctors did were still recent and fresh in most minds. Openly citing Nazi data may have tainted research with its association.

Rather than shear omission of the source, in a few early works there was the mention of Dachau experiments as being connected to the data; although the explicit ways in which the information was gathered, reported or made its way to medical research are not made clear. For example, one article acknowledged the data came from, “the infamous Dachau experiments,” There is no other explanation in these articles about what Dachau is, or why the experiments are infamous. The articles use the information from the experiments but there is no discussion of the ethical or scientific controversy.

One notable example from a 1970 article published in the esteemed *Journal of the American Medical Association*, it is reported, “The results of human experiments performed on persons of block 5 of Dachau in 1942 support the rapid active rewarming method. These sordid


11. F. St C. Golden, "Recognition and Treatment of Immersion Hypothermia." *Procedures of the Royal Society of Medicine* 66 (1973): 1053. “Cardiac standstill demonstrated electrocardiographically is insufficient evidence of death, as during the infamous Dachau experiments at least 3 such cases were revived by rapid rewarming.”
investigations proved to the satisfaction of the executioners that the best method of
resuscitating hypothermic prisoners was by rapid and intensive rewarming.”12 While this article
does mention Dachau, there is a presumption of knowledge about the implications of these
“sordid” investigations. This is the full extent in the article of acknowledgement of where the
data originated. There is no attempt by the authors to explain or justify the source or use of the
data.

A 1983 article on hypothermia explicitly acknowledged the source of information to
offer insight into the physical effects observed at different temperatures:

In the inhumane trials carried out by the Nazis at Dachau, in which prisoners were
immersed in water at temperatures of 2° to 12°C, reportedly there was initially violent
shivering, succeeded by intense muscle rigidity; consciousness became clouded at a
rectal temperature of 31°C, and both muscular rigidity and shivering ceased at rectal
temperatures of around 27°C.13

This is significant because it simultaneously acknowledges the Nazi source, but not its
limitations, and goes on to use the data as evidence.

Rare cases both acknowledge that the information came from Dachau and that there
may be limitations to this type and source of data, while still using the information to support
the other research. Steven Horvath’s writes in a 1981 article “Exercise in a Cold Environment:”

Survival potential consequent to immersion in cold water has not been adequately
determined. The typical definition of cold-water tolerances utilizes mortality as an end
point, but such information can only be derived indirectly. Immersion experiments
performed on prisoners at the Dachau concentration camp have been reported by


Alexander (1945). The information available from incomplete data suggest that no individual immersed in water can survive if the rectal temperature falls below 23.9°C.  

There do not seem to be an attempt to hide the source, but there is no real effort to draw attention to the fact that it came from Nazi experiments or that there may be any ethical component in the use. The mention of Dachau but not Nazi medicine, and no apparent ethical concern about the use of the data may indicate an assumption by the authors that the reader is aware of the source. Or, it may an ambivalence toward the data use; a reluctance to fully disclose or fully obfuscate.

The controversy around using Nazi hypothermia data in medical research was brought to the forefront in the medical and ethics fields with the work on one researcher in the late 1980s. In 1988 Robert Pozos, a physiologist and researcher at the University of Minnesota's Hypothermia Laboratory, openly and explicitly stated that he intended to use the Nazi hypothermia data in his work. In 1994 Pozos, along with Daniel Danzl, published the article “Current Concepts: Accidental Hypothermia” in the New England Journal of Medicine. This article’s publication was the culmination of a firestorm of debate and has been at the center of all subsequent debate. As will be seen in Chapter Three, Pozos defense of using this data and his openness about citing Alexander was the impetus to the modern debate concerning the topic.


Even with the renewed interest and discussion concerning the ethics of publication in the late 1980s that started with Pozos, many researchers and writers did not openly discuss the nature of the material they were citing. Some of the most noteworthy examples of omitting that data came from Nazi experiments are found in publications coming after the renewed debate. In 1997 an article was published that described information coming from “prisoners of war” with Alexander’s report as the citation, but no mention of a Nazi connection. Another article, also published in 1997 in the British Journal of Anesthesia, reported information from the Nazi hypothermia experiments about the specific temperatures when heart rate and breathing are affected. This is reported in a dry, technical manner with little indication that the data was gathered by the Nazis from their direct experiments on these processes. The only hint may be the reports use of the deceptively sterile sounding, “spontaneous breathing adults” used to describe the cold temperature at which the heart stops working properly. Alexander’s report is cited and listed in the endnotes, but there is no mention of any connection to Nazi medicine. Additionally, articles published in 1991 and 2000 cite Alexander’s report and use the data in support of their article’s research with no mention where Alexander obtained the data or the

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17. Gordon G. Giesbrecht et al., "Inhibition of shivering increases core temperature after drop and attenuates rewarming in hypothermic humans." Journal of Applied Physiology 83 (1997): 1633. “Cooled anesthetized dogs have been shown to have an after-drop of up to 3°C (28), and severely hypothermic prisoners of war (Teso30°C) had after-drop values of 3–5°C (1).”

18. F. St C. Golden et al., "Immersion, near-drowning and drowning." British Journal of Anesthesia 79 (1997): 216. “With further cooling, in spontaneous breathing adults, cardiac arrest from ventricular fibrillation (VF) may occur at a deep body temperature <28°C, or asystole at approximately 24-26°C.”
true source of the information. The spotlight on the controversial nature of this particular data may have made some researchers reluctant to acknowledge they were using it. Alternatively, they may have been unaware of the true nature of what they were using.

Robert Berger, a physician and ethics writer of Harvard, in response to the debated sparked by Pozos, offered one simple explanation for why Alexander’s report continues to be cited. He writes in an article for The New England Journal of Medicine: “One probably reason [for continued citation] is the extremely limited availability of the Alexander report and the tendency of investigators to use secondary citations without consulting the primary source.”

Researchers have cited the Alexander’s report because it has been cited elsewhere, or in some other work they are using more directly. This simply exacerbates the number of derivative works and the distribution of the citation. This is more often the case in recent publications as the understanding of what this report truly contains is lessened by time and access. Researchers may have no awareness of the true origins of the material they continue to cite.

There are many other explanations for why this data continues to be cited and acknowledged to various degrees, besides unaware derivative citations. But, it is clear from the above examples that while the original source of that data is not always explicitly stated, or sometime glossed over, the data is in fact being used. Chapter Three will look at some of the discussions going on in the medical and ethics communities in the years following the


Nuremberg Trials about the appropriate use of this data. These discussions have directly or indirectly affected researcher’s willingness and method of disclosure when citing Nazi hypothermia data.
CHAPTER THREE
Discourse about Data Use

Since the original publication in the 1940s the Western medical community has attempted to understand and to come to terms with what Nazi contemporaries did during the Holocaust. The debate over the use of hypothermia data in more recent medical research seems to have polarized the medical community into two camps. There is, on the one hand, the complete condemnation of the data and its use in the attempt to censure and separate the profession from something so morally appalling. On the other hand, there is an attempt to find some redemption for the discipline, in light of the evils perpetrated by medicine, by arguing that lives now can be helped if the data is used. Regardless of standpoint, the debate has evolved and its historical course can now be seen in the literature produced about it.

As discussed in Chapter Two, the data that was gathered and presented in Alexander’s *The Treatment of Shock* has been, and is still being cited in current physiology and hypothermia research. It has been handled by various authors with different levels of acknowledgement or recognition. When Alexander’s report was declassified and released, there was no apparent concern or question about the morality of the data entering or being used. The declassification note that accompanied the document stated, “The Publication Board, in approving and disseminating this report, hopes it will be of direct benefit to U.S. science and industry.”¹ The discussion in the medical and ethical communities surrounding the acceptability of publication affects the ability or willingness to overtly acknowledge use. This thesis will now shift its focus to the evolution of and influences on the discussion surrounding the ethics of using this data in subsequent research.

Alexander’s Writings

Leo Alexander again proves to be an important figure in understanding how the discussion surrounding the data use has evolved since the 1940s. His own views changed over the course of his career, and are emblematic of the ambiguity, uncertainties, and dichotomies that exist. Alexander wrote prolifically after his involvement with the Nuremberg Trials on his interpretations of the course of Nazi medicine, the actions and capability of Nazi doctors, the ethics of experimentation, and the ethics of data use. Immediately after the trials Alexander advocated for the use of the hypothermia data contained in his report, but later wrote that Nazi data was of no scientific value and should not be used. Alexander was also one of the main collaborators of the Nuremberg Code of Ethics,² which established the principles by which human experimentation, and in many cases the use of unethical data, has been judged.

Alexander spent much of his work with the Nuremberg Trials and in the investigation of human experimentation with the understanding that the data could be of use to future medical research. Alexander’s recommendations at the end of The Treatment of Shock advised use of the some of the Nazi findings from the hypothermia experiments. He stated, “Dr. Rascher [the principle Nazi hypothermia researcher], although he wallowed in blood…and in obscenity…nevertheless appears to have settled on the question of what to do for people in shock from exposure to cold…The final report satisfies all the criteria of objective and accurate observation and interpretation…The method of rapid and intensive rewarming in hot

² See Appendix at the end of this Thesis.
water...should be immediately adopted as the treatment of choice by the Air-Sea Rescue Services of the United States Armed Forces.”

Alexander’s position on the use of the data contained in his report was probably influenced by the fact that the report was commissioned by the United States Military and Government, with the intention of finding any Nazi produced information that may be of benefit. While much of the information contained in The Treatment of Shock was used as evidence during the Nuremberg Trials, the report itself was intended only for the purpose of enhancing military knowledge and hopefully gaining any insight into what, if anything, the Nazis had learned.

After Alexander’s report had been submitted with its recommendations, Alexander changed his position of the ethics and usability of the data. In a 1949 article, "Medical Science Under Dictatorship," published in The New England Journal of Medicine, he claimed that the data from the hypothermia experiments was fraudulent and could not be trusted, and asked of the medical community:

The case, therefore, that I should like to make is that American medicine must realize where it stands in its fundamental premises. There can be no doubt that in a subtle way the Hegelian premise of "what is useful is right" has infected society, including the medical portion. Physicians must return to the older premises, which were the emotional foundation and driving force of an amazingly successful quest to increase powers of healing if they are not held down to earth by the pernicious attitudes of an overdone practical realism.

Alexander argued that just because information may be useful, it is not necessary right to use it. Morality in medicine is more complicated than simply usefulness, and American medicine


must look past that simple premise to establish ethical standards of data use. The means, motives, and larger ramifications must also be taken into consideration.

Alexander wrote extensively about what he thought the purpose and motive of Nazi medicine truly were. In a report eventually read before the International Scientific Commission (War Crimes) in Paris, France, on January 15, 1947, Alexander analyzed the objectives of Nazi medicine. He argued that the intentions of the Nazi doctors and Nazi medical system greatly affect how the products of the experiments are interpreted and may be used. He wrote,

Ostensibly, the experiments were performed for the direct benefit of members of the German armed forces, and search for the most effective means of treatment was indicated among the primary motives... It was not until I gained access to the records of Himmler and the Ahnenerbe Research Foundation that I noticed the vast discrepancy in formulations of purposes and interests expressed in communications between members of their inner circle as compared with statements made for the consumption of outsiders... If one takes these experiments at their face value only, one cannot help feeling that the experiments were amateurish and poorly coordinated, that they failed to give the scientific information which was claimed to be desired, and that a unified policy was completely absent except for the barbaric manner of their execution... I felt that possibly the experiments had another hidden meaning and research aim which might give them a common denominator and long range policy...what he was looking for were: methods of extermination, both by murder and sterilization, of large population groups, by the ‘most scientific’ and ‘least conspicuous’ means. In other ways he was after a new branch of medical science which would give him the scientific tools for his plans and practice of genocide...If viewed from this angle the experiments suddenly lose their amateurish and haphazard appearance and, while they are scientifically, wholly or in part, inadequate for the ostensible purposes, they are scientifically adequate if interpreted as wide-scope research in quest of a new field which I cannot describe better then coining for it the new word ‘Ktenology’, (the science of killing). This Ktenology was to become the scientific technology of genocide.5

In this quote, Alexander not only questions the scientific validity of Nazi science but, questions the very purpose of the experiments and the resulting data. Alexander condemned the goals of Nazi science and medicine and argues that any resulting findings have no redeeming value. He maintains that even if any useful information was found, it was found in service of expediting death, and therefore, should not serve modern medicine, which serves life. Alexander was attempting to explain and make sense of Nazi science. He also wanted to demonstrate how Western medicine and its intentions were completely opposed to the intentions of the Nazis, thereby, creating distance and make comparisons between the two more difficult.

Alexander’s evolution of opinion added to the later controversy, confusion, and debate surrounding the subject. This call to action not only galvanized medical ethics but also influenced the perceived acceptable discourse that was to surround any discussion of Nazi medicine. Alexander’s own work exemplified the types of debate that would exist within the medical community. On the one hand he evaluated and separated the acts from the individuals and determined the data to be useful. On the other, he called upon the medical community to condemn all association with Nazi medicine and the data it produced as a flawed product of evil.

**Discussion in Medical and Ethical Literature**

Beginning in the late 1950s, into the 1960s, there was discussion among larger agencies and medical journals, but little opinion expressed by individual members of the medical community, concerning the publication of data obtained from unethical experiments. Many government agencies or national medical societies issued reports that recommended against the
publication or use of unethically obtained data. These statements and recommendations were not in direct response to Nazi data, and did not explicitly mention the use of Nazi data. They were general in nature and tone and resulted from an accumulation of ethical changes in medicine. While writings were not necessarily focused on the Nazi hypothermia experiments, the suggestions and standards were relevant to or implicitly encompassed this data.

In the 1955 *Report on Human Experimentation for the Public Health Council of the Netherlands*, it was recommended that editors of medical journals refuse to publish articles based on unethical experiments. A 1964 report, *Responsibility in Investigations on Human Subjects*, issued by the British Medical Research Council recommended, “that no paper be accepted for publication if any doubts remained regarding the ethical propriety of the research.”

Most medical journals issued their own statements, in theory supporting or reiterating the general sentiments of other organizations. In 1960 the editors at *The Lancet* explained, "We do not want to publish information which, according to professional ethics, has been wrongly obtained; in fact we go so far as to believe that no use should be made of such information." In 1964, the *Medical Journal of Australia* also pledged to accept the recommendations made by various councils. The editor of the medical journal, *The Practitioner*, wrote, “the price of

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knowledge can be too high, and it is therefore the editor's duty to deny publication to any manuscript based on ethically improper practices, even though the editor may be rejecting an epoch-making article.”

The call for ethical experimentation and data use was felt keenly by the institutions sponsoring research and supporting publications that may bear this data. The Massachusetts General Hospital issued guidelines in 1970 about human experimentation studies in general but, notably, also included specific instructions saying: “unethically obtained data will not ordinarily be published because suppression will help curb unacceptable practices by careless or unscrupulous investigators, and any loss to medicine will be more than offset by the moral gain in the maintenance of scientific integrity.” An editorial in The New England Journal of Medicine called for all institutions to establish, “dependable ethical certification… [that] would spare editors of medical journals…of interjecting ethical considerations in deciding whether or not to publish a report.” These institutional guidelines set the framework for how unethical obtained data was to be handled in publications and future research. However, scientific integrity could only be maintained if the true source of the data was openly acknowledged and discussed.


A few people expressed concerns about censorship and offered some alternatives to outright rejection of data. Paul Fraund, in his 1969 book *Experimentation with Human Subjects*, suggested that publication be refused if the procedures involved unethical practices. However, he felt uneasy about the power of censorship that editors might hold.\(^{13}\) Most authors still vehemently condemned unethical practice and affirmed that high ethical standards be maintained, but also pointed out the beneficial nature of some information already produced. Many suggested that detailed editorial notes concerning the sources and justification for use of the data be included with any publication.\(^{14}\)

Two of the notable individuals writing about the use and publication of unethically obtained data were Henry Beecher and Jay Katz. Beecher, a Boston physician, wrote in a 1966 article, “Ethics and Clinical Research,” published in *The New England Journal of Medicine*:

> The question arises, then, about valuable data that have been improperly obtained. It is my view that such material should not be published. There is a practical aspect to the matter: failure to obtain publication would discourage unethical experimentation…Admittedly, there is room for debate. Others believe that such data, because of the intrinsic value, obtained at a cost of great risk or damage to the subject should not be wasted but should be published with stern editorial comment. This would have to be done with exceptional skill, to avoid an odor of hypocrisy.\(^{15}\)

In this article Beecher also points out the parallel between this issue and 1961 ruling of the United States Supreme Court. In Mapp v. Ohio it was ruled that that evidence obtained in violation of the Fourth Amendment, which protects against “unreasonable searches and seizures,” may not be used. As Beecher put it: “It was stated [in the Mapp decision] that


\(^{14}\) DeBakey, "Ethically questionable data,” 115.

evidence unconstitutionally obtained cannot be used in any judicial decision, no matter how important the evidence is to the ends of justice.”\textsuperscript{16} This is analogous to the ends of scientific knowledge not justifying the means of using the unethical data.

A counterpoint to Beecher’s article was offered the same year, 1966 (with an update and expansion in 1974), in an editorial published by Jay Katz in \textit{The New England Journal of Medicine}. Katz, a physician with Yale University, was one major proponent of unrestricted publication of unethically acquired, but possibly valuable data. He wrote, "The goal of science is to produce new knowledge. If, during unethically conducted experiments, one valid scientific fact is produced, should that information be used as it has been, referenced in the literature as it has been, or just discarded?"\textsuperscript{17} Katz advocated for the continued careful appraisal of all data, and the use of that which was found to be valuable and available from no other source. His view was widely dismissed at the time, but did help create and has been used later in one side of the debate.

The 1970s saw very little discussion on about the topic of data use. There was so little published about data use specifically, that the next major article for the time, published in 1974, notes Beecher’s 1966 “landmark article” as one of its impetuses.\textsuperscript{18} Lois DeBakey’s article, “Ethically questionable data: publish or reject?” marked one of the first explicit examinations solely dedicated to the controversy of the data’s use. He notes that, “Attention thus far has been focused primarily on the ethics of the experimentation itself and only tangentially on the

\textsuperscript{16} Ibid. 1358.


\textsuperscript{18} DeBakey, "Ethically questionable data,” 113.
propriety of publication of the resulting data.” DeBakey heavily critiques the arguments of Katz and maintains that there is no justifiable reason for unethical data to be published or used after the fact. DeBakey, however, focused primarily on contemporary research design, saying that unethical data should not be published because it may lead to unethically designed experiments or other unforeseen ethical dilemmas. There is little in the article concerning the use of information discovered before the principles of the Nuremberg Code of Ethics were in effect, instead applying the standards of this Code to all data, regardless of when it was produced.

There was little other interest or discussion evidenced in published medical literature surrounding the use of unethical data throughout the 1970s and early 1980s. There was some focus of research design and contemporary human experimentation, most similar to previous opinions and writings, but nothing that addressed the use of the Nazi hypothermia experiments.

The watershed moment that sparked the specific vigorous debate surrounding the use of the Nazi hypothermia data came in the late 1980s. Robert Pozos, a physiologist and researcher at the University of Minnesota's Hypothermia Laboratory, openly acknowledged his intention to use the Nazi data, specifically that from Alexander’s report The Treatment of Shock, in his research and to inform his publications. Pozos argued, “that Nazi research on hypothermia, while cruel and often fatal, was conducted in a manner capable of producing useful, important, and potentially lifesaving results. Such experiments provide the only available source of

19. Ibid. 113.

20. Ibid. 118.
information about exposure to fatally cold temperatures.” Pozos argued that because there is no way to reproduce the conditions and results that were obtained by the Nazi hypothermia experiments, and that these results are useful to continued hypothermia research, which could save lives, it is important and necessary to use this information. It was detrimental to science and human life to disregard this data.

While Pozos was the loudest voice on the pro data use side of the debate, there were other proponents of data use who argue that there is no other way to obtain the same information that was gathered during the Nazi hypothermia experiments. Dr. John Hayward, a researcher studying hypothermia, stated: “I don’t want to have to use this data, but there is no other and will be no other in an ethical world.” Most maintain that while the experiments were horrific and should never be repeated, not using valid data in current research to save lives would silence the memory and be a disservice to those who died in the experiments. Additionally, it would be detrimental to the advancement of medicine and possibly to lives if not used.

In response to the renewed controversy, Arthur Caplan, a professor of Bioethics, became a leading moderator in the renewed debates in the medical ethics community surrounding the use of Nazi data. At a landmark conference held at the University of Minnesota on May 17-19, 1989 he and a group of other physicians, medical historians, and medical ethicists spearheaded one of the first large, open discussions concerning Nazi data use in medicine and the medical community’s rationale of Nazi science. Caplan eventually edited the


definitive book, *When Medicine Went Bad: Bioethics and the Holocaust*, which encompasses the many facets and diverse opinions surrounding the topic.23 The work of Pozos and Caplan instigated a renewed debate in the late 1980s and 1990s, resulting in a large number of other conferences and numerous writings that address the issue of using unethically obtained scientific data.

The Western medical community as a whole responded to the growing attention and immediacy of the controversy sparked by Pozos, Caplan and others. The American Medical Association (AMA) issued its official position on the use of unethically obtained data in 1998. Previously, it had only issued unofficial opinions from members or recommendations. The AMA stated,

> Based on both scientific and moral grounds data obtained from cruel and inhumane experiments, such as, collected from the Nazi experiments...should virtually never be published or cited. In the extremely rare case when no other data exists and human lives would certainly be lost without the knowledge obtained from use of such data, publication or citation is permissible. In such a case the disclosure should cite the specific reasons and clearly justify the necessity for citation.24

Even this ethical standard showed evidence of ambiguity in use of the data. There is a clear indication that it is felt that data should not be used, but they still allowed exceptions for rare cases. It is this exception that most proponents claim in justifying use of the data.

Since the renewal of the controversy, and the revelation of the continued citation of this material, the medical and biomedical communities have produced a large amount of material debating the ethics of the data’s use. A large amount of attention and writing has focused on the

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hypothermia data, but ethical debates have also broadly looked at the use of data gathered unethically.

Specifically, the debate concerning the use of the Nazi hypothermia data generally falls into two camps. The first is the complete condemnation of any and all use. This argument generally asserts that there is no justifiable reason to allow any use of data that came from Nazi human experimentation. The second is the argument that the data should be used, as it will help save lives now and that not using the data is a further disservice to the memory of the victims. This polarity in opinion, while not new to the discussion, became much more definitive as the discussion evolved.

Analysis

The discussion about the medical community’s role and complicity in the creation of medical ethics, especially concerned with human experimentation, has changed over the years. It is an attempt by Western medicine to distance itself from the actions of the Nazi doctors. As Hartmut Hanauske-Abel has written, “The history of medicine this century is darkened by the downfall of the German medical profession.”25 According to this view, the identity of medicine is inexorably linked with that of Nazi medicine. It is evident in most discussions within the medical community that this link has to be severed in any way possible; inevitably the discussion then must deal with the use of the data Nazi medicine produced.

It is important to understand the way Nazi medicine and doctors have been discussed and dealt with in the Western medical community because of the direct relation this has with the discussion of data use. The data often serves as a surrogate for the Nazi doctors, or Nazi medicine, and therefore, is often subject to the same analysis. The use of data may be the overt topic, but the underlying tension of the medical community’s association with Nazi medicine is often what is really being addressed.

For Western medicine in the immediate aftermath of the Holocaust, debates within the medical communities initially focused on the role and responsibility of the doctors. They generally attempted to address whether the individuals were acting of their own volition, with the intent to gather scientific data at any cost; or, whether the medical community was simply under the control of - another facet of - the greater Nazi agenda, with the medical community having little or no say in the actions being asked of them. This was an attempt to address and identify individual agency verse the coercion of the state.

Discussion began almost immediately and was highlighted throughout the Nuremberg Trials. Because individuals rather than medicine or Nazi structure were on trial it was easier to claim that the atrocities were performed by just a few doctors working alone. Thus the emphasis was on the guilt of these individuals, who could then be shown as not representative of Western medicine. This has heavily influenced and skewed any conversation surrounding the use of the data produced by these doctors. It is important to understand the discussion about the Nazi doctors themselves, their actions, and the ethics of medicine in general because, the

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ethical and moral discussion of what the Nazi doctors did during the Holocaust became intertwined with the discussion of the data that came out of their work.

The Nuremberg Trials, thus, had two lasting influences on later discussions of Nazi data use. The first is that the limited scope the Nuremberg Trials left the task of broader understanding up to the medical community itself. Because individuals were the focus of the trials, it was easier to emphasize the guilt of these individuals and claim that the atrocities were performed by just a few doctors working alone. It was the doctors and the regime they served who were abhorrent, not medicine and its ethics. Those who were deviant and their actions should not be extrapolated from to reflect on the medical community in general. With this rational the data produced by the doctors was distinct from their actions, because it was the doctors who were evil and had done wrong. For proponents of data use this meant that the data became a neutral entity, an unfortunate but possibly useful outcome. The delineations between the individuals, the methods, and the products allowed Western medicine to continue and justify its own human experimentation practices. Western researchers could argue that they were part of a more ethical community, not working alone, and were in no way comparable to the Nazi doctors.

Conversely, the second tendency is for the debate in medical ethics called upon the standards which were established in the Nuremberg Code as a tool for comparison and judgment against the very actions for which those standards were established. Caplan notes that most of medical ethics locates “the origins of bioethics in the ashes of the camps. The Nuremberg Code is frequently held up as the ‘constitution’ of human subject research.”

Code has become a tool for demonstrating why what Nazi doctors did was wrong, but it did not exist at the time of the experiments. There were other medical standards in place, most famously the Hippocratic Oath, but these varied for different institutions and different cultures.\textsuperscript{28} This inconsistency in explanation was not lost on the medical community. This may be why the standards of the Code are then applied to the Nazi data. The actions of the doctors should not be judged against later ethical standards, but the data produced by those doctors and its use can be addressed. This led to overly reactive and restrictive application of censure on the use of data. Because the actions and events perpetrated during the Holocaust cannot be stopped or sanctioned, the data serves in its place.

Many in the medical community have set aside the discussion all together. As Arthur Caplan puts it, “many scholars have dismissed the research done in the camps as worthless and those involved in conducting it as lunatics and crackpots. What point is there in discussing research that is nothing more than torture disguised as science?”\textsuperscript{29} This is indicative of the dismissal of any data because of the condemnation of the scientists. The scientists who refuse to even acknowledge the data are blinded to the fact that others were using the data. This speaks to the interconnected nature of the two debates, and why it is important to separate them. Simply ignoring the discussion of data because a conclusion has been reached regarding those who gathered the data also ignores that the data is already in the medical literature.


\textsuperscript{29} Caplan, "Too Hard to Face," 397.
Beyond the focus on just the individuals, there was also the need for Western medicine to completely condemn and distance itself from any association with Nazi medical practices.\textsuperscript{30} All links and associations had to be severed between the horrific practices that occurred in concentrations camps and medical science that was being legitimately practiced in other medical communities. There were swift and severe attempts by the other medical communities to create distance between associations to Nazi medicine, and the disavowal of even the slightest comparison.

The justification for much of the Nazi research, especially experimentation involving humans, was argued to be the betterment and advancement of quality of life for all humanity. The end goals of medicine - suffering alleviated, diseases cured, or lives saved – often, even in modern medicine, makes experimental means justifiable and noble.\textsuperscript{31} These rationales place a moral component on how and why experimentation takes place, and can often be the very things that lead to actions that are later deemed to be contrary to the goals of science. This became one of the main arguments in defense of, or at least rationalization of, Nazi experimentation. The rationale behind many of the human experiments, especially the hypothermia experiments, was the betterment of German life and saving the brave, noble men who were fighting.

The rationale that the Nazi doctors were working in the interest of the benefit of humanity and science did not influence the later rational of their practices, but it did serve to highlight some of the similarities between Nazi experimentation and experimental justification.


in other medical research. There were swift and severe attempts by the general medical community to create distance between associations to Nazi medicine, and disavow even the slightest comparison.

Once some time, distance, and perspective occurred, there began to be a shift in analysis of Nazi medicine, moving away from looking at the roles and responsibilities of individuals, and instead focusing on the influence of larger societal and psychological structures that were at work during the Nazi regime. For example, new research in 1971 pioneered by Philip Zimbardo, a psychologist at Stanford University, provided a new way to interpret the choices and actions of people and doctors under Nazi rule. The Stanford Prison Experiments provided some of the greatest insights and explanations into why people perform immoral acts or “resort to evil.” These experiments showed how seemingly good people could do horrible things and make choices that were viewed as immoral or criminal. This is often pointed to as an explanation or justification for the actions of individuals being forced or coerced by the Nazi regime. This was the beginning of the shift that was occurring from focus on the individual to study of the larger structures and influences. Zimbardo’s study was important because it exemplified a shift in focus away from looking at the actions and motives of individuals divorced from environmental influences, and instead attempted to understand a number of different aspects. In the realm of medicine and ethics, this was important because it shifted emphasis from specific doctors and their responsibility, to looking at the societal and causal factors that allowed for unethical experimentation to occur in the first place.

http://www.prisonexp.org/
Other explanations of the rise and fall of Nazi medicine have focused on larger societal and power structures. Arthur Caplan and others have argued that the racist underpinnings of Nazi ideology had been prominent in German biology and racial hygiene theories well before Hitler came to power. This suggested, rather than these being aberrant actions and beliefs by just a few in the Nazi medical community, the roots that ultimately led to the rationalizing of human experimentation had a deep and long history in mainstream German biology, medicine, and public health. Jay Katz, 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 the patient’s interests were best served by trusting their doctors.

This new understanding and deeper insight into the complex structures that created and supported medicine and research in the Nazi era made the understanding and implications of the data produced much more complicated and convoluted. While initially the data and the doctors where separate, the two topics have evolved to become inseparable in any discussion of medical ethics.

These many different interpretations have influenced and shaped the evolution of distancing from and rationalization of Nazi medicine. While initially most stemmed from the explicit censure of the doctors involved, providing specific individuals to focus on and blame, recently, more nuanced examination of how medicine existed within the Nazi structure has


35. Ibid. 55.
provided different, complex interpretations. Regardless, the arguments used often just serve as a means for the medical community to rationalize its difference from and disapproval of Nazi medicine. By establishing the identity of modern medicine as the specific antithesis of what occurred during the Holocaust, it is felt that no associations or accusations can be made.

These ways of looking at and explaining Nazi medicine are important because they directly influenced the evolution of the discussion surrounding the use of the data. There were two different aspects of medicine in the Nazi regime that have been scrutinized and debated in the medical community since the actions and results of the Nazi doctors have become well known. The first, and larger debate, concerns the roles and responsibilities of the doctors themselves, and the culpability of the medical profession in what occurred under the Nazis. The second debate concerns the morality of using the data that resulted from the experiments and actions of these doctors. These are separate issues and should be analyzed separately. However, most discussion concerning the use of the data is tainted by the abhorrence of and distancing from the Nazi medical practices.
CONCLUSION

Leo Alexander was correct, if underestimating, the true impact that Nazi medicine and the Nuremberg Trials would have on science, medicine, and the world. He could have never predicted the long life his own work and the data contained within would have in citations and in the debates concerning Nazi data use. Alexander’s report, The Treatment of Shock is at the center of the continued citation of hypothermia data. It serves as the most comprehensive account and greatest source of information concerning Nazi experimentation. These reports remains controversial even as its use is less acknowledge. Additionally, Alexander’s personal views highlight the complex and shifting opinions that have occurred in medicine and ethics about the use of unethically obtained medical data. Alexander’s story, as one of the primary disseminators of the information that became so controversial while having conflicting personal feelings on the subject, is an important framework for understanding the complex, contradictory nature of the information itself and how it has been handled.

While substantial research has gone into understanding the causes and effects of the medical atrocities perpetrated during the Holocaust, there have only been partial investigations into the full aftermath of the Holocaust. The study of the resulting data has yet to be thoroughly explored. Studying the history of how the data was collected and used, and more significantly, the discussions that have occurred about ethics and continued data use, can shed light on the aftermath of the Holocaust and the attempts of the Western medical community to make sense of horrific events perpetrated by peers. This topic is also important because how the data has been used and discussed provides great, often contradictory, insight into medical history and the development of medical and biomedical ethics. Awareness of the full history of medicine and human experimentation, including the presence and use of this data, can also help
encourage greater discussion and understanding as new controversies are discovered and publicized. The long and complicated journey that these products of condemned acts follow, whether it be dismissal, obfuscation, or use, help shape subsequent history understood about medicine, ethics, and the Holocaust.

It has been shown that while the original source of that data is not always explicitly stated, or sometime glossed over, the data is in fact being used. The further removed from Alexander’s original report, the less likely it is for researchers to realize what they are citing. There also may be reluctance to openly acknowledge the true source of the data given the increased and vocal controversy that surrounds its use.

Admittedly, there is considerable overlap in the moral and practical implications of the discussion of Nazi medicine, doctors, and the use of the resulting data. However, there are significant differences that, when teased apart and analyzed separately, shed a deeper light on the complexities of the broader subject of Nazi medicine and medical ethics.

While Nazi doctors violated the concrete, if unwritten, norm of doing no harm, their legacy is far more multifaceted and still in the process of being defined. This process highlights the shared identity of the Nazi medical community and the general medical community in the rest of the world. This post Holocaust identity must be demarcated from the abhorrent acts that occurred. This process can help in understanding the actions that took place, the structure of medicine in general, the change in ethics, and the evolution of medicine and its community in general. Alexander’s report and the subsequent debates that have occurred in the field all provide insight into the development and aftermath of Nazi medicine that is far greater than just the perpetrated atrocities.
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APPENDIX

Hippocratic Oath – Ancient version
I swear by Apollo the physician, and Asclepius, and Hygieia and Panacea and all the gods and goddesses as my witnesses, that, according to my ability and judgment, I will keep this Oath and this contract:
To hold him who taught me this art equally dear to me as my parents, to be a partner in life with him, and to fulfill his needs when required; to look upon his offspring as equals to my own siblings, and to teach them this art, if they shall wish to learn it, without fee or contract; and that by the set rules, lectures, and every other mode of instruction, I will impart a knowledge of the art to my own sons, and those of my teachers, and to students bound by this contract and having sworn this Oath to the law of medicine, but to no others.
I will use those dietary regimens which will benefit my patients according to my greatest ability and judgment, and I will do no harm or injustice to them.
I will not give a lethal drug to anyone if I am asked, nor will I advise such a plan; and similarly I will not give a woman a pessary to cause an abortion.
In purity and according to divine law will I carry out my life and my art.
I will not use the knife, even upon those suffering from stones, but I will leave this to those who are trained in this craft.
Into whatever homes I go, I will enter them for the benefit of the sick, avoiding any voluntary act of impropriety or corruption, including the seduction of women or men, whether they are free men or slaves.
Whatever I see or hear in the lives of my patients, whether in connection with my professional practice or not, which ought not to be spoken of outside, I will keep secret, as considering all such things to be private.
So long as I maintain this Oath faithfully and without corruption, may it be granted to me to partake of life fully and the practice of my art, gaining the respect of all men for all time. However, should I transgress this Oath and violate it, may the opposite be my fate.


Hippocratic Oath - Modern version
I swear to fulfill, to the best of my ability and judgment, this covenant:
I will respect the hard-won scientific gains of those physicians in whose steps I walk, and gladly share such knowledge as is mine with those who are to follow.
I will apply, for the benefit of the sick, all measures which are required, avoiding those twin traps of overtreatment and therapeutic nihilism.
I will remember that there is art to medicine as well as science, and that warmth, sympathy, and understanding may outweigh the surgeon's knife or the chemist's drug.
I will not be ashamed to say "I know not," nor will I fail to call in my colleagues when the skills of another are needed for a patient's recovery.
I will respect the privacy of my patients, for their problems are not disclosed to me that the world may know. Most especially must I tread with care in matters of life and death. If it is given me to save a life, all thanks. But it may also be within my power to take a life; this awesome responsibility must be faced with great humbleness and awareness of my own frailty.
Above all, I must not play at God.
I will remember that I do not treat a fever chart, a cancerous growth, but a sick human being, whose illness may affect the person's family and economic stability. My responsibility includes these related problems, if I am to care adequately for the sick.
I will prevent disease whenever I can, for prevention is preferable to cure.
I will remember that I remain a member of society, with special obligations to all my fellow human beings, those sound of mind and body as well as the infirm.
If I do not violate this oath, may I enjoy life and art, respected while I live and remembered with affection thereafter. May I always act so as to preserve the finest traditions of my calling and may I long experience the joy of healing those who seek my help.


THE NUREMBERG CODE

1. The voluntary consent of the human subject is absolutely essential.
   This means that the person involved should have legal capacity to give consent; should be so situated as to be able to exercise free power of choice, without the intervention of any element of force, fraud, deceit, duress, over-reaching, or other ulterior form of constraint or coercion; and should have sufficient knowledge and comprehension of the elements of the subject matter involved, as to enable him to make an understanding and enlightened decision. This latter element requires that, before the acceptance of an affirmative decision by the experimental subject, there should be made known to him the nature, duration, and purpose of the experiment; the method and means by which it is to be conducted; all inconveniences and hazards reasonably to be expected; and the effects upon his health or person, which may possibly come from his participation in the experiment. The duty and responsibility for ascertaining the quality of the consent rests upon each individual who initiates, directs or engages in the experiment. It is a personal duty and responsibility which may not be delegated to another with impunity.
2. The experiment should be such as to yield fruitful results for the good of society, unprocurable by other methods or means of study, and not random and unnecessary in nature.
3. The experiment should be so designed and based on the results of animal experimentation and a knowledge of the natural history of the disease or other problem under study, that the anticipated results will justify the performance of the experiment.
4. The experiment should be so conducted as to avoid all unnecessary physical and mental suffering and injury.
5. No experiment should be conducted, where there is an a priori reason to believe that death or disabling injury will occur; except, perhaps, in those experiments where the experimental physicians also serve as subjects.
6. The degree of risk to be taken should never exceed that determined by the humanitarian importance of the problem to be solved by the experiment.
7. Proper preparations should be made and adequate facilities provided to protect the experimental subject against even remote possibilities of injury, disability, or death.
8. The experiment should be conducted only by scientifically qualified persons. The highest degree of skill and care should be required through all stages of the experiment of those who conduct or engage in the experiment.

9. During the course of the experiment, the human subject should be at liberty to bring the experiment to an end, if he has reached the physical or mental state, where continuation of the experiment seemed to him to be impossible.

10. During the course of the experiment, the scientist in charge must be prepared to terminate the experiment at any stage, if he has probable cause to believe, in the exercise of the good faith, superior skill and careful judgment required of him, that a continuation of the experiment is likely to result in injury, disability, or death to the experimental subject.