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A Necessary Evil?

How the Experiments done in Nazi Concentration Camps Lend to Medical Data Today

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Abstract

In this essay, I set out to prove that some of the medical experiments undertaken by Nazi doctors during World War II have scientific relevance in today's scientific community. In the first section, the experiments connected with Dr. Karl Brandt will be examined in some detail allowing the reader to develop a basic knowledge of the experiments that will be discussed. This will also set the foundation for the discussion on scientific validity due to the nature in which they are described. In the second section, the results relevant to today's scientific community will be discussed, proving that these horrific experiments do have useful applications. In the third section, the debates surrounding the issues of euthanasia and the use of the results from the experiments will be examined. Although some of the results do have scientific validity, these, and similar, experiments should not be replicated due to their horrendous nature.

“It is alleged, in essence, under count I of the Indictment, that Karl Brandt conspired and agreed with others pursuant to a common design, to perform medical experiments on involuntary human subjects; under Counts II and III that he was a principal in, accessory to, ordered, abetted, took a consenting part in, and was connected with plans and enterprises involving medical experimentation on involuntary human subjects and the execution of the so-called “euthanasia” program.”¹

This passage from the closing prosecutor wraps up the evidence against Karl Brandt excellently from the trial of the *United States vs. Karl Brandt et al.* In this case, 20 Nazi medical doctors who committed crimes against humanity through various medical testing on involuntary human subjects had their experiments brought into the light.

Karl Brandt played a large role in these medical experiments originally as Hitler’s escort physician and, later, acquiring other important positions in the Nazi medical hierarchy.² There was a wide array of experiments that Karl Brandt was connected to, all of which had a very specific goal for why they were carried out. These experiments, while torturous, were carried out for valid scientific reasons, under strict guidelines, and many still have applications to modern medicine.

The first section in this thesis will go into depth concerning the experiments that Karl Brandt was in charge of or involved with. This section is broken down into two main subsections- the “euthanasia” (program from its beginnings) and experiments that Brandt carried out for scientific recognition and career advancement. There are two main reasons for why explaining the experiments will help to prove they have scientific merit. First, it sets out to prove that all of these experiments have a specific question they

¹ Alexander G. Hardy, Arnost Horlik-Hochwarld, Esther J. Johnson, James M. McHaney, “Brief: Closing Brief Against Karl Brandt,” (Case Files, 567, Nuremberg, Germany, 1947, 2).

² Ulf Schmidt, *Karl Brandt: The Nazi Doctor, Medicine, and Power in the Third Reich* (London and New York: Hambledon Continuum, 2007), 130.

attempt to answer or a problem that needs to be solved. Second, this section will show the methods and some of the trial results that came from each of the experiments. Both of these conditions help to justify why researchers have used the results from these experiments in present day scientific research.

The second section in this thesis will explore the applications from these experiments to modern day science and medication. Mass human experimentation is no longer possible due to the Declaration of Helsinki, so the results of these experiments are some of the only data sources researchers have for developing new and improved medical treatments. These applications will help to show that human experimentation was necessary for some of the advanced treatments people in the medical profession has today. This section will also help to show that animal experimentation was not enough in most cases to gain in the insights that were found through the experiments that occurred.

The third section in this thesis will be a discussion of the various historical and medical thoughts concerning the ethical applications of this dilemma. In both the past and present, many people believe that the tragedies which took place inside the concentration camps during World War Two should be left there as a reminder of a period in history that should not be repeated. However, there are some that agree, or partially agree, with the position that the procedures that took place were necessary medical experiments that took place, [insert word] on unwilling participants, and furthered the knowledge the medical community has today.

The Experiments

One of the most famous programs from the World War Two era that was being developed in Germany is the Euthanasia program. This program developed in 1939 with

the co-organization and implementation of Karl Brandt and Philipp Bouhler, a senior Nazi Party official.³ During the early stages of the euthanasia program, it was tested on children by killing them through either starvation or lethal overdoses of medication.⁴ By 1940, an adult killing campaign paralleled the child euthanasia program named Operation T4. Beginning in January 1940, selected patients were transferred to one of six centers throughout Austria and Germany where they would be gassed with carbon monoxide and cremated within hours.⁵ This early version of the euthanasia program was halted by Hitler on August 24, 1941 due to fear of public unrest after it had killed 70,273 people.⁶

By October 1941, Brandt had partially removed himself from the euthanasia program and was now the leading official in charge of civilian medicine.⁷ Overall, it is estimated that around 5,000 “mentally deficient, physically deformed, and diseased children were killed” during the euthanasia program.⁸ Another average coming from the Czechoslovak War Crimes Commission estimated that a total of 275,000 people were killed; this number includes those who are aged, insane, and incurable who were living in nursing homes as well as the “enemies” of the Nazi party.⁹

The goal of the Nazi party through the experimentation and development of the Euthanasia program was to perfect the Aryan race. This so-called “master race” was

³ Ulf Schmidt, *Karl Brandt*, 117.

⁴ Patricia Heberer, “Early Postwar Justice in the American Zone: The “Hadamard Murder Factory” Trail,” in *Atrocities on Trial: Historical Perspectives on the Politics of Prosecuting War Crimes* ed. Patricia Heberer and Jürgen Matthäus (Nebraska: Board of Regents at the University of Nebraska, 2008), 27.

⁵ Heberer, “Early Postwar Justice in the American Zone,” 27.

⁶ Heberer, “Early Postwar Justice in the American Zone,” 27.

⁷ Schmidt, *Karl Brandt*, 168.

⁸ Vivien Spitz, *Doctors from Hell: The Horrific Account of Nazi Experiments on Humans* (Boulder, CO: Sentient Publications, 2005), 60.

⁹ Spitz, *Doctors from Hell*, 60-61.

believed by Hitler to be the most genetically fit and the pure German race. This was something the Nazi party strived for during the euthanasia program.

Eugenics was coined in 1881 by Frances Dalton, a British Biologist, for a scientific program aimed to improve human racial stock through selective scientific breeding. In Germany, this came to mean improving the race by “preserving and fostering the Nordic heritage against so-called foreign elements.”¹⁰ The Nazi party was concerned with preserving their heritage in both the way they appeared both physically and mentally. The eugenics program helped support the belief in the superiority of the Aryan race as well as the need to dispose of the rest of the population as well as Aryan people who were “unfit” to live.

By October 1941, Dr. Karl Brandt had removed himself from the euthanasia program and was now the leading official in charge of civilian medicine.¹¹ With the new position, he was given a wider latitude of possibilities to perform experiments for his own initiatives. Although reprehensible in nature, many of the experiments he performed or was connected to have honorable causes behind them. Many of the experiments were done to help civilian or military populations during the war effort in ways that could improve their overall chance of survival. The range of these experiments helps to prove that they were not done specifically for the objective of torture, but to aid in the survival of the German population. These experiments can be broken down into a few distinct groups: food and water experiments, sulfonamide experiments, epidemic jaundice

¹⁰ Walter Wright, “Peter Singer and the Lessons of the German Euthanasia Program,” *Issues in Integrative Studies*, no. 18 (2000): 29.

¹¹ Schmidt, *Karl Brandt*, 168.

experiments, phosphorous burn treatments, freezing experiments, and chemical and biological warfare.

A first group of personal experiments that Dr. Karl Brandt is connected with are those concerning the ingestion of various food and water alternatives. This was done due to the concern with malnutrition in both soldiers and civilians. Before these experiments occurred, experts had stated that 3,500 calories per day through concentrated food would be sufficient for a soldier, but that did not seem to be enough. There was also little information known about what type of foods were the best and should be used in the diet because different food contains different amounts of fats and protein.¹² The scientists who carried out these operations were also concerned about their soldiers being stranded out in open ocean for long periods of time.

These tests were conducted in a carefully defined way and the doctors monitored the people who underwent the experimental procedures. Examining the experiments concerning food substitutes, a total of 450 'healthy' camp inmates were fed a type of artificial pâté (ÖstlicheKostform) which was made from cellulose remnants. Due to this diet, many prisoners suffered from severe stomach and gastrointestinal problems.¹³ The results of these tests allowed German doctors to conclude that other prisoners could get fed this and expanded the test to include 100,000 prisoners in the Nazi concentration camps of Dachau, Buchenwald, and Sachsenhausen for three months. A six-month test was also run in Mauthausen. Eventually, 116 prisoners died from a group of 370 in the

¹² Schmidt, *Karl Brandt*, 460.

¹³ Schmidt, *Karl Brandt*, 262.

Mauthausen concentration camp.¹⁴ The number who died could have died from any number of reasons; the diet was not the only factor in these prisoners lives that was leading towards an end result of death. The brutal work environment and close quarters with fellow prisoners created an environment where survival was made almost impossible.

In the seawater experiments, victims in Dachau concentration camp were forced to live on a diet of nothing besides chemically processed seawater. This was done to mimic the conditions of soldiers stranded at sea for lengthy periods of time. These experiments took place between July and September 1944 and had the objective of turning sea water into drinkable water.¹⁵ During these experiments, 44 experimental subjects aged 16-49 were split into different groups. The first group had no water at all. The second drank ordinary sea water. The third had sea water processed by the Berka method.¹⁶ The fourth, and final, group drank sea water treated to remove the salt. Out of these four groups, only the last three groups were given emergency sea rations.¹⁷

The control group in this experiment was the group that received nothing because it allowed the doctors to know how long it would take for someone to die without any provisions. The experimental groups were provided with different types of water that could potentially be available in open water emergency conditions. The sea water

¹⁴ This group of 370 was divided in to 220 prisoners in a control group and 150 in an experimental group. Schmidt, *Karl Brandt*, 262.

¹⁵ Joel Levi, "Medicine, the Holocaust, and the Doctor's Trial," in *Bioethical and Ethical Issues Surrounding the Trials and Code of Nuremberg: Nuremberg Revisited* ed. Jacques J Rozenberg (Lewiston NY: The Edwin Mellen Press, Ltd, 2003), 122.

¹⁶ The Berka method is a method used to remove the salty taste of sea water, but not the salt.

¹⁷ Spitz, *Doctors from Hell*, 157-158.

experiments ended with excruciating torture, diarrhea, convulsions, hallucinations, foaming at the mouth, and in most of the prisoners madness or death.¹⁸

Another group of medical experiments that Karl Brandt was found to be in connection with at the medical trial is the sulfonamide experiments. Sulfonamide drugs are those used in the treatment of various bacterial infections.¹⁹ These experiments began as a “medico-political gesture by Karl Gebhardt in 1942 as a way of testing the efficiency of various commercial Swiss and German sulfonamide drugs.²⁰”

The population that these tests were conducted on consisted of 20 male prisoners from Sachsenhausen and also involved 30 operations on women who had foreign bodies placed inside them.²¹ During the experimental procedure, patients were taken to the hospital at Sachsenhausen, told to undress, were and examined, then X-rayed. After that they were taken to the hospital operating room on a small trolley and operated on.²² These operations involved inserting foreign bodies such as wood, powdered glass, or surgical needles into the appendages of the various patients. One of the patients recalls how she had her leg operated on, but only remembers the trace of a sting and not a wound. After this her dressings were changed many times.²³ Over the course of the experiments 74 women were operated on; it was typical for many of these women to

¹⁸ Spitz, *Doctors from Hell*, 173.

¹⁹ “Sulfanilamide,” *The American Heritage Dictionary of Medicine*, ed. The Editors of the American Heritage Dictionaries. 2nd ed. (Boston: Houghton Mifflin, 2015). Accessed 11/15/17.

<http://search.credoreference.com.libproxy.library.wmich.edu/content/entry/hmmedicaldict/sulfanilamide/0>

²⁰ Schmidt, *Karl Brandt*, 263.

²¹ These foreign bodies consisted of wood, powdered glass, or surgical needles. Schmidt, *Karl Brandt*, 263.

²² Spitz, *Doctors from Hell*, 148.

²³ Spitz, *Doctors from Hell*, 148.

undergo multiple operations. Only five died as a result of the operations making this a low risk procedure.²⁴ With these statistics there was only a six percent chance of death during these operations. However, if you factor in the multiple operations the women underwent, this percentage declines drastically. The doctors who performed these experimental operations did so with care so that they would be able to test the efficiency of the tested sulfonamide drugs in order to pass accurate information onto their superiors to help their country achieve a higher quality of antibacterial care.

Epidemic jaundice experiments were another type of experiment Dr. Karl Brandt is linked to in his personal inquiries.²⁵ These experiments were conducted from June 1943 to January 1945 on inmates at Sachsenhausen and Natzweiler for the benefit of the German Air Force. The main objective of these experiments was to find out the causes of hepatitis, whether it originated from a virus or bacteria, and if there were any possible cures.²⁶ This mission was undertaken because from 1941 to 1943 the German army counted approximately five to six million soldiers who had fallen ill from hepatitis.²⁷ This disease took an enormous toll on the Army and Air Force and thus needed to be cured.

The doctor who headed these experiments was Dr. Arnold Dohmen. In the initial stages of these experiments Dr. Dohmen picked 22 boys between the ages of nine and 22 who were emaciated and exhausted from the Auschwitz concentration camp. These boys were then examined by Dr. Mengele and narrowed down to 11 who were then brought to Sachsenhausen.²⁸ In order to produce a cure for the hepatitis vaccine, Dr. Dohmen

²⁴ Spitz, *Doctors from Hell*, 150.

²⁵ Epidemic jaundice is more commonly known as hepatitis.

²⁶ Spitz, *Doctors from Hell*, 187.

²⁷ Schmidt, *Karl Brandt*, 265.

²⁸ Schmidt, *Karl Brandt*, 672.

explained that he needed to infect the boys before testing for a cure. In September 1944 Dr. Dohmen began his experiments by infecting the chosen boys with hepatitis, testing their blood and livers, and quarantining them.²⁹ These experiments seem to have had no mid- or long- lasting damages to the children.³⁰ Through these experiments, it seems nothing was learned about this disease.

Dr. Karl Brandt also was found guilty in connection with a group of experiments concerning phosphorous burns and their treatment. During the 1943 bombing raid by the Allied air forces hundreds to thousands of men, women, and children were left with phosphorous burns of varying degrees. This situation created a need to remedy these burns before the problem grew exponentially worse.³¹ These incendiary bombs were of a type never before used in bombing raids, so this new problem had no immediate solution.

In the fall of 1943, Dr. Karl Brandt set a new ointment to anti-aircraft medical centers. This new ointment had the potential to resolve the burns caused by the phosphorus bombs. Due to this potential, one of the doctors there inquired about testing it on camp inmates.³² The doctor involved in these experiments received permission to operate on inmates at Buchenwald. Over a six-day period, five prisoners from Germany and the Netherlands were burned with phosphorous material from an incendiary bomb to test the effectiveness of the drug 'R 17' and the ointments 'Echinacin Ointment' and 'Echinacin Extern.'³³ These experiments seemed to prove effective, but many civilians suffered consequences due to the extreme nature of these bombs.

²⁹ Schmidt, *Karl Brandt*, 273 &275.

³⁰ Schmidt, *Karl Brandt*, 275.

³¹ Schmidt, *Karl Brandt*, 276.

³² Schmidt, *Karl Brandt*, 277.

³³ Schmidt, *Karl Brandt*, 278-279.

Another group of experiments that were conducted that Dr. Karl Brandt is connected to are freezing and thawing experiments. These experiments were conducted for the benefit of the German Air Force between August 1942 and May 1943. The experiments themselves involved chilling the victims until their bodies dropped below freezing.³⁴ The most likely reason why these experiments were carried out was to gain knowledge of how to thaw bodies out after they had been frozen either in the ocean or in cold climates- for example the Soviet Union in the winter. The knowledge of how to effectively thaw a frozen individual or even an effected body part would have proven invaluable for the German Army and Air Force during the long winter months of World War Two. Another goal of the experiments was to see how long a person could remain in frigid water without dying.³⁵ This information would be valuable because if a ship were to be sunk by the enemy troops, the German Navy would know how long they had to search for any survivors from the downed ship before declaring the crew a lost cause.

To perform these experiments, doctors froze prisoners in both cold water and through dry freezing. The freezing experiments affected approximately 400 people of which 80 to 90 died due to the constant chilling and refreezing. The people who were used were brought down to a body temperature of 25 degrees Celsius, and then were revived in various processes of thawing in order to create a revival method that was safe.³⁶

³⁴ Levi, "Medicine, the Holocaust, and the Doctors' Trial," 121.

³⁵ Spitz, *Doctors from Hell*, 93.

³⁶ The temperature of the prisoners was taken both rectally and through the stomach. Spitz, *Doctors from Hell*, 87-91.

During World War II, chemical and biological warfare was becoming a much more common. These groups of warfare caught the attention of many doctors and scientists due to their growing use, including Dr. Brandt. Experiments involving biological and chemical warfare included both the development of ways to protect German civilians from the effects as well as the creation of new methods to carry out chemical and biological warfare.

The biological warfare experiments were of interested because it was not known “under what conditions inhaled aerosols or dispersed droplets of certain pathogenic germs cause disease in man, Prof. Blome [part of the Blitzableiter committee, the German committee for the production of biological warfare agents] suggested experiments on human beings.”³⁷ There are many diseases that can be spread in this way, but only a few were focused on for the purposes of Dr. Brandt’s research interests. The two main diseases that were focused on in this line of experimentation (and linked to Dr. Karl Brandt) were malaria and typhus.

The malaria experiments took place between February 1942 and April 1945 in Dachau concentration camp and were designed to find a cure by infecting healthy camp inmates.³⁸ For the malaria experiments alone, over 1,084 were subjected to injections of malaria, including Catholic priests. Each month, three to five inmates were also infected for the sole purpose of infecting others.³⁹ This small population was not used in the search for a cure, but had the sole purpose of incubating the infection. About half of the

³⁷ Schmidt, *Karl Brandt*, 282.

³⁸ Levi, “Medicine, the Holocaust, and the Doctors’ Trial,” 121.

³⁹ Spitz, *Doctors from Hell*, 103.

people who were infected with malaria were killed during these experiments in the search for a cure.⁴⁰

One of the priests who remembered being subjected to this experiment is Father Koch. Father Koch was X-rayed then put into a little room where he would hold a box of mosquitos every day for one week for about 30 minutes. Every afternoon a second box was set between his legs. He also remembers that he had his blood drawn every morning and his blood was taken every night and day.⁴¹ This was the typical life of one of the patients chosen to be a part of the malaria experiments. Through the course of these experiments, Dr. Schilling was successful in developing a vaccine against malaria.

A vaccine was also successfully developed in the case of the typhus experiments. In these experiments, many fewer people were killed in the search of a cure- approximately 154 people out of the 729 prisoners.⁴² The typhus experiments took place between December 1941 and March 1945 in Buchenwald and Natzweiler. The aim of these experiments was to evaluate vaccines for typhus, yellow fever, small pox, paratyphoid A and B, cholera, and diphtheria. They also hoped to develop a typhus convalescent serum.⁴³

The chemical warfare experiments focused much more on becoming prepared for an attack if one should happen. On average, Germany was only thirty two percent prepared for a chemical attack if one should ensue. This was even less for children at

⁴⁰ Spitz, *Doctors from Hell*, 106.

⁴¹ L.K Truscott Jr. and Charles Cheever, "Extracts from a Review of the Trial of the United States v. Weiss, Ruppert et. al," (Casefiles, Prosecution 125, Dachau, Germany, 1946, 2-3).

⁴² Spitz, *Doctors from Hell*, 199.

⁴³ Spitz, *Doctors from Hell*, 209.

seven percent.⁴⁴ This would leave the country in a disastrous state if the Allies should strike with chemical weapons.

A few of the more common chemicals that were used in these experiments were mustard gas and phosgene poisoning. In the mustard gas experiments some victims were wounded then infected with the gas, others had to inhale it, ingest it in liquid form, or were injected with it.⁴⁵ In the phosgene poisoning experiments, 40 prisoners were infected in various ways in order to test the prophylactic effect of hexamethylenetetramine (today this chemical is suitable for long-term treatment of urinary tract infections due to its makeup). Of these 40, 12 were given it orally 20 had it injected it into their vein, and eight were used as a control group. All of these prisoners were middle aged men in a weak and underfed condition. Throughout the experiment they developed a brown foam at the mouth, ears and nose.⁴⁶ Both of these experiments tested the effectiveness of the gasses that were currently being produced. In Dr. Brandt's world view, "this was a necessary evil to protect German citizens, especially as rumors were circulating that the Allies were stockpiling chemical warfare agents in preparation for a large-scale gas attack on Germany."⁴⁷

All of these experiments, whether they were carried out on the orders of Karl Brandt or had some other endorsement from him, had a clear objective in mind and were carried out according to a plan. The doctors and scientists who actually did the testing followed protocols set in place by the people they reported back to in order to procure the

⁴⁴ Schmidt, *Karl Brandt*, 282.

⁴⁵ Schmidt, *Karl Brandt*, 285.

⁴⁶ Schmidt, *Karl Brandt*, 294.

⁴⁷ Schmidt, *Karl Brandt*, 285.

most accurate results. The fate of Germany in the war effort, especially once the United States became involved, hung on the fate of these experiments. If accurate and useful results could be produced by the doctors who were doing the testing, German officials believed, there might be a way to aid Germany in the struggle for the upper hand.

How do these experiments influence modern medicine?

Many of these experiments resulted in scientific data that is helping to influence the medical field today. Much of the data that was collected through these studies could not have been collected in any other way. The restrictions on doctors and other professionals in the medical and scientific fields today have been created precisely so that similar experiments have no way of being carried out. Due to the gruesomeness of some of the experiments and the high death toll others took, the Nuremberg Code and, later, the Declaration of Helsinki were accepted as ways to guide the ethical considerations of professionals wishing to do experiments.

According to the Nuremberg Code, “no experiment should be conducted, where there is a priori reason to believe that death or disabling injury will occur... the scientist in charge must [also] be prepared to terminate the experiment at any stage, if he has probable cause to believe, in the exercise of the good faith... that a continuation of the experiment is likely to result in injury, disability, or death to the experimental subject.”⁴⁸

The above passage means that experiments should not be conducted if the risk is too high to the individual who will be partaking in the experiment and that the scientist must be prepared to terminate their experiment if the risk level rises past a previously defined threshold. Due to the nature of some of the experiments that were run during the Nazi occupation of Germany and other regions of Europe, these standards would have

⁴⁸ “Trials of War Criminals before the Nuremberg Military Tribunals under Control Council Law No. 10,” vol. 2 (Washington D.C.: U.S. Government Printing Office, 1949) 181-182.

made the advancements made impossible. The Declaration of Helsinki continues to outline that the benefits that the experiments will have must be found to outweigh the risks.⁴⁹ This was not always necessarily the case with the experiments that occurred either. The freedom that the Nazi doctors had and the medical technology that they had at their disposal is unmatched at any other time in history which resulted in significant data that is still being used and debated over today.

One of the programs from the times of the Nazi experiments is from the use of euthanasia, or mercy killings. There were two driving forces behind the euthanasia program in Germany, eugenics and mercy killings. Hitler “considered it right to do away by mercy killing with insane people who were unfit for life, to release them from their misery.”⁵⁰ The few mercy killings were done with the consent of the parents or legal guardians of the patient who was usually terminally ill. This sentiment is still felt in some places in Europe that allow for patients to choose to end their own life with the aid of doctors.

Today, Holland is a large supporter of the euthanasia program. In this country, euthanasia is technically illegal, but it is still widely practiced. In specific outlined circumstances euthanasia is strongly supported by the Royal Dutch medical Association, and by the general public.⁵¹ The program of euthanasia in the Netherlands follows strict guidelines and appears to have a discontinuity with the program that occurred in Nazi Germany. However, two formal studies conducted by the Dutch government, in support

⁴⁹ World Medical Health Assembly, “World Medical Association Declaration of Helsinki,” (Conference Proceeding, Helsinki, 1964).

⁵⁰ Hans H. Lammers, “Affidavit Concerning the Creation and Management of the Euthanasia Program,” (Case files, 2679, Nuremberg, 1947, 39).

⁵¹ Wright, “Peter Singer and the Lessons of the German Euthanasia Program,” 37.

with the Royal Dutch Medical Association, found that “doctors, rather than patients, are increasingly making end of life decisions” and that involuntary euthanasia was prevalent.⁵² These findings allow for more of a comparison between the program in Holland and the program from Nazi occupied Germany. The line denoting the ethical nature of “death with dignity” has been skewed in opposition to the dignity of the patient and in favor of murder.

However, in a large number of cases of euthanasia in the Netherlands the strict guidelines are still being followed. These include getting written statements by doctors, allowing the patient to choose while they are still in a sane frame of mind that they want to die, and only allowing it as an option in specific cases. There is also a large emphasis placed on comfort and dignity during these situations. The slippery slope between performing euthanasia as a way to help those who wish to die with dignity and the desire to perform euthanasia based killings as a way to create a more genetically fit population is a dangerous thing. One wrong move can send even the most careful of doctors sliding off in the wrong direction. This is why, in all cases, euthanasia must be carefully monitored.

The eugenics portion of the euthanasia initiative was a worldwide movement during the early 1900s. While German doctors were attempting to expel those found unsuitable to pass on their genetics and continue a powerful Aryan race, people in the United States were doing similar things. In the United States, there were both voluntary and involuntary sterilizations that occurred during this time. Birth control was also developed to promote the limited reproduction of the lower classes and those “unfit” to

⁵² Wright, “Peter Singer and the Lessons of the German Euthanasia Program,” 38.

pass on their genes.⁵³ This phenomenon has carried into today as a topic of debate at pregnancy clinics as parents have the ability to choose to abort after finding out their fetus has an uncommon disease or a genetic mutation such as downs syndrome.

Another highly successful group of experiments are the freezing experiments. There were many stages in this experimental process besides just those at the concentration camps which helped to strengthen the potential results. However, this is a group of experiments that could not be carried out today. The high potential risk of death or serious injury to the participant in the study outweighs the benefit of figuring out how to rewarm a body once frozen. Through the experiments conducted on Nazi prisoners, a successful rewarming method was found that is still in use today.⁵⁴

Before the time of the experiments on the Nazi prisoners there was much interest on how the cold could affect the body. Scientists knew that fat could provide a general protection against the cold, but not against local freezing.⁵⁵ This meant that the body fat an individual has could help provide an insulation layer against the cold, but would not help protect against local freezing like mittens or earmuffs would. Scientists also hypothesized that those adjusted to the cold could withstand degrees of cold that those not adjusted to cold cannot. Making this appear to be a sensory- physiological and central nervous system problem.⁵⁶

⁵³ Wright, "Peter Singer and the Lessons of the German Euthanasia Program," 29.

⁵⁴ C. Lester Walker, "Article from 'Readers Digest' Concerning the Treatment Developed from the Freezing Experiments," (Case files, Weltz 9, Nuremberg, 1947, 77).

⁵⁵ B. Balke, Hans Diedrich Cremer, K. Kramer, and H. Reichel, "Articles Concerning Experiments in Adaptation to Low Temperatures," (Casefiles, Handloser 17, St. Johann, 1947, 18).

⁵⁶ Balke, "Articles Concerning Experiments in Adaptation to Low Temperatures," 18.

The original experiments, in 1943, to test the effects of freezing on the human body were failures. They were designed to simulate the conditions of soldiers as they wintered in unfamiliar territory. Seven participants were dressed in the uniforms that soldiers were given, not given more than three blankets each, and were housed in a similar shelter. The participants were also given similar housing situations through the type of bedding they had and the types of duties they had to complete. However, this experiment was not efficient because the weather was unusually warm that year.⁵⁷

This led to experiments done with animals in cold water baths. The water bath test was adapted because it allowed for “an exactly definable and reproducible situation.”⁵⁸ Temperatures in the water baths were much easier to control and could be set at precisely the correct temperature for the experiment to occur successfully. This was done in order to eliminate the uncertainty of the weather. The animals chosen for these tests were rabbits, Guinea pigs, and rats. In order for the tests to work properly, the scientists had to find the point where each of these animals would lose consciousness.⁵⁹ The importance of the point where the animals lost consciousness is that it is analogous to the point where a human would begin to lose the ability to use their mental functions, even when rewarmed.

During the tests on each of these animals there were three different temperatures. One was extremely cold and had a shorter freezing time and the other two each had increasing times and increasing temperatures. Depending on the temperature the animal

⁵⁷ Balke, “Articles Concerning Experiments in Adaptation to Low Temperatures,” 19.

⁵⁸ Balke, “Articles Concerning Experiments in Adaptation to Low Temperatures,” 20.

⁵⁹ George August Wetz, “Extract from the Report of a Conference held in October 1942 Concerning the Problem of Extreme Cold,” (Case files, Wetz 8, Nuremberg, 1942, 30).

was frozen in, the rewarming rates differ. In the coldest waters, rewarming the creature in a bath of 40 degrees Celsius the death rate was cut in half and short-wave treatment improved it slightly after that. During short-wave therapy, electrodes were sent toward the frozen animal in short wavelengths in an attempt to rewarm it. In animals frozen in the middle temperature for longer, a warm bath (40 degrees Celsius) provided similar help as in the coldest waters, but short-wave treatment does not seem to help at all. In these specimens, an injection of glucose appears to help.⁶⁰ These experiments showed that for different times and temperatures the method for reviving a specimen differed slightly because the various bodily functions shut down at different times in the different temperatures.

The successful animal experiments paved the way for successful prisoner experiments in 1943. Understanding “the objection that the whole process of regulating temperature by way of the skin is so different in humans and furred animals that one cannot draw any binding conclusions” the doctors undertook the challenge of replicating the successful results produced from the animal experiments.⁶¹ It was extremely important to achieve similarly successful results in human subjects before applying the methods to soldiers because the process that heats the bodies of humans is different than that which heats the bodies of furred animals. If the different processes were the key to success, then a new method of warming needed to be developed. The method that was created was slowly rewarming the affected people. This was so successful, that one

⁶⁰ Wetzl, “Extract from the Report of a Conference Held in October 1942 Concerning the Problem of Extreme Cold,” 33.

⁶¹ Wetzl, “Extract from the Report of a Conference Held in October 1942 Concerning the Problem of Extreme Cold,” 36.

American stated “before our war with Japan ended, this method was adopted as the treatment by all American Sea Rescue Services, and is generally accepted by medicine today.”⁶²

Biological warfare experiments were also highly successful. Vaccinations were either developed or tested successfully against strains of typhus and malaria that were tested on Nazi prisoners. These tests carry ethical dilemmas that would prohibit them from being conducted in today’s medical and scientific hemispheres. Both of these diseases carry a chance of death, depending on the strain, without treatment. The work that was carried out on concentration camp prisoners allowed for successful vaccines to be developed and likely allowed for many lives to be spared through the treatments that were tested.

In regard to typhus, the Army Medical examiner desired to know the durability of the typhus vaccine, as well as how much to inject, when to repeat injections, and any other directions.⁶³ The tests carried out on the prisoners selected for this experiment were designed to deduce this information. This would mean that the objective of the experiments was to save those infected by typhus. For those who received the vaccines, the tolerance was good overall. It was ideal to wait four to six weeks between vaccinations in order to achieve immunity.⁶⁴ Experiments conducted on the reliability of

⁶² C. Lester Walker, “Article from ‘Readers Digest’ Concerning the Treatment Developed from the Freezing Experiments,” (Case files, Weltz 9, Nuremberg, 1947, 77).

⁶³ Army Medical Inspectorate, “Letter to Behring- Werke Concerning Typhus Vaccine,” (Case Files, Handloser 67A, 1942, Berlin, 1).

⁶⁴ Joachim E.A. Mrugowsky, “Report to German Medical Authorities on the Results of Typhus Vaccine Tests,” (Case Files, Mrugowsky 20, 1942, Berlin, 2-3).

the typhoid vaccine had to be conducted on humans because one of many sources that was producing the typhoid infection was animals, however, animals were immune.

The malaria experiments were another part of the successful biological warfare experiments that resulted in a vaccine. Dr. Schilling developed a vaccination against malaria which was the only one in existence.⁶⁵ This is a highly remarkable medical breakthrough that would save lives in the long run. The necessity to work on humans is evident because animals are resistant to malaria.⁶⁶ If these experiments had not come to fruition, there would likely be no preventative vaccine against malaria due to the ethical considerations there currently are against experiments on humans.

Sulfonamide experiments were successful as well. This group of experiments helped to begin answering questions about which conditions worked with this group of medications.

Clinical success with sulfonamides was only found “in cases involving bacteria, cases where inflammation is caused by bacteria or the toxic reaction to it, diseases where the microbes causing it react to sulfonamide in vitro, diseases where the kind of organism causing it can be reached in the macro-organism [or]body fluid and reacts in vitro, [or] diseases that can come in contact with the chemotherapeutic.”⁶⁷

This passage mentions the conditions that qualify as sulfonamide successful. The main difference between those injuries and conditions that would be successful if

⁶⁵ Truscott Jr. and Cheever, “Extracts from a Review of the United States v. Weiss, Ruppert et. al,” 4.

⁶⁶ Truscott Jr. and Cheever, “Extracts from a Review of the United States v. Weiss, Ruppert et. al,” 4.

⁶⁷ Fritz Earnst Fischer, “Affidavit Concerning the Sulfonamide Experiments,” (Case Files, Gebhardt/Oberherst/ Fischer 8, Nuremberg, 1947, 5).

sulfonamide was applied. An unsuccessful application of a sulfonamide would be in a case where the injury was caused by the presence of bacteria.

Some of the experiments that were performed in the concentration camps weren't successful at developing a process or vaccine but were successful at eliminating processes that were developed but did not work. One example of this is the seawater experiments. In the seawater experiments a process called the berka method was developed to help with removing the salty taste from sea water in emergency situations. Therefore, this method of drinking sea water is almost certainly going to lead to death or serious dehydration.

This set of experiments could not be performed on humans today because the risk would be too great even if the method paid off. Experiments involving death, unless the primary scientists are also subjects, are prohibited.⁶⁸

When the Berka method was tested on prisoners in the concentration camps it was deduced that "if the Berka method is used, damage to health [is] to be expected not later than six days after taking Burkuitit... [it] will result in permanent injuries to health and... will finally result in death after not later than 12 days."⁶⁹ The results proved that this method of creating "safe" drinking water from sea water in dangerous situations was disproven and should not be used in any circumstances. The salt from the sea water still

⁶⁸ "Trials of War Criminals before the Nuremberg Military Tribunals under Control Council Law No. 10", Vol. 2 (Washington, D.C.: U.S. Government Printing Office, 1949), 181-182.

⁶⁹ Alfred Christensen, "Minutes of a Conference Concerning the Seawater Experiments," (Evidence, No- 177, Berlin, 1944, 1-7).

remains after the process has taken the taste out. This is the part to be worried about. The salt will dehydrate a person's cells and will eventually cause their death.

Still other types of experiments began to yield results before other experiments took precedence or the Allied powers began to turn the tide against the German superpower. An excellent example of this is the epidemic jaundice experiments which "disclosed that contagious jaundice is transferred by a virus."⁷⁰

In these examples and in the wider realm of experiments conducted during this time, scientists and researchers gathered large amounts of data. Today, there is no ethical way to gather the same data and the data collected is now thought of as unusable due to moral considerations. However, the results of these tests were successful, or have allowed for further progression into these inquiries.

Historiography

The main controversies surrounding the use of data collected from the experiments done at Nazi concentration camps can be broken down categorically into two- the controversy surrounding the euthanasia initiative and the controversy surrounding the hypothermia experiments. The controversy surrounding the euthanasia initiative is fairly straight forward; should voluntary euthanasia be allowed? However, the controversy surrounding the hypothermia experiments is more complicated. Are the results from the studies scientifically valid? If they are scientifically valid should scientists be allowed to use and cite them in their work? Does the unethical nature of these experiments corrupt the scientific nature of them?

⁷⁰ Rudolph E.H. Brandt, "Affidavit Concerning the Epidemic Jaundice Experiments," (Case Files, Prosecution 267, Nuremberg, 1946, 1).

Beginning with the question of whether or not voluntary euthanasia should be legal. Throughout the early 1900s, most of the authors agree that it should. This argument is based on eugenics and their desire to strengthen the human race. In the early 1900s Charles Richet, the person who discovered anaphylaxis, remarked in a book entitled *Human Selection* “that measures ought to be taken in order to save the human species from degeneration.”⁷¹ He also advocated for the ‘elimination’ of “inferior races and of abnormal individuals.”⁷² This form of euthanasia has shown itself in various forms- termination of early pregnancy due to the baby being “unfit” for life and capital punishment for the deranged. These sentiments were shared before the rise of the Nazi party and are analogous to the ideals of Nazi eugenics that led to the euthanasia program then.

In 1935, paralleling the Nazi party acquiring power, Alexis Carrel, author of *Man the Unknown*, advocated for optional or spontaneous eugenics, a type of eugenics that is undertaken more subconsciously. He believed that “modern nations will save themselves by developing the strong, not by protecting the weak.”⁷³ Carrel also admitted that it would be impossible to dispose of all of the mentally handicapped or sickly children and create a perfect race.⁷⁴ The progression from Richet to Carrel is more forward thinking because Richet realizes that a society cannot, and would not consciously, kill off a portion of its children in order to create a strong nation.

⁷¹ Samuel S. Kottek, “Medical Ethics in Question: An Historical Perspective on Eugenism and Normality,” in *Bioethical and Ethical Issues Surrounding the Trials and Code of Nuremberg: Nuremberg Revisited*, ed. Jacques J. Rozenberg (Lewiston, NY: The Edwin Mellen Press, Ltd, 2011), 71.

⁷² Kottek, “Medical Ethics in Question,” 71.

⁷³ Kottek, “Medical Ethics in Question,” 72.

⁷⁴ Kottek, “Medical Ethics in Question,” 72.

In 1988 a famous eugenicist Peter Singer believed that “infants lack self-consciousness, rationality, and autonomy and therefore have a less strong claim to life than do others... He also claimed that we should permit active euthanasia of severely disabled newborns at the parents’ request.”⁷⁵ This caused many groups to become outraged such as disabled people, women, and church groups. One anti-bioethicist Oliver Tolmein described Singer’s views as “deny[ing] the right to live of the disabled.”⁷⁶ The opposition shows a change in the viewpoint of the wider population, mirroring the efforts exuded to create a more just environment for the disabled. Many more people now believe that everyone has a right to live to the fullest that they are able. It also shows the change in the level of discrimination against the disabled.

The hypothermia controversy seems to be much more heated than that surrounding euthanasia. This question does not have a clear cut yes or no. The answer seems to include much more of a spectrum. There are authors on one side of the aisle saying do not use the findings they are not scientific and it would be unethical. Then there are authors on the other side stating the findings are okay to use. In the middle, are those who believe the findings to be sound scientifically, but only in specific circumstances. However, the one thing that all of the authors can agree upon is the experiments themselves should never be repeated due to their horrendous nature.

One of the scientists who is using the data and believes in its scientific properties is Dr. John Hayward. Dr. Hayward is a Biology professor at Victoria University in

⁷⁵ Wright, “Peter Singer and the Lessons of the German Euthanasia Program,” 34.

⁷⁶ Wright, “Peter Singer and the Lessons of the German Euthanasia Program,” 35.

Vancouver who worked on wetsuits for fishing on the frigid ocean waters. He rationalizes using the data in this way,

“I don’t want to use the Nazi data, but there is no other and will be no other in an ethical world. I’ve rationalized it a bit. But not to use it would be equally bad. I’m trying to make something constructive out of it. I use it with my guard up, but it’s useful.”⁷⁷

The way Dr. Hayward rationalizes his use of the Nazi data helps to highlight the ethical dilemma that all researchers face when deciding if and when to use the results. The desire not to use it comes up against the knowledge of the atrocities that occurred in order to gather the data that is being used, but there is no other way to get the same results. Dr. Hayward can also help to validate the data because Dr. Rascher’s cooling curve appeared to be consistent with the cooling curve at warmer temperatures.⁷⁸ The validation of the analogous cooling curves helps Dr. Hayward to trust that the data collected is scientifically sound and something that he can base his scuba suit calculations off of.

A second author who thinks that the scientific nature of these experiments seems to be good is Robert S. Pozos. Pozos bases his argument on five premises. First, there was a rationale behind the experiment.⁷⁹ This experiment had the objective to attempt to find a way to rewarm people who had been chilled to various degrees. Second, “the experiments were conducted by trained scientists who had experience in the area of

⁷⁷ Baruch C. Cohen, “The Ethics of Using Medical Data from Nazi Experiments,” in *Bioethical and Ethical Issues Surrounding the Trials and Code of Nuremberg: Nuremberg Revisited*, ed. Jacques J. Rozenberg (Lewiston, NY: The Edwin Mellen Press, Ltd, 2003), 139-140.

⁷⁸ Cooling curves show the change in state between solid, liquid, and gas. Cohen, “The Ethics of Using Medical Data from Nazi Experiments,” 140.

⁷⁹ Robert S. Pozos, “Scientific Inquiry and Ethics: The Dachau Data,” in *When Medicine Went Mad: Bioethics and the Holocaust*, ed. Arthur L. Caplan (New Jersey: The Humana Press Inc., 1992), 102.

science and temperature regulations.”⁸⁰ The main authors in the reports on these experiments were Holzloehner and Finke, both of whom were established scientists. Third, “the data were presented to various scientific audiences in Nazi Germany.”⁸¹ Fourth, “the information has been referenced by scientists since World War II who are knowledgeable in this area.”⁸² This is evident by the work that Dr. John Hayward did with the data on his work with wetsuits. It has been used numerous times other than that as well. Fifth, “no one has scientifically debunked the major findings.” This one is very important to his claim because, in science, once something is proven it is correct until proven incorrect. In this case, it would be nearly impossible to do so without breaking the Hippocratic oath and putting subjects in jeopardy.

An author who is in the middle of the spectrum on this issue is Baruch C. Cohen. In “The Ethics of Using Medical Data from Nazi Experiments,” he states that censorship of the data from Nazi experiments does not seem proper, placing them on the more positive side about using the results. However, he believes that in order to use the data a researcher must not be able to get relevant results any other way and there must be an evident capacity that lives can be saved.⁸³ This position is very neutral. Cohen allows that Nazi data can be used, but only in very specific circumstances.

An author who is on the against the use of data gleaned from these experiments is Robert L. Berger. In his article, *Nazi Science: Comments on the Validation of the Dachau Human Hypothermia Experiments*, Berger takes the stance that the hypothermia

⁸⁰ Pozos, “Scientific Inquiry and Ethics,” 102.

⁸¹ Pozos, “Scientific Inquiry and Ethics,” 102.

⁸² Pozos, “Scientific Inquiry and Ethics,” 103.

⁸³ Cohen, “The Ethics of Using Medical Data from Nazi Experiments,” 156-157.

experiments and their subsequent data are not to be trusted and are a type of ‘pseudo-science.’ This is based on four major claims. The first claim is that the “design and methods used were not subjected to critical analysis”. Second, he believes is an abundance of conflicting, fraudulent, and incomplete data that is not recorded. Third, the Nazi doctors claimed they would be able to save lives through their research without producing definitive proof. Fourth, “the responsibility for the scientific standards was shifted from an unqualified and dishonest investigator [Adolf Hitler] to competent and presumably credible scientists.”⁸⁴ According to Berger, the unethical scientific approaches involved in these experiments, not including the torture the subjects had to endure, tampered with the scientific nature of the evidence and created a situation that is hard to scientifically rationalize.

On the issue of whether or not it is ethical to use the data, the standpoints these authors take usually correlate with their view as to whether or not it is scientific. Cohen believes that in order to use the Nazi data, one must cite details of the experiment and state that it was reprehensible and never to be repeated.⁸⁵ Dr. John Hayward’s statement read that it is ethical, but one must keep in mind that the way that the data were collected was unethical. Berger believes that the severe criminality that the Dachau hypothermia experiments exhibited leads one to be unethical in using them.⁸⁶ Pozos strays from his original position based on scientific validity to one disallowing the use based on ethical claims.

⁸⁴ Robert L. Berger, “Nazi Science: Comments on the Validation of the Dachau Human Hypothermia Experiments,” in *When Medicine Went Mad: Bioethics and the Holocaust*, ed. Arthur L. Caplan (New Jersey: The Humana Press Inc., 1992), 130.

⁸⁵ Cohen, “The Ethics of Using Medical Data from Nazi Experiments,” 157.

⁸⁶ Berger, “Nazi Science,” 128.

“Citation of unethical data acknowledges the dehumanization and death that occurred in gathering the information and also demeans scientific inquiry. The argument that the information could be used to save human lives is a powerful one, but referencing unethical data supports the unethical implementation of experiments that might lead to more lives being lost... In this case, the ethical considerations of the Dachau data gathered do not warrant them continuing to be scientifically referenced.”⁸⁷

Pozos believes that by referencing the unethical data, it condones the behavior that spawned it. He also believes that by condoning that behavior, behavior that replicates it will seep into experiments today. This reasoning changes Pozos’s mind about the use of data from the Nazi experiments and will lead him to seek elsewhere for results.

Conclusion

Dr. Karl Brandt was in charge of and connected to many experiments that made an impact on the medical and scientific communities both at the time they occurred and present day. The experiments that were undertaken had real scientific value and helped to propel knowledge forward on diverse subjects. However, there is still a controversy over whether these results should be used or not. The tragic circumstances surrounding these experiments and all others that took place were more terrible than words can describe. However, the silver lining is no one else needs to be hurt in pursuit of the information that was uncovered.

⁸⁷ Pozos, “Scientific Inquiry and Ethics,”107.

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