

PAUL WEINDLING

**Victims and
Survivors of Nazi
Human Experiments**

Science and Suffering
in the Holocaust

B L O O M S B U R Y

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ABBREVIATIONS

AdF	Archives de France
AMM	Archive of the Mauthausen Memorial
BAB	Bundesarchiv Berlin
BAK	Bundesarchiv Koblenz
BDIC	Bibliothèque de documentation internationale contemporaine
BStU	Die Behörde des Bundesbeauftragten für die Stasi-Unterlagen
DFG	Deutsche Forschungsgemeinschaft
DÖW	Dokumentationstelle Österreichischen Widerstandes
HSTA	Hessisches Staatsarchiv
ICRC	International Committee of the Red Cross
IG Farben	Interessengemeinschaft Farben
ITS	International Tracing Service
KWI	Kaiser Wilhelm Institute
KWS	Kaiser Wilhelm Society
KZ	Konzentrationslager
MPS	Max Planck Society
NDW	Notgemeinschaft der deutschen Wissenschaft
NHM	Naturhistorisches Museum
NIOD	Instituut voor Oorlogs-, Holocaust- en Genocidestudies
NMT	Nuremberg Medical Trial
NSDAP	Nationalsozialistischer Deutscher Arbeitspartei
POW	Prisoner of War
RFR	Reichsforschungsrat
RuSHA	Rasse- und Siedlungs-Hauptamt

SA	Sturmabteilung
SS	Schutzstaffel
STAN	Staatsarchiv Nürnberg
UNOG	United Nations Organisation Geneva
USHMM	United States Holocaust Memorial Museum
WVHA	Wirtschaftsverwaltungshauptamt
YVA	Yad Vashem Archives

PREFACE

When the concentration camp doctor Josef Mengele stood on the ramp at Auschwitz, his clinically trained eye scanned trainloads of deportees. He selected those fit for forced labour, from the children, elderly and other racial undesirables sent for immediate disposal to the cavernous gas chambers. But he was also intent on another agenda – one that was opportunistic and self-imposed – to screen for twins, dwarves and others of genetic interest, whom he kept back for his research. The human experiments and other types of deadly research conducted in concentration camps and clinics are widely perceived as iconic of the Holocaust. Despite the notoriety of concentration camp doctors like Mengele, quite basic questions remain unanswered: what were the practices and purpose of the experiments, their extent and locations, whether they were ordered by Nazi authorities or whether scientists opportunistically exploited the killing regimes and stocks of captives for their own agendas? Most importantly, it is necessary to remedy the quite staggering neglect surrounding the persons who were subjects of the experiments: how many victims were there, who were they in terms of their religious and ethnic identities, their age and gender, and what were the victims' responses? The assumption is often made that experiments took place only in concentration camps and were undertaken solely by SS doctors, whereas a range of public health measures as well as diverse types of camps and clinics, and doctors who held neither SS nor NSDAP rank were involved. Only very late (around the year 2000) did compensation authorities attempt, albeit partially, to establish the extent of the experiments.¹

Grand narratives of the Holocaust cite at most Mengele on the ramp, but these accounts do not reconstruct how Mengele threaded research agendas through the routines of duty as camp physician. Histories to date leave unanswered the extent that Nazi sterilization and the euthanasia killings of psychiatric patients involved research in terms of medical publications, student dissertations on clinical experiments on psychiatric patients, and researchers obtained stockpiles of body parts for further research. Furthermore, the place of the experiments needs to be determined, as the Holocaust was unleashed, shaping how diverse groups of Jews from across the length and breadth of Europe became experiment victims. The opportunistic researchers targeted not only Jews but also other ethnic groups such as gypsies, or groups persecuted for their sexuality as homosexuals, or deemed a security risk like Polish priests. Many others involved in resistance or simply forced labour

were subjected to invasive and destructive science. An evidence-based account of the experiments and their victims is simply lacking.

To answer these questions it is necessary to research the life histories of victims for whom an experiment was a gratuitous blow to survival. The coerced experiments showed the transformative effect of Nazism as a mindset and organization in terms of mobilizing medical research for racial ends. At the same time the experiments were generated by a highly scientized system of medical education and research. The devastation wreaked by the Nazi experiments make them a reference point in modern bioethics as a worst-case scenario of medical scientists exploiting for research vulnerable patients and populations, often to the point of death. Any understanding has to be grounded in the abundant but until now neglected sources.

This new narrative account of the experiments analyses the interaction of perpetrators and victims as the Nazi regime consolidated its power, and as the war and Holocaust unfolded. Earlier accounts mainly recite the Nuremberg documents, especially those from the Nuremberg Medical Trial.² Although vastly important, the Nuremberg Trials were limited by the selection of defendants and the prosecution strategy of demonstrating vertical administrative hierarchies reaching to Himmler and Hitler. Especially overlooked were academic networks and rationales indicating that far more was involved than ‘pseudo-science’ in terms of the rationales of leading clinicians and the involvement of research institutes. This fresh analysis is grounded in a reconstruction – as comprehensive as possible – of victims’ life histories and testimonies, and thereby building up a mosaic of personal histories to obtain a structural analysis of all experiments and their perpetrators. The aim is to analyse the full spectrum of experiments and the total population of victims for the first time.

In order to achieve this comprehensive analysis, record linkage to reconstruct victim life histories has involved evaluating tens of thousands of documents on the organization of the experiments and on individual victims. Recent years have seen new documents become available through the opening of the vast stores of Second World War victim documents gathered together by the International Tracing Service (ITS). Compensation files on surviving victims are a rich source of narratives. The wide sweep of Shoah Foundation survivor interviews provide testimonies that can be linked with documentation on the implementation of the experiments. There are extensive Nazi era records on medical and pharmaceutical experiments. Retrospective testimony was cited in postwar trials, and in the extensive victim compensation files held by Germany, the United Nations and affected countries, notably Poland, Hungary, France, Belgium and the Netherlands, and autobiographies, published and unpublished. Contrary to the expectation that documentation on the experiments was destroyed and that nearly every one of the research subjects perished, so preventing us from receiving first-hand accounts, the quantity of such accounts is immense and has been scarcely examined to date.

Yet the research has been far from straightforward. German-held documentation is often rendered problematic by access and copying restrictions. Performance by German archives, state bodies and institutions regarding disclosure of systemized criminality of a type represented by the experiments can be immensely improved, especially when measured by international standards. While the Nuremberg Medical Case left an ethical legacy leading to informed consent and data protection, abstruse interpretations of archival law impede the reconstruction of the original violations that amount to criminal acts of violence and murder. It is ironic that the injuries to victims that rendered necessary the formulation of the rights of research subjects as informed consent are used to suppress details of the original violations and their extent. There is still no comprehensive memorial record for victims of Nazi euthanasia, and identifying victims of Nazi psychiatric research poses difficulties. Privacy restrictions mean that the extent that the victims of Nazi psychiatry were subjected to research, and determining where brains and tissues of these victims have been held long after the war remains challenging. A murdered euthanasia victim had an afterlife as brain sections passed from institute to institute often until 1990 and sometimes longer, indeed – so profound are the obfuscations – until the present day.³

Recent research on the German Research Fund (Deutsche Forschungsgemeinschaft, DFG) and on the history of major academic institutions scarcely deals with experiment victims. The focus has been on the massive Nazi investment in science, and on the rationales of scientists, rather than on who were killed and maimed as a result of the mobilization of science for military and racial ends. A revisionist picture of a vibrant and innovative scientific establishment under National Socialism emerges, although German failures as regards penicillin and typhus control suggest otherwise. Indeed, the extent that scientists espoused Nazi values of autarky, race and war, or were opportunistic in seeking only resources for research remains controversial. Although the Max Planck Society commendably apologized to a handful of surviving twins from Mengele's Auschwitz research, those on its Presidential commission researching Mengele and his links to geneticists and biochemists failed to resolve basic issues of timing and rationales of the researches on Jewish and gypsy twins, as well as the overall numbers and identities of his victims.⁴ Similarly, another renowned scientific vivisector, the aviation medical researcher, Sigmund Rascher, sent brains from Dachau to the Kaiser Wilhelm Institute for Brain Research posing uncomfortable questions as to the links between the prestigious KWI and coerced experiments. It becomes necessary to trace the provenance of brain tissues: as one German neuro-scientist reflected in 1990 on the customary depersonalization regarding slides and body parts, 'until now, nobody has thought about histological sections as being part of the body'.⁵ Recovering the life histories of research subjects restores the dignity and integrity of a full person. At the same time, the reinstating of individual

identity provides a fuller understanding of scientific practices, as well as showing how certain criteria of age, gender and ethnicity rendered prisoners and patients liable for selection. The silence as to the victims of experiments is a topic that reflects on the inability of German academia still to adequately confront the scientific and personal legacy of a murderous medicine. Academic institutions, funding organizations and professional bodies on the whole appear not to wish to face up to the human damage resulting from past academic research. Wider questions arise of the extent that basic academic qualifications of doctoral and Habilitation dissertations involved murdering and maiming research subjects, while Jews were being stripped of academic and medical qualifications, and institutes were sustained by slave labour. Given that professional qualifications obtained under the exploitative regime of National Socialism were the basis of post-war careers, far reaching questions arise as to the extent that the legacy of Nazi research tainted the German medical profession in the longer term. How to research these issues with due empathy and responsibility towards victims poses problems in that silence as to victim identities and experiences bestows further shame and stigma on the victims, while personal sensibilities concerning injuries require due respect. Commemoration, understanding and a long-term process of institutions accepting responsibility are fundamentally desirable, and yet to date rarely fully realized. In short, despite creditable exceptions, overall there has been a profound failure by German (and Austrian) academia to accept fully the human damage to victims, unleashed by nazification of the medical sciences.

Researching victims

The initial analysis of the experiments was made possible by funding from the Arts and Humanities Research Council in the form of establishing a database of medical experiment victims. A major grant from the Conference for Jewish Material Claims against Germany allowed the overall analysis and data retrieval to be developed to a point where a complex set of data could be assembled and analysed. The research involves linking multiple names, tracing survivors, identifying the killed, and understanding the complexities of notorious locations like Auschwitz, shadowy locations where forced labourers were incarcerated, or clinics where research was undertaken as on aborted fetuses of forced labourers or on psychiatric patients.

The research involved compiling a collective biographical analysis to chart the contours of atrocity. It became clear that an overlooked genre of victims' writing and speaking about their experiences needed recovery. The Wellcome Trust is supporting analysis of victim narratives. The United States Holocaust Memorial Museum (USHMM) summer seminar on Nazi medical research in 2010 provided an opportunity for an informal network of collaboration on the experiments and anatomical and anthropological

victims. I am grateful to the USHMM for sustained access to its extensive library, archive and documentation, not least to International Tracing Service (ITS) and other compensation records.

The above funding allowed my developing a research project on victims with a small (actually too small given the immensities of the task) research team at Oxford Brookes University. The researchers for this ambitious endeavour have been Anna von Villiez (who carried out database design and development), Aleksandra Loewenau (who tenaciously researched the several thousand Polish victims) and Nichola Farron (who took on the daunting task of documenting Soviet victims). Grateful thanks are due to Aleksandra Loewenau for compiling the index. Marius Turda collaborated on Greek victims. Oxford Brookes University has provided the project with ideal accommodation and administration.

The international composition of the victims meant further expert assistance has been necessary. Data retrieval was carried out by Marina Dubyk (for the Ukraine), Vladimir Petrović (for the former Yugoslavia), Mikhal Šimůnek (for Czechoslovak victims), Francesco Cassata (for Italian victims), and Rakefet Zalashik (for Israeli sources). Laurence Schram of the Mecheln documentation centre provided supplementary data on victims deported from Belgium, and Raphael Toledano on experiment victims at Natzweiler. Patricia Heberer (USHMM) generously shared details of Kaufbeuren victims whose brains were retained. Ryan Farrell expertly assisted with data analysis on perpetrators.

The odyssey through archives as repositories of scarred and shattered lives, and of perpetrator records means that I owe especial thanks to staff at numerous archives. I wish to warmly thank the UN archives in Geneva, the archivists and librarians at USHMM for help over repeated visits, and despite perplexing access conditions, the Bundesarchiv in their holding of compensation files of the Federal Ministry of Finance. Many other archives have been supportive. In Germany I wish to thank the Max Planck Society Archives and the Max Planck Institute for Psychiatry Archives; the German Foreign Ministry 'Politisches Archiv'; the Institute for Contemporary History, Munich; the memorial archives at Buchenwald, Dachau, Neuengamme, and Sachsenhausen; the firm archives of Bayer-Leverkusen and Schering; the Hessen State Archives; the International Tracing Service ITS at Bad Arolsen, and the Psychiatric Institute Heidelberg. In Israel my thanks are due to Yad Vashem; in Poland to the State Museums at Auschwitz and Majdanek, and again to Aleksandra Loewenau for access to research findings obtained within the framework of the collaborative projects; in France to the highly supportive BDIC at Nanterre and the Archives de France; in the Netherlands to NIOD in Amsterdam; in Belgium to the Kazerne Dossin and the Direction générale Victimes de la Guerre; in Austria to the Archive of the Austrian Resistance, the Austrian National Archives, the Mauthausen memorial archives at the Austrian Ministry of Interior, and the Department of Anthropology at the Natural History Museum;

in the United States also to the curatorial staff of the Fortunoff Collection at Yale, and the New York Public Library Special Collections; in the United Kingdom to the National Archives, Wiener Library and Wellcome Library.

Such a complex topic can only be developed in collaboration with multiple colleagues. I am grateful to Ruth Weinberger, Volker Roelcke, Gerrit Hohendorf, Maike Rotzoll, Florian Schmaltz, Christian Bonah, Margit Berner, Thomas Beddies, Kamila Uzarczyk, Herwig Czech, Gabriele Moser, Christiane Wolters and Sabine Hildebrandt for assistance and advice. The work has benefited from my role on historical commissions for the Max Planck Society on the Kaiser Wilhelm Society under National Socialism, the Robert Koch Institute, and the German Association for Psychiatry, Psychoanalysis and Neurology. I learned much about the contours of atrocity in terms of linkages with forced labour by contributing to the project of Constantin Goshler, when I analysed the delivery of compensation for ‘other personal injuries’ by the Foundation for Memory, Responsibility and Future from 1998 to 2004.

This victims-based study follows on from the publication of documents on the Nuremberg Medical Trial, to which I contributed on initial Allied research on the experiments in 1945–48.⁶ I gratefully appreciate that Angelika Ebbinghaus and Karl-Heinz Roth, Christian Pross, Michael Kater and Robert Lifton have provided access to their working papers for their own respective and quite fundamental landmark contributions.⁷

Note on names and identities

Most archives allow names to be cited when the person is deceased. In some cases, surviving victims have spoken publicly of their experiences with the express intention of allowing themselves to be fully named.

Certain German archives have imposed far-reaching anonymization restrictions, notably the German Federal Archives requiring complete anonymization, and destruction of notes and the secure database entries on completion of the research. This condition is despite the fact that reconstructing a life history involves linkage from several sources, so that the database constitutes a unique record of a person’s odyssey through camps and clinics, otherwise hidden from history; moreover, these linked records provide unique verification of the analysis presented here. Anonymization of victims of systematized violence and murder, many deceased for over fifty years raises significant issues. These include why there are severe legal sanctions to publishing in ways restoring identity of persons who were persecuted and consigned to oblivion, and reconstructing the abuses to which victims were subjected?

Names are essential for the cohort analysis, in order to link records and to ensure there is no double counting. Naming a victim is to restore identity

and a whole sense of the historic person to individuals reduced to being camp numbers and research material. The ethic for Jewish victims is to name, and Sinti and Roma have recognized the need to name Auschwitz victims. Similarly, it is difficult to understand why victims of criminal acts of violence and murder should not be named? Holocaust and other murdered and maimed victims are persons of historic significance in that for each person how the tidal wave of Nazi medical violence affected them was in multiple and individually distinctive ways. Drawing an administrative line that classes the majority of victims as historically insignificant in line with German archive laws inflicts further injury. Moreover, to say that medical matters require express consent from descendants when the person was rendered infertile or killed as a child legitimates the experiments and other violations; in many cases there can be no descendants. It is ironic that the perpetrator society is the most restrictive, as regards commemoration of named victims, and generally reluctant to recognize the extent of the devastation of research in terms of identifiable individuals. Victims of Nazi psychiatric research are still often marked by their blanked out names, although this practice has of late been questioned. One might ask whether blanket restrictions on naming applied by the German Federal Archives are ethical, as the current position on blanket anonymization legitimates the violations as 'medical' in terms of procedures and for the persons so violated. The text presented here has balanced legal and ethical obligations with my conviction that over time a full naming of, in the first instance, all murdered victims, and ultimately all medically mutilated victims should be rendered possible.

Some victims have left courageous and frank testimonies in publicly available sources as the Shoah Foundation interviews. Others opt for silence. I have accordingly respected these viewpoints, along with whether a victim is – or may be – still living. I am also aware that a forced abortion, or damage to genitalia or reproductive capacity has special sensitivities. The statistics of victims are compiled from otherwise closed sources, and although they cannot currently be made publicly available in terms of named records, provide a basis for verification.

Finally, referring to categories of victims, I use the labels of 'Jews', 'Gypsies' and 'Homosexuals' with certain reservations. The self-identity of the victim may correspond, or differ in that personal faith might not correspond to Nazi racial categories. Thus one victim of the 'Jewish skeleton collection' at Strasbourg was a Protestant at least in terms of baptismal records. In order though to convey the situation from the point of view of both the rationales of perpetrators and the responses of victims, who were often defiant in their identities as Jews or gypsies, these terms are used. I should also point out that the English term 'gypsy' lacks the stigma of the German *Zigeuner*. Records do not always allow self-identity as Roma or Sinti, or Jenisch to be established. If the ethnic identity is known, this is given.

I generally specify whether victims are Polish Jews, or Polish Catholics. Here again, there were socialist atheists among the persecuted Poles, as

among other groups of the resistance and partisans who fell victim to experiments. 'Russian' was for the Germans a broad and often a derogatory category. I use the generic 'Soviet' as reflecting citizenship at the time, and specify further if it is known a victim was for example Ukrainian. With tens of thousands of victims of coerced research, it is not always possible to bring out nuances of personal identity.

CHAPTER ONE

Exploring experiments

Concealed depths

Two warders pushed me to a bathroom. 3 doctors and about 10 students were already gathered there. After a heart examination I was injected with some red stuff and put in to a bath-tub with a thermometer. They switched on a ventilator. I was covered in water all but head and hands. Two of the physicians took my wrists, controlling my pulse and making notes. I was not able to describe the agony I felt being completely helpless in the hands of the so unscrupulous tormentors to whom the life of a concentration camp inmate meant less than nothing. The last thing I remember before I lost consciousness was that a slight ice-covering began to appear on the surface of the water.¹

Iwan Ageew, a partisan, endured freezing water experiments at the concentration camp of Dachau early in 1943.² His scientist-tormentors focused on how long immersion could be endured – in many cases, taking the subject until the onset of death. For those who survived, the scientists assessed how quickly different rewarming procedures took effect. Ageew survived but felt dehumanized, and expendable, and was rejected for compensation on the basis that the experiment did not affect his earning capacity in later life.³

A photo of freezing water experiments at Dachau shows an unknown research subject wearing the protective jacket and headgear of a pilot. Ice floats on the water surface. Three white-coated academics take measurements. These scientists measured the heart rate, rectal temperature and pulse. For those who survived, the scientists assessed how quickly different rewarming procedures took effect.

This photo of the prisoner has become iconic of the Nazi experiments. It appeared with the caption ‘Human Laboratory Animals’ in *Life*



FIGURE 1.1 *SS Sturmbannführer Dr Sigmund Rascher (right) and Professor Dr Ernst Holzlöhner observe the reactions of a Dachau prisoner, who has been immersed in a tank of ice water to simulate hypothermia, ca. September 1942.*

Courtesy of Ullstein Bilderdienst

Magazine's feature on the Nuremberg Medical Trial. Widely reproduced as representing concentration camp experiments, the photo can be viewed from various angles. One might at first presume that the unidentified victim died, having been measured and monitored to the point of death. But an alternative view is possible: that the prisoner survived, whereas it was the scientist perpetrators who died in the closing stages and the immediate aftermath of war. The photo can be seen either as an image of scientised murder, or of transcendence of victims over their destructive, and ultimately deceased torturers. The history of the Nazi experiments is one of a controlled and measured death, or survival albeit often with severe injuries. Survivors have spoken and written eloquently about their experiences.⁴

The photographed prisoner's life depends on the scientists: a professor of physiology and Nazi activist, Ernst Holzlöhner, and two assistants, the air force doctor, Sigmund Rascher, and Erich Finke, likely the third man holding a thermometer. By the time the Dachau freezing experiments were revealed to a shocked international press in November 1945, the three researchers

were dead.⁵ Rascher was executed by the SS (one account was that it was for falsification in launching a blood stypic, and another was that it was for faking paternity of four abducted children). Finke died on 4 April 1945 in a military hospital in the SS enclave of Holstein. After being interviewed by British scientific intelligence about a foam survival suit, Holzlöhner attempted to kill his wife, killed his child and committed suicide in June 1945.⁶

The victim in the tank is unknown: he might have been one of the killed victims aged between eighteen and forty-five – the number of deaths (possibly eighty) relies on fragmentary records and a post-war statement by the prisoner assistant, Walter Neff, rather than on records kept at the time.⁷ Or he might be one of the 133 persons known to have survived. The largest group among these were Polish prisoners, among them many priests.

Medical students were onlookers – there were students in Dachau from the SS Medical Academy in Graz, who subsequently made their careers in concentration camps and in other SS capacities.⁸ In fact, the Dachau experiment block was a visitor's attraction for Nazi officials and groups from police, education and training institutions.⁹ Newly qualified doctors found research material for their MD and Habilitation dissertations in concentration camps. Doctoral dissertations addressed wider issues such as forced sterilizations and racial pathology, as well as clinical experiments on drug doses and vaccines.¹⁰ The prisoner pathologist František Bláha alleged pathology specimens were sent from Dachau to Munich University. Rascher had a bloodthirsty taste for 'fresh' specimens when he researched on low airpressure, and dissected a research subject in the pressure chamber.¹¹ While most experiments occurred in sealed blocks and compounds in concentration camps, they were rendered possible by academic, military and political support. Here, a dense set of power structures of the military, SS and academics shaped the research. The experiments made wider medical circles complicit in the research: patients and prisoners became resources of blood and body parts for research.

The forced immersion in the iron tank was a perverse baptism, as victims were plunged into a hellish world of scientific exploitation of their bodies, bones and internal organs. Experiments were a form of assault causing invalidity, infertility, incapacity and death. But this was violence in distinct, systematized forms that could be camouflaged as being of benefit to the war effort, to science, and the race. The experiments represent neither the random bloodshed, nor sporadic violence of camp guards and brutal punishments. They were closer to torture under medical supervision, or being subjected to medical selections that were a matter of life or death. Experiments were the calculated scientized viciousness of the injection needle or scalpel and meticulously compiled fever charts, and the minutely recorded effects of the freezing water tank and pressure chamber. Their execution was planned, authorized by administrators and funding agencies, or supported

by the military and industry, or public health agencies in efforts to prevent infections and promote productive labour on the basis of innovative research.

The freezing experiments were oriented to problems of survival of air crew, and ensuing dry cold experiments to the war in the freezing Russian heartlands. At the same time fundamental problems of the human metabolism were at stake. The scientists plunged into research without boundaries. If they wanted an eye, a testicle, a brain, or a whole skeleton, it was there for the taking. If they wanted to replicate survival at sea, a bullet wound, an epidemic infection, starvation or thirst – again, they could. The possibilities seemed limitless, and at the height of the war, the resources in terms of funding and facilities flowed.

Experiments as exploitation

As the Nazi racial war and the ‘Final Solution of the Jewish Problem’ unfolded, medical and racial experts preyed on the blood, bodies and brains of subject populations. German (and the occasional Belgian, Danish, Dutch, Sudeten (i.e. Czechoslovak) German, Baltic German and Romanian German) researchers invaded the minutest structures of the human body, and harvested corpses, foetuses, brains and eyes, and drained vast stockpiles of blood. The motives blended exploitation for the war effort, racial studies to identify and weed out degenerates, and coldly detached scientific aims. Scientists set out to conquer new frontiers: they measured and probed the fragile boundaries between consciousness and the unconscious; between life – under adverse conditions of cold, hunger and exhaustion, high fever or infected wounds – and the physiology of death; and demarcated the boundaries between sanity and ‘idiocy’. The research concerned growth defects, physiological performance under severe stress, the destruction of reproductive organs, genetics of malformations and disease, and the sheer form of the body, not least how the body shape and skeleton from one race would differ to that of another. The experiments thus were part of a wider pattern of coerced research, involving anthropology, brain slicing and analysis of body fluids. The term ‘experiment’ should be construed here in this wider sense.

Such experiments were at the vortex of administrative and political structures, the scientists, and the victims. Reichsführer-SS Heinrich Himmler delighted in designing new experiments on topics such as survival and resuscitation that utilized concentration camp resources. Experiments and hereditary research were designed to support the racial re-ordering of Europe, as well as to reconfigure medical and racial science in a new Germanic form. Bodies were looted as research materials: rapacious medical scientists extracted testicles, chemically destroyed wombs, and extracted foetuses from slave labourers. As military fronts extended and contracted,

medical research intensified, and frenetic experiments continued up to the final dying gasps of the Nazi racial colossus.

A battery of scientific techniques was deployed, and innovative knowledge of hormones, genes and viruses was applied. The living body was stressed, and then measured and dissected. Rather than ‘pseudo-science’, scientific ambition drove forward ruthless agendas to advance careers, and to obtain resources and international acclaim. German medical science, for so long world leading and well embedded in military structures, was now set to demonstrate its racial prowess. Himmler and his medical deputy Reichsarzt SS Ernst Grawitz were ambitious for the scientific researches to show the Germanic ability to obtain results in daring ways that no researcher had hitherto dared to deploy – and so, to use a phrase from the period, to make the rarefied academic peaks of medical knowledge higher.

Nazi Germany invested vast resources of skilled personnel, equipment and facilities into experimental medicine. Medical research was designed to cure, prevent and ideally eradicate diseases impeding military operations, to enhance fitness and fertility of the German race and nation for vast resettlement schemes, and ultimately to deliver a wonder weapon in the shape of devastating nerve gas. Such a racially oriented and militarized medicine occupied a central place in the vast schemes of population engineering that provide a rationale for genocidal clearance for ‘living space’. Europe’s population map was being redrawn with grandiose schemes for Germanization of peripheral ethnic groups brought ‘Home to the Reich’ from the Baltics, Eastern Europe and the South Tyrol; the shifting eastwards of Slav populations, and the sterilization and killing of millions of racial undesirables. The relentless destruction of Jews and gypsies, and others deemed pathogenic was ultimately intended to revitalize the Germanic and Nordic races. Auschwitz doctors used the metaphor of excising a diseased organ to restore health. The destruction offered hitherto undreamt of scientific opportunities for the exercise of experimental agendas in clinics, camps and ghettos, and consequent research on stockpiles of body parts.

By the time the war ended, the Nazi-coerced experiments were notorious in terms of their calculated cruelty. Despite prosecutions of medical perpetrators at Nuremberg, the wider dimensions of the cataclysmic medical destruction have never been mapped.¹² How many victims there were, and when and where the experimental destruction occurred – and the overall delineating of the institutional and political contours of the coerced human research – have rarely been matters of historical concern. For all the ink spilled by authors on the Nazi racial war and the Holocaust, and recent historical efforts to examine Nazi science, the myriad victims of medical research – Jews, gypsies, mixed race German adolescents, Catholic priests, homosexual males, Jehovah’s Witnesses, Soviet prisoners of war and partisans, and psychiatric patients to name just some of the prey of the predatory scientists in camps and clinics – remain if not hidden from history, then incidental casualties. Journalists have engaged with victims – notably

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