MASS BURIALS OF THE HOLOCAUST

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During the Holocaust, an estimated six million Jews as well as other groups, were killed and disposed of in mass graves. While archaeological investigations have been done at Holocaust sites, none of them have included a formal excavation of a mass grave. This study focuses on the four death camps of Chelmno, Belzec, Sobibor, and Treblinka and what is known about each, both historically and archaeologically. The purpose of this study is to look at what is already known about the mass burials of the Holocaust and to then look at what else can be learned or better understood from them to create a theoretical excavation plan. The conclusions of this study will consider how to best approach an excavation of this kind as well as to determine whether or not such an excavation should even be done.
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INTRODUCTION

The Holocaust refers to the time period from 1933, when Adolf Hitler came into power in Germany, until 1945 when the concentration camps were liberated. During this time, millions of Jews and other populations, deemed undesirable, were systematically killed. The brunt of the killings occurred after the implementation of Hitler’s “final solution”. The term “final solution” is the term the Nazis used to refer to the annihilation of the Jewish population (USHMM 2012). Some of these individuals were cremated after being killed and their ashes were dumped into pits while others were killed and then disposed of in mass graves.

Over the past 68 years these mass burials have not been formally excavated. However, a number of mass graves have been opened up to confirm their existence. Others have only been probed to find the boundaries, but there has not been any large scale archaeological excavations done to these graves. While numerous graves have been located and recorded, others have not. This lack of knowledge on the location of graves may become an issue in the future. We are rapidly approaching a time when there will no longer be any living survivors or even witnesses of the Holocaust to give firsthand information. There will no longer be individuals to provide information on how the killings occurred, where they occurred, or where they are located.

For now there has not been an immediate need or desire to excavate these burials, but a time may come when such excavations become necessary. If the sites remain unrecorded or are forgotten they may be unintentionally unearthed during construction, which would create a need to excavate the burials or relocate the construction project. In the future, some may want to purposefully excavate these graves in order to gain more information on the Holocaust. It is
important that if and when these situations arise, archaeologists have sufficient information about the Holocaust and excavation of mass graves to allow them to proceed most effectively.

The purpose of this study is to look at what is already known about the mass burials of the Holocaust and to then look at what else can be learned or better understood from them to create a theoretical excavation plan. The conclusions of this study will consider how to best approach an excavation of this kind as well as to determine whether or not such an excavation should even be done.
BACKGROUND

The term Holocaust is a Greek word meaning “sacrifice by fire” (USHMM 2012). “The Holocaust was the systematic, bureaucratic, state-sponsored persecution and murder of approximately six million Jews by the Nazi regime and its collaborators” (USHMM 2012). These killings took place between January 1933, when Hitler and the Nazi regime came into power, until May 1945 when the allied forces liberated the concentration camps (USHMM 2012). The Holocaust includes the killing of other groups in addition to the Jews. Roma (Gypsies), the disabled, and Slavic peoples were targeted for their perceived racial inferiority. Communists, Socialists, Jehovah’s Witnesses, and homosexuals were also targeted based on political, ideological, and behavioral grounds (USHMM 2012).

The proposed destruction of these populations was a result of the Nazi ideology of racial purity. Adolf Hitler formulated these ideas which became known as Nazi ideology. “He believed a person’s characteristics; attitudes, abilities, and behavior were determined by his or her so-called racial make-up” (USHMM 2012). He believed that all groups carried traits that were passed from one generation to another and that no individual could overcome these qualities of race. In forming this ideology he drew on the ideas of the German Social Darwinists of the late nineteenth century. The Nazis defined Jews as a race and negative stereotypes about them were attributed to an unchanging biologically determined heritage. Nazis believed that superior races had the right and obligation to exterminate inferior ones. Maintaining race purity was important to Hitler. He believed that mixing of other races would lead to degeneration of a race over time. The Germans were thought to be members of a superior race which Hitler referred to as Aryan.
For the Nazis, the Jews were the racial enemy and a threat to the survival of the Aryan race. This thinking lead to the view that all racial threats including the Jews needed to be eliminated (USHMM 2012). “What was “Aryan”? Like all races the category “Aryan” was an invention, a social construction rather than a physical fact” (Bergen 2003:36). Hitler borrowed the term Aryan from eighteenth and nineteenth century European racial theorists. Aryan originally referred to a group of people in ancient India. This group was supposedly taller, lighter skinned, and superior to their neighbors. The only constant definition of Aryan during the Holocaust was the claim that Aryan was the opposite of Jew (Bergen 2003 36-37).

The “euthanasia” campaign implemented by the National Socialist government beginning in the autumn of 1939, represented one of the many radical measures which aimed to restore the “racial integrity” of the German nation (Friedman 2011:137). This euthanasia program was code named T4. It aimed to exterminate individuals that the Nazi authorities deemed unworthy of life: people with cognitive impairment, physical disability, or mental illness (Friedman 2011). The name T4 refers to the address of the programs headquarters located at Tiergartenstrasse 4, Berlin (Bergen 2003:120). “Considered by many historians as a model and precursor to the “final solution”, the euthanasia program claimed the lives of some 200,000 individuals, including 5,000 children” (Friedman 2011:138). This euthanasia program was the first time gas was used in Nazi Germany for killing individuals. The mentally ill were put into sealed rooms and carbon monoxide was introduced. After these individuals died, the bodies were then cremated (Arad 1987:9).

Prior to the beginning of the Holocaust, the Jewish population of Europe was numbered at over nine million. It is estimated that six million were killed by the end of the Holocaust, which is approximately two out of every three Jews (USHMM 2012).
Never before had a European or world government adopted the policy that all Jews, every last Jewish man, women, and child, would be exterminated. At the same time, while Jews were the primary victims, slated for total physical annihilation, six million non-Jewish victims also suffered grievous oppression and destruction, including several hundred thousand Roma-Sinti, two million polish civilians, three million soviet prisoners of war, several thousand gay men and Jehovah’s Witnesses, tens of thousands of political prisoners, and 200,000 persons with disabilities (Friedman 2011:1).

After the appointment of Hitler as chancellor, the Jewish participation in German state and society changed radically and quickly. “By the end of 1933, new laws had begun the process of expelling Jews from civil service, reducing their percentage in school and universities in Germany, restricting their ability to become doctors and lawyers, and removing them from cultural and social organizations” (Friedman 2011:15). The Jews were moved to ghettos that all shared three purposes: the concentration of the Jewish population, at least partial separation of the population from the “Aryan” population, and the expropriation of valuables (Friedman 2011).

In the early years of the Holocaust, concentration camps were established to hold the Jewish population. Later the Jews were moved to extermination centers where they were killed in specially developed gassing facilities. Prior to permanent gassing facilities, mobile gas vans were used. These were put into operation in December 1941. Sixty individuals could be killed in these vans at a time (Benz 1999). These trucks had a sealed rear cabin. Victims were loaded into the trucks and carbon monoxide was brought into the cabin through a pipe. It took between fifteen and thirty minutes for the people to die. By the middle of 1942, thirty gas vans had been produced (Arad 1987:11). The gas vans proved inefficient however and more effective methods were needed. Thus, Zyclon B was developed and was tested at Auschwitz (Benz 1999). This gas was first used for killing on September 3, 1941 at Auschwitz (Arad 1987:9). Zyclon B was not used however, in the gas chambers of the four death camps (Arad 1987). In the final months of
the Holocaust, in an attempt to avoid liberation of concentration camps by the allied forces, the Nazis evacuated occupants through forced marches.

Between 1937 and 1945, 20,000 camps were established (USHMM 2012). Several types of camps existed. These included concentration camps, forced labor camps, extermination or death camps, transit camps, and prisoner of war camps. There were eleven main concentration camps including Dachau, Sachsenhausen, Ravensbrucke, Buchenwald, Flossenburg, Neungamme, Gross Rosen, Natzweiler, Mauthhausen, Stutthof, and Dora/Nordhausen. Many more periphery or sub camps exist beyond these. There were four main killing centers of Belzec, Chelmno, Sobibor, and Treblinka. In addition, two labor/extermination camps of Auschwitz/Birkenau and Majdanek existed. Two reception and holding centers of Bergen Belsen and Theresienstadt existed as well. The four killing centers of Belzec, Chelmno, Sobibor, and Treblinka are the focus of this study (USHMM 2012).

These killing centers were established to facilitate the final solution or mass destruction of the Jews. The first killing center of Chelmno was opened in December 1941. Here, mobile gas vans were used to massacre the Jews (USHMM 2012). This site was chosen as an extermination camp for its proximity to a forest and abandoned palace. Access to this site was both convenient and private. It held two extermination facilities and had three specially adapted trucks built for the mass killings. While it is difficult to estimate the number of individuals killed here, a monument at the site says that 180,000 Jews were murdered there (HEART 2012). At the height of its eradication, the Auschwitz-Birkenau killing center had four gas chambers that were used to gas 6,000 Jews a day (USHMM 2012). Extermination of Jews at Auschwitz-Birkenau began in 1942 and ended on January 27, 1945 when the camp was liberated. At the time of liberation 7,000 survivors were found. It is thought that approximately 1.1 million people were killed at
Auschwitz with ninety percent of them being Jews. At the site of Majdanek, the latest research suggests that approximately 78,000 individuals were killed, of which 59,000 are estimated to have been Jews. Majdanek while used to kill Jews, has been found to have primarily been used as a holding center (HEART 2012).

At the death camps, gas chambers were used to increase killing efficiency and to make the process less personal for the perpetrators (HEART 2012). The extermination of the Jews had started in 1941 with the Nazi invasion of the Soviet Union. Four SS formations which were called Einsatzgruppen were tasked with murdering the Jews. They drove the Jews from their homes to locations nearby and shot them. At these killing sites, the Jews were lined up either on the edge of, or inside of, the ditch and then shot (Arad 1989:7). “The locations selected for these killings were either natural ravines, antitank ditches, or pits specially dug for the purpose” (Arad 1989:7). However, this method of killing was found to be full of problems. The shooting of thousands of people was a slow process and required many SS men. These killings were hard to keep a secret from the general public as they were being carried out simultaneously at thousands of locations. Prolonged exposure to killing people also caused psychological problems for the members of the Einsatzgruppen. For these reasons, additional methods were sought in an attempt to carry out the killings in a more efficient manner (Arad 1989:8).

_Aktion Reinhard_ is the term used by the Nazis to refer to the extermination of Polish Jewry from 1942 to 1943. This program had two aims. The first was to deport and physically destroy the Jewish people. The second part was to collect their valuables and possessions. To achieve these goals the three death camps of Belzec, Sobibor, and Treblinka were established. These death camps were built in the far eastern region of Poland. Aktion Reinhard was responsible for the mass murder of approximately 1.7 million Jews. Belzec was built solely for
the extermination of the Jews as part of Aktion Reinhard. It was chosen as the sight of a death camp for its location on a railway. It is estimated that 434,508 individuals were murdered here. Sobibor was the second death camp to be constructed as part of the Aktion Reinhard program. It is estimated that 250,000 Jews were killed here. Treblinka the third death camp established, as part of Aktion Reinhard was built in 1942. It is estimated that a total approaching 900,000 Jews were killed here between July 1942 and August of 1943. When the final gassing was complete the camp was destroyed and trees were planted in an effort to turn it into a farm to hide the evidence (HEART 2012).

Although much is known about the Holocaust historically, less is known about it archaeologically. There have been several main studies conducted in an attempt to locate and record the location of mass burials at these sites. One of these studies is being done by Father Patrick Desbois in Ukraine (USHMM 2012). In this area, Jews were not moved to death camps but were instead killed in the villages. Desbois is attempting to locate every mass grave and site where Jews were killed during the Holocaust. So far 800 of the estimated 2,000 sites have been mapped. Through his work, he and his team are collecting artifacts and video testimonies from eyewitnesses (USHMM 2012). Another major ongoing study is that of Yad Vashem which is a part of the International Institute for Holocaust Research. Their project maps and describes the murder of Jews in the former USSR. They have created a guide that includes information on the location of murder sites, the identity of the perpetrators, the number of victims, and how Jews were murdered (Yad Vashem 2012). Although these ongoing studies are making great strides in locating killing sites of Jews during the Holocaust, they are not doing any physical study of graves and human remains. There is still a gap in our knowledge about the Holocaust that could be filled through archaeological excavations at the concentration and death camps themselves.
METHODOLOGY

Several methods were used to complete this study on the mass graves of the Holocaust. The first method was to research what is already known about the camps and mass graves. I focused on the death camps in particular which include Belzec, Chelmno, Sobibor, and Treblinka. To do this I looked at sources dealing with the background of these sites and the studies, including excavations that have been initiated there. By looking at what is already known, I hypothesized about what else could be learned about the Holocaust through the excavation of mass graves. I outlined a theoretical excavation of a mass burial to look at what could be learned from an excavation. This excavation plan includes research questions that can be asked, identification of the data needed to answer these questions, as well as what techniques and procedures would need to be used to gain this data. In developing this plan I consulted sources on excavations of mass burials. I also looked at Information on Jewish religious practices to evaluate the controversy/sensitivity of an excavation of these burials. In addition I used this excavation plan to evaluate how to best excavate a mass burial and whether or not the benefits of an excavation outweigh the negatives.
DATA ANALYSIS

When looking at the six different sites where extermination was carried out against the Jews and other groups, two categories can be seen.

From the archaeological perspective, in terms of layout, structures and site formation processes, the four extermination centres clearly form a category distinct form Auschwitz Birkenau and Majdanek. The latter were originally constructed as concentration camp, and forced labour was used there before, during, and after the extermination of the Jews took place. Since they were in use up to the arrival of the red army, their structures/barracks still stand today. (Gilead et al. 2009).

These two concentration and extermination centers differ archaeologically from the four strictly extermination centers. “They were established solely for extermination, mostly of Polish Jews, and when that task was accomplished, during the second half of 1943, they were destroyed by the SS in an attempt to conceal the extermination process, the barracks were taken apart, the gas chambers erased by explosives, and the land ploughed” (Gilead et al. 2009). There is great archaeological potential at the extermination sites as a result of the complete destruction that took place. Since the majority of the evidence from the holocaust is contained in the ground at the sites of Chelmno, Belzec, Sobibor, and Treblinka, I have focused my data analysis on these four sites and have not included the two concentration/extermination sites simply because the archaeology between these types of sites differs.

Chelmno

Chelmno, the first killing center, started operations in December 1941 (Bergen 2003). At this death camp, specially equipped gas vans were used to kill Jews and Gypsies. “Guards loaded their victims into the cargo compartment and sealed the doors. As the van drove, pipes brought
the diesel exhaust directly into the back so that the people there were asphyxiated” (Bergen 2003:175). The Jews were brought to Chelmno by train. Chelmno consisted of two areas known as the castle and the forest (Figure 1). When they arrived at the castle, they were told they would be sent to Germany but had to first take a shower. After being stripped down and handed a towel and soap, they were pushed through a corridor that was labeled “washroom” and into the vans. These vans drove to the forest a few miles away. Once in the forest, any Jews who were still alive were shot. The bodies numbering about one thousand a day, were unloaded and buried by forced Jewish workers. In the spring and summer of 1942, ovens were brought to Chelmno so that the mass graves could be opened up and the bodies exhumed and burned. This was done in an attempt to get rid of the stench of rotting bodies (Bergen 2003:176).

The first archeological excavation of an extermination camp was done at Chelmno. Until 1986, no archaeological research had been carried out at extermination sites. Extermination sites have been investigated and dug, but the work was not archaeological. The excavations of Chelmno were carried out in three phases during the years of 1986-1987, 1997-2002, and 2003-2004. Chelmno consists of two separate areas: the castle and the Rzuchow forest clearings. It is the second area where bodies were cremated and buried in mass graves. Excavations in the Rzuchow forest focused on five mass graves. The graves were found to be filled with gray soil, burnt waste, and ground human bones (Gilead et al. 2009).
Belzec

The operations at Belzec began in March 1942. This site was a labor camp which was outfitted as a killing center after the Wannsee conference (Bergen 2003:178). “The entire camp occupied a relatively small, almost square area, the north, west, and east sides each measured 245 meters, and the south side 265 meters. It was surrounded by a high fence of wire netting, topped by barbed wire and camouflaged with branches” (Arad 1987:27). The camp included three watch towers in the corners and one in the center. Belzec was divided into two sub-camps (layout can be seen in figure 2). Camp I in the northern and western part was for reception and administration. Camp II in the eastern part was the extermination area (Arad 1987:27). “The aim was to let as little time as possible pass between the arrival of the rail transport and the final
depositing of the victims in mass graves” (Benz 1999:144). “Belzec had a fixed installation for gassing that used diesel fumes” (Bergen 2003:178). “By the time the camp was dismantled in the spring of 1943, some six hundred thousand Jews had been murdered there, along with perhaps several thousand Gypsies” (Bergen 2003:178). Only one person of the killing center at Belzec survived (Bergen 2003:178).

The extermination process was not always a smooth one. “There were also some difficulties concerning the burial of the victims. After a pit was full of corpses, it was covered with a thin layer of earth. From the heat, putrification, and in some cases water that penetrated into the pits, the corpses swelled, and the thin layer of earth split” (Arad 1987:71). As the bodies swelled, there are reports of them pushing up over the sides of the pit and rolling down the side of a hill (Arad 1987:71). Not everyone who arrived at Belzec was gassed. Some were instead shot. “Those people who had no strength to go through the ordinary extermination procedure, from the train to the gas chambers, were taken directly to the pits and there they were shot” (Arad 1987:71). There was a problem at Belzec of the pace of gassing not keeping up with the pace of new arrivals of Jews. In the middle of June in 1942, it was realized that the three gas chambers were no longer sufficient to hold the number of Jews arriving. Deportations were temporarily stopped while new larger gas chambers were built. During this first stage, from the middle of March until the middle of June 1942, about 93,000 Jews were killed here. The new gas chambers were built on the site of the old ones. The new building had six gas chambers with each being 4x8 meters. Some sources however report the new size as being 4x5 meters. These new gas chambers could hold over two thousand people at one time which was the capacity of a transport of twenty train cars (Arad 1987:73).
Archaeological investigations carried out at Belzec have confirmed that mass murder was committed here and that an attempt to conceal the crime was made. The excavation unearthed materials that confirm the murder of individuals as well as aiding in reconstruction of the probable layout of the camp (HEART 2012). “Bełżec [Belzec] was a temporary, experiments operation where the procedures and logistics of mass extermination by gas and the burial of corpses were tried and tested, initially on the Jews of the Lubin ghetto, before being applied at the Sobibor and Treblinka extermination camps” (HEART 2012). Four investigations of Belzec
have taken place. The first of these investigations took place in 1945. After the end of the war, War Crimes Investigation Commissions were created in Poland. Teams of investigators went to each location in Eastern Europe where Nazi atrocities had occurred. At each of these locations, officially constituted boards of enquiry were set up. Investigations began on October 10, 1945.

The investigation commission team heard oral testimony from inhabitants of Belzec village and the surrounding area. In an investigation of the camp nine pits were opened up to confirm the existence of mass graves. Within these pits lay evidence of thousands of corpses that were cremated, with any remaining bones having been crushed into small pieces. The unearthed remains were moved to a specially made concrete crypt (HEART 2012). The second investigation took place in 1946. During this investigation, individuals who had previously testified were re-interrogated. Through this inquiry, the Investigation Commission published a report that included findings on the closing activities of the camp (HEART 2012). These activities included: “cremations, destruction of evidence, dismantling of gas chambers, removal of fences, ground being ploughed-up and planted with fir trees and lupines” (HEART 2012). The third investigation of Belzec was carried out in 1961. It was decided that Belzec should be commemorated as a place of remembrance. To preserve the site as a memorial, extensive excavations were done. During this investigation, a memorial site was marked out, monuments erected, and symbolic tombs and urns were crafted. The symbolic tombs were placed where graves were believed to be located, but the location was later found to be incorrect (HEART 2012). The fourth investigation took place from 1997-2000. Archaeological investigations were begun in order to examine the topography of the camp and locate the area of the mass graves. The methodology used in each investigation included laying out a fixed grid system at 5 meter intervals. 6 meter boreholes were carried out to obtain core samples. Over two thousand drillings
were taken and thirty-three mass graves were located as a result. Within the graves bodies, carbonized human remains, and ashes were found. The soil samples from the drillings were placed back into the boreholes (HEART 2012).

Two groups of graves were distinguished. “The first and probably the earlier one, consisting of twenty-one graves clustered in the western and northwestern part of Bełżec, and the others in the northeastern section of the site” (Gilead et al. 2009). During the 1997 investigation graves numbered 1-6 were located and the graves numbered 7-33 were located in 1998 (HEART 2012). The former extermination center at Belzec has become a huge monument. This makes it impossible to conduct further archaeological research at this site. “It may be possible during future investigations at Bełżec to estimate at least an approximate number of corpses once contained in the 33 mass graves, based on the known number of corpses exhumed from mass graves at other sites: Katyn, Kharkhou, Miednoje, etc. And the contents and cubic capacity of these graves” (HEART 2012).

**Sobibor**

The killing operation began at Sobibor in April 1942 and ended in October 1943. The camp was constructed solely for the purpose of killing. Sobibor claimed the lives of 250,000 Jews (Bergen 2003:179). These 250,000 individuals were killed in three extermination waves: May-June 1942, October –December 1942, and March 1943 (Benz 1999:145). The camp in Sobibor was located in a sparsely populated region connected to the main railway station in the city of Sobibor by a sidetrack (Benz 1999: 145). “The entire camp area encompassed a rectangle 600x400 meters. At a later stage it was enlarged” (Arad 1987:30). (Layout in figure 3). Sobibor was divided into three parts: the administration, reception, and extermination areas. Victims were moved from the
reception area to the extermination area through the “tube” which was a passageway enclosed in barbed wire and tree branches.

The first gas chambers built here were located in the northwest portion of the camp. There were three gas chambers in the building. Each gas chamber was 4x4 meters and could hold about two hundred people. Carbon monoxide came into the gas chamber through pipes connected to an engine exhaust (Arad 1987:30-32). The Sobibor killing process was a more improved version of the killing process at Belzec (Arad 1987:75). “Elderly people, the sick, and invalids who were unable to walk were told they would be taken to a lazarett (infirmary) where they would receive medical treatment. Actually they were put on carts, pushed by men or pulled by horse, and at a later stage on a narrow-gauge railway carriage, and were taken into camp III, directly to the open pits, and there they were shot” (Arad 1987:77). “During the first stage of the killing operations in Sobibor, which lasted three months, at least 90,000-100,000 Jews were murdered there” (Arad 1987:80). At the end of July 1942 there was an interruption to the transporting of Jews to Sobibor while the railway was under construction (Arad 1987:80). Sobibor was the last location at which new larger gas chambers were built. During the interruption of transportations to Sobibor, the old chambers were partially dismantled and three more gas chambers were built. The three new gas chambers were 4x4 meters. This doubling in number of the gas chambers allowed for 1,300 individuals to be gassed at a time (Arad 1987:123).
Building activities at the Sobibor site have been minimal. Because of this, most areas that were part of the extermination center have the potential to be excavated archaeologically (Gilead et al. 2009). In 2000-2001 excavations using the same methods as Belzec were performed at Sobibor. Through drilling, seven mass graves were defined and five structures were found. In
2007 and 2008 Sobibor was again excavated by a different group. Large areas of Belzec and Sobibor were drilled and cores were extracted in an effort to define the location and extension of mass graves. The allowing of the mass grave to be drilled has been seen as a monumental failure by orthodox Jews. It is because of this that mass graves at Nazi extermination centers will not be excavated any time in the foreseeable future (Gilead et al. 2009). This was seen as a monumental failure because Jewish individuals hold the belief that the bodies of the deceased should not be disturbed.

**Treblinka**

Killing began at Treblinka in July 1942. Treblinka, like Sobibor, was built solely as a killing center. Close to a million Jews were killed here (Bergen 2003:179). The camp formed a rectangle 600x400 meters (Layout can be seen in Figure 4). The camp was divided into three equal areas which were the living area, the reception area, and the extermination area. The extermination area was located in the southeastern section. During the first months of operation there were three gas chambers which were 4x4 meters and worked similar to those at Sobibor. These chambers were made to look like showers. To the east of the gas chambers lay, ditches for burying the dead. These ditches were 50 meters long by 25 meters wide by 10 meters deep. The “tube used to move people to the chambers was called “the road to heaven” and was 100 meters long (Arad 1987:40-42). As the freight cars arrived, the men were separated from the women and children. They were sent to a barrack to undress and were then sent to the “showers” where exhaust was pumped into the building. After the killing was complete, the bodies were dragged by the feet to ditches to be buried (Arad 1987:83). Soon people were arriving faster than could be gassed and the surpluses had to be shot. Running out of room in the burial pits for new bodies
was also a problem which was partially solved by the use of scoop shovels (Arad 1987:87). To keep up with the influx of Jews at Treblinka, a new gassing chamber was built next to the existing structure. Construction of additional gas chambers began in early September. The new building contained ten gas chambers each of which was 4x8, meters but some sources say the new building only had six gas chambers. The three old gas chambers had covered an area of 48 square meters while the new gas chambers covered an area of 320 square meters. The old gas chambers could hold 600 people. Assuming there were six new chambers, the new ones could hold 2,300 people, and 3,800 people if there were ten of them (Arad 1987:119-120). Up to fifteen thousand human beings were exterminated here daily (Benz 1999:149). In an area near Treblinka’s southern fence, large pits were dug in order to hold the tens of thousands of people who had died in the freight cars or had been shot due to the inefficiency of the gas chambers or their inability to walk (Arad 1987:121).

There has not been any archaeological excavation attempted at Treblinka. There has, however, been an archaeological survey of the camp, which used non-invasive methods. This survey was part of the Holocaust landscapes project which was developed to create a methodology that shows the benefits of archaeological work at Holocaust sites. A multidisciplinary approach was developed using the non-invasive methods of Digital Kinematic GPS and total Station Survey, Ground Penetrating Radar, resistance survey and electrical imaging alongside aerial photographs, cartographic sources, and historical evidence (Sturdy Colls 2012).
Figure 4. Layout of Treblinka (HEART 2012).
Transportation to Death Camps

Many individuals died in the freight cars on the way to the death camps. The freight cars were designed to carry sixty to seventy people maximum but double these numbers were packed into them (Arad 1987:63). “They had suffocated from lack of oxygen, the heat, and the lime sprinkled on the freight car floor” (Arad 1987:65). “Thousands of Jews died en route to the death camps during that summer from thirst, suffocation, and lack of minimum sanitary facilities in the crowded freight cars” (Arad 1987:65). “The trip from Warsaw and the other ghettos to Belzec, Sobibor, and Treblinka, which should have lasted a few hours, sometimes lasted a day or two” (Arad 1987:65).

Covering up the evidence of crimes

While the bodies of those killed in the gas chambers were originally buried in pits, they were later exhumed and cremated. The cremation of the corpses began in autumn of 1942 at the camps of Sobibor and Belzec. At Treblinka the cremations began in March of 1943. Experimenting with systems to burn the bodies was done at Chelmno. The first experiment was to use incendiary bombs but these were found to cause large fires in the nearby woods. The second experiment was to cremate the bodies on wood in an open fireplace. The remaining bones were then destroyed using a bone-crushing machine. These ashes and pieces of bone were then buried in the same pits the bodies had been removed from. After these experiments, the burning of the corpses began at Chelmno and Auschwitz in 1942. At Sobibor the bodies were removed from the pits using an excavator and were placed on a big roaster built out of old railway tracks. After this policy of cremation was instituted, the bodies of those who were gassed were no longer buried but instead immediately cremated. The same procedures were implemented at Belzec. The
cremation activities started in December 1942 and were completed by April 1943. In Sobibor the cremation process was much faster than at other camps. This is because only one-third of the 250,000 victims in this camp had been killed and buried before the cremation began. At Belzec however, all 600,000 victims had been buried before the cremation began. The cremation task was the most difficult at Treblinka. Here the unearthing and cremation of over 700,000 corpses took place at the same time as new transports were being gassed and cremated. Unlike at Auschwitz where closed Crematoriums were used, open pits were used at the death camps to accommodate the large number of individuals (Arad 1987:170-177).

The goal of the final solution was to kill the entire Jewish population. This goal was not achieved but six million Jews were murdered. The following are minimum numbers: 165,000 Jews from Germany, 65,000 from Austria, 32,000 from France and Belgium, more than 100,000 from the Netherlands, 60,000 from Greece, the same number from Yugoslavia, more than 140,000 from Czechoslovakia, half a million from Hungary, 2.2 million from the Soviet Union, and 2.7 million from Poland. To these numbers must be added all those killed in the pogroms and massacres in Romania and Transistrien (over 200,000) and the deported and murdered Jews from Albania and Norway, Denmark and Italy, from Luxembourg and Bulgaria. Directly or indirectly they all lost their lives as a result of National Socialist racial ideology, which was proclaimed and submissively pursued by the German master race (Benz 1999:152-153).

These numbers put the number of individuals killed during the Holocaust into perspective. If these truly are minimum numbers, the excavation of known grave sites could exponentially increase the information we have about Holocaust victims and their executioners as well as confirming the accuracy of these numbers.

Excavation of a mass grave

Of the four Nazi extermination centers very little is known archaeologically. Treblinka has never been excavated and the entire site is now a monument. Belzec was mostly surveyed before the entire site was turned into a monument. Chelmno has been excavated but the extermination was
carried out in gas vans with bodies being buried elsewhere. Sobibor is the only site where
archaeological excavations can likely be carried out at this time (Gilead et al. 2009). In looking
at what archaeological excavation has been done at each of the extermination sites, it can be seen
that the work has focused on locating and defining areas of mass graves and other structures.
Archaeology has been used to confirm historical records. Archaeology of the camps can also tell
us things historical documents cannot. “Increasingly, archaeology (together with this literature
and testimonies) may be an important way of understanding what happened during the
Holocaust. These artifacts can provide more help if they are investigated (Together with the
literature and the testimonies) while at least some of the survivors are around to provide greater
context” (Freund 2012:191-192). Many of the written accounts of the Holocaust lack one aspect:
the material culture from the site. Excavations have proved that the murder of six million Jews
did indeed happen and have helped to recreate the layout of the camps. I believe much more
could be added to our knowledge of the Holocaust through the excavation of killing sites.

The exhumation of individuals in the mass graves of the Holocaust is a both a sensitive
and controversial matter. One example of this controversy deals with the archaeological research
that has been done at Belzec. The work done here was seen by some of the Jewish population to
be a monumental failure. The boring of the holes was in an attempt to examine the topography of
the camp in order to exclude areas with human remains so they would not be disturbed during
construction of the memorial. The Jewish community did not agree with the systematic drilling
every few yards. They felt that drilling should not have been done where remains were known to
be located. They pose questions about what was done when remains were found, how remains
were disposed of after being disturbed, and if a rabbi was there to monitor the treatment of the
dead or to pray over the remains. The Jewish community wants memorials adjacent to the sacred
soil not on top of it (Weiss 2003).

In the case of Belżec, however, Jews felt victimized a second time. First, there
was the extermination camp that had to be summarily evacuated and disinfected
following the liberation of the camps in 1945 without the possibility of proper and
dignified burials for the dead and now here was an archaeologist digging through
the very remains that they had been unable to properly rebury (Freund 2012: 205).

Another example of this controversy deals with the mass graves of Bergen-Belsen located
in a cemetery on the site. In 1969, the Arbitral Commission on Property, Rights, and Interests in
Germany inspected mass graves in one of the cemeteries at Bergen-Belsen camp. In an attempt
to determine if they should be opened up to allow officials of the French government’s mission
for the search for victims of the war to exhume, reconstruct, attempt to identify, and bring back
to France the remains of 139 French Nationals that had been buried there. Prior to this
controversy the French mission had exhumed more than 54,000 bodies. They had only run into
opposition on one other occasion. The bodies they exhumed were located in civilian areas, mass
graves in the concentration camps, and improvised graves along roads. This exhumation was
opposed by Jewish survivors of Bergen-Belsen and eventually as a result by the government of
the Federal Republic of Germany. The Jewish survivors were opposed to this exhumation for
two reasons. The first is that they did not think the nationality of the dead could be determined.
The second is that they saw disruption of the remains to be an impermissible act of desecration.
This controversy was in process for more than eleven years. In the end the German government
sided with the Jewish opposition rather than the French government (Rosensaft 1979).

One of the first steps in planning an excavation of a mass grave is to determine what
methods should be used. Two basic invasive methods for excavating mass graves have emerged.
“These are the pedestal method, where the soil around the bodies is removed allowing the body
mass to be viewed and accessed from all angles, the stratigraphic method, where the grave walls are maintained and bodies removed in reverse order from their initial deposition in the grave” (Tuller and Duric 2006). The pedestal method is anthropologically based, while the stratigraphic method is archaeologically based. A study was done in which two similar mass graves were excavated. One was excavated using the pedestal method and the other was excavated using the stratigraphic method. It was found that the stratigraphic method is more appropriate for complex sites. This method is helpful in understanding the grave formation process and also assists in maintaining body part articulation (Tuller and Duric 2006).

Examination of a mass grave requires excavation but does not always require exhumation of the bodies. All or some of the bodies may have to be moved for the purposes of analysis, but in some cases the examination is possible within the grave itself. By analyzing the individual skeletons, biological profiles can be created. Sex, age, ancestry, age at death, stature, trauma, cause and manner of death, and identification can all be determined based on skeletal evidence. It is important to determine the boundaries of the grave before beginning soil removal. If soil is moved to a location on top of the mass grave it will have to be moved again later. The decision to sieve all or some of the soil will also have to be made. Sieving all the soil may be necessary to recover small body parts and objects pertaining to the manner and cause of death such as bullets and shell cases (Hunter and Cox 2005).

The location of mass burials must also be determined. There are several search methods that can be used. One method is cartographic analysis: ordinance survey, geological, land use and historic map sources. A second method is aerial photography which can be vertical, oblique, and satellite. A third method is field observation including vegetation, topographical, and geological features. A fourth method is geophysical survey which may include resistivity,
magnetometry, or ground-penetrating radar. A final method is manual evaluation which may include auguring, probing, trial trenching, or stripping. These methods are listed from less invasive to more invasive. The more invasive methods involve disturbing the ground, which can lead to a loss of evidence (Hunter and Cox 2005:33).

The excavation environment of mass burials differs from the excavation of other sites. There are enhanced responsibilities for the physical and psychological well-being of staff. Health concerns can arise when working among decomposed bodies. This type of work can also take a toll psychologically on the workers as well. A health and safety risk assessment must be completed to minimize the risk factors (Hunter and Cox 2005).

Non-invasive methods can also be used in investigating mass burials instead of invasive methods. In an archaeological survey of Sobibor in 2008, three different non-invasive techniques were used to map the subsurface. The techniques used were: an electromagnetic high-resolution metal detector and terrain conductivity meter, ground-penetrating radar, and electrical gradiometer together with GPS-linked mapping (Freund 2012:229). “GPR is a high-frequency electromagnetic technique that uses the propagation and reflection of radar waves to map subsurface interfaces” (Freund 2012:230). Changes in soil texture and moisture as well as buried objects, will create distinct radar reflections (Freund 2012:230). Aerial images were also used. “Low altitude aerial photography from helium-filled weather balloons allowed us to photograph and measure the size of the area of the mass burials in the open field” (Freund 2012:231). These images support coring activities that took place in a 2001 archaeological survey. GPS mapping was also done on the site. GPS data was collected at the locations of everything that was found. This information will be extremely useful in future excavations (Freund 2012: 231-233).
Before excavation of a mass burial can begin, research questions must be considered. One research question that could be asked deals with the number of perpetrators. We know that perpetrators were killing Jews through the use of guns. Bullets recovered from the mass graves, if this is where they were shot, could be analyzed for their ballistic properties to see how many guns were used. Research questions can also look at how the individuals died. If the individual was shot there may be a bullet associated with the body or lodged within a bone. There have been reports of beatings as well. If an individual died as a result of a beating this may be evidenced from broken bones or trauma to the skull. If an individual was killed through the use of gas vans or gassing chambers this may not be visible from examining the body. The same may be true if the individual died from health problems other than an injury. How the individuals are buried may give clues to know how they were killed. For example, if they laid down in rows and were shot within a trench then the position of the bodies will show this.

The position of the bodies may be more haphazard if the individuals were killed somewhere other than by the grave. The way the individual is killed or positioned may also give clues as to when the individual died. Gassing and cremation were used later than shooting. However, cremation was also used as a way to hide the evidence and bodies were exhumed and cremated after they had been buried. The position of the body may also provide information on how the body was moved to the grave. Position could indicate whether they were carried, dumped or bulldozed into the grave.

Other research questions can deal with the health of the individuals. From the bones, injuries can be seen. These injuries, if not in the process of healing, may be indicative of the cause of death. If the injury is in a state of healing it can be determined if the individual received care for the injury or if it was left to heal on its own. If the individual received care for an injury
this would be indicative of Jewish doctors having provided the care. Disease and malnutrition may also be seen through an analysis of the bones. Signs of disease and malnutrition could indicate how long the individual had been in a concentration camp or ghetto. More disease or malnutrition would indicate a greater length of time before death in the camps. The bones of the individuals can also be analyzed. From the skeleton, a biological profile can be created. This profile includes: determining sex, ancestry, age at death, and stature during life. In analyzing the bones, evidence of ante-mortem trauma or pathology can be looked at. It is important to distinguish between peri-mortem and post-mortem traumas. The main traumas that can be looked for are blunt force, sharp force, and projectile (Hunter and Cox 2005:161-168). Very little analysis of the individuals who died at the death camps can be done because they were, for the most part, cremated. These methods are more relevant for killing sites that were not within a camp and were not destroyed at the end of the war in an attempt to cover up the evidence.

CONCLUSIONS

Much is known historically about the Holocaust, but less is known about it archaeologically. There has been limited archaeological excavation done at these sites as a whole and even less when looking at the mass burials. In looking at what is known historically about the death camps, it can be seen that the vast majority, if not all of the individuals who were gassed, were cremated. Archaeologically this is not the case. The bottoms of ten pits were found to contain bodies in wax-fat transformation at Belzec. However most of the contents of the pits are cremation ash and small pieces of bone. This changes what can be learned through the excavation of these pits. The ash and small pieces of bone would offer little information if examined. The few full skeletons
that do exist could be studied to gain insight into the lives of the individuals who were killed at these death camps. However, the number of full skeletons available for study would be fairly small to make any generalizations about the daily life of the Jews as a whole. Because of this I feel that in at least the case of the death camps, archaeological excavation of the mass graves should not be carried out. At these sites I do not believe the information that could be gathered outweighs the wishes of the Jews to leave the dead undisturbed. The Jewish people hold very strongly to the value of kavod hamet which means dignity of the dead (Freund 2012:209). The excavation of these graves would not be in keeping with this value.

I think that archaeological studies should still be done at these sites, but first non-invasive methods to find the areas containing human remains should be carried out. If this is done, areas with human remains can be avoided, allowing archaeological excavations to gain a better understanding of the Holocaust as a whole to still be done. Good archaeology can still be done and much can be learned, without looking at human remains. It is important for the Jewish population to be involved in the archaeology of the Holocaust. It is also important that what has been done archaeologically at sites relating to the Holocaust be published academically. Much of the archaeology that has been done has been reported in the news, but not in scholarly journals or books. It is important for this information to be published, not only for the public, but for archaeologists to use for further excavations.

Holocaust archaeology is a newly developing area of study and as non-invasive methods of investigation are developed and put into practice a greater understanding of the Holocaust will emerge. Archaeologists need to work together with the Jewish population to set up procedures on how to deal with human remains should they be accidently unearthed. If the focus is taken off of human remains during archaeological investigations, the chances of being able to move along in
excavating at these sites will be much greater. The real question may not be how to excavate a mass burial but instead how to best avoid these areas so that excavations in other parts of the sites can continue.
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