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From Madness to Medicine: How Nazi Medical Experimentation Morphed into Today's Medical Field

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From Madness to Medicine
How Nazi Medical Experimentation Morphed into Today's Medical Field

A Thesis

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Abstract

It is no secret that many of our current scientific and medical advancements stem from a long history of research, trials, and experimentation, but not enough is known about the origins of our routine practices. The Holocaust enabled Nazi doctors to explore countless victims in search of the ultimate answer to the Jewish question. The answer: to alleviate the burden that those deemed “unworthy of life” placed on the greater society. The mass extermination practices which highlight the atrocities of the Holocaust are the end result of constant scientific developments disguised as medicine. Tiergarten 4 (T4) serves as the beginning of the euthanasia project, a secret initiative which strived to perfect the science behind extermination. This project quickly grew from a science experiment into a plague that invaded psychiatric asylums, pediatric wards, and eventually evolved into the main method of extermination in Nazi concentration camps. In the years following the conclusion of the war, the world turned its face from the horrors associated with the Holocaust. Tactics, regimens, and beliefs established throughout the Nazi regime were abandoned and disregarded as inhumane – except for those discovered through the robust scientific experiments disguised in the name of medicine. How did we progress from utilizing Zyklon B pellets into gas chambers to giving patients doses of anesthesia to be sedated for procedures? This paper analyzes the slow progression from madness to medicine, uncovering how Nazi medical experimentation slowly morphed into routine practices acknowledged in the medical field today.

Preface

I have always been fascinated by the horror in which the Holocaust is seated. I remember first learning about the realities of the mass genocide wrought by Nazi Germany in the Second World War in my seventh-grade English class. We were introduced to Holocaust era literature and spent an extended amount of time focusing on the inhumanity which existed in this time. My curiosity grew as we had the opportunity to visit the National Holocaust Memorial Museum on my eighth-grade trip to Washington, D.C. Since then, it has been a constant source of wonder to me and a consistent fuel for the research-driven side of my brain. This research was given tangibility when I was extended the Bruce and Lucy Gerstein Holocaust Education Travel Fund during my time at Butler University. This grant sparked my interest in electing the Holocaust to be the focus of my thesis.

While the history surrounding this time intrigued me, I wanted to attempt to tie in my area of study, health sciences, into this research. As a result, the combination of my curiosity about the era of the Holocaust with my desired future career in the medical field birthed a thesis connecting the two. By analyzing how medical practice during the time of the Holocaust connects to specific medical practice we use today, I will be relating my two fields of interest. The research will also allow me to understand origins of some of the medical practices and techniques, which will be a part of my everyday occupation routine in the medical field.

Adding to my interest – I am the great-granddaughter of William Kerby II, who served in Patton's Third Army. In his later years, Pap shared small memories of his experience in the Battle of the Bulge, and we later learned that part of his unit traveled to Buchenwald Camp

shortly after its liberation.¹ Hearing his experience ignited my interest in both the Second World War and the Holocaust. I cannot begin to imagine the realities of what he saw at Buchenwald that day as he walked through the camp. As I thought more about those realities, a greater desire grew in me to understand the seemingly absurd combination of the beauty of mankind with the unjust, horrific ways we can treat one another.

¹ “Buchenwald.” *Ushmm.org*, United States Holocaust Memorial Museum, 2022, <https://encyclopedia.ushmm.org/content/en/article/buchenwald>.

INTRODUCTION

Background

Most individuals have a general idea of the atrocities surrounding the Holocaust – we know about the rounding up of Jewish families and their transport to concentration camps. We know of the infamous gas chambers and crematoriums. Some of us may have even read *The Diary a Young Girl* by Anne Frank in middle school or have heard briefly about the twin studies conducted in Auschwitz. While many of us can comprehend the general overview of everything the Holocaust embodied, it is not often that we stop a moment to think of the process of how it transpired – the means by which these ends were met. Thinking of the methods to the madness of the Holocaust make it entirely too real, so we allow ourselves to infrequently wonder about how the Holocaust actually came to be – how it was manifested.

Nearly 70,000 individuals were murdered by way of euthanasia throughout the duration of the Holocaust. Six different extermination facilities were established for the killing of individuals “unfit” to live. Approximately 6,000 people were gassed by Zyklon B pellets every day at Auschwitz. It seems absurd that some of these ideas (in theory) still persist into today’s practice.² Currently, we use some of the same techniques, chemicals, and concepts to sedate patients for commonplace procedures utilizing anesthesia. In extreme cases, these practices are used to induce physician-assisted suicide or procedures of the like. How did we go from such evil to such routine practice?

² Aly Götz, et al. *Cleansing the Fatherland: Nazi Medicine and Racial Hygiene*. Translated by Belinda Cooper, Johns Hopkins Univ. Press, 1994, pp. 32-45.
“Euthanasia Killings.” *Ushmm.org*, United States Holocaust Memorial Museum, 2022,
<https://www.ushmm.org/learn/timeline-of-events/1939-1941/euthanasia-killings-continue>.

A variety of “medical” developments in the Holocaust have led to practices and methods we acknowledge and accept today. One of the most prevalent is the concept of genetics. Before the Holocaust, studying genetics and hereditary was a difficult task and only a foundational knowledge was established on the field. The Holocaust bred the perfect subjects for the study of this concept – there were millions of individuals at the disposal of scientists for endless and relentless research. Dr. Joseph Mengele, better known as the “Angel of Death,” devoted his studies throughout the Holocaust to discovering the science behind heredity. Dr. Miklós Nyiszli – a Jewish doctor selected to aid Mengele – recorded many of these studies in an eyewitness account published in 1960.³ This account, entitled *Auschwitz: A Doctor’s Eyewitness Account*, details Nyiszli’s time spent in Auschwitz and is believed to be one of only a few accounts from the inside of a crematorium. For most individuals, walking in the gates of the crematoriums of Auschwitz meant that you would never pass through them again. Nyiszli offers a unique perspective into the horrors of this specific aspect of the Holocaust as he worked in one of the crematoriums and saw “behind-the-scenes” operations which individuals did not usually survive to speak about. Nyiszli’s close relationship with Mengele also provided insight to the realities of the “scientific” work being conducted within the walls of Auschwitz.

Mengele served as the head physician at Auschwitz Concentration Camp and he was charged originally with instructions to control a tuberculosis outbreak. After quickly finding a solution to that problem (gassing and exterminating all infected individuals), Mengele’s focus shifted to the study of “specific proteins” and “eye color” – components of genealogy. Mengele primarily studied these traits by way of utilization of twins, which served as an ideal comparison of traits. Nyiszli spoke of the uniqueness of the study of twins as the twins could die at the exact

³ Nyiszli Miklós. *Auschwitz: A Doctor's Eyewitness Account*. Translated by Tibere Kremer and Richard Seaver, Fawcett Crest Publishing, 1960.

same time, in the exact same way, a phenomenon not usually observed in the “outside world.” These twins could then be studied by comparative dissection.⁴ This research gave way to the studies of hereditary anomalies of the eyes in many different families and twin sets. These studies exist as the beginnings of genetics research as we know it today.⁵ Mengele and his assistant strived to understand how hereditary factors behave and what results come from certain behaviors. Genetics studies are a prime example of important “medical” and scientific information gleaned from the Holocaust but by atrocious means.

Another important scientific development comes from the control of outbreaks of infectious diseases. As mentioned earlier, Mengele was originally brought to Auschwitz with the objective of controlling tuberculosis outbreaks. This specific case was resolved by the ease of the gas chambers, but other similar situations relied on medical intervention and isolation protocols to contain disease outbreaks. Throughout the Nazi Reich, more than 44,000 camps (and similar sites) were established; however, not every one of these sites involved extermination by mass murder. Only a handful of camps had running gas chambers and crematoriums which were utilized for extermination - other sites were used for forced labor, detainment, transit, etc.⁶ Camps where murder was not as convenient forced leaders to keep infectious diseases under control as to not lose their work force. Oftentimes, infected individuals would all be transferred to a singular barracks to not spread the outbreak to the rest of the camp. This initiative is still seen in practice today.

⁴ Nyzsli, Miklós. *Auschwitz*, pp. 51-53.

⁵ Müller-Hill Benno. *Murderous Science: Elimination by Scientific Selection of Jews, Gypsies, and Others in Germany, 1933-1945*. Translated by George, Oxford University Press, 1988, pp. 71-74.

⁶ “Nazi Camps.” *Ushmm.org*, United States Holocaust Memorial Museum, 2022, <https://encyclopedia.ushmm.org/content/en/article/nazi-camps>.

The practice of conducting autopsies was another medical endeavor which gained ground throughout the Holocaust. Autopsies were not new to the scene as topics such as hereditary were, but the nature surrounding the Holocaust allowed routine autopsies to happen on a much more frequent timeline while also being much more invasive and in depth than in the pre-war era. Nyiszli writes extensively about the subject matter in his eyewitness account as he performed most of the autopsies in Auschwitz under the supervision of Mengele; he operated the singular dissection room in Auschwitz which resided in the number four crematorium. Nyiszli was responsible for conducting autopsies on individuals after Mengele was through experimenting with them; he even writes of a few encounters where individuals of certain interest to Mengele were brought in for questions by both doctors and then immediately killed for examination. Nyiszli writes of vast discoveries such as tumors, extensive deformities, pathologies, etc. Nyiszli was further directed to prepare and study the skeletons of some victims. Early on, Nyiszli discovered his research was being sent to the Institute of Biological, Racial, and Evolutionary Research at Berlin-Dahlem - an institute which he claimed to be one of the “highest medical authorities at one of the most famous scientific institutes in the world.”⁷ These autopsies, more in depth than ever before, allowed a greater understanding of the human body and the deformities which were of specific interest to the Nazi doctors. Each “medical” development derived from the Holocaust seems almost wrong and unethical to use in today’s modern world, but we constantly see these practices in commonplace settings.

The same is true of the monster of eugenics which was created in this time; this concept is most routinely used in the practice of anesthesia. Through trial and error, leaders of the Reich engineered a scientific way to exterminate mass amounts of individuals. This science progressed

⁷ Nyiszli, Miklós. *Auschwitz*, p. 53.

from a small initiative at the Tiergarten 4 site to the implementation into asylums to the mass extermination in concentration camps to research into what we see today as routine eugenics. This work will explore that journey of eugenics through the Third Reich: from madness to medicine.

Objective

From my research into the secondary materials on this topic, it seems as if basic connections have been identified between the Holocaust medical experimentation and the modern medical practices into which I plan to look. The objective of my research is to form a bridge between the specifics of each time period (the Holocaust era and modern day) and the methods which each encompass as they stand alone. My goal is to expand on existing literature in a unique way. I have noticed a limit to the proposed connection as most research focuses on a singular aspect of the connection; my goal is to compile these links to better understand the full picture of the complex bridge between Holocaust medical experimentation and modern-day practices - primarily in regards to ethical perspectives and the direct evolutionary line in which the experiments morphed into modern methods.

Chapter 1: History

Origins of the Holocaust

One question which, in World War II, became of importance to the ruling National Socialist Party was how to find an answer to the “Jewish question”: how do we “solve” the problem created by the presence of the Jewish minority in society? The actions taken towards answering this question – the actions which resulted in the deaths of over 6 million Jews and other “minorities” considered inferior – are collectively identified as the Holocaust. However, the ideology behind the Jewish question was posed far before the onset of the horrors which served as the answer. The question of inferiority became one of commonplace as European Jews were gradually being awarded equality and civil rights. This became the platform on which the Nazi Party stood.

From the beginning, leaders of the party, including Adolf Hitler, took it upon themselves to provide answers for how Jews were to exist in German society. Once the Nazi Party took power in 1933, the relentless pursuit of these answers began. Countless policies were instituted which demoted Jewish citizens from their routine place in society.⁸ This process of legalized discrimination created a divide between Jews and all other citizens in the country. By early April of 1933, Jewish businesses were being boycotted and individuals identified as Jewish were being let go from their employment, losing property, and undergoing countless other practices which removed them from society. Jewish individuals were denied healthcare, removed from prestigious governmental positions, denied certain levels of education such as medical and law school, and were forced to give up land which they owned. 316 antisemitism policies or laws

⁸ “The ‘Jewish Question.’” *Ushmm.org*, United States Holocaust Memorial Museum, 26 Nov. 2019, <https://encyclopedia.ushmm.org/content/en/article/the-jewish-question>.

were enacted in 1933 alone on various governmental levels.⁹ The fall of 1935 brought perhaps the most apparent form of legal action against Jews at the time – the Nuremberg Race Laws – which were passed by the German parliament. The Nuremberg Laws were composed of two components, the Law for the Protection of German Blood and German Honor, as well as the Reich Citizenship Law. These initiatives provided a legal foothold for the slew of discriminatory actions the Nazi Party wished to take. The laws expanded the scope of which individuals were considered “Jewish.” Instead of solely personal beliefs and identification, under these new laws, individuals could also be identified as Jewish based on their ancestors. The Reich Citizenship Law focused on this identification of Jewish descent, splitting the society into haves and have nots. This law robbed individuals of their German citizenship and all the rights which accompanied it. In addition, the topic of marriage between German citizens and Jewish individuals was called into question by the Law for the Protection of German Blood and German Honor. The law identified such marriages and relationships as “interracial” and forbidden - formally known as ‘race defilement’ in the law.¹⁰ Some might say the Nuremberg Laws serve as the foundation for the entirety of the Holocaust as they paved the way for the differentiation between Jew and German, considering one to be lesser than. This differentiation was permanent, no one could “earn” their way to a German citizenship; once an individual was identified as Jewish, they were perpetually inferior in German society. This served as only the beginning to an additional 1,110 policies and laws which would be put in place by the end of 1939.

⁹ “A Wave of Discrimination.” *Facinghistory.org*, Facing History & Ourselves, 2022, <https://www.facinghistory.org/holocaust-and-human-behavior/chapter-5/wave-discrimination>.

¹⁰ “The Nuremberg Race Laws.” *Ushmm.org*, United States Holocaust Memorial Museum, 11 Sept. 2019, <https://encyclopedia.ushmm.org/content/en/article/nuremberg-laws>.

New laws and policies and the actions taken to establish them existed as only one aspect of the immense discrimination which would be felt by Jewish individuals in Nazi Germany. After the success seen in constituting the Nuremberg Laws, Nazi Germany began a sprint towards finding a solution to the Jewish question. Shortly after these policies were put into place, the discrimination was materialized in the form of ghettos. Jewish individuals were transported to a concentrated area where they could be more efficiently “managed” and controlled. As the Reich gained more power, these ghettos quickly poured into a variety of camps under the guise of simple relocation. The first waves of relocation included the transportation of Jews to concentration camps where they were subject to intense labor to aid the German war effort. In later waves, and ultimately, the remainder of Jews in ghetto settlements were transported to extermination camps as opposed to labor camps.¹¹

The Nazi Party utilized a variety of camps to imprison, detain, and exterminate individuals considered inferior. Over 44,000 sites have been identified to have been established throughout the time of the Reich. These established sites went beyond the scope of only concentration – or labor – camps. In addition to forced-labor camps, the Nazi regime also utilized prisoner-of-war camps and transit camps. Transit camps existed as a temporary stop between the ghettos and the extermination camps or one of six killing centers established by the Nazi Party.¹²

The first camp, Dachau, opened its gates in March of 1933 and was the longest “surviving” camp as it remained open until the end of the war in 1945.¹³ Early camps, such as Dachau, were introduced as a temporary holding site for Jews attempting to emigrate; this eased

¹¹ “Ghettos.” *Ushmm.org*, United States Holocaust Memorial Museum, 2022, <https://www.ushmm.org/collections/bibliography/ghettos>.

¹² “Nazi Camps.” United States Holocaust Memorial Museum.

¹³ “Nazi Camps.” United States Holocaust Memorial Museum.

the nerves surrounding transportation processes. This front was quickly broken down as it grew more difficult to hide the horrors embedded within these camps. As this front was dismantled, it is bewildering that Nazi leaders were not held accountable. One may wonder how it would be possible that these camps were allowed to stay in operation and persist throughout the war. For one, the Nazi camps exist entirely independent from any type of judicial review.¹⁴ Due to this lack of accountability and evaluation, the Reich was able to build this empire of camps designed for the sole purpose of answering the Jewish question, cleansing society of the burden which Jewish individuals represented.

The numerous transportations to various camps aided in forming the answer to the Jewish question, known as the final solution. Throughout the reign of the Third Reich, Jewish lives were demoted from citizens to laborers to extermination subjects. By the end of the war, an increase of traffic at killing centers was observed as Jews were labeled as “unworthy of life.” Once establishing this new identity for Jewish individuals, the Nazi Party was tasked with finding an efficient and timely way of accomplishing their goals - to rid German society of those considered inferior or non-German. This concept of racial inferiority and ideal of racial hygiene culminated in Nazi leaders utilizing medical means to exterminate or euthanize individuals. Exploring a medical avenue provided a toolbox of biological solutions to a problem which very much existed in the social realm.¹⁵ The relentless pursuit for medical answers and solutions led Nazi physicians, scientists, and leaders down a winding path which eventually resulted in the final solution - the mass extermination of Jewish individuals.

¹⁴ “Nazi Camps.” United States Holocaust Memorial Museum.

¹⁵ Aly, Götz; et. al. *Cleansing the fatherland*, pp. 2-5.

Origins of Eugenics & T4

Francis Galton, a British mathematician and scientist, coined the term “eugenics” in 1881. Since then, this word has been morphed and modified to fit different cultural and historic situations. Eugenics has been extensively described by Charles B. Davenport, an American eugenicist, as “the science of the improvement of the human race by better breeding.”¹⁶ In America, the eugenic movement progressed alongside social Darwinism on the foundation of the idea of “survival of the fittest.” This ideology mirrors a similar mindset observed throughout Nazi Germany. However, the Nazi Party did not let nature determine the fittest - instead of “survival of the fittest”, the Regime embodied the idea of “survival of who we deem to be socially superior and a benefit to the furtherance of the Nazi Party.” Throughout history, we see this contrast between eugenics movements across seas.

In 1910, Davenport founded the Eugenic Record Office in New York stateside; the office served two main purposes. First the office evaluated and analyzed the transmission of traits, particularly social ones. Individuals, groups, and nations were then classified into positions on a scale of human worth utilizing the data which was found. From there, the office also introduced biological solutions to social problems and worked hard to get legislation passed to implement these solutions.¹⁷ Studies run by the Eugenic Record Office utilized only small groups of individuals and families and then generalized the results to whole people groups - “proving inferiority.” Scientists and psychologists were grasping for straws while trying to prove their theories and actions taken towards racial hygiene. These practices set the precedent for similar ideals which would later act as the foundation of the Nazi Party’s agenda.

¹⁶ Friedlander, Henry. *The Origins of Nazi Genocide: From Euthanasia to the Final Solution*. Univ. of North Carolina Press, 1995, pp. 1-7.

¹⁷ Friedlander, Henry. *The Origins of Nazi Genocide*, pp. 20-26.

We see parallels between the two throughout the 1900s in the United States. In 1924, the Johnson Act was passed in the US which placed limitations on immigration from countries whose inhabitants were labeled as inferior. In 1907, Indiana became the first state to enact a sterilization law, setting a trend for the rest of the country. Following the precedent by Indiana, more than half of the states took action towards legalizing sterilization by the mid-1930s. This also had a global impact; the eugenic movement was spread across the Atlantic Ocean, into European countries. International leaders in the eugenic field looked to one another and structured their research around advancements others were making. Innovation in this field – seen through the Indiana Sterilization Law – led other eugenic leaders to progress and dream bigger.¹⁸ As the movement progressed and became more aggressive, it lost support and scientific acceptance. Revisitation of previous studies conducted by the Eugenic Record Office disproved results and led to the rejection of eugenic practices and generalizations.¹⁹ The German eugenic movement reflected that which persisted in the United States up until the First World War. World War I acted as a turning point for the United States and the eugenic movement slowly subsided. As one monster was laid to rest, another was rearing its head across the Atlantic.

As the eugenic movement ignited throughout Europe, Germany quickly latched onto certain ideals which would prove to be essential in executing their final solution plan. The concept of eugenics persisted as a topic of intense debate between doctors, theologians, and lawyers throughout the 1920s. By the time the Reich took power, these points of discussion seemed to make their way into every conversation as the Jewish question was screaming in the face of Nazi leaders. Once leaders identified their intentions for Jewish individuals, a new

¹⁸ “Indiana Eugenics.” *Eugenics.iupui.edu*, Indiana University-Purdue University, 2022, <https://eugenics.iupui.edu/>.

¹⁹ Friedlander, Henry. *The Origins of Nazi Genocide*, pp. 8-13.

question arose - how to do it. The means by which mass extermination would be accomplished was a topic of discussion for an extended period of time among Nazi leaders and scientists. For a short period of time, mass accidents were the plan of attack. Jewish individuals would be rounded up into train cars or coaches and “accidents” would occur (such as explosions or running the cars off the tracks), getting rid of a mass number of Jews at once. After a few attempts, this method was identified as inefficient and impractical; it also raised suspicion from the general public. These crude solutions were rejected and the search for a more effective method of extermination began... so the Tiergartenstrasse 4 site was initiated.

Nazis were masters of camouflage - easing the public’s eye by disguising the terrors of the Holocaust under “normal” operations. Tiergartenstrasse 4 (T4) in Berlin is a prime example of this feat - the Nazi Party hid one of their most secret operations in plain sight. T4 was an office from which the Nazi euthanasia program blossomed; the murder of over two hundred thousand psychiatric patients was organized and executed out of this site. By the late 1930s, Operation T4 was well underway.

Nazi leadership decided the operation would first tackle the population who they deemed “unfit to live.” This included ill inmates, psychiatric patients, handicapped individuals, and more. Originally, the T4 Operation had a target figure of euthanizing 65,000 to 70,000 individuals - a number which they exceeded enormously. Before the operation took flight, scientists and doctors were charged with perfecting the euthanasia methods which would accomplish such a goal.²⁰ After the staged accidents were discounted, Nazi leaders turned to a medical route. Scientists employed by T4 spent countless hours consulting toxicologists to identify and perfect a chemical-based killing method. These toxicologists and chemists were employed by the Reich

²⁰ Aly, Götz; et. al. *Cleansing the fatherland*, pp. 28-30.

Criminal Police Office, which acted as a front for the acquisition of the toxic substances. After trials and debates, Operation T4 decided on pursuing carbon monoxide poisoning as the means for extermination. The first gassing tests were conducted in Brandenburg camp where over 9,722 individuals were murdered as scientists were attempting to determine if gassing or injections were a quicker and more efficient route to meet their goals. The gassing avenue was chosen as it was much faster and could eliminate a large group of people at once, instead of injecting individuals one by one.²¹ While the method of gassing persisted throughout the Holocaust, the chemicals utilized varied between locations and camps. Carbon monoxide was a popular choice, alongside Zyklon B gas, which was a form of hydrogen cyanide. Zyklon B was developed later in the war by Dr. Fritz Haber and his colleagues; this chemical was seen more often utilized in latter years of the war in larger camps such as Auschwitz. The chemical itself was first intended for pest control but quickly was acquired in mass for the extermination of Jews.²² Operation T4 primarily relied on carbon monoxide as a means of euthanasia.

Now that Operation T4 had its means for extermination, all it needed were subjects, so T4 began work which would lay the path for the final solution and extensive extermination we observe in concentration camps. As Operation T4 morphed into a wider operation, it acquired a new name. The concentration camp branch of this widescale euthanasia program was titled Operation 14 f 13. Operation T4 served as a prelude to the gas chambers and crematoriums which were built on the outer borders of the grounds of countless camps. While an important feature, the significance does not lie in the development of camouflage of the operation but in the overt acceptance of the mass murder of defenseless individuals. This precedent set by T4 led to

²¹ Burleigh, Michael. *Death and Deliverance: 'Euthanasia' in Germany c. 1900-1945*. Cambridge University Press, 1994, pp. 133-134.

²² Müller-Hill, Benno. *Murderous science*, pp. 68-70.

the standard which Operation 14 f 13 greatly exceeded. As this operation introduced itself in the camp front, it built a bridge between euthanasia as a means for a selective groups of patients to a method for extensive mass murders. The realistic progression across this bridge is astounding. How did we get from a small operation out of an office building in Berlin to exterminating millions of Jews behind the gates of massive concentration camps? Careful manipulation and maneuvering ensured that the Nazi Party could complete this transition with ease, right under the noses of their beloved public.

Transition from Psychiatric Asylums to Concentration Camps

The ideology behind mass destruction was prompted by the fact that the Nazi Party believed some individuals were inferior. This belief drove the individuals to be isolated, sterilized, rejected, and removed.²³ For the killers, a logical progression led from exclusion to extermination. The Nazi Party took careful steps to ensure their plans were executed and their theories could be turned into implementation. Operation T4 began conducting their scientific endeavors on an easy target: psychiatric asylum patients.

The 1920's observed a large spike in psychiatric patient populations, reaching over 300,000 individuals.²⁴ This steady increase in the inferior population began to raise concerns for Nazi leadership. Why should they continue to waste resources on individuals who they deemed to not even be worthy of life itself? Most individuals placed in psychiatric asylums required continuous care, medication, and attention - all of which cost money. In addition, this care was predicted to last for the entirety of one's life as it was not common for patients to leave these asylums once admitted. This concept introduced an economic component into the equation for the Nazi Party; they had to decide if it was worth it to uphold the care and management of the

²³ Müller-Hill, Benno. *Murderous science*, p. 22.

²⁴ Burleigh, Michael. *Death and deliverance*, p. 29.

ever-growing population of psychiatric patients. Of course, the worth attributed to the lives of these patients fell insignificant to the Regime's endeavors and agenda.

However, the Nazi Party had a reputation to uphold. They could not simply empty out asylum beds by ruthless murder of the handicapped, not yet at least. The public would grow suspicious and skeptical, and the Nazis could not have that. They had to find a subtle way of ridding themselves of this burden. This is the foundation on which the euthanasia program within psychiatric asylums was built. While the Nazis were constructing this mindset, another practice was already being put into play: sterilization.

The Nazi agenda used sterilization as a steppingstone into euthanasia endeavors. This idea stemmed from the concept of racial hygiene. Nazi leadership tackled this concept through three primary avenues: Nuremberg Laws, sterilization laws, and finally the euthanasia program. The Sterilization Law and Nuremberg Laws, as discussed previously, served as the springboard for the rest of the antisemitic framework Nazi Germany built. They not only wanted to prevent the marriage between Germans and non-Germans, but they decided they wanted to prevent the procreation of non-Germans altogether. This is when the party turned to science and chemists to achieve their goal, so sterilization was brought to the table.

On July 14, 1933, the Sterilization Law was passed by the Nazi government which prevented the creation of genetically diseased offspring. This law sparked the establishment of close to 200 genetic health courts designed to enforce the new legislation. Throughout the course of the war, it's estimated that between 350,000 to 400,000 individuals were sterilized on the basis of racial inferiority. Nazi scientists were once again tasked with finding the most efficient method of accomplishing their means. Asylum leadership experimented with x-rays and injections. Ultimately, they decided on the method of medicinal sterilization for mass

sterilization as surgeries took too long and x-rays were not always successful. Caladium seguinum was the medicinal avenue chosen and utilized by a majority of asylums that wished to mass sterilize occupants.²⁵ By 1935, sterilization was a common and routine practice in asylums. The methodology and practice behind these forced sterilizations paved the way for the success and adaptation of the euthanasia program - it's almost as if the only change was which chemicals were utilized.

While sterilizations could prevent a plethora of new psychiatric patients, it did not serve as an answer for the current abundance of patients gracing the halls of the asylums. The Regime needed more - they did not only want to prevent the births of new individuals "unfit for life," but they wanted to rid their countries of those individuals who already existed. Euthanasia offered a solution to their desires. The euthanasia program accomplished mass murder by utilization of stealth tactics. While Hitler authorized the official "go" for the program in a secret letter in 1939, "unnatural" deaths in German asylums began the previous year. After the initial implementation of the practice, euthanasia mirrored sterilization and quickly embedded itself in routine asylum operations. In 1940, the Law on Euthanasia for the Incurable Ill was drafted and it stated "persons suffering from an incurable illness burdensome to themselves or others or certain to be fatal can, at their express request and with the permission of an authorized physician, receive euthanasia from a doctor."²⁶ Nazi leadership utilized various propaganda tactics to gain support for the legislation. This propaganda almost normalized the practice of euthanasia and offered new perspectives. One of which was framed as the best options for individuals who were not living a worthwhile life. A multitude of German parents relatives demanded euthanasia as a form

²⁵ Annas, George J., and Michael A. Grodin. *The Nazi Doctors and the Nuremberg Code: Human Rights in Human Experimentation*. Edited by Marcia Angell, Oxford University Press, 1992, pp. 84-89.

²⁶ Aly, Götz; et. al. *Cleansing the fatherland*, pp. 32-36.

of “deliverance” for their children, spouses, siblings, or parents - believing the lies the propaganda fed them. However, individuals could not be euthanized solely on the basis of request - a few other steps were required.

The Reich Committee was responsible for the euthanasia decisions. Requests were sent in by family members, physicians, caretakers, etc. and the patient or case was reviewed and evaluated. Before the euthanasia law, this evaluation process was to determine next steps in a “cure and care” structure. After the law, the process simply served as a way to determine who was eligible for elimination in the new “cure or death” structure - either patients were too far gone or they could be cured, but there was no place for care in the new system. While I’d like to believe these evaluations were highly ethical and rooted in medical reasoning, the track record for Nazi leadership does not indicate anything that would prove that to be true. Medical and social criteria became interchangeable for the terms of execution. Various criteria for euthanasia no longer existed - the ability to work was all that counted in most situations.²⁷ Once a patient was given the green light for euthanasia, they were often times transported to intermediate asylums where they waited for another transport to a killing center. The “interim asylums” bought Nazi leadership enough time to correct errors and erase all traces of patients before exterminating them. These asylums provided a disguised period of time during which relatives could object if they were not responsible for the recommendation. Often this period only offered a buffer for families to “miss the deadline” for objection; by missing the deadline, the asylum's leadership assumed unspoken consent. At this point, the patients were transported for extermination.

²⁷ Aly, Götz; et. al. *Cleansing the fatherland*, pp. 37-39.

The goal of this process was to be as discreet as possible. The Regime wanted death by euthanasia to mirror a natural death to hide their secret operations. Upon decision of death, usually in the evaluation period, Nazi physicians would choose a cause of death from a list of over 61 common causes to assign to each patient. After evaluating symptoms and forms of treatment, the physician would choose a cause of death which seemed most likely to occur or which one best matched the patient's case.²⁸ That cause of death was then printed on a death certificate and given to families. These certificates served as the disguise for over 70,000 patients killed by euthanasia in asylums. While this process was perfected in adult asylums, its humble beginnings originate from the pediatric realm.

The handicapped children spread across Germany serve as the first euthanasia victims, setting precedents for the rest of the Holocaust. Physicians, midwives, and all other medical staff were required to report all children upon birth or below the age of 3 with specified medical and psychiatric conditions - a new practice which was put into place in August of 1939. These conditions included deformities, idiocy, paralysis, and a plethora of others.²⁹ This process was overseen by the Reich Commission for the Scientific Registration Heredity and Constitutional Severe Disorders; this committee was also responsible for the evaluation process of pediatric patients for euthanasia. Physicians who conducted these evaluations and made the decision were compensated a small amount for every patient they reviewed - providing incentive for a life or death decision.³⁰ Evaluations of pediatric patients happened on a less routine basis compared to what is observed later in adult asylums. Due to the lower demand, the means for extermination was much different.

²⁸ Burleigh, Michael. *Death and deliverance*, p. 162.

²⁹ Friedlander, Henry. *The Origins of Nazi Genocide*, pp. 56-59.

³⁰ Müller-Hill, Benno. *Murderous science*, pp. 42-45.

Handicapped children were killed on an individual basis by a team of physicians and medical staff; this mirrors the euthanasia procedures observed in the more modern world. Most of these killings occurred at a private pediatric clinic which belonged to Dr. Ernst Wetzler, who became a commonplace face in the world of pediatric euthanasia. Hitler even authorized the practice of abortion - through Wetzler - in November of 1940 on the grounds of euthanasia. Wetzler would “refer” patients to be euthanized if they reached certain social or medical criteria. One has to wonder how these killings were accomplished from a societal point of view - how were these referrals ever granted. Many sources claim that parents were tricked into giving “consent” through questionnaires. Taken as a routine survey, parents of pediatric patients in various clinics and hospitals were asked to fill out a survey on the topic of euthanasia practices - most likely worded in a less conspicuous way. Each question asked the guardian if they would be in agreement with euthanasia through a variety of circumstances, such as incurable illnesses, or if the physician recommended it, or if the patient was in a lot of pain, or suffering. 73% of questionnaires completed by parents included at least one yes answer - which granted consent. A comment section was available at the end of the questionnaire where parents provided a multitude of justifying rationality as to why a yes was circled on their submission. Many of these comments expressed a wish to not be involved in the process, they wanted physicians to make the decision. Parents believed it would be harder to make a decision knowing that euthanasia was an option; instead, they wanted physicians to proceed with euthanasia without consulting them first.³¹ This is exactly what physicians began doing. They used the questionnaires as written consent to murder children if that is what they deemed best for the patient. After the fact, parents

³¹ Aly, Götz; et. al. *Cleansing the fatherland*, pp. 40-41.

would be informed that their children died of natural causes and given a death certificate with one of many fake causes of death.

This practice persisted throughout the entirety of the war, until 1945. Even when adult euthanasia in psychiatric asylums seemed to encounter a lull or ceased altogether, pediatric euthanasia persisted. At least 5,000 children have been documented to have been murdered through this practice which commenced the mass euthanasia movement through Nazi Germany.

A month and three days after the decree initiating the killing of children, Hitler gave the command to begin killing adult patients as well.³² The “go ahead” from Hitler in 1939, allowed for massive growth in the euthanasia movement from the limited operation for pediatric patients. Instead of a mere 5,000 patients, over 200,000 patients were subjected to euthanasia after the expansion to adults.

Similar to the smaller pediatric operation, evaluations for euthanasia had to be filtered through the Regime. The Reich Medical Office took responsibility for deciding the fate of a multitude of adult psychiatric patients. Euthanasia was staged as a mercy killing process, giving relief to those who no longer had quality of life or were incurable. Unfortunately, Nazi physicians identified most of the patients in each psychiatric asylums to meet this standard.³³ These evaluations took place by request or recommendation. Family members or individuals made these requests through a sub-department of the chancellery of the Führer. Up to two thousand petitions, or requests, arrived at the department each day.³⁴ The evaluation process for psychiatric individuals began on October 9, 1939 - the beginning to a long-winded nightmare of euthanizing innocent people who were labeled as unworthy to live.

³² Friedlander, Henry. *The Origins of Nazi Genocide*, pp. 63-68.

³³ Müller-Hill, Benno. *Murderous science*, p. 40.

³⁴ Burleigh, Michael. *Death and deliverance*, pp. 92-93.

“Those responsible believed in the necessity of what they were doing. Mentally and physically disabled people were killed to save money and resources, or to create physical space” for other Nazi casualties which took priority.³⁵ Before mass extermination, asylums were overshooting their target numbers by over 15,000 patients. Leadership only saw one solution to this problem hanging over their heads. On average, asylums only required approximately 600 patients capable of work to run and upkeep the facility.³⁶ All other patients were considered a waste of time, space, money, and energy. Mass extermination became the natural next step - disguised as mercy killing, or euthanasia, for the mentally unstable who were not living their fullest lives. This plan of action required facilities which could accomplish killing multiple individuals on a daily basis, so killing centers entered the scene.

Due to the nature of the larger adult program, single injections one at a time was not a viable option. Killing centers and extermination asylums were established for the use of mass extermination by gas. They were built and structured in a way which made the process as seamless as possible - from arrival to cremation after extermination. The first “practice round” for the killing centers was conducted at Brandenburg asylum in the winter of 1939-1940. A gassing demonstration was supervised to test the new method and to ensure the efficiency of the killing method as opposed to injections. The demonstration was successful and proved to leadership that the gas chambers in the killing centers would do their job adequately.³⁷ Over time, six killing center emerged under the direction of the Nazi Party. However, as the killing productivity rose, so did suspicion and skepticism of the process. The growing secret was becoming harder and harder to conceal.

³⁵ Aly, Götz; et. al. *Cleansing the fatherland*, pp. 8-9.

³⁶ Aly, Götz; et. al. *Cleansing the fatherland*, p. 91.

³⁷ Friedlander, Henry. *The Origins of Nazi Genocide*, pp.115-119.

Hitler ordered an end to the adult euthanasia operation on August 14, 1941. Public knowledge of the killings was becoming widespread and was a concern to Nazi leadership. By late summer of 1941, euthanasia was no longer a secret to the general public. Hitler's secrecy attempts were failing, which caused him to command the operation to come to a screeching halt. The end quickly transitioned to a slight pause, as the mass killing continued on less than a year later.³⁸ The second phase, or the reinstating of the program, proved to be more amplified and deadly than the first. Nazi leadership came back more systematically than the first round of the program, ensuring their secret would be kept for round two. The second phase did not only bring new ideas for the structure of the operation, but it also brought new ideas for subjects.

The continuation of the euthanasia program opened its arms to a slew of new social criteria for euthanasia. Instead of just murdering psychiatric patients, Jews, Gypsies, and other inferior groups were welcomed into the euthanasia pool. First, the program was utilized for the extermination of handicapped Jews, most of whom had not been admitted to an asylum. The Nazi Party sought out these individuals and forced them to be evaluated for euthanasia. Upon evaluation, the individuals were divided into three different groups. Group I included pure Germans (not many evaluations led individuals to be placed in this category). Group II included individuals who could work in Germany (this category was composed of Germans and those whose inferiorities were not severe). Group III consisted of Jewish individuals and those who were deemed unworthy of life (evaluations almost always concluded with placement into this group).³⁹ Once individuals were placed in Group III, they entered the transportation process to one of the six killing centers. This phase continued on for a short period of time before the larger expansion.

³⁸ Friedlander, Henry. *The Origins of Nazi Genocide*, pp. 75-78.

³⁹ Müller-Hill, Benno. *Murderous science*, pp. 62-65.

Through the success of the euthanasia program, the Nazi Party landed on a final solution to their Jewish question. They figured that if individuals did not protest when their own relatives were murdered in asylums, then how could they possibly protest the murder of Jews, Gypsies, and anyone who the Nazi's deemed inferior? The practice had been tested thoroughly without objection for multiple years, which ensured the final solution would progress without objection as well. This is exactly what transpired.

While it cannot be confirmed who gave the final command to enact the final solution – to kill all Jewish individuals – it is proven that Hitler had a heavily influential deciding voice. While the decision might have been made by a group of Nazi leaders, it was Hitler who gave the verbal command to exterminate every Jew to the Nazi Party. In 1941, Alfred Rosenberg made the decision public in a press conference.⁴⁰ This was the beginning of the end.

The Wannsee Conference was the first of many formal conversations held between Nazi leadership regarding the Final Solution. Fifteen members of Nazi and German governmental leaders of high rank gathered on January 20, 1942, to discuss the logistics of the Final solution; how the solution was to be implemented rested at the top of the priority list to discuss. Often, we accredit the Holocaust to strictly leadership within the Nazi Party, while many other governing bodies had to collaborate to fabricate the mass murder of millions on individuals.⁴¹ The Wannsee Conference was held to make sure all agencies were on the same page and that the Final Solution would commence without hindrance.

Again, efficiency was of topic priority to the Nazi Party. It was decided that the easiest and most efficient way of mass murder was to bring victims to a central killing place. Due to the

⁴⁰ Müller-Hill, Benno. *Murderous science*, pp. 15-17.

⁴¹ “Wannsee Conference and the Final Solution.” *Ushmm.org*, United States Holocaust Memorial Museum, 2022, <https://encyclopedia.ushmm.org/content/en/article/wannsee-conference-and-the-final-solution>.

much larger amounts of individuals who would die by euthanasia, bigger killing centers had to be constructed. Many were built in conjunction with pre-existing concentration camps, but a few stood alone and acted as a final destination to many Jewish prisoners. Six major killing centers were used to bring the final solution to fruition. The biggest, and most well-known killing center is the one located at the Auschwitz-Birkenau site. While Auschwitz has established itself as a symbol of genocide through the Third Reich, it only exists as the last, most efficient Nazi killing center. The entirety of the euthanasia program, beginning at Tiergartenstrasse 4, progressed to this very end. The entire program existed to perfect the process of murder through euthanasia so that over 6 million men, women, and children could be exterminated by the Nazi Regime. The following chart illustrates various locations, killing methods, number of victims, and year(s) of operation:

Table 1

Killing Center	Killing Method	Min # of victims	year
Chelmno	Gas van - Carbon Monoxide	152,000	1941-42 & 1944
Belzec	Gas chamber - Carbon Monoxide	600,000	1942
Sobibor	Gas chamber - Carbon Monoxide	250,000	1942-43
Treblinka	Gas chamber - Carbon Monoxide	900,000	1942-43
Majdanek	Gas chamber - Carbon Monoxide & Zyklon B	60,000	1942-44
Auschwitz-Birkenau	Gas chamber - Zyklon B	1,100,000	1942-44

Chapter 2: Eugenics in Modern Medicine

The Scientific Progression from Zyklon Gas to Modern Medical Practices

One would think that Zyklon B pellets and the endless research conducted to perfect them would be left behind with the rest of the remnants from concentration camps such as Auschwitz with the liberation and the end of the war in 1945. Yet, the hours of research and medical experimentation did not get destroyed with the rest of the camps; instead, it lived on in the brains and memories of Nazi scientists and victims alike. It merely took a new form and adapted new names. While the eugenics movement throughout the world slowed after the conclusion of World War II, it never ceased. The eugenics work, along with other scientific and medical endeavors, persisted past the bounds of the war and escaped to develop into practices the medical field still utilizes today.

Different medical specialties and areas of research can be traced back to the medical experimentation conducted during the Holocaust, such as genetics, the study of heredity, autopsy practices, and also eugenics. These specialties developed directly as a result of the scientific material robbed from the victims of the Nazi Party.⁴² Scientific material and practices slowly progressed to procedures which are considered safe and routine today. The chemicals used in modern medicine can be traced back and derived from the chemicals used extensively by the Nazi Party.

Zyklon B, the brand name for hydrogen cyanide, existed as the Nazi's weapon of choice by the end of the war. It originally was intended to act as a pesticide and disinfectant chemical, but after discovery by the Nazi Regime, it quickly became the preferred method of mass

⁴² Bernadac, Christian. *Devil's Doctors: Medical Experiments on Human Subjects in the Concentration Camps*. Ferni Publishing House, 1978, pp. 14-19.

extermination.⁴³ At killing centers and concentration camps, the gas form of the chemical was utilized. Zyklon B was obtained in small, pellet form, but when exposed to the oxygen in the air, it transformed into the poisonous gas which proved to invaluable to the Nazis. Before Zyklon B was utilized as the primary form of poison, carbon monoxide was also used. Carbon monoxide, also inhaled as a gas, becomes poisonous when your body begins to place oxygen with the carbon-based chemical in your bloodstream. This replacement leads to extensive tissue damage and eventually, death, due to the lack of oxygen. Zyklon B became preferred over the carbon monoxide method as it delivered extermination in a much quicker fashion.

Today, the medical field utilizes a variety of different chemicals for routine anesthesia and in extreme circumstances, euthanasia. Three main types of anesthesia are utilized in the modern medical field; they are based on the scale needed based on the procedure. Local anesthesia is utilized for minor procedures which may cause the patient mild discomfort such as getting stitches or removing a mole. Regional anesthesia is similar in concept, as it only numbs a part of the body. Regional anesthesia is often used when larger surgeries take place, and a larger part of the body needs to be numbed. The first two forms of anesthesia allow the patient to remain aware, awake, and alert. The third type of anesthesia, general anesthesia, causes the patient to lose consciousness. This type is utilized for major surgeries or procedures such open-heart surgery or a joint replacement. Anesthesia can be administered to patients in two main ways - through an inhalable gas or through an intravenous administration of fluid.⁴⁴ Different chemicals and different dosages are used based on which type of anesthesia is required for the procedure. For general anesthesia, a mix of inhalable gasses are commonly used – nitrous oxide

⁴³ Müller-Hill, Benno. *Murderous science*, pp. 70-71.

⁴⁴ “Types of Anesthesia” *Asahq.org*, American Society for Anesthesiologists, 2022, <https://www.asahq.org/madeforthismoment/anesthesia-101/types-of-anesthesia/>.

and variations of ether derivatives. The third form, general anesthesia, most closely resembles the practice of euthanasia. When nitrous oxide (or similar chemicals) is inhaled, the oxygen is replaced. It takes up the space in your lungs and prevents oxygen from entering your lungs to then be dispersed to various parts of the body where it is needed. The lack of oxygen in part of your body, such as your brain and blood, causes your normal body functions to slow and operate at lower levels.⁴⁵ As soon as the inhalable gas ceases, and oxygen again refills the lungs, the effects are reversed. Euthanasia is the result if this reversal does not occur.

Oxygen serves as the primary fuel for bodily operations which sustain life – without it, our body cannot survive or function. Euthanasia occurs when the oxygen in our bodies is replaced by other chemicals. In a way, euthanasia simply exists as the “overdose” of anesthesia. Usually, euthanasia injections are composed of a mixture of chemicals for different functions: muscle paralysis to cease bodily movement and stoppage of the heart to prevent blood and oxygen flow. A drug for sedation is also included in the mix to ease the body into the cessation process. Barbiturates, a class of drugs, are most commonly used for euthanasia procedures. This class is most notably utilized to decrease brain activity and interfere with the nervous system to slow activity. This class of drugs is also commonly utilized for common medical diagnosis, such as seizures or insomnia – we also see barbiturates used in the world of general anesthesia.⁴⁶ However, when used in the correct dose, barbiturates make for effective euthanasia drugs.

The core of euthanasia is the complete cessation of bodily function – usually accomplished through the limitation or replacement of oxygen throughout the body. Anesthesia

⁴⁵ Vardanyan, R, et al. “General Anesthetics.” *Synthesis of Essential Drugs*, 9 May 2007, pp. 1-8., <https://doi.org/10.1016/B978-0444521666-8/50001-7>.

⁴⁶ Dierickx, Sigrid, et al. “Drugs Used for Euthanasia: A Repeated Population-Based Mortality Follow-Back Study in Flanders, Belgium, 1998–2013.” *Journal of Pain and Symptom Management*, vol. 56, no. 4, 1 Oct. 2018, pp. 551–559., <https://doi.org/10.1016/j.jpainsymman.2018.06.015>.

operates under a similar process, only for a temporary period of time, whereas the effects of euthanasia cannot be reversed with addition of oxygen into the body. By viewing the set of processes through this lens, we can clearly draw conclusions between these modern practices and the program established in Nazi Germany. The Nazi Party viewed individuals, not as people, “but apparatuses, motors; they had not been killed, but their functions had been interrupted.”⁴⁷ The science (established during Operation T4) behind interrupting – either temporarily or permanently – the functionality of an individual provided a springboard for the development of modern anesthesia and euthanasia.

Anesthesia

The practice of anesthetics existed in ancient times as healers would utilize harsh chemicals to subdue patients for medical practices or for pain relief. However, the early forms of the anesthesia we utilize today can be traced back to the 1840s. Doctors William Morton and John Warren adapted the idea of putting patients to “sleep” during procedures. On October 16 of 1846, Morton first used anesthesia – or Letheon, as he called it – on a patient for a tumor removal surgery. From this successful surgery, history observes a plethora of scientists and physicians tweaking the chemicals and formulas used to perfect the use of anesthesia. In 1889, Dr. Henry Dorr was the first physician to be named a Professor of Anesthetics and Anesthesia.⁴⁸ As can be imagined, the development of anesthetics across the globe progressed alongside the eugenics and euthanasia movements. While the development of anesthesia for medical purposes was well under-way before the beginning of the Second World War, the medical

⁴⁷ Aly, Götz; et. al. *Cleansing the fatherland*, p. 147.

⁴⁸ Harrah, Scott. “Medical Milestones: Discovery of Anesthesia & Timeline.” *Umhs-Sk.org*, University of Medicine and Health Science, 6 Apr. 2022, <https://www.umhs-sk.org/blog/medical-milestones-discovery-anesthesia-timeline#:~:text=Modern%20medicine%20would%20not%20be,Warren%20on%20October%2016%2C%201846>.

experimentation, and scientific findings between the 1930s and 1940s played a role in commercializing the anesthesia we see used today.

Euthanasia and anesthesia share similar pathways within the body. Important neuronal functions in the brain are regulated by mitogen-activated protein kinases (MAPKs). These pathways consist of protein kinase cascades which can affect different parts of the body. Essentially, a stimulus interferes with or “turns on” the protein kinase. Once turned on, the kinase then sends signals to other proteins which cause the body to respond in various ways. MAPKs can cause cells to proliferate, differentiate, or even undergo apoptosis (cell death).⁴⁹ Drugs and chemicals – oftentimes, barbiturates – administered in the form of anesthesia or euthanasia can interfere with or induce this pathway and cause sedation or death, depending on the dosage.

While Nazi physicians had no use for anesthesia through their practices during the Holocaust, the developments made in the euthanasia program indirectly led to the developments in the paralleled anesthesiology field. The science behind euthanizing patients which was perfected by the scientists, chemists, and physicians working for the T4 operation, can also be used to understand how anesthesia affects patients.

Physician-Assisted Suicide

As physician-assisted suicide continues to be a topic of debate in medical circles all over the globe, it presents an ethical question to each individual who chooses to allow their brain to begin to wrap around the concept. Similar to anesthesia, euthanasia, commonly referred to as physician-assisted suicide in regard to humankind, can trace its early history to ancient times.

⁴⁹ Zhang, Wei, and Hui Tu Liu. “MAPK Signal Pathways in the Regulation of Cell Proliferation in Mammalian Cells.” *Cell Research*, vol. 12, no. 1, 1 Mar. 2002, pp. 9–18., <https://doi.org/10.1038/sj.cr.7290105>.

Even after the establishment of the Hippocratic Oath in 5th century B.C., euthanasia was still practiced and pondered. However, as far as the Hippocratic Oath was concerned, the practice of euthanasia was forbidden and considered harmful and unnecessary for patients.⁵⁰ This perspective morphed over time as euthanasia was redefined as a “merciful killing” of those who wished to no longer live or could no longer be cared for due to a difficult diagnosis.

In the 1870s, we observe the development and isolation of morphine – a new agent which reignited considerations of euthanasia. In America, Samuel Williams began to advocate for the utilization of morphine for euthanasia practice, sparking extensive discussion among medical and scientific circles. This elaborate discussion leads the American Medical Association (AMA) to take a stance. The Association publicly denoted Williams, and opposed his views of euthanasia, stating that the role of a physician is to heal, not to execute. This perspective was held by the general public, until the conversation surrounding the use of euthanasia once again began in the 1900s. Much like Nazi Germany, an economic component was woven through the debate. The trying times of the Great Depression brought a new wave of considerations into the conversation. Public support for euthanasia greatly increased during this hardship as it was a way to reallocate resources used for those with incurable illnesses or infants born with psychiatric disorders. By 1935, the Voluntary Euthanasia Legislation Society (VELS) was established in order to lobby for the implementation of legislation in support of euthanasia. This organization led to the more formal development of the Euthanasia Society of America (ESA) in 1938 – headed by Charles Francis Potter, an American author and theologian. The Nazi Regime’s use of Euthanasia throughout World War II limited the progress the ESA was making, placing them on the

⁵⁰ McPherson, Laura. “The History of the Hippocratic Oath.” *Absn.northeastern.edu*, Northeastern Bouvé College of Health Sciences School of Nursing, 3 June 2015, <https://absn.northeastern.edu/blog/the-history-of-the-hippocratic-oath/>.

defensive. Directly after the war, trends showed decreasing support for physician-assisted suicide as the World Medical Association provided their opinion in opposition to euthanasia. In 1973, a Patient's Bill of Rights was accepted by the American Hospital Association – while euthanasia was not directly condoned, the Bill of Rights did include the patient's rights to refuse life-sustaining treatment. In 1976, legislation to allow euthanasia emerged. That year, California instated a law which allowed terminally ill patients to withdrawal treatment, ending their life. By the end of the next year, 1977, eight states had established similar "Right to Die" bills. Oregon became the first state to pass physician-assisted suicide legislation in 1994; the Dignity Act was passed which granted permission to patients and physicians to practice euthanasia. After the new legislation caused controversy, various cases were elevated to the Supreme Court level throughout different states. In 1997, the US Supreme Court ruled against the constitutional right to die in a pair of decisions -- Washington v. Glucksberg and Vacco v. Quill. These decisions denied national legislation supporting euthanasia, stating that terminally ill patients do not have the protected right to death assisted by a physician. These cases protected the state-by-state decision of legalizing physician-assisted suicide. By the early 2000s, euthanasia was an active global movement; many different countries began establishing their own legislation in support or against the practice of euthanasia in the medical field.⁵¹ Throughout the 2000s until present day, varying states have continued to enact legislation opposing or legalizing physician-assisted suicide. Approximately eleven different countries legalized physician-assisted suicide and eleven different states (including the District of Columbia) passed legislation in support of physician-

⁵¹ "Historical Timeline: History of Euthanasia and Physician-Assisted Suicide." *Euthanasia.procon.org*, Encyclopedia Britannica, 29 Mar. 2022, <https://euthanasia.procon.org/historical-timeline/>.

assisted euthanasia. Just because euthanasia in the form of physician-assisted suicide is establishing its place in the medical field, does not mean it does so without opposition.

The choice of euthanasia is required, by law, to remain an autonomous decision until the point of death for a patient. To ensure this, often patients drink a “potion” of a barbiturate drug mixed with a juice in order to euthanize themselves. The family members of the patient can then be alongside the patient as the drug takes action and puts the patient to sleep, eventually causing death.⁵² Obviously, the autonomy woven throughout modern-day euthanasia is not a luxury which was also afforded to the victims of the Holocaust. Due to its origins, the use of this practice continues to be heavily debated. The future of physician-assisted suicide in the modern medical field is unknown but seems to be on an upward trend. While the future is not determined, parts of its past can be undoubtedly traced back to the medical experimentation which took place throughout the Holocaust.

⁵² Riley, Sean. “Navigating the New Era of Assisted Suicide and Execution Drugs.” *Journal of Law and the Biosciences*, vol. 4, no. 2, Aug. 2017, pp. 424–434., <https://doi.org/10.1093/jlb/lxx028>.

Chapter 3: Ethical Considerations

The Opinion of Nazi Doctors

The fear surrounding modern day medical developments from the Holocaust are predominately rooted in the fear of reoccurrence. It is a concern that lessons from the Third Reich may not have been thoroughly learned. If doctors – both Nazi and Jewish physicians alike – were able to abandon all prior commitments to the betterment and upkeep of the wellbeing of their patients, who is to say it cannot happen again. A perfect combination of pseudoscientific racism, abandonment of morals, and social crisis created the grounds for the unethical happenings of the Holocaust to unfold – a combination which would easily recreate itself.⁵³

The Nazi Regime and Operation T4 recruited young physicians who were ambitious and hungry for power and wanted to make a place for themselves in the medical field. These physicians were relentless when it came to establishing a name for themselves amongst their colleagues. Now, when interviewed, physicians who worked for the Nazi Party claim they were blinded by the shiny prize of success; because they were so focused on their scientific endeavors, they were blind to the reality of the horror occurring around them. Else von Lowis, a government official who once took a tour of Grafeneck Asylum, claimed that it “was perfectly plain what was happening at Grafeneck, an open secret.”⁵⁴ If individuals only briefly visiting these psychiatric asylums were able to pick up on the “secret” of the Nazi Party, then there is no doubt that physicians and scientists closer to the operation knew as well.

Most of the participating physicians also believed in the racial hygiene theory and in the euthanasia program’s goals. As a result, countless physicians and scientists transformed mass

⁵³ Aly, Götz; et. al. *Cleansing the fatherland*, pp. 1-3.

⁵⁴ Burleigh, Michael. *Death and deliverance*, p. 163.

murder into their profession. Procedures, experiments, and studies for the perfection of euthanasia could be disguised under medical research, but at its core, it was murder, plain and simple. Each new discovery or development aided in the ultimate end for “inferior” individuals across Germany. Many physicians believed themselves to be guiltless and clean of the fate of many of the asylum patients, but in reality, they played one of the biggest parts of all. By perfecting the sciences and methodology behind the conduction of the euthanasia process, they sealed the fate of millions of individuals who would fall victim to the extermination methods of the Nazi Regime. The physicians played a part in the extermination, without having to ever face the end results.

Other individuals claimed that even though they understood the weight of what surrounded them, they had no choice to back out. However, there are several accounts of physicians or scientists taking a step back from the work of the Nazi Party after realizing what was at hand. Kurt Borm, a former Nazi physician, reported that he was asked to serve in a Nazi-operated camp. After identifying the work he would be contributing to – as the camp to which he was being assigned included mass extermination – he simply refused. Borm never received any consequences and was free to move on to research elsewhere. Testimony after testimony proves that Nazi physicians had ways out of their work; their contribution was a thoughtful choice as they understood the overarching consequences of their research and work.⁵⁵ This thoughtful choice acts as grounds for concern. One might wonder how an individual could go on, progressing the means would provide the demise of millions of human beings, showing no remorse throughout their practice or after the fact.

⁵⁵ Friedlander, Henry. *The Origins of Nazi Genocide*, pp. 224-228.

Countless Nazi physicians, scientists, and leaders on trial after the war claimed numerous times that they knew nothing about the Final Solution or about the realities of the euthanasia program. There are even accounts of individuals, such as Viktor Brack (a Nazi physician), swearing that no handicapped Jewish individuals died in the killing centers.⁵⁶ It is almost as if the empathetic part ingrained in most humans ceased to function in these individuals. Minor invasive or even destructive procedures have always existed as a part of the routine medical practice, creating some explanation as to why it may have been easier for physicians to practice euthanasia. They were trained for this – to conduct research, to be subjective, to look at a human body as a functional, motorized unit. This view of humankind breeds extermination machines who share no empathetic remorse for those harmed during their scientific advancements. Those who did in fact struggle to stomach the reality of their contributions, turned a blind eye to the evil at hand – creating a community of “self-blinded internal exiles coexisting with annihilators.”⁵⁷ The “best” of them existed as eye-witness bystanders who rejected what unfolded before them, vowing to never speak a word about it. By never speaking into existence the horrors which took place, the reality of what took place was made to be morphed into the self-proclaimed history of the physicians and scientists involved. It would be near impossible to be honest with oneself if they had a hand in the ultimate destruction of millions of helpless individuals – leading many individuals to falsify history in their own minds and memory for their self-preservation.

“Today, the perpetrators are old men who have rehearsed the legends about their lives for decades, with the result that they firmly believe them.”⁵⁸ The evil has been shut out, time and

⁵⁶ Friedlander, Henry. *The Origins of Nazi Genocide*, p. 263.

⁵⁷ Müller-Hill, Benno. *Murderous science*, p. 23.

⁵⁸ Aly, Götz; et. al. *Cleansing the fatherland*, pp. 12-14.

time again. Through a multitude of interviews with former perpetrators we see a denial of anti-Semitism, ill-intent, and any wishes of destruction all together, all in attempt of justification of the crimes committed. By recognizing the scientific progressions and medical developments which exist as a result of research conducted throughout the Holocaust, physicians and scientists can write off their crimes in the name of medicine. The assurance that this justification never becomes a subject again is of importance and causes concern for the use of such scientific developments made during the reign of the Third Reich in modern medicine.

Use of “Evil Medicine” in Today’s World

The fascination with the developments made during the Holocaust through medical experimentation, melted away for most individuals when they understood the reality of the horrors accompanying the developments. The language of science was translated into the language of destruction. So then, we ask ourselves if these scientific developments should be carried into a new, positive light for the use of good, or should we let it be destroyed alongside the camps and crematoriums which once belonged to the Nazi Regime. The answer is not simple. Although under extremely devastating circumstances, worthwhile medical developments were made by Nazi scientists and doctors. As previously outlined, we observe the origins of genetics, heredity, autopsies, and anesthesia derived from the research conducted through medical experimentation in the Holocaust and through Operation T4. While the reasoning behind conducting such medical human experimentation and the means by which it was achieved should be left far behind, only to exist in the past, I do believe that good can continue to transpire from developments now embedded and embodied in the modern medical field.

Many of the scientific developments of the time have been transformed and adapted. The medical experimentation conducted on psychiatric patients does not exist as the ending point for

these scientific developments, but only the beginning. This raw data and findings act as only ground zero to the developments made since then, morphing into medical practices we utilize today. We no longer think of genetics as the twin studies conducted in Auschwitz by Mengele, but now we think of traits and characteristics which make up an individual or Mendel's pea plants. We no longer think of euthanasia as the ruthless murder of those deemed inferior, but we see an ever-rising increase of physician-assisted suicide legalizations across the globe.⁵⁹ These scientific progressions owe their origins, in part, to the medical experimentations conducted through the Holocaust.

The question – and rightful concern – still exists regarding the repetition of history. How do we ensure that we will never again turn to horrors similar to those conducted under the Nazi Regime to produce significant scientific results. For this reason, we see another aspect of the modern-day medical field arise from the ashes of the Holocaust – healthcare ethics. Modern healthcare ethics has established its roots in the happenings surrounding the Holocaust and what transpired throughout the rule of the Nazi Regime.⁶⁰ To ensure evils such as these would never occur in the name of medical and scientific progression, we see the continuous development of ethical principles which provide safety and protection for the existence of further human experimentation in the field of medicine.

The Nuremberg Trials

One might wonder how the world was seemingly so quick to forgive and forget the reign of terror the Nazi Party had over Germany, choosing to remember only the scientific advancements made at the time. The simple answer – it wasn't, even though the use of medical

⁵⁹ McAshan, Britni R. "Medicine after the Holocaust." *Tms.edu*, TMC News, 5 Apr. 2017, <https://www.tmc.edu/news/2017/04/medicine-after-the-holocaust/>.

⁶⁰ Chelouche, Tessa. "Teaching Hard Truths about Medicine and the Holocaust." *AMA Journal of Ethics*, vol. 23, no. 1, 2021, pp. 59–63., <https://doi.org/10.1001/amajethics.2021.59>.

developments discovered by Nazi scientists and physicians in modern medicine raises a plethora of ethical concerns. Nonetheless, a slow progression occurred out of this era, allowing for healing and for the continuation of new scientific research, under a new set of standards. A progression which is only made possible by the Nuremberg Trials and Nuremberg Code.

After the conclusion of the war and cessation of Nazi power, the world was left with a variety of war criminals. The next step was to try them and hold them accountable for the damage done and crimes committed. A variety of steps were taken to accomplish this goal, including the establishment of the Nuremberg Code, the Declaration of Helsinki, and the Tokyo Convention – each of which were passed or held to determine and uphold ethical standards after the war.⁶¹ However, the Nuremberg Trials began the long path of attempting to reverse some of the evil committed by Nazi Germany and laid the framework for the reform of human experimentation. The trials began in October of 1945 and lasted for almost a whole year, concluding in October of 1946. While the blame for the crimes committed could be placed on multitude of individuals, only twenty-two of Nazi Germany's leaders were tried in Nuremberg in 1945, many of whom were physicians.⁶² On the other side of the trial, the International Military Tribunal existed as the first tribunal made up of individuals from varying nations – representing a united front against the horrors committed throughout the reign of the Nazi Regime. At the end of the almost year-long trial, only three individuals were acquitted. Out of their counterparts, twelve were sentenced to death, three received a life-sentence in prison, and the remaining four individuals were sentenced to varying imprisonment time periods, varying from ten to twenty years. This trial laid the foundation for the definitions and criminality associated with the occurrences of the Holocaust; from there, other Nazi leaders, scientists, doctors, etc. were tried

⁶¹ Aly, Götz; et. al. *Cleansing the fatherland*, pp. 68-71.

⁶² Annas, George J.; et. al. *The Nazi doctors and the Nuremberg Code*, pp.65-69.

and sentenced as well. A majority of these sentences occurred at a later trial, known as the Subsequent Nuremberg Proceedings, which existed as an offshoot of the original trials.⁶³ The trials which occurred from October 1945-October 1946, existed as the first of thirteen different trials held in Nuremberg through 1949.

The Nuremberg Code

While the Nuremberg Trials contributed greatly to the justice served on behalf of all past victims, it did not address the future. This is exactly what the subsequent Nuremberg Code attempted to do. Following the Trials, 1947 brought the publication of the ethical code which was written as a result. Most would agree that the human experimentation in the scope observed throughout the duration of the Holocaust should exist only in historical accounts and documents; however, the very act of human experimentation is a necessity when it comes to understanding the human body and how various independent variables effect it. After the horror which unfolded in the medical experiments of the Holocaust, it was of the utmost importance of the medical and scientific community to establish ethical principles which would serve as the standard for human-based experimentation. The Nuremberg Code is an attempt to outline natural laws which should be innate human nature in a written set of ethical principles. The need for such a document or standard became evident as we saw human beings degraded to merely test subjects by Nazi physicians. A fine line exists, as once the step is taken into the realm of human experimentation, the subject and object merge.⁶⁴ This code ensures the fundamental moral principles will be upheld when humans become both subject and object.

⁶³ “The Nuremberg Trials.” *Ushmm.org*, United States Holocaust Memorial Museum, 2022, <https://www.ushmm.org/collections/bibliography/the-nuremberg-trials>.

⁶⁴ Annas, George J.; et. al. *The Nazi doctors and the Nuremberg Code*, p. 307.

The Nuremberg Code outlines ten major principles required for the ethical practice of human research. These ten principles keep the subjects in mind as they provide protection, confidentiality, and consent to participants when involved in research. Researchers have flexibility in how they accomplish each of the ten requirements, as long as all are met. The ten principles, as outlined by the United States Holocaust Memorial Museum are included below.⁶⁵

Table 2

1. The voluntary consent of the human subject is absolutely essential.
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 a prior 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.

⁶⁵ “The Nuremberg Code.” *Ushmm.org*, United States Holocaust Memorial Museum, 2022, <https://www.ushmm.org/information/exhibitions/online-exhibitions/special-focus/doctors-trial/nuremberg-code>.

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 the liberty to bring the experiment to an end if he has reached the physical or mental state where continuation of the experiment seems 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 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.

The Nuremberg Code set the foundation for all future ethical and legal questions which related to the realm and practice of human experimentation.⁶⁶ It was one of the few documents in history where its significance was understood as it was being crafted – it was ingrained into history almost as soon as it was published. It has integrated itself into commonplace scientific practices in the modern world. It essentially takes the form of a living document as its significance can be appreciated year after year, research study after research study. It serves as the perfect model by which human research should be conducted and acts as a blueprint for principles which protect the rights of individuals who act as subjects in medical research. “The key contribution of Nuremberg was to merge Hippocratic ethics and the protection of human

⁶⁶ Annas, George J.; et. al. *The Nazi doctors and the Nuremberg Code*, p. 6.

rights into a single code."⁶⁷ By following the code, future human-based research can be successful and safe – preventing any traces of evil so greatly observed through the Holocaust. Now, nearly 80 years after the code was written, we continue to recognize the impact it had on the world of medical research. The legacy left by the Nuremberg Code serves as a constant reminder of the importance of applying the entirety of the code and using it as the golden standard for human-subject based research. The Nuremberg Code set the foundation for all future ethical and legal questions which related to the realm and practice of human experimentation.⁶⁸ It was one of the few documents in history where it's significance was understood as it was being crafted – it was ingrained into history almost as soon as it was published. It has integrated itself into commonplace scientific practices in the modern world. It essentially takes the form of a living document as its significance can be appreciated year after year, research study after research study. It serves as the perfect model by which human research should be conducted. By following the code, future human-based research can be successful and safe – preventing any traces of evil so greatly observed through the Holocaust.

⁶⁷ Shuster, Evelyne. "Fifty Years Later: The Significance of the Nuremberg Code." *New England Journal of Medicine*, vol. 337, no. 20, 13 Nov. 1997, pp. 1436–1440., <https://doi.org/10.1056/nejm199711133372006>.

⁶⁸ Annas, George J.; et. al. *The Nazi doctors and the Nuremberg Code*, p.6.

Conclusion

The Bridge between the Realities of the Holocaust and of Today

The precedent outlined by the Nuremberg Code continues to hold great significance in the medical research field today. We see the code integrated into modern research policies, standards, and routine practices – because of the Code, research subjects are respected and gifted with transparency of the study at hand. The Code ensured the protection of autonomy, justice, and the rights of human research participants. While the lasting impact of the Nuremberg Code is profound and woven throughout modern day research, debates still exist surrounding the influence of the Code. “Because of its link with the horrors of World War II and the use of prisoners in Nazi concentration camps for medical experimentation, debate continues today about the authority of the Code, its applicability to modern medical research, and even its authorship.”⁶⁹ In many cases, it is hard to apply historical occurrences and practices to today’s world: the Nuremberg Code is no exception. Much like the medical experimentation which occurred throughout the Holocaust, other experimentation which proved to be relevant in the mid-1900s are debated on applicability in today’s modern medical field.

The medical field as we know it today is constantly morphing and changing through innovation and new discoveries, many of which are founded on research conducted in the past. As previously discussed, we can accredit many modern specialties in medicine to the developments which occurred throughout the Holocaust and the surrounding time periods. One might wonder how applicable studies from the past are to the future progression of modern medicine and research. Time and time again, we see past developments proving themselves to be relevant in the modern medical field, but not without debate.

⁶⁹ Shuster, Evelyne. Fifty Years Later. 1436-1440.

Various medical experimentations which proved to be relevant in the mid-1950s are immersed in debate of modern relevance, ethical appropriateness, and reliability. Genetic engineering in modern medicine exemplifies a modern medical practice which was derived from historical scientific studies which continues to be debated today. We see the beginnings of the development of the field of genetics at Auschwitz as Dr. Joseph Mengele conducted a variety of studies on camp prisoners. Since then, the world of genetics has morphed and molded to modern day medicine. One new genetics-based endeavor is the concept of genetic engineering. The process of tweaking individual genomes or biologically engineering embryos to have certain traits or lack thereof is a topic of research which is heavily debated. While the practice promises some good, such as the elimination of certain diseases or health problems, the process and experimentation behind these practices questions the limit of ethical considerations. Some concerns surrounding the process of genetic engineering revolve around creating societal inequalities, eliminating certain genes/traits, or interfering with the natural progression of humanity.⁷⁰

This is the science of eugenics. Just as euthanasia continues to be debated in modern medical circles, so does eugenics. Eugenics is defined as “the study of how to arrange reproduction within a human population to increase the occurrence of heritable characteristics regarded as desirable.”⁷¹ The controversy lies in the process of “arranging reproduction.” While some individuals have no ethical hesitations when it comes to genetically modifying the genome of a human, others find it of great concern as it “going against” the natural progression of one’s

⁷⁰ “How Genetic Engineering Will Reshape Humanity.” *Economist.com*, The Economist Newspaper, 18 Apr. 2022, <https://www.economist.com/open-future/2019/04/25/how-genetic-engineering-will-reshape-humanity>.

⁷¹ “Eugenics.” *Languages.oup.com*, Oxford Languages, 2022, <https://languages.oup.com/google-dictionary-en/>.

development. Francis Galton created the science from the foundation laid by Charles Darwin's theory of natural selection. Eugenics gained ground alongside the euthanasia movement in America in the early 1900s. Progression of the movement slowed as euthanasia and eugenics became increasingly tied to the Nazi Party's agenda.⁷² While Francis Galton is recognized for coining the term "eugenics," the concept can be traced back to the mid-1800s. Gregor Mendel (and his famous pea plants) paved the way for modern genetics. Mendel's work, rooted in heredity, served as the backbone of the emergence of eugenics. The understanding of the expansive genome allowed eugenicists to dream of ways to manipulate the genes enveloped in it.

Often, we accredit this kind of science to unethical experiments - notably throughout the Holocaust -- but this area of study is much farther stretched. In the 1900s, the eugenics movement skyrocketed; it became a global scientific interest. Prominent eugenicists, such as Francis Galton, dove into research surrounding the concept. Various legislation was passed in support of eugenics and similar science – such as the sterilization laws passed throughout the States, beginning in Indiana in 1907. By 1938, 30,000 individuals had been sterilized across the United States. The support for the practice of sterilization, and eventually euthanasia, spread across the globe. The Nazi Party adopted these practices and amplified them. The process of amplifying the euthanasia movement (by whatever means necessary) is when controversies were highlighted. As the eugenics movement adapted into the horror, which was the Holocaust, we saw the rest of the world turn away from similar practices. Now, with the implementation of the Nuremberg Code, the rest of the world is beginning to turn back to eugenics, but not without some opposition.

⁷² Friedlander, Henry. *The Origins of Nazi Genocide*, pp. 6-18.

The process of genetically engineering specific traits eerily resembles the concept of the racial hygiene theory – that some traits or characteristics were unwanted and should be eliminated. Jamie Metzl, a biotechnology executive who works in the field of genetic engineering, addressed the reality of the dangers of this practice – “The ‘better angels of our nature’ remain primary drivers in our development of genetic technologies, but the dark side of human nature could also be empowered through these same tools. We need a very strong ethical and cultural framework to increase the odds that we’ll use these technologies wisely.”⁷³ The fine line between these two realities should always be a consideration when a new development holds so much power. When these technologies continue to progress, we can return to the ethical framework laid out in the Nuremberg Code as a result of the ethical downfall represented throughout the Holocaust. As we observe the transition from medical experimentation into the modern medical field, we must take the necessary steps to ensure our results abandon madness and embody medicine.

⁷³ “How genetic engineering will reshape humanity.” The Economist Newspaper.

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