Sinnreich erdacht: machines of mass incineration in fact, fiction, and forensics

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On burning people, and corpses

On 10 May 1933, students at the University of Berlin threw 25,000 books on a large pyre located in the square in front of the university. In the days that followed, gleeful students mounted book burnings at all the major universities in Germany. Newspapers from as far afield as China and Japan printed photographic and descriptive images of this violence. The world sensed that some kind of terrible rupture of civilization was taking place in the country of *Dichter und Denker* (poets and philosophers). Not a few journalists remembered the poet Heinrich Heine's prediction a century earlier: 'Where one burns books, one soon will burn people'.²

Twelve years later it appeared that Heine's prophecy had been realized: the Nazis and their allies had killed 6 million European Jews, and driven another million into exile overseas. I use the word 'appeared' because, in fact, only very, very few of those victims were burned alive. Over 3 million Jews were killed in gas chambers, while bullets killed some 2 million, and almost all the rest died as the result of starvation and disease. To be sure, there are testimonies of living Jewish babies thrown on pyres in Auschwitz-Birkenau in the summer of 1944.³ There are also reports of some Jewish *Sonderkommandos* having been put alive in the ovens, but the setting on fire of live human beings was exceptional.

Yet *burning* has become the central icon of the event that, significantly, has become known first in English and later in many other

languages as the Holocaust, derived from a Greek word that means 'something wholly burnt'.⁴ Often people refer loosely to the 'gas ovens' of Auschwitz, collapsing the gas chambers and crematoria ovens into one spurious umbrella concept that equates killing and burning. One of the first memoirs of Auschwitz, written by Sonia Landau and published under the Polish-Christian name she had adopted after her escape from the Warsaw ghetto, Krystyna Zywulska, systematically conflated the killing and burning. Indeed, while 99.99 per cent of the bodies that were burned were the corpses of people killed by other means (mostly by gas), most authors who refer to the Holocaust choose to emphasize the importance of the act of burning within that genocide. There are various reasons for this. First of all there is the traditional association of the death camps, where half of the Jews were killed, with hell. Sonia Landau recalled that when she arrived in Auschwitz-Birkenau, her friend Zosha remarked, 'We've arrived in hell', adding the question 'do you think we'll roast?' For the Polish-Catholic Zosha, who had been raised within the sacred topography of Christianity, the identification of Birkenau with hell was obvious. Landau quickly internalized the Christian view. Later in her memoir she described the nighttime scene during the Hungarian Action, when the crematoria ovens were overloaded and bodies were also burnt on large pyres, in terms that literally evoke the traditional iconography of the infernal part of the afterlife. The association with the medieval image of hell was direct:

Every chimney was disgorging flames. Smoke burst from the holes and the ditches, swirling, swaying, and coiling above our heads. Sparks and cinders blinded us. Through the screened fence of the second crematory we could see figures with pitchforks moving against the background of flames.... I felt, as if at any moment, the earth would open and swallow us with this hell.⁵

The comparison became routine. In 1971 the Jewish critic and philosopher George Steiner noted that the death camps 'are the transference of Hell from below the earth to its surface.... In the camps, the millenary pornography of fear and vengeance, cultivated in the Western mind by Christian doctrines of damnation, was realized'.⁶ The comparison was, of course, not that appropriate: hell has always been associated with the fires that burn the wicked. In the case of the camps, the fires burned the corpses of the innocent.

The prominence of fire – the fires of hell – in the Holocaust narrative is also the result of the fact that the gas chambers are unimaginable. Indeed, their very architecture suggests so. They

were enclosed spaces, and those who died in there died invisibly to the world. There is a fundamental contradiction between the act of witnessing and death in a gas chamber. Only a few writers and visual artists have tried to imagine death in such a place, and mostly they have not been successful. Camp survivor Jorge Semprun reflected on this some years ago. 'There are of course survivors of Auschwitz', he noted, and he immediately added:

but there are no survivors of the gas chambers.... We have the proofs, but not the testimonies. In Humanity's collective memory, legendary or historical, fable or document, there will always be this ontological vacuum, this lack of being, this appalling emptiness, this infected and poisonous wound: no one could ever tell us that he has been there.⁷

The burning of the corpses in the crematorium and on the open pyres, and the smoke darkening the skies fill this vacuum.

Furthermore, it is important to note that destruction by fire carries long associations with Jewish martyrdom. Beginning in Roman times, Jews like Rabbi Akiva, Rabbi Shimon ben Gamliel, and Rabbi Hanina ben Teradion had suffered martyrs' deaths on the pyre – the last, as the Mishna records, wrapped in a Torah scroll.

Finally, the image of the crematorium makes it a specific symbol of the catastrophic interaction of the German and Jewish worlds in the mid-twentieth century. From the end of the nineteenth century, Germany was the industrialized economy par excellence. The label 'Made in Germany' may have been imposed on German products by the British Merchandise Act of 1887 because they were considered of inferior quality and reliability, but by 1900 German manufacturers stamped the label proudly on their products, as it had come to mean the ingeniously devised perfection of German engineering and industrial production, which had become firmly anchored in a culture of research and invention guarded by the Kaiserliche Patentamt (Imperial Patent Office), renamed in 1919 the Reichspatentamt (Reich Patent Office), located in its monumental headquarters in the Kreuzberg district of Berlin.

At the same time as Germany was rising as an economic power, Jewish religious authorities proclaimed an explicit injunction against cremation when it acquired increasing popularity in the late nineteenth century. From rabbinical times onwards, rabbis had tried to establish which acts of non-observance of religious law led to a separation between an individual and the Jewish community. These discussions acquired greater urgency in the Age of Emancipation, when it became possible for a Jew to fully participate in

civil society without having to take the radical step of conversion. Nevertheless, the question arose of whether there was a boundary short of conversion that those born as Jews should not cross if they were to remain acknowledged as Jews by orthodox Jewry. In the early twentieth century, the act of cremation became, in the words of religious scholar Adam S. Ferziger, 'an especially potent boundary marker, in part because it was a relatively new deviation against which a broad-based Jewish consensus could be built'.⁸ One of the key reasons was the centrality of burial within the Jewish tradition. Ultimately, the community that existed in the Jewish burial ground represented the totality of a Jewish congregation at peace with itself. Cremation implied a wilful severance from the community. The concentration camp crematoria, therefore, can be interpreted as a symbol of the particularity of the *German* assault on the *Jews*. The German-Jewish poet Nelly Sachs clearly expressed this in one of the most famous lines to come out of the Holocaust: 'O die Schornsteine / Auf den sinnreich erdachten Wohnungen des Todes, / Als Israel's Leib zog aufgelöst in Rauch / Durch die Luft – ' ('O the chimneys / On the ingeniously devised habitations of death / When Israel's body drifted as smoke / Through the air – ').⁹

A patent application

Sinnreich erdacht (ingeniously devised): we know that if the Germans did not exactly plan the deaths through disease and starvation in the ghettos, they at least welcomed the high mortality. We know that they carefully prepared the massacres by means of shootings. And it took some planning to design and construct the gas chambers in Belzec, Sobibor, Treblinka, and the original gas chambers, those in Auschwitz (the improvised gas chamber of Block 11 and crematorium 1) and Auschwitz-Birkenau (bunkers 1 and 2, which were originally peasant cottages). But real technical ingenuity and advanced engineering skills became important when the SS commissioned the firm of Topf & Söhne to supply ovens for four modern crematoria in Auschwitz-Birkenau (there were no crematoria in Belzec, Sobibor, and Treblinka, and the other concentration camps where crematoria were built, such as Dachau, Buchenwald, and Sachsenhausen, did not play an important part in the German genocide of the Jews).¹⁰ The crematoria in Auschwitz were necessary to allow the camp to operate both as an extermination camp and as a supply of labour to industries both

in Auschwitz and, in 1944, elsewhere in the Reich. Belzec, Sobibor, and Treblinka were isolated places, and the environmental mess that came with the mass burials or the burning of bodies on open pyres did not impede industrial production or attract unwanted attention. Auschwitz was located in the midst of a densely populated and intensely developed area, and rapid and final disposal of the remains of the murdered was the only way it could operate as a factory of death. Each of the four crematoria built in Auschwitz-Birkenau was equipped with a gas chamber. But the gas chambers were, so to speak, the simple and straightforward part of those buildings. The ovens were the technological cores, as the speed of cremation was the rate-limiting step in the killing operation. On 9 April 1946, the American psychiatrist Gustave Gilbert visited former Auschwitz commandant Rudolf Höss in the Nuremberg jail, where he was kept as a defence witness in the trial against Ernst Kaltenbrunner. Gilbert recorded in his diary Höss's dispassionate discussion of the extermination process. 'The killing itself took the least time', Höss told him. 'You could dispose of 2,000 head in a half-hour, but it was the burning that took all the time.'¹¹

It did not only take all the time, but also required much thought. In order to accommodate the daily massacres in the gas chambers, each muffle in the furnaces designed and built for the crematoria in Auschwitz-Birkenau was to have the enormous capacity of ninety-six corpses per twenty-four hours (with fifteen muffles in crematoria 2 and 3 each, and eight muffles in crematoria 4 and 5 each, this resulted in a total daily cremation capacity in Auschwitz-Birkenau of 4,416 corpses per day). In order for the massacres to continue, day after day, week after week, month after month, the ovens, the flues, and the chimneys had to be extraordinarily resilient to cremate thousands of corpses between the massacre of one transport and the arrival, generally twenty-four hours later, of the next train with deportees. In addition, they had to be economical. When civilian crematoria incinerate a body, they do not have to be concerned about the availability of the fuel to heat the oven, and they can easily recoup the costs of the fuel through the usually substantial fee they charge the client for the service. But in the death camps, fuel was a big concern. Not only was it strictly rationed within the context of the war economy, but also the expense could not be charged to a third party: it came out of the general operation budget. Indeed, fuel economy was one of the reasons for the firm of Topf & Söhne being so successful in its business relations with the SS. In the history of cremation,

there was no precedent for either the cremation capacity or the economies achieved in Auschwitz-Birkenau.

The development of the ovens in Auschwitz had been the result of an evolutionary process that can be reconstructed on the basis of archival evidence. Each muffle of the original ovens designed and installed in crematorium 1 had a daily capacity of some fifty-seven corpses, but within a year Topf & Söhne had been able to increase the productivity of each muffle by almost 70 per cent. Yet this remarkable story of technical betterment was meant to remain unknown. If history had unfolded as SS Chief Heinrich Himmler imagined it in the war years, the camp ought to have disappeared not only from the earth, but also from the record of history. In a speech given in Posen (Poznan) in October 1943, Himmler discussed the responsibility of the SS for the genocide of Europe's Jews, and he reminded the assembled that 'in our history, this is an unwritten and never-to-be-written page of glory'.¹² This secrecy did not serve the commercial interests of Topf & Söhne. In developing the Auschwitz ovens, the company had broken new ground in thermo-mechanical engineering, and under normal circumstances it would have sought publication in the relevant trade journals. Such avenues were closed to the company – and not only because it was participating in genocide. The ovens themselves broke German law because they were based on multi-corpsse incineration, which made the identification of ashes impossible, and because they brought the corpse into direct contact with the flame. The German cremation law of 1934 stipulated that the body should be incinerated through the application of hot air, and that only one corpse at a time could be cremated in a muffle: these ashes, this name. Yet, in order to safeguard its commercial interests, Topf & Söhne did something that broke the confidentiality agreement with the SS: it applied in November 1942 for a patent for a *Kontinuierliche arbeitender Leichen-Verbrennungsofen für Massenbetrieb* (Continuous Operation Corpsse Incineration Furnace for Intensive Use). This patent application is very important as it explicitly refers to the high mortality in 'the gathering camps in the occupied territories in the East' and the impossibility of burying 'the great number of deceased inmates'. It goes on:

A number of multi-muffle ovens were installed in some of those camps, which according to their design are loaded and operated periodically. Because of this, these ovens do not fully satisfy, because the burning does not proceed quickly enough to dispose of in the shortest possible time the great number of corpses that are constantly presented. The last

can only be done in ovens which are fed continuously and hence also work continuously.¹³

Fritz Sander, the engineer who developed the design to be patented, confessed in March 1946, during an interrogation by Soviet officials, that this new installation 'was to be built on the conveyor belt principle. That is to say, the corpses must be brought to the incineration furnaces continuously. When the corpses were pushed into the furnaces, they would fall onto a grate, then slide into the furnace and be incinerated. The corpses would serve at the same time as fuel for heating the furnaces.' When challenged why he had volunteered to design such ovens when he knew they were to serve a genocide, Sander responded: 'I was a German engineer and key member of the Topf works, and I saw it as my duty to apply my specialist knowledge in this way to help Germany win the war, just as in wartime an aircraft construction engineer builds airplanes, which also kill human beings'.¹⁴ Obviously Sander did not realize the elemental distinction between a weapon to be used in an armed conflict and a tool designed to kill unarmed and powerless prisoners.

The patent application describes the continuous-cremation furnace as a structure in which the corpses are inserted at the top, and as they slowly slide down a system of inclined grids they are quickly reduced to ashes. It does not provide data on the capacity of the furnace, but in 1985 Rolf Decker, manager of incinerator production at the Ruppmann company in Stuttgart, made an engineering assessment of Topf's continuous-cremation furnace.¹⁵ He assumed that the furnace could be initially loaded with fifty corpses, and in the upper part of the furnace the bodies would dry out through evaporation; after falling into the second part, these corpses would be burned, while the first part would be reloaded. After falling into the third part of the furnace, the remains would be completely reduced to ashes. 'On the basis of the plan one may only theoretically calculate the capacity and duration, because exact data can only be determined through practical trials.... With continuous operation one could arrive at an incineration capacity of around 4,800 corpses per 24 hours.' The most important achievement was not only in capacity (which could be easily expanded to 7,200 corpses per day), but also in economy:

Pre-heating of such an oven should take at least two days. After this preheating the oven will not need any more fuel due to the heat produced by the corpses. It will be able to maintain its necessary high

temperature through self-heating. But to allow it to maintain a constant temperature, it would have become necessary to introduce at the same time so-called well-fed and so-called emaciated corpses, because one can only guarantee continuous high temperatures through the emission of human fat. When only emaciated corpses are incinerated, it will be necessary to add heat continuously.¹⁶

The question, of course, was where one would find a supply of ‘well-fed’ corpses in Auschwitz in 1942. It is important to note that, when he wrote his assessment of the mass-incineration oven, Decker did not know yet of Sander’s statement, given in 1946, that the corpses were to serve also as fuel for heating the furnaces. Sander’s interrogations were to be unearthed in the Osobyi (Special) Archive in Moscow only in the early 1990s.¹⁷

In his classic study *Modernity and the Holocaust*, philosopher Zygmunt Bauman postulated that the key to the success of the Nazis was their insight that one must make the victims ‘part of that social arrangement that was to destroy them’.¹⁸ In the same way that the rationality of the Final Solution turned human nature against itself, the principle of recuperative heat utilization by the combustion of body fats, which structured the Topf mass incinerators, transformed the very substance in the body that protected and sustained life into a tool to eradicate the final physical trace of that life.

With the Topf patent application, the Holocaust linked not only back to the core principles of the rationality of the Final Solution, but also to the ‘normal’, everyday world defined by the ideals of progress and the desire for achievement, and the experience of compromise, disappointment, and defeat. When he was interviewed by Claude Lanzmann for the movie *Shoah*, Holocaust historian Raul Hilberg observed that most of the persecution of the Jews that unfolded from 1933 to 1941 was *not* original. The Nazis invented very little: earlier persecutions inspired them. But they had to become inventive when they began to kill Jews en masse. ‘That was their great invention, and that is what made this entire process different from all others that had preceded the event. In this respect, what transpired when the “final solution” was adopted – or, to be more precise, bureaucracy moved into it – was a turning point in history.’ Lanzmann follows Hilberg’s reflections on the Holocaust being the result of a series of absolutely original inventions with eyewitness testimonies on the use of the gas vans in Chelmno, the first of the death camps. The sequence ends with Lanzmann reading a document dated 5 June 1942, detailing technical changes to the gas vans to improve their efficiency. They involve reduction of the

load space to improve the gas vans' stability, better protection of the lights, and the provision in the floor of a drain 'with a slanting trap, so that fluid liquids can drain off during the operation'.¹⁹ Images of the Ruhr accompany the reading of the document, a bleak landscape crowned with cooling towers and factory chimneys – symbols of German industrial power.

Yet the Final Solution was an invention that did appear different from all the other inventions that energize the modern world: it was one without an official patent, understood as a publicly issued government licence (the noun 'patent' derives from the Latin verb *patere*, which means 'to lay open', which in this case means to make available for public inspection), conferring on the inventor for a limited time the sole right to manufacture, sell, or deal in the process or product that results from the invention *in exchange for the publication of a description of that invention*. The gas vans that were the object of the improvements mentioned in the document of 5 June 1942 were not patented, nor were the gas chambers built in the Operation Reinhard camps. The Topf patent application is the only such patent application that preserved in a regular, official form the inventiveness that turned 'ordinary' persecution into an unprecedented Holocaust. Hence it marks an important moment in the history of the Holocaust. It is significant, however, that the Reichspatentamt refused to issue the patent during the war. 'This patent could not then be approved ... because of its secrecy classification', Sander explained to his interrogators in 1946. 'The project file is registered in the Patent Office but the invention could not be patented in wartime.'²⁰ Did he have hopes that, in 1946, the prospects looked better?

The patent and Cold War politics

In 1953 the West German patent office issued patent no. 861731 to the firm of Topf & Söhne in Wiesbaden for 'a treatment and processing for the burning of corpses, cadavers, and parts thereof'.²¹ Initially, patent no. 861731 did not attract attention. Yet in the late 1950s the real or perceived continuity of the Federal Republic of Germany (FRG) with the Third Reich became a matter of public debate. From 1956 onwards, officials of the communist German Democratic Republic (GDR) had begun to look for documents that would incriminate the West German elites as former Nazis. In 1957 they began with a campaign against 'Hitler's blood judges

who serve the Adenauer regime'. This campaign against judges and public prosecutors inspired socialist students in West Germany to research and mount an exhibition of the Nazi-era personal files of current judges, and copies of death sentences they had imposed. For the next couple of decades the West German justice system operated under a cloud. In 1959 the GDR began to focus on senior politicians and civil servants. The Federal Minister for Expellees, Theodor Oberländer, was forced to resign and was subjected to a show war crime trial in absentia in East Berlin, and the most senior and powerful civil servant in the FRG, Hans Maria Globke, came under attack for having written a lengthy commentary on the Nuremberg Laws of 1935 and for having authored other anti-Semitic legislation. Because Globke was Adenauer's most trusted advisor, being considered the puppet-master who controlled the politicians, the attack on Globke equalled an attack on Adenauer.²²

The Austrian-Jewish author Robert Neumann supported the outing of the West German elites and was disgusted by the general opinion that the documents that had been presented were all forgeries created by the East German secret service.²³ A native of Vienna, Neumann had become a bestselling author in Germany in the late 1920s. In May 1933 his books had been burned on the pyres created by Germany's students. In a novel that appeared a few years later, Neumann recalled the event. His alter ego, the Jewish writer Werner Marcus, has done his best to ignore the Nazis. When on 10 May he hears that students will burn his books, he decides to attend the event. 'It would interest him, Werner Marcus, to watch it in person at close range, just for the sake of amusement, from the angle of pathological psychology.' And thus he leaves his house to see the bonfire, telling his mistress that he will be back at nine. He returns at ten.

He was in no way disarrayed. On the contrary, if that signified anything, he was even more correctly dressed than usual; his hat was on straight, his tie straight, his gloves spotless, not a speck of dust on his coat. Only he was rather pale when one looked closer, with a corpse-like pallor that was terrifying at first sight. He rang for his valet. 'Pack the bags,' he said in a flat voice.²⁴

Neumann knew there was no future for him in either Nazi Germany or clerico-fascist Austria, and moved to England in 1934. He returned to the continent only in 1959, settling in Switzerland. His arrival coincided with the outing of the judges, Minister Oberländer, and Secretary of State Globke. At the same

time, Neumann only met Germans who all sang the tired refrain that 'wir haben es nicht gewusst' and who proclaimed their great love for the Jewish people and their great respect for the Jewish contribution to civilization in general, and German civilization in particular. In January and February 1960 Neumann hosted a series of four radio programmes in which he read documents that testified to the deep involvement of German civil society in the Holocaust. At the beginning of the third programme, having read twenty documents, he observed that 'we have now moved beyond ascribing the responsibility for the atrocities simply to the men at the top, or them and their closest co-conspirators, the killer simply formations of the SD and the SS'. By the beginning of the fourth programme he told his listeners that he had read enough documents. 'Every single one, I say, stands for a hundred, is proven a hundred times, with copies, with legally valid attestations of their authenticity, with sworn statements by witnesses, bystanders, murderers, and in a few cases by the murdered themselves.'²⁵ These documents he published in late 1960 under the title *Ausflüchte unseres Gewissens (Excuses of Our Conscience)*. That same year he published *Hitler: Aufstieg und Untergang des dritten Reiches* (published in English in a radically shortened version as *The Pictorial History of the Third Reich*). It is a picture book that begins with the childhood pictures of Hitler, his rise to power, and then leads to a fifty-page documentation of the killing of the camps and the Holocaust of the Jews – including a long passage from Sonia Landau's (Krystyna Zywułska's) *I Came Back*. Neumann noted how few SS men had been brought to trial, and how they had good times at their reunions. The main text ends with an afterword with photographic reproductions of key documents that trace the involvement of bureaucrats, lawyers, physicians, and industrialists in the persecution and destruction of the Jews. The final section, 'The shared guilt of the industrialists', begins with the reproduction of a letter in which the director of I. G. Farben, Otto Ambros, reports on 'the new friendship' with the Auschwitz SS and the nice dinner hosted by the leadership of the Auschwitz concentration camp, a bill for 459,844.30 reichsmark to be paid by I. G. Farben to the Auschwitz SS for prisoner labour done in December 1943, and a list of Ambros's leading positions in the West German business world. The next spread is devoted to Topf & Söhne. Neumann included reproductions of the first page of the Topf patent application of 1942, the first page of patent no. 861731 issued in 1953, a letter written by the chief architect of Auschwitz to his boss in Berlin, reporting on the progress in the construction

of crematorium 2 and its Topf ovens, and a letter on Topf letterhead dealing with the cracks in the ovens of crematorium 4. The caption that accompanies the first three documents states that 'the experiences with the Continuous Operation Corpse Incineration Furnace for Intensive Use' in Auschwitz, which are substantiated by letters of 26 October 1942 and 29 January 1943 (reproduced on page 250), resulted on 5 January 1953 in a new patent for the firm J. A. Topf & Söhne in the Federal Republic.²⁶ The caption that accompanies the letter on the cracks of crematorium 4 was a quote from Krystyna Zywułska's memoir – one that Neumann has also printed earlier in the book:

About an hour later the chimney of the fourth crematorium, which was just behind our dormitory barrack, began to gush flames.... At first a thin grey ribbon appeared, then thick billows, growing heavier until they spread like a cloud veiling the sky over that part of the camp.... The smoke carried the smell of burning flesh.²⁷

The American edition did not include the documentary section – to have done so would not have made much sense, as most Americans did not read German. Instead, Neumann provided a narrative summary of the argument. After mentioning the continuous employment of Nazi 'hanging judges and prosecutors' in the West German courts, the cases of Oberländer and Globke, the text stated that 'the Ruhr corporation that built the cremation ovens, asked for a new mass cremation oven patent in the Federal Republic in 1953 – and got it'.²⁸ Neumann did not think that more was needed to bring the point home that Germans, and especially German youth, should be watchful.

Neumann's outing of Topf & Söhne through the publication of the patent application of 1942 and the 1953 patent did not have much effect on the two companies that could be burdened with the Topf legacy. In East Germany the 'people-owned' Erfurter Mälzerei und Speicherbau (Erfurt Malting Equipment and Granary Construction), which continued the Topf business on the old site but without the furnace business, was safely ensconced within the communist state; the West German branch, established in 1950 by Ernst Wolfgang Topf, had effectively ceased to exist by 1960 and was to be formally closed in 1963. And it did not have any effect on the historiography of the Holocaust for the next quarter of a century: more detailed questions concerning the crematoria and their incineration capacity were to become a focus of research only in the mid-1980s.²⁹ But the patent application of 1942 and the

patent of 1953 did speak to the poetic imaginations of two men born in the Netherlands: the novelist, essayist, and journalist Harry Mulisch, and the Israeli engineer, businessman, film producer, and playwright Wim van Leer.

Criminal case 40/61 and DRP 861731

On 30 September 1961, Harry Mulisch visited the Auschwitz museum. It was in some ways a very personal visit: Mulisch was half Jewish. His Jewish mother, Alice Schwarz, had been targeted for deportation to Auschwitz. His Austrian-born non-Jewish father, Karl Victor Mulisch, had played a key role in the despoliation of the Dutch Jews, and had been imprisoned after the war as a Nazi collaborator. The son of a perpetrator and a victim, Harry believed that he embodied the whole of the Holocaust in his person. From early April 1961 he had attended the Eichmann trial in Jerusalem as a correspondent for *Elseviers* magazine, and in his despatches he had developed a theory that Eichmann was the prototype of a new kind of man, a man who is a machine. 'If I called Eichmann a "medium without hypnosis" earlier, then that is the definition of a machine', Mulisch had written on 18 June 1961.

A machine is a rational tool set up to execute any command whatsoever, without comment.... He personifies the perfectly ordinary man, the 'Massentier', the 'Gewohnheitstier' with the mechanical order receptor.... He is precisely the opposite of a man who wants to be bad. He is a machine that is good for anything.... This is why I called Eichmann 'the symbol of progress'. This living dead person is the prototype of modern man, who created the machine in his own likeness.

Yet in his despatches 'the machine' had remained a metaphor. At the end of the trial Mulisch decided to visit the main site of the crime for which Eichmann was tried: Auschwitz. There the machine had been a reality, embodied in a site, a physical infrastructure, and the crematoria. First he visited the exhibitions in the *Stammlager*, and then he moved on to Auschwitz-Birkenau, 'The loneliest spot on Earth, describable only through silence'. The crematoria, he erroneously stated, had a daily capacity of 60,000 corpses. It is unclear if he wrote the last despatch from the trial while in Birkenau, or after his return to Amsterdam. What is clear is that he had Neumann's recently published *Hitler: Aufstieg und Untergang des dritten Reiches* on his desk when he tried to write

it. Not burdened by a university-formed super-ego concerned with academic convention, Mulisch lifted, without giving proper credit, significant pieces of Sonia Landau's testimony from Neumann's book.

Mulisch had gone to Auschwitz because he had great difficulty bringing his reportage to closure. How does one close a journey into an abyss? He decided to use Landau's quotes about the arrivals' confusion about the purpose of the crematoria, in a collage of fragments that included SS doctor Johann Kremer's diary entries on the meals he ate and the wines he drank after attending the killings, and commandant Höss's recollections of what one could see through the peephole when the Zyklon B was thrown into the gas chamber. The end began with the observation that the Zyklon B was delivered 'by the companies of Degesch and Testa, of the I. G. Farben Konzern' and that 'the crematoriums were supplied by the company of Topf & Söhne in Wiesbaden. On January 5, 1953, this company obtained patent no. 861731 for a treatment and processing for the burning of corpses, cadavers, and parts thereof. And in the white mist the sun of Birkenau is hanging. In the distance the locomotives are still steadily blowing their whistles.'³⁰ It is as good or bad an ending as one can make. As a collage, with its somewhat anomalous juxtapositions, it uses the surrealistic technique to defeat the traditional narrative sequence that makes sense of the world, and gives it meaning. In Auschwitz everything is disjointed and fractured. The world is in pieces. It is a world as wasteland.

Mulisch's articles on the Eichmann trial were bundled into *De Zaak 40/61: Een Reportage (Criminal Case 40/61: A Report)*. As a result, by the end of 1961 the Topf patent figured at the conclusion of two books. It attracted the attention of the Dutch-born Israeli man of many talents Wim van Leer. Born in the Netherlands in 1913, van Leer had apprenticed in the metal industry, and spent the war manufacturing ammunition in Britain. After the war he moved to Israel, set up the country's crop-spraying industry, established factories to produce plastics and steel barrels, and was instrumental in creating a native film culture through the production of films and the establishment, with his wife Lia, of the Jerusalem Cinemathèque.³¹ Van Leer knew patents. His father had become very wealthy on the royalties of a patent to seal oil barrels, and he owned a few patents himself. The ending of Mulisch's book, with the reference to patent no. 861731 issued by the West German Patent Office in 1953 to the firm of Topf & Söhne,³² motivated van Leer to do some research. He contacted the Wiener Library in

London, which was in the early 1960s the primary collection of Nazi-era books and documents. It provided him with a copy of the 1953 patent and the patent application of 1942. Van Leer erroneously assumed that patent no. 861731, which mentioned Martin Klettner as its inventor, was a reworked version of the Sander design of 1942, and he was enraged by the chutzpah of the post-war Topf & Söhne management and the West German Patent Office.

Van Leer had also ambitions as a playwright, and in the early 1960s plays that raised issues related to the camps were popular: Max Frisch's *Andorra* was a critical success, and Rolf Hochhuth's *Der Stellvertreter* (*The Deputy*) had made an unknown author famous and wealthy overnight. When van Leer saw during a visit to the Wiener Library a photocopy of the Topf patent application, he not only understood the technical and the moral issues, but also realized that it had a great dramatic potential, and that it would allow him to tackle an issue that had not yet been addressed: the motivation of those involved. The Eichmann trial had shown that the simple explanation of anti-Semitism did not hold. 'The Holocaust is the best documented crime in history, and what is more, documented in the handwriting of the perpetrator', van Leer wrote in a letter to a Canadian advertising executive in March 1967, 'yet about the motivations of this crime there is little or nothing known.... Chana [Hannah] Arendt was certainly right when she spoke of the banality of the war criminal, but is it really as simple as that?'³³

Van Leer believed that a play that focused on the circumstances surrounding the creation of the Topf patent application would allow him to raise the question of motivation, and to show the complexity of Arendt's 'banality of evil', by which term she referred to evil deeds committed by people who have neither a wicked heart nor a criminal temperament, but who are essentially 'thoughtless'.³⁴ He therefore wrote a three-act play that focused on the fictive firm Troeltsch & Sons, which produced large automatic bread-baking ovens, and that by 1942 had fallen on hard times – the concept that crematorium ovens in concentration camps were modified bread ovens went back to a *New York Times* article on the liberation of Buchenwald which noted that 'in the crematory itself were two batteries of three ovens, each prominently marked with the makers' name – J. A. Topf & Söhne, Erfurt. This concern customarily manufactured baking ovens'; the claim was repeated in the narration of the movie *Nazi Concentration Camps* shown on 29 November 1945 during the Nuremberg Trials.³⁵ By reviving

the erroneous assumption that Topf & Söhne had been suddenly jolted into the construction of incineration ovens, van Leer could introduce an element of decision which was largely absent in the slippery-slope history of the historical Topf firm, as it had moved from the construction from civilian crematoria to 'regular' concentration camp crematoria to the 'special' concentration camp crematoria with gas chambers and a very high incineration capacity.

The play, which in its original Hebrew version sported the title *DRP 861731*,³⁶ and which in its English version appeared under the titles *Final Solution* and *Patent Pending*, is set in the office of the bomb-damaged Troeltsch & Sons bakery oven plant. The main protagonists are the company's owner, the elderly Edgar Troeltsch, the chief engineer, who has just returned from a stint as an army officer on the Eastern Front, Wilhelm Baumann, and the Mephistophelean SS-Obersturmbannführer Dr Hamlin. 'Gentlemen, the problem I'm placing before you concerns the cremation of human corpses on a – how shall I put it? – unusually large scale', Hamlin tells the industrialist and his engineer. 'Cremation?' Troeltsch asks. 'Yes, my dear Troeltsch', Hamlin responds, 'either cremation or incineration or any other method you can invent which will reduce the human body, after death of course, to the smallest amount of substance in the shortest possible time. Have I made myself clear? And when I say on a large scale, I mean sometimes in the order of thirty to forty thousand per day.' Hamlin tells Troeltsch that crematorium oven-builders only offer incineration installations of up to thirty-six corpses per day. 'At that rate I'd need over a thousand furnaces. They have no idea of automation. It is the *scale* of the operation that presents the difficulty.' Hamlin proceeds to present Troeltsch and Baumann with some relevant facts. 'Take the human body, weighing about seventy kilos, which is a fair average. It contains twelve kilos of carbon, two kilos of hydrogen, half a kilo of phosphorus and the rest – fifty-five and a half kilos of water. It has a calorific value of 160,000 thermal units.' The technical problem, Hamlin argues, is to achieve the simultaneous 'evaporation of body fluids, water in fact, and the incineration of solid matter'. With a down payment of 50,000 marks, and a guarantee that the workers will not be drafted, Troeltsch agrees to undertake the work. Yet Baumann sees some extra problems, such as 'the effect of clothing, uniforms – the physical dimensions, the disposal of the ashes or whatever it is that remains'. Hamlin responds with a cryptic remark: 'If it'll help you, I can let you have a few samples, dead or alive'.³⁷

Baumann begins doing calculations for the ovens, and realizes quickly that the fuel requirement is immense: 3,500 corpses per day will require 260 tons of fuel every twenty-four hours. This is not available. 'If we could only in some way separate the fats contained in the human body, in some way break up the hydro-carbon and nitrogen bonds, we would incinerate the bodies with their own fat', he tells Troeltsch. Yet this requires a temperature that far exceeds that achieved in bread ovens. He also realizes that the units cannot be mobile. When Hamlin tells him that he can design a stationary oven, Baumann is somewhat surprised, as he had assumed the installation would be used to incinerate the remains of soldiers, and a stationary installation would not make much sense in the dynamic circumstances of the Front. And he is puzzled when an SS man brings Hermann Israel Bernstein, a Jewish concentration camp prisoner. Baumann gets to know Bernstein, who tells him about the killings in the camps. Baumann begins to realize new things. 'I know that there are concentration camps, who doesn't?' he tells Bernstein. 'It is one of the Führer's secret weapons. Not so secret either. What I didn't know ... I suppose I could have known if I had thought about it, but who does think these days? It doesn't bear thinking about.' Baumann begins to realize that he is involved in the construction of a death factory. 'What's happening out there in these camps? ... What we're doing? ... The real purpose of these experiments?' Troeltsch tries to calm Baumann. 'There is nothing we can do about it. We'd be very unwise to stick our noses into matters like that.' Yet Baumann reminds him that they are already in the middle. 'With all due respect Sir, can't you put two and two together? They can collect them, strip them, gas them but they can't dispose of them without any traces, that's where we come in, Troeltsch and Sons, purveyors to the bakery industry.' While Troeltsch defines their job as producing an automated crematorium, Baumann corrects him: it is 'the last stage in a human slaughter-house'. Troeltsch responds that if it is true, it is a ghastly business, but they are not involved with the dirty work. 'All we do is clean up after them.'³⁸

Finally, Baumann confronts Hamlin, who suggests that he does not know enough 'to question decisions taken at the highest level'. He threatens the arrest of Baumann's wife and children if he does not cooperate. Baumann surrenders. In the last scene, he has stopped thinking about the moral issues, and has retreated into the narrow world defined by the engineering problem that Baumann now spells out in great detail.

BAUMANN: In the ideal system we have a furnace which, once heated by oil to say 1,200 degrees and continuously fed with combustion material....

TROELTSCH: You mean fuel oil?

BAUMANN: No Herr Troeltsch, not fuel oil. Corpses, in other words body-fats. That's the whole idea, don't you see. The corpses themselves supply the fuel.

TROELTSCH: Oh, I see. Carry on Baumann, this is fascinating.

BAUMANN: If you look here at Station A, the hopper containing some 250 corpses feeds onto a conveyer-belt. We have an advantage – and here the particular construction of the body comes to our aid – that the head and limbs are dehydrated first, being of relatively small dimensions. They now separate from the body, and drop off into this funnel-shaped duct onto grid B. Since all circulating air passes through this grid, the limbs burn fiercely in the draft.

TROELTSCH: And the body itself?

BAUMANN: When the dehydration phase is over, which takes longer because of its larger volume, it will disintegrate in the same way.

TROELTSCH: So you have to light the furnaces only once a day.

BAUMANN: Yes, for an hour or so until she is at 1,200 degrees. Then you can switch off, and the corpses keep the furnace going. It is a tremendous fuel saving.³⁹

After Baumann confirms the originality of his design, Troeltsch calls in his secretary, and dictates to her a letter to the Reichspatentamt in Berlin. As he dictates the text of the original Topf patent application of November 1942, the curtain closes, and on a descending screen is projected the first page of the (other) patent as it was issued in 1953.⁴⁰

On 3 November 1964 *The Final Solution* debuted in Wimbledon. Later that month the production ran in Edinburgh, and Wolverhampton, and in June 1965 it had a few performances in London under the title *Patent Pending*. It had a final hurrah in April 1967, when, again under the title *The Final Solution*, it had a few performances in Toronto.⁴¹

The Six Day War occurred two months after the last performance of *The Final Solution*. When van Leer wrote his play, he did so in a vacuum. 'The world is still trying to fit the Holocaust into its framework of thinking; is trying to give some meaning to the figure of 6 million dead which now hangs over us meaningless like the distance to the moon or the American National Debt',⁴² he had written in March 1967. But the fear so many Jews felt in May and June 1967 – the fear that the Arab armies were to finish the Nazi Final Solution – mobilized the collective memory of the Jewish people. The Six Day War initiated a new perspective on the

genocide of the 6 million. The great trials of the perpetrators had come to an end. And the fundamental values of society rapidly changed as we became collectively more open to the psychological needs of others, and as we began to appreciate the variety of human society, with its implication that each single person, irrespective of gender, race, religion, sexual orientation, or health has his or her place and purpose. Television also changed the way we negotiate the relationship between the public, the private, and the intimate. As it began to bring us heart-rending testimonies of victims as our daily fare, it suggested that listening to testimonies of traumatized people and identification with their psychological needs were an important moral duty. Thus we came to live in what Annette Wieviorka labelled *l'ère du témoin*, the era of the witness.⁴³ Therefore the men and women who became after 1967 the focus of attention, and who through their testimonies, memoirs, and works of the creative imagination have defined the way we think about the Holocaust as one of the greatest catastrophes in human history, were not real German engineers and industrialists like Fritz Sander and Ludwig Topf, or imagined ones like Walther Baumann and Edgar Troeltsch, but Jewish survivors like Rudi Vrba and Alfred Wetzler, who in 1944 risked all to tell the world about Auschwitz and its crematoria, or artists like Primo Levi and Imre Kertész, whose *If This Is a Man* and *Fatelessness* are the cornerstones of a new and imperishable library built from letters that took wing on the pyres of Treblinka and in the ovens of Auschwitz, and the many, many survivors who, up to today, bear witness to the lives and deaths of their fathers and mothers, uncles and aunts, brothers and sisters, and children, who were murdered, and who have given them, in the words of Isaiah, 'a place and a name that shall not be cut off'.⁴⁴

High Court of Justice, Queen's Bench Division, 1996-I-1113

In the era of the witness, the mass-incineration ovens, embodied in the Topf patent application, did, indeed, cease to have significance as a means to understand the Holocaust. Yet, despite this, the application regained centre stage one more time. The stage this time was not located in a theatre built for entertainment, but in a courtroom in the Royal Courts of Justice in London. The year was 2000, and the case the libel action brought by David Irving against Deborah Lipstadt, author of *Denying the Holocaust: The Growing*

Assault on Truth and Memory, and her British publisher, Penguin Books.⁴⁵ The origin of this case was the endorsement by Irving, a well known writer of popular histories of the Second World War, of hard-core Holocaust denial after he read in 1988 a forensic report, commissioned by Holocaust deniers Robert Faurisson and Ernst Zündel, and written by American engineer Fred Leuchter. In this report Leuchter came to the conclusion that Auschwitz had not been an extermination camp because he found only negligible traces of cyanide in the walls of the 'alleged' gas chambers, and because the ovens would not have been able to incinerate the 'alleged' number of corpses. Following the method of denial developed by Faurisson in the 1970s, Leuchter had totally ignored eyewitness testimony concerning the operation and technique of the crematoria. Irving had identified the Leuchter report as a major breakthrough in the historiography of the Second World War, and he lent his name and reputation as a researcher of the Third Reich to the proposition that the German murder of 6 million Jews was a hoax perpetrated by Allied secret services as atrocity propaganda, and that it had been kept alive by Zionists to swindle the Palestinians out of their homeland, and by Jewish financiers to swindle the Germans out of billions of marks.

Irving's endorsement of the allegation that the Holocaust was a hoax had rattled Lipstadt, and she consequently identified him in her book on Holocaust denial as a particularly dangerous denier because, unlike Faurisson, Zündel, Leuchter, and others, he had actually done substantial archival research on the Second World War. When Lipstadt's condemnation caused a publisher to cancel a contract with Irving, leading to substantial financial loss, the latter decided to sue in the High Court of England and Wales. In accordance with the applicable law, Irving needed only to make the complaint; it was up to Lipstadt and her publisher to prove that she had been right.

Having worked in the Auschwitz Zentralbauleitung archives, and having published a book and a number of other pieces that focused on the construction history of the camp, I was hired as an expert witness by the lawyers of Lipstadt and Penguin.⁴⁶ My brief was to prepare an expert report that focused on Auschwitz. I was to assemble and discuss the evidence that, indeed, more than a million people, mostly Jews, had been killed at Auschwitz, mostly in gas chambers, and that their bodies had been disposed of in crematoria and by means burning on open pyres. (If mass graves still existed, a forensic investigation of their contents would have provided a

straightforward method of establishing at least the number of victims.) In addition, I was to review the arguments concerning Auschwitz proposed by Holocaust deniers, and show that they were without value. All of this was to demonstrate that, in his quick and unequivocal endorsement of the Leuchter report, Irving had not acted as an unbiased, objective, and conscientious historian would have acted. Or, in other words, I was to aid the general case to be presented in court that Irving had not treated sources with appropriate reservation, that he had dismissed counter-evidence to his hypotheses without proper scholarly consideration, that he had been 'cherry-picking' the evidence to suit his purposes, and so on.⁴⁷

In my expert report, which was to run to more than 700 pages, I reviewed the evidence about the killings at Auschwitz.⁴⁸ I showed, again and again, how eyewitness evidence provided by both former camp personnel and camp survivors, and material evidence such as German documents and the remains of the crematoria, converged to give a clear record of the use of the camp as a place of extermination of human beings, mainly Jews. I also showed that none of the arguments proposed by deniers survived a critical examination of either the evidence they called on to make their case, or the logic they employed. In my attack on the Leuchter report, I paid special attention to his assertion that the daily incineration capacity of crematorium 1 had been eighteen corpses, of crematoria 2 and 3 had been forty-five corpses each, and of crematoria 4 and 5 had been twenty-four corpses each, leading to a total daily incineration capacity in Auschwitz of 156 corpses – which would have provided over the lifespan of the crematoria a total cremation capacity of 85,000 corpses. I had, however, a German document from the Zentralbauleitung archive, dated 28 June 1943, which reported the incineration capacity to Berlin. This letter stated that crematorium 1 had a daily incineration capacity of 340 corpses, crematoria 2 and 3 had a daily incineration capacity of 1,440 corpses each, and crematoria 4 and 5 of 768 corpses each, leading to a total daily incineration capacity of 4,756 corpses. If Leuchter's number suggested a camp with 'normal' mortality, the German document suggested that the crematoria were built to serve a genocide. I noted that the information given in the letter of 28 June 1943 converged with the testimony provided in May 1945 by Henryk Tauber, a former *Sonderkommando* (a prisoner forced to work in the camp), who had worked first in crematorium 1, and who had noted that bodies of thin people 'burned very slowly' and that 'bodies of fat people burn very much faster. The process

of incineration is accelerated by the combustion of human fat which thus produces additional heat'.⁴⁹ In crematorium 2 he and his fellow *Sonderkommandos* proved able to reach a high level of fuel efficiency. When dealing with the corpses of victims who had arrived in Auschwitz that very same day, and who were not emaciated, 'we used the coke only to light the fire of the furnace initially, for fatty corpses burned of their own accord thanks to the combustion of the body fat. On occasion, when coke was in short supply, we would put some straw and wood in the ash bins under the muffles, and once the fat of the corpse began to burn the other corpses would catch light themselves'.⁵⁰ I also invoked a statement by Topf engineer Kurt Prüfer on the capacity of the ovens, and, finally, the Topf patent application of 1942. After a lengthy discussion of the patent, I concluded: 'both the text of the patent application and the design of the incinerator make the incineration process described in Tauber's testimony not merely plausible, but indeed probable'.⁵¹

I finished the report in June 1999. In January 2000 I had to defend it in court under cross-examination by Irving, who represented himself. During my cross-examination, the issue of the coke consumption of the crematoria became a point of contention. It was important for two reasons: first of all, Tauber had claimed that, once the ovens were heated and going, hardly any coke had to be added, as the corpses themselves began to act as fuel. For Holocaust deniers, Tauber's statement is proof that he had lied, as this is 'impossible'. Furthermore, Holocaust deniers, taking the situation in a civilian crematorium as their standard, postulate that it 'always' takes 20–30 kg of coke to incinerate a body, and as a result the coke supplies to Auschwitz, which were recorded for 1943, were sufficient to incinerate only one-tenth of the alleged number of corpses. Or, in other words, the bills for the coke supply were to prove that it is 'impossible' that the crematoria had been involved in a genocidal operation. This argument has been fully developed by Holocaust denier Carlo Mattogno in his *Auschwitz: fine di una leggenda* (1994).

Irving challenged me on the coke use on the first day of my cross-examination, after I had discussed the projected incineration capacity in Auschwitz indicated by the letter of 28 June 1943.⁵² In my reply I noted that it appeared that the Auschwitz crematoria had been very efficient, using only 3.5 kg of coke per body. I quoted a number of documents that supported my allegation, including the Topf patent application.

MR JUSTICE GRAY: I am afraid I have completely forgotten what is supposed to be the significance of the patent application one way or the other.

MR RAMPTON: I could tell your Lordship but then I would be giving evidence and I cannot do that.

MR JUSTICE GRAY: I am simply asking what case is sought to be made, but perhaps it is better elicited from Professor van Pelt.

MR RAMPTON: The case sought to be made is that it explains how it was that they were able to incinerate as many corpses as they could, and also how they managed to use as little fuel as these were able to do.⁵³

I quoted the relevant sentences of the report, those on the patent, where it stated that after preheating the oven for two days it would not need any extra fuel, due to the heat produced by the corpses, and noted that it went back to the experience made with multi-muffle ovens in crematorium 1. Key was the comment that one should use a combination of fat corpses and emaciated corpses to obtain the desired result. Rampton then asked me if this chimed with descriptions given by eyewitnesses. I suggested that Tauber described the problem in his testimony given in 1945.⁵⁴ The patent application thus became a key document in confirming the reliability of the witness, Tauber.⁵⁵

It convinced Mr Justice Gray. In his judgement he came back to the report on various occasions.⁵⁶ After reviewing all the evidence, including the patent, Mr Justice Gray stated: 'I accept that the evidence of van Pelt, which was based on contemporaneous documents..., that, if the incinerators were operated continuously and many corpses were burnt together so themselves providing fuel, no more than 3.5 kg of coke would have been required per corpse'.⁵⁷ Thus the convergence of the evidence provided by Tauber and Höss, and that provided by documents such as the Topf patent application of 1942, led Mr Justice Gray to conclude:

having considered the various arguments advanced by Irving to assail the effect of the convergent evidence relied on by the Defendants, it is my conclusion that no objective, fair-minded historian would have serious cause to doubt that there were gas chambers at Auschwitz and that they were operated on a substantial scale to kill hundreds of thousands of Jews.⁵⁸

Conclusion

The ovens that Topf & Söhne built in Auschwitz have done much harm to humankind. Without the massive daily incineration

capacity that they provided from March 1943 onwards, the camp could not have killed and burned the more than 400,000 Hungarian Jews in the spring of 1944. However, Fritz Sander's patent application from 1942, based on the experience of multi-corps incineration, did in the end do little damage to the prospects of humanity. In fact, within the context of a lengthy and costly trial, it proved to be a key piece of evidence that confirmed the validity of eyewitness evidence provided in 1945 by a survivor of the Auschwitz *Sonderkommando* and, through that, the factual truth of the commonly accepted historical record concerning the most deadly of German death camps.

Notes

- 1 With my thanks to Élisabeth Anstett, Jean-Marc Dreyfus, Robert Rozett, Miriam Zagiel, Lia van Leer, and Miriam Greenbaum. This work was supported by a grant from the Netherlands Institute for Advanced Study in the Humanities and Social Sciences (NIAS).
- 2 The quote is from Heinrich Heine, *Almanson*, available on the web through the freie digitale Bibliothek (Dig.Bib) at www.digbib.org/Heinrich_Heine_1797/Almanson. For an analysis of the use and abuse of Heine's quote, see Theodor Verweyen, *Bücherverbrennungen: Eine Vorlesung aus Anlass des 65. Jahrestages der 'Action wider den undeutschen Geist'* (Heidelberg: Universitätsverlag Winter, 2000), pp. 1ff.
- 3 International Military Tribunal, *Trials of the Major War Criminals*, 41 vols (Nuremberg: Secretariat of the Tribunal, 1947–49), vol. 8, p. 319.
- 4 Zev Garber & Bruce Zuckerman, 'Why do we call the Holocaust "the Holocaust?" An inquiry into the psychology of labels', *Modern Judaism*, 9:2 (May 1989), 197–211.
- 5 Krystyna Zywułska, *I Came Back* (trans. Krystyna Cenkalska) (New York: Roy Publishers, 1951), pp. 16, 179–80.
- 6 George Steiner, *In Bluebeard's Castle: Some Notes Towards the Re-definition of Culture* (London: Faber & Faber, 1971), pp. 46ff.
- 7 Jorge Semprun, 'Une petite lampe s'est allumée dans la baraque des contagieux...', in Ariana Kalfa & Michaël de Saint Cheron (eds), *Élie Wiesel en Hommage* (Paris: Les Editions du Cerf, 1998), pp. 60–1; as quoted in Caroline Fournet, *The Crime of Destruction and the Law of Genocide: Their Impact on Collective Memory* (Aldershot: Ashgate, 2007), p. 32.
- 8 Adam S. Ferziger, 'Ashes to outcasts: cremation, Jewish law, and identity in early twentieth-century Germany', *AJS Review*, 36 (2012), 71–102, p. 73.
- 9 Nelly Sachs, *O the Chimneys: Selected Poems, Including the Verse Play, Eli* (trans. Michael Hamburger) (New York: Farrar, Straus & Giroux, 1967), pp. 2–3.

- 10 See Jean-Claude Pressac, *Auschwitz: Technique and Operation of the Gas Chambers* (New York: Beate Klarsfeld Foundation, 1989); Debórah Dwork & Robert Jan van Pelt, *Auschwitz: 1270 to the Present* (New York: Norton, 1996); Annegret Schüle, *Industrie und Holocaust: Topf & Söhne – Die Ofenbauer von Auschwitz* (Göttingen: Wallstein, 2010).
- 11 Gustave M. Gilbert, *Nuremberg Diary* (New York: Da Capo Press, 1995), pp. 249–50.
- 12 As quoted in Lucy S. Dawidowicz (ed.), *A Holocaust Reader* (New York: Behrman House, 1976), pp. 132–3.
- 13 J. A. Topf & Söhne Erfurt, Patent application, 'Kontinuierliche arbeitender Leichen-Verbrennungsofen für Massenbetrieb', Archive Auschwitz-Birkenau State Museum, Oswiecim, BW 30/44, 1f.
- 14 For the transcript of the interrogation see File 1/9 Topf & Söhne, in Gerald Fleming, *Hitler and the Final Solution*, augmented edition (Berkeley: University of California Press, 1984, 1994), pp. 204–5.
- 15 Decker was commissioned by the Berlin publisher Klaus Kunz, who was preparing a book on the future of a Nazi-ruled Europe based on the counterfactual assumption that Germany had won the Second World War. See Ralph Giordano, *Wenn Hitler den Krieg gewonnen hätte: Die Pläne der Nazis nach dem Endsieg* (Hamburg: Rasch & Röhling Verlag, 1989), pp. 277–9.
- 16 Report by Rolf Decker, 25 April 1985, on patent application T 58240 Kl. 24 for a 'Kontinuierliche arbeitender Leichen-Verbrennungsofen für Massenbetrieb', Auschwitz-Birkenau State Museum, Oswiecim, ms. BW 30/44.
- 17 The collections of the Osobyi Archive are now part of the Russian State Military Archive. Significant parts, including the interrogations of Sander and other Topf engineers, are available in microfilm at the archive of the United States Holocaust Memorial Museum.
- 18 Zygmunt Bauman, *Modernity and the Holocaust* (Ithaca: Cornell University Press, 1989), p. 122.
- 19 Claude Lanzmann, *Shoah: An Oral History of the Holocaust* (New York: Pantheon, 1985), pp. 71, 104.
- 20 Fleming, *Hitler and the Final Solution*, p. 204.
- 21 See Schüle, *Industrie und Holocaust*, pp. 327ff.
- 22 See Annette Weinke, *Die Verfolgung von NS-Tätern im Geteilten Deutschland* (Paderborn: Ferdinand Schöningh, 2002), pp. 76–160.
- 23 See Robert Neumann, *Ein Leichtes Leben* (Vienna: Kurt Desch, 1963), pp. 528–35.
- 24 Robert Neumann, *By the Waters of Babylon* (New York: Simon & Schuster, 1940), pp. 237–8.
- 25 Robert Neumann, *Ausflüchte unseres Gewissens: Dokumente zu Hitlers 'Endlösung der Judenfrage' mit Kommentar und Bilanz der politischen Situation* (Hannover: Verlag für Literatur und Zeitgeschehen, 1960), pp. 19, 45.
- 26 Robert Neumann with Helga Koppel, *Hitler: Aufstieg und Untergang des dritten Reiches* (Munich: Kurt Degesch, 1961), pp. 166–9, 178–9, 250–1.

- 27 Zywwulska, *I Came Back*, p. 165.
- 28 Robert Neumann with Helga Koppel, *The Pictorial History of the Third Reich* (New York: Bantam, 1962), p. xxix.
- 29 One of the first major studies that considered the technical aspects of the Auschwitz crematoria is Jean-Claude Pressac, 'Étude et réalisation des Krematorien IV et V d'Auschwitz-Birkenau', in Francois Furet (ed.), *L'Allemagne nazie et le genocide juif* (Paris: Gallimard & Le Seuil, 1985), pp. 539–86.
- 30 Harry Mulisch, *Criminal Case 40/61, the Trial of Adolf Eichmann: An Eyewitness Account* (trans. Robert Naborn) (Philadelphia: University of Pennsylvania Press, 2005), p. 171. Comparison of the texts of Mulisch's and Neumann's book proves beyond reasonable doubt that Mulisch took his information from Neumann. Interestingly, Mulisch did not acknowledge his debt to *Hitler: Aufstieg und Untergang des dritten Reiches*.
- 31 See Wim van Leer, *Time of My Life* (Jerusalem: Carta, 1984).
- 32 See Schüle, *Industrie und Holocaust*, pp. 327ff.
- 33 Letter from Wim van Leer to Harry J. Pollock, 3 March 1967, in the van Leer family archive, Jerusalem.
- 34 See Hannah Arendt, 'Thinking and moral considerations', in *Responsibility and Judgment* (New York: Schocken, 2003), pp. 159ff.
- 35 'Nazi death factory shocks Germans on a forced tour', *New York Times*, 18 April 1945, p. 8; US Army Signal Corps, *Nazi Concentration Camps*, James B. Donovan, E. Ray Kellogg & George C. Stevens, Nuremberg prosecution exhibit 230, RG-60.2629, Tape 2322, Archive at United States Holocaust Memorial Museum, Washington, DC (available at http://resources.ushmm.org/film/display/detail.php?file_num=219, accessed 27 May 2012).
- 36 DRP stands for *Deutsches Reichspatent*. This was the designation of a patent issued by the Reichspatentamt between 1919 and 1945. The number 861731 referred to the patent issued by the West German Patent Office in 1953, and hence the title is *formally* erroneous: it should have been DP 861731. In addition, the title is also *historically* erroneous, because DP 861731 was not based on the patent application of 1942.
- 37 Wim van Leer, *Patent Pending: A Play in Three Acts*, mimeographed typescript, Library Yad Vashem, Jerusalem, inventory no. 66-0545, pp. 23–5, 27.
- 38 *Ibid.*, pp. 30, 58, 60–4.
- 39 *Ibid.*, pp. 81, 88, 91–2.
- 40 *Ibid.*, p. 93.
- 41 A German translation was commissioned by Felix Bloch Erben publishers in Berlin, and made by the German journalist and scriptwriter Eckart Heinze (writing under the pseudonym Michael Mansfeld). The translation, entitled *Sonderbehandlung* (*Special Treatment*), contained many changes, and van Leer was very unhappy with the result. It was never performed. A copy of *Sonderbehandlung* is in the van Leer family archive.
- 42 Letter from Wim van Leer to Harry J. Pollock, 3 March 1967.

- 43 Richard Sennett, *The Fall of Public Man* (New York: Knopf, 1977), p. 259; Annette Wieviorka, *L'Ère du témoin* (Paris: Plon, 1998).
- 44 Isaiah 56:5.
- 45 On this trial, see Deborah E. Lipstadt, *History on Trial: My Day in Court with David Irving* (New York: Ecco, 2005).
- 46 See Robert Jan van Pelt, *The Case for Auschwitz: Evidence from the Irving Trial* (Bloomington: Indiana University Press, 2002).
- 47 See Wendie Ellen Schneider, 'Past imperfect: *Irving v. Penguin Books Ltd*, No. 1996-I-1113, 2000 WL 362478 (Q. B. Apr. 11), appeal denied (Dec. 18, 2000)', *Yale Law Journal*, 110 (2001), 1535.
- 48 Robert Jan van Pelt, 'Expert opinion written by Robert Jan van Pelt, D.Lit., Professor of Architecture at the University of Waterloo, Canada, on instructions of Davenport Lyons and Mishcon de Reya, Solicitors, for the purpose of assisting the Queen's Bench Division in the High Court in London in the case between David John Cawdell Irving, plaintiff, and Penguin Books Limited and Deborah E. Lipstadt, defendants'. An electronic version of this report is available at www.hdot.org/en/trial/defense/van (accessed 13 June 2013).
- 49 Van Pelt, 'Expert opinion', p. 534. For the electronic edition see <http://www.hdot.org/en/trial/defense/van/ix> (accessed 13 June 2013).
- 50 *Ibid.*, p. 535.
- 51 *Ibid.*, pp. 540–1.
- 52 High Court of Justice, Queen's Bench Division, 1996-I-1113, *Irving v. Penguin and Lipstadt* transcripts, day 9 (25 January 2000), pp. 139–43. For the electronic edition see www.hdot.org/en/trial/transcripts/day09/pages136-140 and www.hdot.org/en/trial/transcripts/day09/pages141-145 (accessed 13 June 2013).
- 53 *Ibid.*, transcripts, day 11 (28 January 2000), p. 161. For the electronic edition see www.hdot.org/en/trial/transcripts/day11/pages161-165 (accessed 13 June 2013).
- 54 *Ibid.*, transcripts, day 11 (28 January 2000), p. 163. For the electronic edition see www.hdot.org/en/trial/transcripts/day11/pages161-165 (accessed 13 June 2013).
- 55 *Ibid.*, transcripts, day 11 (28 January 2000), p. 166. For the electronic edition see www.hdot.org/en/trial/transcripts/day11/pages166-170 (accessed 13 June 2013).
- 56 The judgement was published in book form: Charles Gray, *The Irving Judgement: David Irving v. Penguin Books and Professor Deborah Lipstadt* (Harmondsworth: Penguin Books, 2000). An electronic edition is available at www.hdot.org/en/trial/judgement (accessed 13 June 2013).
- 57 Gray, *The Irving Judgement*, p. 323. For the electronic edition see www.hdot.org/en/trial/judgement/13.40 (accessed 13 June 2013).
- 58 *Ibid.*

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