

‘Electroshock Therapy’ in the Third Reich

LARA RZESNITZEK ^{1*} and SASCHA LANG

Institute for the History of Medicine Charité, Institut für Geschichte der Medizin,
Charité - Universitätsmedizin Berlin Thielallee 71, 14195 Berlin Germany

Abstract: The history of ‘electroshock therapy’ (now known as electroconvulsive therapy (ECT)) in Europe in the Third Reich is still a neglected chapter in medical history. Since Thomas Szasz’s ‘From the Slaughterhouse to the Madhouse’, prejudices have hindered a thorough historical analysis of the introduction and early application of electroshock therapy during the period of National Socialism and the Second World War. Contrary to the assumption of a ‘dialectics of healing and killing’, the introduction of electroshock therapy in the German Reich and occupied territories was neither especially swift nor radical. Electroshock therapy, much like the preceding ‘shock therapies’, insulin coma therapy and cardiazol convulsive therapy, contradicted the genetic dogma of schizophrenia, in which only one ‘treatment’ was permissible: primary prevention by sterilisation. However, industrial companies such as Siemens–Reiniger–Werke AG (SRW) embraced the new development in medical technology. Moreover, they knew how to use existing patents on the electrical anaesthesia used for slaughtering to maintain a leading position in the new electroshock therapy market. Only after the end of the official ‘euthanasia’ murder operation in August 1941, entitled T4, did the psychiatric elite begin to promote electroshock therapy as a modern ‘unspecific’ treatment in order to reframe psychiatry as an ‘honorable’ medical discipline. War-related shortages hindered even the then politically supported production of electroshock devices. Research into electroshock therapy remained minimal and was mainly concerned with internationally shared safety concerns regarding its clinical application. However, within the Third Reich, electroshock therapy was not only introduced in psychiatric hospitals, asylums, and in the Auschwitz concentration camp in order to get patients back to work, it was also modified for ‘euthanasia’ murder.

Keywords: History of Psychiatry, Electroshock, Convulsive Therapy, National Socialism, Euthanasia

* Email address for correspondence: lara.rzesnitzeck@charite.de

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Introduction

Seventy-seven days before the outbreak of the Second World War, the German-language neurological and psychiatric journal *Zentralblatt* announced 'a new, revolutionary method in the shock therapy of schizophrenia coming from Rome'.¹ A method, as well as suitable apparatus, had apparently been found which superseded the 'convulsive therapy' of schizophrenia, which had been introduced by Ladislav Meduna (1896–1964) in 1934 and relied on epileptic seizures triggered with camphor or pentylenetetrazol (Cardiazol).

That same year, the new treatment was indeed introduced in many countries in Europe, and in Japan,² Latin America and the USA.³ With regards to Europe, however, it is assumed that National Socialism played a decisive role in the introduction of this new shock therapy. The research literature not only emphasises the flight of doctors and scientists of Jewish descent or faith from National Socialism,⁴ but particularly supports the thesis that the introduction of the new technology in the Third Reich had drawn special interest from high-ranking officials of the Nazi regime. 'Electroshock therapy' (now known as electroconvulsive therapy (ECT)) 'was swiftly integrated into the dialectics of healing and killing typical of medicine in Nazi Germany'.⁵

Since Szasz's article 'From the Slaughterhouse to the Madhouse', the invention of electroshock therapy has generally been regarded as 'modern therapeutic totalitarianism'.⁶ Social histories such as Braslow's *Mental Ills and Bodily Cures* seem to have reinforced the view popularised by *One Flew Over the Cuckoo's Nest* of electroshock therapy as a 'treatment' to enforce discipline inside the repressive regime of a psychiatric hospital.⁷ Furthermore, it is frequently assumed that if electroshock therapy was indeed

¹ Selzer, 'Cerletti e Bini: L'elettroshock', *Zentralblatt für die gesamte Neurologie und Psychiatrie, Referateteil*, 93 (1939), 486.

² G. Yasukoti G and H. Mukasa, 'Elektroshocktherapie der Schizophrenie', *Fukuoka Act Med*, 32, 8 (1939), 81–3, cited in: Anton von Braunmühl, 'G. Yasukoti and H. Mukasa, "Elektroshocktherapie der Schizophrenie"', *Zentralblatt für die gesamte Neurologie und Psychiatrie, Referateteil*, 96 (1940), 167.

³ Edward Shorter and David Healy, *Shock Therapy: A History of Electroconvulsive Treatment in Mental Illness* (New Brunswick, NJ: Rutgers University Press, 2007).

⁴ Uwe Hendrik Peters, 'Die Einführung der Schockbehandlungen und die psychiatrische Emigration', *Fortschritte der Neurologie und Psychiatrie*, 60 (1992), 356–65.

⁵ Hans-Walter Schmuhl and Volker Roelcke (eds), *'Heroische Therapien': Die deutsche Psychiatrie im internationalen Vergleich 1918–1945* (Göttingen: Wallenstein, 2013), 10; Angelika Ebbinghaus, 'Kostensenkung, Aktive Therapie und Vernichtung: Konsequenzen für das Anstaltswesen', in Angelika Ebbinghaus, Heidrun Kaupen-Haas and Karl Heinz Roth (eds), *Heilen und Vernichten im Mustergau Hamburg, Bevölkerungs- und Gesundheitspolitik im Dritten Reich* (Hamburg: Konkret Literatur, 1984), 136–46; Hans-Ludwig Siemen, 'Psychiatrie im Nationalsozialismus', in Michael von Cranach (ed.), *Psychiatrie im Nationalsozialismus: Die bayerischen Heil- und Pflegeanstalten zwischen 1933 und 1945* (Munich: Oldenbourg, 1999); Götz Aly, 'Forschen an Opfern', in Götz Aly (ed.), *Aktion T4 1939–1945: Die 'Euthanasie'-Zentrale in der Tiergartenstrasse 4* (Berlin: Hentrich, 1987), 153–60: 159; Michael Hubenstorf, 'Tote und/oder lebendige Wissenschaft: Die intellektuellen Netzwerke der NS-Patientenmordaktion in Österreich', in Eberhard Gabriel and Wolfgang Neugebauer (eds), *Zur Geschichte der NS-Euthanasie in Wien, Teil 2: Von der Zwangssterilisation zur Ermordung* (Vienna: Böhlau, 2002), 237–420; Herwig Czech, 'Abusive medical practices on "euthanasia" victims in Austria during and after World War II', in Sheldon Rubenfeld and Susan Benedict (eds), *Human Subjects Research after the Holocaust* (Cham, Switzerland: Springer International, 2014), 109–25.

⁶ Thomas S. Szasz, 'From the Slaughterhouse to the Madhouse', *Psychotherapy: Theory, Research and Practice*, 8 (1971), 64–7: 67.

⁷ Joel Braslow, *Mental Ills and Bodily Cures: Psychiatric Treatment in the First Half of the Twentieth Century* (Berkeley, CA: University of California Press, 1997). See Ken Kesey, *One Flew Over the Cuckoo's Nest* (Toronto: Signet Book/NAL, 1962), or, more relevant still, the movie of the same title (USA, 1975); Erving Goffman,

a disciplinary medical therapy, then its introduction and application in the Third Reich must have been particularly cruel. Indeed, such highly regarded historical research on the Third Reich and the ‘euthanasia’ murders as Henry Friedlander’s *The Origins of Nazi Genocide: From Euthanasia to the Final Solution* claims that during the Nazi period, electroshock was no therapy, but rather a treatment used to ‘inflict torture’.⁸ Within the Third Reich, it had ‘finally’ been the ‘bureaucratic apparatus for organising the mass murder of mentally disabled and mentally ill people which under the conditions of war economy provided German psychiatric hospitals with the apparatuses necessary for electroconvulsive therapy’ and which considered the establishment of institutes for investigating the new technology.⁹

Although most histories of electroshock therapy failed to engage with the complexities of the existence of electroshock therapy in the Third Reich,¹⁰ preliminary investigations on the chronology of the introduction and implementation of the new therapy in Europe and especially in Germany raise doubts as to whether National Socialist health policy favoured the introduction of the new shock therapy for the German Reich, or whether it in fact delayed it.¹¹ Following this line of enquiry, our article proposes a chronological analysis of the invention and subsequent introduction of electroshock therapy in the Third Reich and occupied territories. The extent to which there was a special ‘therapeutic enthusiasm’ concerning electroshock within the Third Reich is queried, as well as the existence of state-subsidised research institutions with the explicit purpose of studying and promoting electroshock therapy.

Our analysis relies on an exhaustive review of contemporary international publications as well as on archival records, including medical files from several countries in Europe and the USA.

Methodologically, a ‘social construction of technology’ perspective is taken to show how medical science worked relative to its social context. The ways in which new scientific knowledge was acquired and put into practice were many-faceted, and dependent on

Asylums. Essays on the Social Situation of Mental Patients and Other Inmates (Garden City NY: Doubleday, 1961); Timothy W. Kneeland and Carol A. B. Waren, *Pushbutton Psychiatry: A History of Electroshock in America* (Westport, CT: Greenwood Publishing, 2002).

⁸ Henry Friedlander, *The Origins of Nazi Genocide: From Euthanasia to the Final Solution* (Chapel Hill, NC: The University of North Carolina Press, 1995), 169: ‘a machine designed to give electroshock treatments and thus inflict torture’; Ebbinghaus, *op. cit.* (note 5), 142: ‘Elektroschockbehandlung ist keine Therapie’.

⁹ Schmuhl and Roelcke, *op. cit.* (note 5), 16 and 10; Hubenstorff, *op. cit.* (note 5), 375.

¹⁰ See Shorter and Healy, *op. cit.* (note 3); Robert Passione, ‘Italian Psychiatry in an International Context: Ugo Cerletti and the Case of Electroshock’, *History of Psychiatry*, 15 (2004), 83–104; German E. Berrios, ‘The Scientific Origins of Electroconvulsive Therapy: A Conceptual History’, *History of Psychiatry*, 8 (1997), 105–119; Norman Endler, ‘The Origins of Electroconvulsive Therapy (ECT)’, *Convulsive Therapy*, 4 (1988), 5–23.

¹¹ See Lara Rzesnitzeck, ‘Lothar B. Kalinowsky und die Einführung der Elektrokrampftherapie in Europa: Die verflochtene Geschichte eines “zufälligen” Aufbruchs “wider Willen”?’ in Schmuhl and Roelcke (eds), *op. cit.* (note 5), 200–15; Isabelle von Buelzingsloewen, ‘Un fol espoir thérapeutique? L’Introduction de l’électrochoc dans les hôpitaux psychiatriques français (1941/1942–1945)’, *Annales historiques de l’électricité*, 8 (2010), 93–104; Rudolf Nowak, ‘Zur Frühgeschichte der Elektrokrampftherapie in der deutschen Psychiatrie’ (unpublished PhD thesis: University of Leipzig, 2000); Lara Rzesnitzeck, ‘“Schocktherapien” im nationalsozialistischen Deutschland: Am Beispiel der Berliner Psychiatrie’, *Nervenarzt*, 85 (2013), 1175–81; Holm Krumpolt, ‘Die Auswirkungen der nationalsozialistischen Psychiatriepolitik auf die sächsische Landesheilanstalt Großschweidnitz im Zeitraum 1939–45’ (unpublished PhD thesis: University of Leipzig, 1995); Erik Robert Heintz, ‘Die Einführung der Elektrokrampftherapie an der Psychiatrischen und Nervenklinik der Universität München 1941 bis 1945’ (unpublished PhD thesis: Ludwig Maximilian University of Munich, 2004); Hendrik van den Bussche, ‘Personalprobleme, Disziplinäre Krise und Selbstdeprofessionalisierung der Psychiatrie im Nationalsozialismus’, *Schriftenreihe der Deutschen Gesellschaft für Geschichte der Nervenheilkunde*, 21 (2015), 127–169.

the diverging interests of physicians, industrial companies, mental health politics and the exigencies of total war. Our article describes how the changing medico-political and economic context during the Third Reich and the Second World War not only shaped the design of the devices for electroshock therapy but actually reversed their function as tools of medical therapy.¹²

The Italian Invention of 'Electroshock Therapy': From a Science of Epilepsy to a Therapy of Schizophrenia

In the spring of 1936, Ugo Cerletti (1877–1963), director of the psychiatric–neurological university hospital in Rome since 1935, sent his assistants to Vienna to study a new therapy for schizophrenia which had been recently introduced there, Meduna's 'convulsive therapy'. Its principle was the injection of a pharmacological substance able to provoke a generalised epileptic seizure, the hypothesis being that this had a healing effect on schizophrenia.

Cerletti, with his longstanding research on epilepsy, immediately responded to the report of his assistants on their Vienna observations with the idea of modifying Meduna's procedure with the use of electricity instead of a pharmacological substance. In his epilepsy experiments on dogs, Cerletti had already used electrical provocation to study histopathological brain changes following multiple epileptic seizures. However, until then, he had been reluctant during these experiments to attach the electrodes to the head of the dogs 'in view of the fact that the passage of an electric current through the brain several times might also produce some histological alterations'.¹³ Yet the method with one electrode in the mouth and the other in the rectum was relatively dangerous as the current passed the heart and led to the death of several of Cerletti's dogs. Therefore, still in October 1936, Cerletti entrusted his technically experienced assistant, Dr Lucio Bini (1908–64), with further studies on examining the possibility of safely causing epileptic seizures by applying electric current to the head. The initial results of these tests in dogs, utilising equipment designed by Bini, were presented in May 1937 at an international conference in Switzerland on 'The Therapy of Schizophrenia: Insulin Shock, Cardiazol, Permanent Sleep'.

In contrast to the intravenous pharmacologic induction of epileptic seizures, electricity promised to be simpler, more reliable and less terrifying for the patient, as the application of the electric current immediately resulted in a loss of consciousness.¹⁴ Motivated by this therapeutic concern, Cerletti wished to change a technique initially developed to study the neurohistopathology of epilepsy into a therapy of schizophrenia; the technique constructed for medical research was reshaped to enable medical therapy. It is evident, therefore, that the 'electroshock' idea was not born in the Roman slaughterhouse and it was not primarily tested on pigs as Szasz suggests with his 'From the Slaughterhouse to

¹² See Wiebe E. Bijker, Thomas P. Hughes and Trevor J. Pinch (eds), *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (Cambridge, MA: MIT Press, 1987); Bruno Latour, *Pandora's Hope: Essays on the Reality of Science Studies* (Cambridge, MA: Harvard University Press, 1999).

¹³ Ugo Cerletti, 'Electroshock therapy', in Arthur M. Sackler *et al.* (eds), *The Great Physiodynamic Therapies in Psychiatry* (New York: Hoeber-Harper, 1956), 91–120: 91; compare: Lothar Kalinowsky, 'Lothar B. Kalinowsky', in Ludwig J. Pongratz (ed.), *Psychiatrie in Selbstdarstellungen* (Berne: Hans Huber), 147–64, 154.

¹⁴ For a quick overview see Berrios, *op cit.* (note 10).

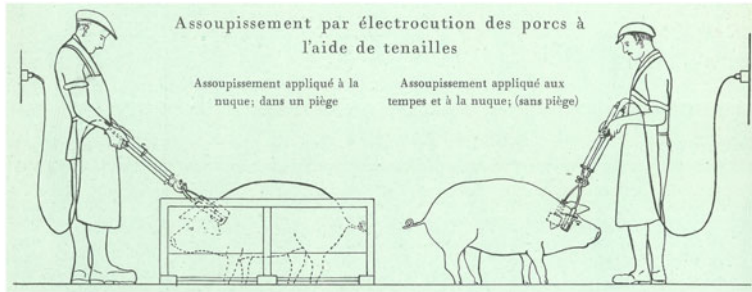


Figure 1: Illustration of pig's anaesthesia with the electrode holder. Source: excerpt from a French brochure by Lotterschmidt & Weinberger, without any date, Siemens MedArchives, Erlangen, Germany.

the Madhouse' story.¹⁵ On the contrary, Cerletti had been quite reluctant to proceed to a clinical application:

This possibility [of using electricity to induce convulsions in people as they were then produced by cardiazol] was often discussed at our Institute and particularly when observing, after cardiazol injections, the painful reactions which shook fully conscious patients for over a minute – as a result most of them refused the subsequent treatments. However, the idea of submitting man to convulsant electric discharges was considered utopian, barbaric, and dangerous: in everyone's mind was the spectre of the 'electric chair'. And I myself found in the literature on electrology reports on death in man caused by electric currents of lower voltage than that used on our experimental dogs.¹⁶

However, there is some truth in the slaughterhouse myth. Indeed, Cerletti continued in his autobiographical notes to say that it was 'a chance occurrence' involving some new electrical equipment at the slaughterhouse in Rome that allowed him to make the next step. Having been told at first that here 'hogs were killed by electric current', Cerletti first saw this information 'confirm' his 'doubts regarding the danger of electric applications in man'. However, having gone to the slaughterhouse 'to observe this so called "electric slaughtering"', he realised that it was a technique for anaesthesia; the pigs were killed by other means while unconscious.

In fact, the Roman slaughterhouse was equipped with a new innovative electrical anaesthesia for pigs that had been developed between 1927 and 1930 and which in 1934 was already being sold throughout Europe, especially in Italy and the Nordic countries (see figure 1).¹⁷

Realising the astonishing similarities between this procedure and his experiments with dogs,¹⁸ Cerletti realised 'that the hogs of the slaughterhouse could furnish the most valuable material' for his investigations, which he again put in Bini's hands as soon as Bini had returned from the schizophrenia conference in Switzerland. The chief veterinarian, Professor Ettore Torti, indeed allowed Bini further experiments to study the safety margin of the applied current. The result of these tests on pigs was that 'there was a clear difference

¹⁵ Szasz, *op. cit.* (note 6); Ebbinghaus, *op. cit.* (note 5), 142; Cornelius Borck, *Hirnströme* (Göttingen: Wallstein, 2005), 253; compare also: Lothar Kalinowsky, 'The Discoveries of Somatic Treatments in Psychiatry: Facts and Myths', *Comprehensive Psychiatry*, 21, (1980), 428–35.

¹⁶ Cerletti, *op. cit.* (note 13), 92.

¹⁷ See further: Lara Rzesnitzek and Sascha Lang, 'A Material History of Electroshock Therapy: "Electroshock" Technology in Europe until 1945', *NTM Journal of the History of Science, Technology, and Medicine* 24, (2016), 251–77.

¹⁸ See 'the hogs were clamped at the temples with big metallic tongs which were hooked up to an electric current (125 volts). As soon as the hogs were clamped by the tongs, they fell unconscious, stiffened, then after a few seconds they were shaken by convulsions in the same way as our experimental dogs', Cerletti, *op. cit.* (note 13), 92.

between the time necessary for a current to provoke a "fit" (<1s) and the time necessary to provoke the death of an animal (60–150s)', a safety margin big enough to make Cerletti dare to undertake the first clinical applications.¹⁹

The story of these first trials on sick people in the Roman Clinic has been written several times.²⁰ Remarkably, the first trial was conducted in secret for fear of a major incident.²¹ Cerletti was already 60 years old and a renowned authority in the field of neurology and psychiatry, and he was cautious of losing his reputation. In any case, the 'Maestro', as he was called, did not need to discover something 'new' that would grant him his first academic position. The fact that Cerletti did choose a newly admitted patient, instead of a well-known patient of his own, has been widely critiqued; however, in the light of the history of human experimentation in medicine, it appears neither as a feature exclusively characteristic of psychiatry and neurology, nor even of medicine in the Third Reich or in Europe.²²

The new 'electro-convulsive' method proved so convincing that Cerletti dared to present the results as early as 28 May 1938 to the Royal Medical Academy in Rome; they were published in Italian professional magazines as 'electric shock' (*l'elettroshock*). The method was geared initially to apply a weak calibration current to two electrodes fixed with a special supporting structure to the patient's head, to be able to measure the so-called head resistance. On the basis of this value, a suitable voltage could subsequently be selected so that the electricity flowing through the patient's head via the same electrodes for fractions of a second would cause an epileptic seizure. Bini's construction was patented and the production of the 'electroshock' apparatuses taken over in exclusive licence by the Milanese Company Officine Elettrotecniche Italiane Ing. Vittorio Arcioni S.a.s. (Arcioni) (see figure 2).²³

However, in the first half of 1939, the new method 'hardly attract[ed] any interest', as Max Müller (1894–1980), who had organised the Swiss conference on the pharmacological shock therapies, later remembered. The apparatus developed by the Italians was a trade secret of the company Arcioni and 'difficult to get so that nobody was really keen on this apparently risky and still little tested method'.²⁴

Max Müller was nevertheless to apply 'electroshock therapy' for the first time outside Italy and launch it in Switzerland as early as November 1939. What motivated him to do so was an advertising visit by a German emigrant of Jewish origin, Lothar Kalinowsky (1899–1992), and a follow-up letter written by him from the Italian clinic.²⁵

¹⁹ Ferdinando Accornero, 'An Eyewitness Account of the Discovery of Electroshock', *Convulsive Therapy*, 4 (1988), 40–9: 44.

²⁰ David Impastato, 'The Story of the First Electroshock Treatment', *American Journal of Psychiatry*, 116 (1960), 1113–4; Accornero, *op. cit.* (note 19), Richard Abrams, 'Interview with Lothar Kalinowsky, M.D.', *Convulsive Therapy*, 4 (1988), 24–39: 30; Shorter and Healy, *op. cit.* (note 3), 37–43.

²¹ Abrams, *op. cit.* (note 20), 30.

²² See Susan Lederer, *Subjected to Science: Human Experimentation in America before the Second World War* (Baltimore, MD: Johns Hopkins University Press, 1995).

²³ Archivio Ministero dell'Industria del Commercio e dell'Artigianato, Ufficio Italiano Brevetti e Marchi, serie Invenzioni: 'Apparecchio per applicazioni elettriche'/Numero fascicolo, 369–762.

²⁴ Max Müller, *Erinnerungen: Erlebte Psychatriegeschichte 1920–1960* (Berlin: Springer, 1982), 246.

²⁵ Müller, *op. cit.* (note 24), 246; the guestbook of the mental hospital Münsingen documents Kalinowsky's visit on 6 May 1938; in the Berne archives estate of Max Müller, there is the letter by Lothar B. Kalinowsky to Max Müller dated 19 March 1939—the authors thank Urs Germann for this suggestion; see further: Lara Rzesnitzeck, 'Lothar B. Kalinowsky und die Einführung der Elektrokrampftherapie in Europa', *op. cit.* (note 11); Lara Rzesnitzeck, "'A Berlin Psychiatrist with an American Passport": Lothar Kalinowsky, Electroconvulsive Therapy and International Exchange in the Mid-Twentieth Century', *History of Psychiatry*, 26 (2015), 433–51.



Figure 2: Illustration: Italian manual 'Apparecchio per l'elettroshock – brevetto Prof. Bini', 1939. Source: Collection Dolhuys, Museum van de Geest, Haarlem, The Netherlands.

Two months after Müller, in French-speaking Switzerland, Oscar Louis Forel (1891–1982) started to administer regular treatments to patients in Prangins at the psychiatric hospital which he had founded. After the first 262 sessions, within eight months, he highly recommended the therapy.²⁶ Consequently, with Italy's entry into the war, Müller wanted to avoid the possibility that the supply of the devices he required for this very promising therapy might be threatened, and so he gave his Arcioni apparatus to Purtschert & Co. in Luzern for reproduction.²⁷

The Way to the First German Experiences and the Siemens Konvulsator

Only a few days before the German invasion of Poland, Bini and Cerletti presented their research results from already 3000 cases of artificial inducement of epileptic seizures in humans at the Third International Congress for Neurology in Copenhagen in August 1939 in a special section on epilepsy.²⁸

This announcement of electroshock therapy did not remain without consequences.²⁹ Young psychiatrists such as the German Adolf Bingel (1901–82) or the Danish Arild Faurbye (1907–83), who had taken part, were enthusiastic about this new area of research and the excellent opportunities it offered for a scientific career. Immediately upon their return from Copenhagen, they sought support from engineers to construct a device with

²⁶ Oscar Luis Forel, 'L'Électrochoc en psychiatrie', *Annales Médico-Psychologiques* XV série, 99 année (1941), 32–40.

²⁷ Müller, *op. cit.* (note 24), 247.

²⁸ Lucio Bini, 'Der durch elektrischen Strom erzeugte Krampfanfall', in Knud Winther and Knud H. Krabbe (eds), *III Congrès Neurologique International, Copenhague 21–25 Août 1939, Comptes Rendus des Séances* (Copenhagen: Einar Munksgaard, 1939), 706–8; Ugo Cerletti and Lucio Bini, 'Der Elektroschock in der Neurologie', in *op. cit.* (note 28), 709.

²⁹ See further: Rzesnitzeck and Lang, *op. cit.* (note 17), 259–60.

which they could examine the promising Italian work on 'electroshock'. Faurbye started his first treatments in November 1940:³⁰ Bingel, who had been senior physician at the university psychiatric and mental hospital in Erlangen since 1937,³¹ began in December 1939. This early German start in Germany was made possible because Erlangen had the head office of the electro-medical research laboratory of Siemens-Reiniger-Werke (SRW), the leading company for medical technology in the German Reich. Its head, the physicist and mathematician Johannes Pätzold (1907–80), had already developed an interest in the method and its apparatus by the time of the Copenhagen Congress, although he was himself more concerned with high-frequency therapy techniques.³² Indeed, by the summer of 1939, SRW had requested a report about the medical usefulness of the new 'convulsion' therapy and the Arcioni device.³³ SRW had asked Oswald Bumke (1877–1950), the director of the psychiatric clinic at the Ludwig Maximilian University of Munich, who was also editor of the reference work *Handbook of Mental Diseases*, for an expert opinion, because Munich had obtained an Arcioni apparatus as early as July 1939 thanks to Lothar Kalinowsky. However, it was not until October 1941 that Bumke stated that, despite his predictions, the new convulsive therapy did produce positive results with those suffering from schizophrenia and other mental illnesses and that the treatment was therefore to be recommended.³⁴

Bingel's boss, the medical director and chair of the Erlangen clinic, Friedrich Meggendorfer (1880–1953), had been less sceptical about the new therapy. On 3 February 1940, Bingel and Meggendorfer could thus describe their treatments as 'the first German tests', started in December 1939 with an apparatus produced by SRW.³⁵

Following this, Bingel was appointed 'Adj. Professor' in 1940. Meggendorfer, who had been appreciated in the early 1930s for his genetic studies on Huntington's disease and his eugenic thinking on 'moral insanity', or personality failures, saw in the official congratulations on his sixtieth birthday that the 'success' of having been the first German psychiatrist to embrace the new therapy was not mentioned at all. The congratulations were written by Ernst Rüdin (1874–1952), who at this time viewed electroshock therapy, like both insulin coma and cardiazol-convulsive therapies, as a contradiction of the genetic view of endogenous psychoses, especially with regards to schizophrenia.³⁶ Rüdin had been the major proponent of the Expert Committee on Questions of Population and Racial

³⁰ Jesper Vaczy Kragh, 'The Origins of Electroconvulsive Therapy in Denmark', *Journal of ECT*, 25 (2009), 270–3.

³¹ See Birgit Braun and Johannes Kornhuber, 'Adolf Abraham Gustav Bingel (1901–1982): Pionier der Elektrokonvulsionsbehandlung in Deutschland', *Fortschritte der Neurologie und Psychiatrie*, 81 (2013), 586–91.

³² Pätzold completed his post-doctoral qualification (*Habilitation*) in 1940 with this subject. He had been employed as a developmental engineer since 1930, and between 1943 and 1945 was head of the entire technical development of SRW.

³³ Memo Pätzold dated 6 December 1939; patent department SRW-Erlangen to Bini, 9 December 1939, Siemens MedArchives intermediate archive (SMAZ), Electric-Medical Laboratory (E-Lab), technical development, direct current and low frequency applications (electroshock) [unsigned, abbreviated E1 in the following].

³⁴ Report by SRW-Erlangen about a trip to Munich on 7 and 8 October 1941, 10 October 1941, SMAZ, E-Lab, E1; it fits that it is only from March 1941 that usage of electroshock therapy can be proven in the medical files of the Munich clinic, compare Heintz, *op. cit.* (note 11), 31.

³⁵ Anton Bingel and Friedrich Meggendorfer, 'Über die ersten deutschen Versuche einer Elektrokrampfbehandlung der Geisteskrankheiten', *Psychiatrisch-Neurologische Wochenschrift*, 42 (1940), 41–43.

³⁶ Matthias Hamann-Roth, *Die Einführung der Insulinschocktherapie im Deutschen Reich 1935 bis 1937: Studien zur Geschichte der Medizin im Nationalsozialismus Band 2* (Wetzlar: GWAB, 2000); Rzesnitzek, 'Schocktherapien', *op. cit.* (note 11).



Figure 3: Illustration: Konvulsator. Source: advertising brochure 1942, Siemens MedArchives, Erlangen, Germany.

Policy that had prepared the scientific justification for the Law for the Prevention of Hereditarily Diseased Offspring passed in 1934.³⁷ The law enabled forced sterilisation in over 400 000 cases of schizophrenia, epilepsy, Huntington's disease, hereditary blindness or deafness, congenital mental deficiency or manic depressive illness until the end of the Third Reich.

In spite of this initial reluctance towards the new therapy due to the preponderance of genetic thinking in German psychiatry and Nazi mental health politics, SRW were able to present a genuinely German electroshock apparatus under the name Konvulsator at the end of June 1940 (see figure 3). In the light of some patent queries because of Bini's application for a German patent, the patent department of SRW had consciously chosen the name Konvulsator to distinguish their equipment from the Italian *l'elettroshock*.

Pätzold had succeeded in changing the construction in such a way that the elements of Bini's device which were most relevant for the patent had in any case been avoided; the circuit omitted the preceding resistant measurement and also enabled the direct adjustment of the current in mA.³⁸ Additionally, and in contrast to the Italian electrode clip or forceps 'maximally compressing the electrodes together and pressing them strongly against the skin', SRW's electrodes were to be 'simply rested on the head' – as Bingel and Meggendorfer had proposed. A similar construction was used by an English apparatus also developed in 1939.³⁹

³⁷ Matthias M. Weber, 'Ernst Rüdin, 1874–1952: A German Psychiatrist and Geneticist', *American Journal of Medical Genetics*, 67 (1996), 323–31; Volker Roelcke, 'Ernst Rüdin: Renomierter Wissenschaftler, radikaler Rassenhygieniker', *Nervenarzt*, 83 (2012), 303–310. Jay Joseph and Norbert A. Wetzel, 'Ernst Rüdin: Hitler's Racial Hygiene Mastermind', *Journal of the History of Biology*, 46 (2013), 1–30; see also: Robert Proctor, *Racial Hygiene: Medicine Under the Nazis* (Cambridge, MA: Harvard University Press, 1988).

³⁸ Johannes Pätzold, 'Das Gerät zur Elektrokrampferzeugung und seine physikalischen Grundlagen', *Deutsche Medizinische Wochenschrift*, 42 (1940), 1157–1160; see further on the patent issues: Rzesnitzeck and Lang, *op. cit.* (note 17), 260–2.

³⁹ Gerald Flemming, Frederick Golla and Grey Walter, 'Electric-Convulsion Therapy of Schizophrenia', *Lancet*, 234 (1939), 1353–5.



Figure 4: Illustration: Elkra I and Elkra II. Source: Bundesarchiv R 96 I-12.

Having bypassed Bini's 'electroshock' patent, SRW saw themselves confronted with another competitive construction built by the Vienna-based company Reiner & Co. It was developed by a graduate technician and psychiatrist at the Vienna University Psychiatric Clinic, Wolfgang Holzer (1906–80), who had been given the order to scrutinise the Arcioni device and to adapt it to the needs of the Vienna clinic. Elkra I, a large standalone unit with an additional electrode holder, was constructed, and then Elkra II, where the entire apparatus was directly attached to the forceps (see figure 4).⁴⁰

Holzer had regarded it as 'established' that 'suitably sized electrode holders proved to be considerably better than electrode appliances attached by means of headbands' because the latter 'frequently could not even be attached to unsettled patients'.⁴¹ Moreover, with Holzer's Elkra II, the treating physician was able to position the electrodes on the patient's head and simultaneously activate the treatment current without requiring additional staff.

This advantage 'to enable shocking even the most unsettled patients in a comfortable manner' had quickly piqued the interest of psychiatric hospitals even if 'due to the war events it was difficult to get such an apparatus'.⁴² For example, the Heilanstalt für Kopfverletzte und Nervenranke, another Viennese clinic, which since the 1930s had distinguished itself through a special commitment to new therapies including 'convulsion therapy',⁴³ bought an Elkra II in spite of having been one of the first clinics to own a Konvulsator produced by SRW.

⁴⁰ Wolfgang Holzer, 'Über die Methodik der Elektroschocktherapie', *Allgemeine Zeitschrift für Psychiatrie*, 118 (1941), 357–379; Wolfgang Holzer, 'Über eine Entwicklungsreihe von Elektroschockgeräten', *Allgemeine Zeitschrift für Psychiatrie*, 121 (1942), 124–40.

⁴¹ W[olfgang] Holzer, A[nna] Klaua, H[erbert] Reisner, 'Erfahrungen mit der Elektroschocktherapie', *Allgemeine Zeitschrift für Psychiatrie*, 120 (1942), 119–45; 121.

⁴² Otto Buchner, 'Erfahrungen bei über 1500 Elektroschockfällen', *Psychiatrisch-Neurologische Wochenschrift*, 44 (1942), 97–100.

⁴³ Otto Buchner, *Systematische Arbeits- und Beschäftigungstherapie* (Vienna and Leipzig: Gerold, 1937).

Within the Elkra II design, the ‘electrode forceps’ was an integral part of the overall device. This made SRW find a remarkable way to protect themselves against Elkra II as competitor in the sales area of electroshock therapy in the German Reich, to which Austria officially belonged since the ‘Anschluss’ of 1938. SRW claimed to have a patent on the ‘electrode forceps’: the Deutsche Reichspatent (D.R.P.) 578 532 for ‘the forceps form of the anaesthesia device’ – for the electrical anaesthesia of animals to be slaughtered⁴⁴ – precisely the technique that Bini had studied in the Roman slaughterhouse to test the safety margin of the application of electricity to the head.

As SRW turned to Reiner & Co. to assert claims from this patent on the holder electrode of Elkra I and II, Holzer responded with indignation:

the subordination of electroshock under the broader term anaesthesia and of patients under animals to be slaughtered [...] shall represent a unique curiosity for a leading electromedicine company. It does not apply for the patients in my sphere of influence.⁴⁵

In March 1941, Reiner & Co. nevertheless began to consider a contractual agreement with SRW for a ‘simple non-transmittable licence’ ‘regarding a “device for anaesthetizing animals to be slaughtered”’. In turn, Reiner & Co. committed themselves to pay a licence fee to the amount of one per cent from the list price of the apparatus for all electroshock devices produced and sold by Reiner & Co.

Meanwhile, SRW got help from Anton Edler von Braunmühl (1901–57), at the mental hospital Eglfing-Haar, to also develop more comfortable electrodes, which were pressed to the patient’s head and which enabled the current release at the same time (see figure 5). Braunmühl had been the main protagonist of insulin coma therapy and cardiazol-convulsive therapy in the Third Reich. As early as 1939, he had urged SRW to give him a Konvulsator prototype for testing the new therapy which he had learnt about on a trip to Italy. In 1944, Braunmühl gained his postdoctoral qualification (*Habilitation*) in Munich thanks to his clinical research into shock therapies.⁴⁶

Holzer’s career became frozen. Although his electroshock developments as well as his comprehensive book *Physikalische Medizin in Diagnostik und Therapie* would have met by far the requirements to qualify for a *Habilitation*, this did not happen during the Nazi period.⁴⁷ Still, in September 1944, Holzer tried to get support for his research in electroshock therapy; however, his idea of a whole scientific institute for investigating electroshock was never realised.⁴⁸

⁴⁴ Compilation of protective rights ‘concerning electrical animal anaesthesia and to which we are entitled’, 1 November 1938, SMAZ, E-Lab, technical development, direct current and low frequency use (anaesthesia apparatuses for big animals, apparatuses for the anaesthesia of fish); see further: Rzesnitzeck and Lang, *op. cit.* (note 17), 266–8.

⁴⁵ Holzer to the SRW-Vienna, 24 September 1941, SMAZ, E-Lab, electro shock 1940–1941 [unsigned, abbreviated E2 in the following].

⁴⁶ Anton v[on] Braunmühl, ‘Der Elektrokrampf in der Psychiatrie’, *Münchener Medizinische Wochenschrift*, 87 (1940), 511–4; Anton v[on] Braunmühl, ‘Über mobile Elektrodentechnik bei der Elektrokrampftherapie’, *Archiv für Psychiatrie*, 114 (1942), 605–610. From an aristocratic Catholic family, Braunmühl was never a member of the NSDAP. In 1946, the American Military Government gave him the directorship of Eglfing-Haar and in 1947 an honorary professorship for medicine in Munich (UAM E II 980, university archive LMU Munich).

⁴⁷ Wolfgang Holzer, *Physikalische Medizin in Diagnostik und Therapie* (Vienna: Wilhelm Maudrich, 1940). University archive Vienna, Med. Dekanat 1945/46, GZ 115. After the war, Holzer was awarded the professorship and direction of the psychiatric university hospital in Graz.

⁴⁸ BArch R 96 I-18: ‘Vorschlag zur Gründung einer Forschungsanstalt für aktive Therapie der Nerven- und Geisteskrankheiten’ by Wolfgang Holzer and letter from Paul Nitsche to Wolfgang Holzer dated 21 September 1944.



Figure 5: Illustration: Siemens' new electrodes relaying on Braunmühl's recommendations. Source: picture dated 1955, used in an advertising brochure in 1957, Siemens MedArchives, Erlangen, Germany.

National Socialist Austerity Plans: The Timeline of the Introduction of Electroshock Therapy

By the end of June 1941, SRW had delivered only fifty *Konvulsatoren*, most of them abroad, including twenty-three devices to the occupied Netherlands. Just eighteen devices had been sold to psychiatric institutions in the 'Großdeutsches Reich', of which only five had gone to mental asylums (including Eglfing-Haar). Remarkably, the SRW referred all other interested parties to the beginning of the assembly-line production.⁴⁹ This was the experience of, for example, Gottfried Ewald (1888–1963), who had been desperately looking for a device for the university psychiatric hospital in Göttingen and had finally been able only as a result of personal initiative to acquire a device from Switzerland, from Purtschert & Co., in the summer of 1941.⁵⁰

The low sales figures of the *Konvulsator* were not least the consequence of a politically desired radical policy of austerity in psychiatry in the German Reich, intended to lead to the starvation of patients with 'lives unworthy of living'.⁵¹ What was financed was the so-called 'euthanasia' T4 campaign which Paul Nitsche (1876–1948) organised on behalf of the Reich Working Party for Mental Asylums. From its start in October 1939, until its official discontinuation in August 1941, the construction of gas chambers on former hospital grounds and a bureaucratic procedure of camouflaging was funded to murder more than 700 000 patients with diagnoses such as schizophrenia, mental deficiency, epilepsy, dementia or Huntington's disease.⁵²

Crucially, the consequences of another budget cut in psychiatry contributed to an increase of interest in convulsive therapy and particularly electroshock therapy in the spring of 1942.

With the responsibility for mental hospitals passing to Herbert Linden (1899–1945), the beginning of new insulin coma cures had generally been forbidden as insulin was scarce

⁴⁹ SRW-Erlangen to SRW-Berlin, 18 July 1941, SMAZ, E-Lab, E1; Braunmühl to SRW-Erlangen, 9 April 1940; Pätzold to von Braunmühl, 4 April 1940, SMAZ, E-Lab, E2; memo Pätzold, 6 December 1939, SMAZ, E-Lab, E1.

⁵⁰ Gottfried Ewald and S[iegfried] Haddenbrock, 'Die Elektrokrampftherapie: Ihre Grundlagen und ihre Erfolge', *Zeitschrift für die gesamte Neurologie und Psychiatrie*, 174 (1942), 635–69.

⁵¹ Heinz Faulstich, *Hungersterben in der Psychiatrie 1914–1949* (Freiburg im Breisgau: Lambertus, 1998).

⁵² Friedrich Karl Kaul, *Nazimordaktion T4: Ein Bericht über die erste industriemäßig durchgeführte Mordaktion des Naziregimes* (Berlin: Volk und Gesundheit, 1973); B. Böhm, 'Paul Nitsche: Reformpsychiater und Hauptakteur der NS-"Euthanasie"', *Nervenarzt*, 83 (2012), 293–302.

and insulin coma therapy could ‘not be regarded as a specific therapy’ for schizophrenia as ‘there were also other methods (such as Cardiazol and electroshock) available’.⁵³ Indeed, the cherished genetic theory of endogenous psychoses and especially of schizophrenia implied that insulin coma, cardiazol or electroshock therapies could only have unspecific impacts similar to ‘states of shock’ induced by means of cold showers or a swivel-chair;⁵⁴ a real ‘therapy’ of the ‘core group’ of schizophrenia was only conceivable by prevention, namely sterilisation.⁵⁵

These genetic views and the consequent Nazi sterilisation policy had at first considerably delayed the introduction of insulin coma therapy in Germany in the mid-1930s and also caused an initial restraint towards electroshock therapy in well-known clinics.⁵⁶ The university mental hospital of the Charité in Berlin, run by Maximilian de Crinis (1889–1945), a key actor in the preparation and implementation of the national socialist ‘euthanasia’ murders, had not begun testing until winter 1941/42. In contrast, the small evangelical private clinic ‘Waldhaus’ am Nikolassee, which became famous for employing those physicians and carers ‘who have not received any employment in state facilities for political and racist reasons’,⁵⁷ had started with the new therapy by the spring of 1941. Its medical director, Heinrich Schulte (1898–1983), recommended electroconvulsive therapy as an alternative to the pharmacological convulsive therapy as early as June 1941, including at the conference of the Berliner Gesellschaft für Psychiatrie und Neurologie, since it was less stressful for the patients, simpler, cheaper and also suitable for ambulant treatment.⁵⁸ However, the ‘horrifying’ sight of his ‘demonstration of the electroconvulsion on two patients’ caused ‘several listeners [to] leave the room’.⁵⁹

That the circle of leading National Socialist psychiatrists, based around, amongst others, Ernst Rüdin, Maximilian de Crinis, Paul Nitsche and Carl Schneider, finally began to advertise convulsive therapies was the result of a shift in Nazi mental health politics;⁶⁰ to counter the public opinion that psychiatry ‘is becoming more and more superfluous since mentally ill people would soon become extinct due to the racial hygienic laws’,⁶¹ the convulsive methods, including prominently electroshock therapy, promised to justify a future eugenic National Socialist psychiatry of sterilisation, ‘euthanasia’ and therapy. Probably with a view to introducing this ‘new way’ for psychiatry in the Third Reich,

⁵³ Anonymus, ‘Kurze Mitteilungen: Insulinverwendung in den Universitäts-Nervenkliniken’, *Allgemeine Zeitschrift für Psychiatrie und ihre Grenzgebiete*, 121 (1942), 188.

⁵⁴ Karl Bonhoeffer, *Die Geschichte der Psychiatrie in der Charité im 19. Jahrhundert* [Sonderdruck aus der *Zeitschrift für die gesamte Psychiatrie und Neurologie* 168] (Berlin: Springer, 1940); Karl Bonhoeffer, *Nervenärztliche Erfahrungen und Eindrücke* (Berlin: Springer, 1941).

⁵⁵ Christel Roggenbau, ‘Über die neue Behandlungsmethode der Schizophrenie nach Sakel’, *Deutsche Medizinische Wochenschrift*, 65, 33 (1939), 1297–9.

⁵⁶ Hamann-Roth, *op. cit.* (note 36); Rzesnitzeck, ‘Schocktherapien’, *op. cit.* (note 11).

⁵⁷ Klaus Jürgen Neumärker K.-J., *Karl Bonhoeffer: Leben und Werk eines deutschen Psychiaters und Neurologen in seiner Zeit* (Leipzig: Hirzel, 1990).

⁵⁸ Henneberg, ‘Sitzungsbericht der Berliner Gesellschaft für Psychiatrie und Neurologie, Sitzung vom 9. Juni 1941, Bericht über Erfahrungen mit der Elektrokrampfbehandlung bei Psychosen’, *Klinische Wochenschrift*, 20 (1941), 967.

⁵⁹ Pätzold to SRW-Berlin dated 25 June 1941, SMAZ, E-Lab, E2.

⁶⁰ ‘Denkschrift “Gedanken und Anregungen betr. die künftige Entwicklung der Psychiatrie” (1943) according to the agreement between professor Rüdin/Munich, Professor de Crinis/Berlin, Professor Schneider/Heidelberg, Professor Heinze/Görden, Prof. Nische/Berlin’, BArch R 96 I-9, printed in: Franz-Werner Kersting and Hans-Walter Schmuhl (eds), *Quellen zur Geschichte der Anstaltspsychiatrie in Westfalen, Bd. 2, 1914–1955* (Paderborn: Schöningh, 2004), 619–25.

⁶¹ Ernst Rüdin, ‘Eröffnungsansprache der Tagung der Gesellschaft Deutscher Neurologen und Psychiater am 26.03.1939’, *Zentralblatt für die gesamte Neurologie und Psychiatrie*, 167 (1939), 1–3.

a number of lectures on electroshock therapy, among them lectures by Meggendorfer and Bingel, Max Müller and also Wolfgang Holzer, had appeared on the agenda of the sixth annual assembly of the Gesellschaft Deutscher Neurologen und Psychiater scheduled for 5–7 October 1941.⁶² Yet, the whole conference was cancelled due to the war.

While deaths from medicine overdoses and through starvation continued after the termination of the 'official' T4 campaign in August 1941,⁶³ financial means for equipping the mental hospitals with therapy techniques were thus granted upon Linden's mediation and an educational film on electroshock therapy was produced.⁶⁴ Facing continuing complaints, which also spread into public discourse, that 'the difficulties of material procurement do not favour the spreading of electroconvulsive treatment',⁶⁵ ninety-five devices were finally ordered from SRW at the end of February 1943 with a collective order by the management of the Reichsausschusses zur wissenschaftlichen Erfassung von erb- und anlagebedingten schweren Leiden (State Committee for the Scientific Assessment of Severe Hereditary Disease), who had also organised the T4 programme.⁶⁶

Therapeutic Enthusiasm? Electroshock Therapy's Sales Markets during the War

Such a collective order had become necessary after SRW, upon Linden's request, had made clear that the production of electroshock apparatuses would only be worthwhile for the company if higher quantities were sold. Because technology central to the war effort, such as X-ray diagnostic devices, took priority with regards to the use of materials and production processes,⁶⁷ the collective order had to be a formal 'Wehrmacht' order. Those clinics which missed this order, offered by Linden, were informed by SRW that the delivery period for the device would be 'at least one and a half years'.⁶⁸ Yet, even the delivery of the devices of the 'Wehrmacht' order happened 'drop by drop'.⁶⁹ One simple 'technical' reason for the delays was the fact that many clinics did not have any alternating current available, since the in-house electricity grid was exclusively supplied with direct current. Under such circumstances, a direct current converter was necessary for the Konvulsator. Although SRW did not itself produce it, they had promised to include the accessory device in the delivery of the Konvulsator, although 'special convertors could not be obtained in the foreseeable future'.⁷⁰

⁶² BArch R 96 I-11; compare: Hans Walter Schmuhl, *Die Gesellschaft Deutscher Neurologen und Psychiater im Nationalsozialismus* (Berlin: Springer, 2016).

⁶³ See Faulstich, *op. cit.* (note 51).

⁶⁴ IWF film Archive, C426, 'Elektroschock' (publ. 1943, produced in 1941–1942); see further: Ulf Schmidt, *Medical Films, Ethics and Euthanasia in Nazi Germany: The History of Medical Research and Teaching Films of the Reich Office for Educational Films/Reich Institute for Films in Science and Education, 1933–1945* (Husum: Matthiesen, 2002).

⁶⁵ Heinrich Stolze, 'Die technische Durchführung der Elektrokrampfbehandlung mit dem Konvulsator von Siemens', *Psychiatrisch-Neurologische Wochenschrift*, 45 (1943), 100–3.

⁶⁶ After the order of seven Konvulsatoren was delayed, the final order to SRW was corrected to a total of 88 devices (list of ordered Siemens Konvulsatoren, 6 April 1943; Hegener to SRW-Berlin, 9 April 1943, BArch, R 96 I-12). Until the end of 1942, besides the Austrian cities of Linz, Salzburg, Graz and Innsbruck, only some Bavarian hospitals and the mental institutions in Berlin, and three hospitals in Württemberg: Tübingen, Weinsberg and Göppingen, had been equipped with electroshock devices; compare BArch, R 96 I-12, page 50–51.

⁶⁷ See production statistics, Siemens MedArchives (SMA) 289.

⁶⁸ BArch R 96 I-12, p. 12.

⁶⁹ *Ibid.*, p. 9.

⁷⁰ BArch R 96 I-12, p. 15.

Remarkably enough, however, a Konvulsator produced by SRW had been in constant use in France at the Paris Hôpital des Enfants–Malades as early as February 1942.⁷¹ The psychiatrist who used it was Georges Heuyer (1884–1977). Heuyer, known as the founder of French child psychiatry, had been another participant in the Copenhagen Neurological Congress of 1939; it was here that he had learned about the new therapy from Cerletti's and Bini's lectures. Although Heuyer had even announced an export of Konvulsatoren to France, at the occasion of the presentation of the initial dog experiments for a French apparatus at the conference of the Société Médico-Psychologique in April 1941,⁷² most psychiatric hospitals in the occupied France, as, for example, the Hôpital du Vinatier near Lyon, known from the study by Isabelle von Bueltzingsloewen on starvation in French psychiatry during the German occupation, used equipment from Purtschert & Co.⁷³

On German territory – against widespread assumptions to the contrary⁷⁴ – the war-related production bottlenecks meant that many of the psychiatric hospitals without university affiliation did not receive an apparatus before 1944, and some, only after the war.

In the later French occupation zone, for example, during the Third Reich, none of the big psychiatric asylums in Bad Schussenried, Zwiefalten or Weissenau had an electroshock apparatus in use. The French psychiatric commissioner sent to inspect the situation in the psychiatric hospitals at the end of the war in 1945 noticed with astonishment:

This method has never been practised in these three institutions and this fact appears monstrous to the psychiatrist that knows of the remarkable results of electroconvulsive therapy in the treatment of acute psychosis.⁷⁵

The minor diffusion of electroshock therapy was not solely the result of an inadequate supply or inadequate diffusion of electroshock devices;⁷⁶ most of the ordered Reichsausschuss Konvulsatoren had finally been delivered to hospitals and asylums.⁷⁷ However, few of the hospital asylums which did receive one appear to have been

⁷¹ Heuyer [Georges], Bour and Feld, 'Électro-choc chez des adolescents', *Annales Médico-Psychologiques*, 100 (1942), 75–84.

⁷² Marcel Lapipe and Jean Rondepierre, 'Essais d'un appareil français pour l'électro-choc', *Annales Médico-Psychologiques*, 99 (1941), 87–95: 94; Bueltzingsloewen, *op. cit.* (note 11) even claims that it was the Germans who first used electroshock therapy on French territory: in the summer of 1940 in the neuropsychiatric department, the military had started treating their soldiers at Sainte Anne. Concrete clues cannot be found either for this effort or for the assumption that a Konvulsator had been given beforehand to the hospital or the responsible medical unit. Moreover, the psychiatrist responsible for this unit, Reinhard Formanek, coming from the Munich Research Institute for Psychiatry, had hardly any experience with this method as the Institute, if of one believes the medical files of its clinical unit, did not attempt electroshock therapy in 1939 or 1940.

⁷³ Isabelle von Bueltzingsloewen, *L'Hécatombe des fous: La Famine dans les hôpitaux psychiatriques français sous l'Occupation* (Paris: Aubier, 2007).

⁷⁴ Götz Aly, 'Der saubere und der schmutzige Fortschritt', in *Beiträge zur nationalsozialistischen Gesundheits- und Sozialpolitik* (Berlin: Rotbuch, 1985), 9–78: 50; Matthias Hamann, 'Schockverfahren im Nationalsozialismus: Ein Arbeitsbericht', *Manuskript der Herbsttagung des Arbeitskreises zur Erforschung der Geschichte der 'Euthanasie' und Zwangssterilisation vom 27–29 Oktober in Grafeneck und Münsingen, 1995*, 65–71; Gerrit Hohendorf, 'Die "Schocktherapieverfahren" und die Organisationszentrale der nationalsozialistischen "Euthanasie" in der Berliner Tiergartenstraße 4, 1939–1945', in Schuhl and Roelcke, *op. cit.* (note 5): 287–307: 305.

⁷⁵ Robert Poirrot, *Rapport sur la destinée de l'Assistance Psychiatrique en Allemagne du Sud-Ouest pendant le Régime National-Socialiste* (Imprimerie Nationale: Tübingen, 1945), author's translation. In Zwiefalten, for example, and according to the annual reports, the apparatus arrived in 1946. The authors thank Bernd Reichelt for drawing their attention to this.

⁷⁶ Van den Bussche, *op. cit.* (note 11), 151–3.

⁷⁷ SRW's statistics on the delivery of medical technology prove that about 230 Konvulsatoren had been delivered by January 1944 (Pätzold to SRW-Berlin dated 7 January 1944, SMAZ, E-Lab, electroshock from 1942) and more than another 86 Konvulsatoren during 1944 (X-ray and electromedical products, undated statistic for 1944 that lists desired value and built value, SMA 294). Because of the war, the delivery must have concerned the German Reich and occupied territories.

particularly eager to use it, if one believes the report of Curd Runckel (1913-?),⁷⁸ who was working with Nitsche at the T4 unit. Runckel had been sent into the hospitals and asylums to learn the reasons for the reluctance to the new therapies and 'euthanasia'. In the summer of 1944 he wrote:

In many places the electroshock apparatus is still regarded with certain scepticism. Especially in Lower Silesia the treatment method is frequently belittled; otherwise it would barely be possible, I think, that a huge asylum like Lüben sells its newly acquired electroshock apparatus. . . . I continuously try to convince the medical directors . . . that the modern methods are, concerning nursing care, surely greatly relieving.⁷⁹

Especially in comparison with the older insulin coma therapy, electroshock therapy was dismissed. Also Braunmühl had claimed that electroshock combined with insulin was to be preferred to electroshock alone,⁸⁰ and the use of insulin for psychiatric therapy – outlawed in February 1942 due to the lack of insulin – was finally again permitted only in 1944.⁸¹ Indeed, the notion of a quick and extensive introduction of electroshock therapy in the Third Reich seems to be nothing more than a myth; a 'cliché', as Heinz Faulstich has argued in his major work, *Starvation in Psychiatry 1914–1949*: a historically mistaken, if widely cherished, idea that psychiatrists during the time of National Socialism were widely enthusiastic about 'euthanasia' and shock therapies.⁸²

Correspondingly, historical studies that have relied on patient files have found that electroshock was seldom used. In Saxony, for example, in the psychiatric hospital Altscherbitz, an analysis of 1400 patient files, including 497 with the diagnosis of schizophrenia, found a single case of electroshock treatment.⁸³ The supposed reason is the 'surely disastrous shortage in financial means and staff due to the fascist war'. For the Saxon psychiatric hospital Großschweidnitz, the finding was similar: 'only with May 1942 are there a handful of treatment trials of the quite cheap treatment documented in the patient files; however, it never achieved greater significance'.⁸⁴ In contrast, the asylum Eglfing-Haar near Munich had a high incidence of electroshock therapy, as here Anton von Braunmühl, the most ardent proponent and defender of the somatic therapies in the Third Reich, had done everything to convince SRW to give him the second prototype for clinical use.⁸⁵ But besides the university hospitals and asylums with psychiatrists specifically interested in the treatment, the diffusion of electroshock therapy remained minimal in the daily practice of the mental institutions in the German Reich until the end of the war.⁸⁶

⁷⁸ Ernst Klee, *Das Personenlexikon zum Dritten Reich: Wer war was vor und nach 1945* (Frankfurt am Main: Fischer, 4. Aktualisierte Auflage 2013), 515.

⁷⁹ Letter of Runckel to Nitsche 30 June 1944, cited in Faulstich, *op. cit.* (note 51), 652.

⁸⁰ Anton von Braunmühl, 'Fünf Jahre Shock- und Krampfbehandlung in Eglfing-Haar', *Archiv für Psychiatrie und Nervenkrankheiten*, 114 (1941), 410–40.

⁸¹ See Linden's statement on the unblocking of insulin (as far as available) for psychiatric shock therapy, dated 31 January 1944, ABezObb (Archive Bezirk Oberbayern) 609.

⁸² Faulstich, *op. cit.* (note 51), 653.

⁸³ Rosemarie Schöne and Dieter Schöne, 'Zur Entwicklung und klinischen Anwendung neuer somatischer Therapiemethoden der Psychiatrie in den 30er Jahren des 20. Jahrhunderts unter besonderer Berücksichtigung der Schocktherapien und deren Nutzung in den deutschen Heil- und Pflegeanstalten' (Dissertation zur Erlangung des akademischen Grades Dr med. Leipzig, 1987), 76.

⁸⁴ Krumpolt, *op. cit.* (note 11), 63.

⁸⁵ Eglfing-Haar is not the rule but rather the exception, and therefore offers only limited utility in portraying the 'the history of everyday life' (Alltagsgeschichte) of a psychiatric hospital or asylum until the end of National Socialism, compare: Bernhard Richarz, *Heilen, Pflegen, Töten: Zur Alltagsgeschichte einer Heil- und Pflegeanstalt bis zum Ende des Nationalsozialismus* (Göttingen: Vandenhoeck & Ruprecht, 1987).

⁸⁶ Van den Bussche, *op. cit.* (note 11), 156.

In psychiatric hospitals that had a special focus on electroshock therapy, sometimes explicit consent for shock therapy was required from the family. For this, at the university psychiatric and mental hospital Erlangen for example, a letter was sent with the following wording:

Insulin- or Cardiazol- and Electroconvulsive treatment gives the possibility to approach mental diseases in a healing manner today. Therefore we think it our duty as physicians to propose this treatment and we ask that you give us your consent for this treatment at your earliest convenience. As the treatment is invasive and may result in complications, we are informing you of our intentions. If you agree with the treatment, we ask that you sign and return this letter.⁸⁷

On the other hand, psychiatric hospitals whose clinical directors completely subscribed to the ideology of schizophrenia as a genetic disease – such as the Wittenauer Heilstätten in Berlin – changed the diagnosis in the case of a successful electroshock treatment, for example, to ‘reactive psychosis’.⁸⁸ It fits that an increasing number of reactive disorders, especially in soldiers, were treated with electroshock.⁸⁹

In conclusion, the ‘dialectics of healing and killing’, as promoted in the 1943 ‘Denkschrift’ letter ‘Thoughts and suggestions concerning the future development of psychiatry’ written by the elite of the Nazi psychiatrists, remained a pure ‘ideal’, unattained until the end of the Third Reich. Regarding the everyday practice in most of the mental institutions of the German Reich, there was no ‘dialectics of healing and killing’ but a prevailing policy of starvation, leaving people to die and murder.⁹⁰

Doing Research in Wartime? ‘Prevention of Vertebral Fractures with Convulsive Shock’

The Munich Research Institute for Psychiatry (Deutsche Forschungsanstalt) run by Rüdin had no interest in research into electroshock therapy; its clinical unit had in any case been closed in 1942 because of the war. However, even SRW reacted with restraint to hints that a ‘model institution for research into electroshock treatment’ was to emerge in southern Germany, in co-operation with the Heidelberg University Hospital and under the direction of Carl Schneider and the mental hospital at Wiesloch.

Actually, the Reich Working Party for Mental Asylums, represented by Linden and Nitsche, had been planning the establishment of a psychiatric research institution with its main pillar in Heidelberg–Wiesloch since the spring of 1942. Yet this was intended less as a ‘model institution for the research of electroshock treatment, as the SRW branch in Mannheim had understood from the discussions in Heidelberg with Linden and Schneider,⁹¹ but rather for enhancing Schneider’s own genetic, constitutional and neurobiological examinations of ‘mentally deficient children’.⁹²

⁸⁷ Cited by: Braun and Kornhuber, *op. cit.* (note 31). Source: Archive of the Hospital of the Friedrich-Alexander-University Erlangen-Nürnberg, historical stock of the psychiatric university hospital, admission number: 308/204; 447/354, author’s translation. The procedure for asking the patient or the family for consent to the treatment, differed between clinics; this can also be shown for the period after the Second World War up to the 60s, see Rzesnitzeck, ‘“Schocktherapien” und Psychochirurgie in der frühen DDR’, *Nervenarzt*, 86 (2015), 1412–19.

⁸⁸ Rzesnitzeck, ‘Schocktherapien’, *op. cit.* (note 11).

⁸⁹ See SRW-Erlangen to SRW-Berlin dated 24 June 1943, SMAZ, E-Lab, E3.

⁹⁰ Van den Bussche, *op. cit.*, (note 11), 164.

⁹¹ Internal Memo branch Mannheim dated 16 July 1942, SMAZ, E-Lab, E3.

⁹² BArch R 96 I-4; Gerrit Hohendorf and Maïke Rotzoll, ‘Medical research and National Socialist euthanasia: Carl Schneider and the Heidelberg research children from 1942 until 1945’, in Sheldon Rubenfeld and Susan Benedict (eds), *Human Subjects Research after the Holocaust* (Cham, Switzerland: Springer International, 2004), 127–38.

Whatever the potential plans concerning research into electroshock, Pätzold explicitly pointed out that because of its extensive involvement in the war economy, SRW 'had practically been deprived of all possibilities for more extensive development work for the duration of the war so that currently collaboration can only be in exchanging experiences and discussing pending problems in this field'.⁹³

However, SRW did not want to make the same mistake as its predecessor companies during the First World War, when work on developments for civilian and medical-technology use had been considerably limited for reasons of war economy, with the consequence that SRW had, after the end of the war, been left behind compared to the international competition. SRW were therefore striving to avoid a repeat of this situation and to maintain developmental activity for civil commodities as far as possible.⁹⁴

The company needed, in fact, to justify their already existing scientific collaboration with Anton von Braunmühl via nested lines of argument as 'relevant to the war' in order to avoid seriously jeopardising their continuity.

In this way, it had been alleged that the help offered by SRW in procuring a Purtschert & Co. apparatus for Anton von Braunmühl, who was planning some major research comparing all apparatuses available on the market, was 'about a question irrelevant to the war for which an enormous amount of work was not justified'. On the part of SRW, the response to this was that 'mainly sick soldiers were treated with electric convulsion at Dr von Braunmühl's and hence 'comparative experiments for determining the reasonable method . . . are thus also part of looking after sick soldiers and must also be regarded as relevant to war.' The scope which the technical development department of SRW was trying to create with this argument was, without doubt, extremely narrow. However, they took the position that 'tests for improving the apparatuses, whose production is not forbidden, are also allowed', and, beyond the 'wording of any regulations', it must be left to the company to decide 'which of the works will be postponed and which will not'.⁹⁵

Yet, the conditions of total war in 1944 made any further research impossible.

As for the Heidelberg efforts in Wiesloch, Schneider was in any case resigned to the fact that after two attempts 'the war did not [allow] the realisation of the extensive projects planned at that time' and that 'the implementation of total warfare after the disaster of Stalingrad brought about the dissolution of the newly started Wiesloch department again in 1944'.⁹⁶

Some research had nevertheless been done on electroshock at the Heidelberg Clinic, and then also at the partner institution in Wiesloch.

As Bingel had already warned in 1940 that the 'electroconvulsive treatment' is 'not as free of complications as it seemed according to first reports by the Italian authors',⁹⁷ Schneider's chief Heidelberg physician, Fritz Schmieder (1911–88), had started to examine the frequency of vertebral fractures under 'electroconvulsive therapy' since February 1942.⁹⁸ The question whether a 'medicine affecting the muscle apparatus would be able to decrease the danger of a fracture', had already been internationally discussed in relation to pharmacological convulsion therapy since 1939; from 1940 onwards, it was also

⁹³ Pätzold to branch office Mannheim dated 4 September 1942, SMAZ, E-Lab, E3.

⁹⁴ Sascha Lang, 'Röntgenozid' [X-ray Genocide] (dissertation in preparation: University of Bielefeld).

⁹⁵ Department for technical development to SRW-Berlin dated 30 October 1942, SMAZ, E-Lab, E3.

⁹⁶ BArch R 96 I-4, final report by Schneider of 24 January 1944.

⁹⁷ Adolf Bingel, 'Über die psychischen und chirurgischen Komplikationen der Elektrokrampftherapie', *Allgemeine Zeitschrift für Psychiatrie*, 115 (1940), 325–43: 342.

⁹⁸ Fritz Schmieder, 'Zur Häufigkeit und Bedeutung der Wirbelsäulenschädigungen bei den Krampf- und Schockverfahren', *Allgemeine Zeitschrift für Psychiatrie*, 121 (1943), 141–180.

considered in relation to electroconvulsive therapy.⁹⁹ Consequently, studies on ‘preventing vertebral fractures with convulsive shock’ were also planned for the research department, especially for Schmieder’s position here from July 1942 until the end of March 1943. Ernst-Adolf Schmorl (1906–64), a leading assistant to Nitsche with extensive experience in pharmacological convulsion therapy,¹⁰⁰ meanwhile carried out experimental studies ‘on the differences of induced and spontaneous convulsion in humans’.¹⁰¹

For the studies on the prevention of vertebral fractures, Schmieder had asked SRW in November 1942 for technical as well as material support. Schmieder wanted to carry out ‘a series of tests with electroshocks on cats or rabbits using the Konvulsator for this purpose’ – the facilities were unfortunately inadequate for the housing of dogs.¹⁰² Although SRW did not yet have any experiences available from their own animal studies, Pätzold was able to advise Schmieder on the electrodes to be used for cats and the necessary device settings. Thanks to this scientific collaboration, Heidelberg ranked among the first clinics besides Eglfing-Haar that were not only lent the Konvulsator II in May 1943 as a simplified and handy (although not battery-driven) device for testing, but whose criticisms were taken into consideration in the future technical design.¹⁰³

Meanwhile, the problem of vertebral fractures had not remained of purely scientific or medical significance, as it influenced decisively the choice for Linden’s collective device order for the clinics and mental hospitals of the German Reich and thereby consolidated SRW’s position on the electroshock market. It was precisely because of the claim that vertebral fractures were few with the SRW apparatus compared to the competing devices that the collective order went to SRW in spite of the Konvulsator being the most expensive device (955 RM against 390 RM for Elkra II, for example): a claim that was pure advertising, as its author, Meggendorfer, in Erlangen, did not possess any clinical experience with the other devices.¹⁰⁴

A Therapy in Auschwitz or a Solution to the ‘E’-Problem?

In the Third Reich, the distinctive conditions of National Socialism and total war meant a particular interest in electroshock therapy. To this end, an electroshock apparatus was constructed at the concentration camp Auschwitz III, the working camp of the IG Farben-Werk in Monowitz, in 1944. With the unofficial agreement of the SS camp physicians Eduard Wirths (1909–45) and Horst Fischer (1916–66), the Polish detainee physician Zenon Drohocki (1903–78), helped by a Dutch engineer detainee, wanted to treat sick detainees with the apparatus in the neuropsychiatric department which he had established inside the Monowitz camp detainee hospital.¹⁰⁵ As part of his neurological and

⁹⁹ H. A. Palmer, ‘Vertebral Fractures Complicating Convulsion Therapy’, *Lancet*, 234 (1939), 181–2; A. E. Bennett, ‘Preventing Traumatic Complications in Convulsive Therapy’, *Journal of the American Medical Association*, 114 (1940), 322–4.

¹⁰⁰ E[rnst]-JA[dolf] Schmorl, ‘Beobachtungen über die Einwirkung der Cardiazol-Krampfbehandlung’, *Allgemeine Zeitschrift für Psychiatrie*, 108 (1938), 328–42.

¹⁰¹ BArch R 96 I-4.

¹⁰² Schmieder to Pätzold dated 27 November 1942, SMAZ, E-Lab, E3.

¹⁰³ Pätzold to Schmieder dated 25 May 1943; Pätzold to Schmieder dated 18 October 1944, SMAZ, E-Lab, E3.

¹⁰⁴ See Meggendorfer to Nitsche, 5 January 1943, National Archives at College Park, RG 549, Records of US Army Europe, Judge Advocate Division, War Crimes Branch, Records relating to Medical Experiments, Entry-Number AI 2217, Box 3, page 125157f.

¹⁰⁵ Zenon Drohocki, były więzien obozu koncentracyjnego Oswiecim-Brzezinka-Monowice nr 169779, ‘Wstrząsy elektryczne w rewirze monowickim’ [prisoner of the concentration camp Oswiecim-Brzezinka-Monowice number 169779, ‘Electroshocks in the Area of Monowitz’], *Przegląd Lekarski*, 32 (1975), 162–6:

psychiatric education, Drohocki had done research in Berne, Brussels and Paris on electroencephalography, and had also gained practical experience in 'electroconvulsive therapy' in Grenoble.¹⁰⁶ During his attempt to flee to Switzerland from France, then occupied by the Germans, Drohocki was arrested and deported to Auschwitz with a 'design of the apparatus for generating electroshocks' in his rucksack.¹⁰⁷

The 'senseless luxury' of such a state-of-the-art healing method in view of the gas chambers, as Drohocki retrospectively put it,¹⁰⁸ had not least been the most prestigious project of the SS physicians Wirths and Fischer.¹⁰⁹ Thus, when the leading physician of the concentration camp, Enno Lolling (1888–1945), visited at the end of 1943, Fischer demonstrated the therapy on a prisoner 'to demonstrate that electroshock can make emotionally disturbed people fit for work again'.¹¹⁰ In his position, Lolling was directly under the control of the head of 'Amtsgruppe D' at the SS-Wirtschafts-Verwaltungshauptamt (SS Head Office for Economic and Administrative Affairs), who constantly emphasised the optimisation of work amongst those prisoners employed in the German war effort.

In fact, it seemed that the SS Head Office for Economic and Administrative Affairs developed an enduring interest in the introduction of the method after the presentation, because in the spring of 1944 electroshock therapy was addressed again within a discussion amongst all the SS physicians employed in the concentration camps in Auschwitz. Prior to this, Drohocki had received the order to write a scientific 'lecture about electroshocks in general, with particular reference to research in Monowitz',¹¹¹ which was subsequently presented by Fischer.¹¹² Yet again, it concerned healing the mentally ill in order to 'reincorporate them into the working processes'.¹¹³ While Drohocki, because of a widespread shortage of anaesthesia, was himself testing electroshock as an anaesthetic method for surgical means, the SS's interest was in utilising humans as resources in the service of the nation and warfare.

During the criminal proceedings against Fischer in 1966, many of the other detainee physicians who had, like Drohocki, been involved in the electroshock therapy emphasised that they would have been able to save 'many a human life' thanks to the device, in the future, if only their own at the time.¹¹⁴

After the war, however, it became known that in Austria, part of the German Reich, an electroshock device had indeed been used for 'euthanasia' murder. Psychiatric inpatients had been personally killed by physician Emil Gelný (1890–1961),¹¹⁵ who had been medical director for the Lower-Austrian mental hospitals Gugging and

162–4 (for the translation of the article the authors thank Cornelius Borck/Artur Zipf; see also Borck, *op. cit.* (note 15), 257–62.

¹⁰⁶ Christian Dirks. *'Die Verbrechen der anderen': Auschwitz und der Auschwitz-Prozess der DDR: Das Verfahren gegen den KZ-Arzt Dr. Horst Fischer* (Paderborn: Schöningh: Paderborn, 2005), ch. 3.4, 134. On Drohocki's research activity, see n. 268.

¹⁰⁷ Drohocki, *op. cit.* (note 105), 162.

¹⁰⁸ Drohocki, *op. cit.* (note 105), 165.

¹⁰⁹ Dirks, *op. cit.* (note 106), 136; Drohocki, *op. cit.* (note 105), 163f.

¹¹⁰ Dirks, *op. cit.* (note 106), 137.

¹¹¹ Drohocki, *op. cit.* (note 105), 165.

¹¹² Dirks, *op. cit.* (note 106), 137.

¹¹³ Personal record Dr Horst Fischer dated 14 August 1965, cited Dirks, *op. cit.* (note 106), 137.

¹¹⁴ See Drohocki, *op. cit.* (note 105), 164–6; Dirks, *op. cit.* (note 106), 140–1.

¹¹⁵ Gerhard Fürstler and Peter Malina, *'Ich tat nur meinen Dienst': Zur Geschichte der Krankenpflege in Österreich in der NS-Zeit* (Vienna: Facultas, 2004). Gelný also used others' methods for killing.

Mauer-Öhling since October 1943. In Gugging¹¹⁶ and Mauer-Öhling,¹¹⁷ Gelny had used an Elkra II, which he had himself converted, on a total of around three hundred occasions.

Even if Gelny had not developed this method of murder on the orders of the T4 organisation, he had nevertheless turned to them, and specifically to Nitsche, in February 1944 with his ‘euthanasia’ suggestion.¹¹⁸ This was at a time when the T4 had long been looking for a new solution to the ‘e-problem’, as it had been labelled in the correspondence of Karl Brandt (1904–48), Hitler’s general commissioner for the medical and health system, in the sense of a ‘centrally planned but locally conducted “euthanasia”’.¹¹⁹ As a result, a meeting of doctors and the heads of those institutions directly involved in ‘euthanasia’ took place in Vienna in the summer of 1944, on which occasion Gelny demonstrated the use of the apparatus and the method with the murder of a mental patient in Gugging.¹²⁰ With regards to this demonstration, it also seemed ‘very valuable’ to Nitsche to be present at the ‘inspection of the electrical method by Dr Gelny’ planned by Brandt.¹²¹

However, Gelny might not have been the first to develop the idea of using electroshock therapy for the explicit purpose of ‘electrocution’.

Dr Elisabeth V., a young psychiatrist at Eichberg between 1942 and 1945, remembered discussions on the topic of killing mental patients at Eichberg:

When he acquired an electroshock apparatus, Director Mennecke raised the question of whether one could effect their deaths through high levels of electric current passed through their brains.¹²²

Friedrich Mennecke (1904–47) had been director of the psychiatric asylum in Eichberg since 1939; during the Nuremberg trials, Mennecke was especially condemned for the murder of children in Eichberg as part of Schneider’s research project in Heidelberg.¹²³

Gelny’s criminal case remains the only officially known murder of patients using a converted electroshock therapy device. In 1946, Holzer was appointed as an expert in the connected criminal case before the national court in Vienna against the employees of the hospitals in Gugging and Mauer-Öhling, tasked with explaining the changes made by Gelny to the Elkra II in order to exploit the therapeutic device to discreetly continue murdering patients.¹²⁴ As, in the late summer of 1944, Holzer had contacted Nitsche, the medical leader of the T4 campaign, to advertise for a research institute

¹¹⁶ Angela Danbauer, ‘Die Heil und Pflegeanstalt Gugging während der NS-Zeit’ (Dissertation: University of Vienna, 2012).

¹¹⁷ Michaela Gaunerstorfer, ‘Die psychiatrische Heil- und Pflegeanstalt Mauer-Öhling 1938–45’ (Dissertation: University of Vienna, 1989).

¹¹⁸ BArch R 96 I-18, Letter from Gelny to Nitsche dated 7 February 1944. Henry Friedlander, *The Origins of Nazi Genocide: From Euthanasia to the Final Solution*. (Chapel Hill, NC: University of North Carolina Press, 1995), 160.

¹¹⁹ Götz Aly, ‘“Aktion Brandt”: Bombenkrieg, Bettenbedarf und “Euthanasie”’, in Aly (ed.), *op. cit.* (note 5), 168–82: 172.

¹²⁰ Heinz W. Arnberger, Dokumentationsarchiv des Österreichischen Widerstandes, *Widerstand und Verfolgung in Niederösterreich 1934–1945* (Vienna: Österr. Bundesverlag, 1987), 656.

¹²¹ BArch R 96 I 18: Letter by Nitsche to Brandt dated 24 August 1944.

¹²² Report Dr Elisabeth V., dated 9 August 1945, Eichberg Trial, cited in: Michael Burleigh, *Death and Deliverance: Euthanasia in Germany* (Cambridge: Cambridge University Press, 1994), 262.

¹²³ Peter Sandner, *Verwaltung des Krankenmordes. Der Bezirksverband Nassau im Nationalsozialismus*. Historische Schriftenreihe des Landeswohlfahrtsverbandes Hessen. Hochschulschriften, 2 (Gießen: Psychosozial, 2003).

¹²⁴ Expert opinion by Dr Wolfgang Holzer, ‘personally submitted on 23 August 1946’ Court A1-VgVr-criminal files: Vg 8eVr681/1955, in it: Vg 8a Vr 455/46, see Fürstler and Malina, *op. cit.* (note 119); see further: Rzesnitzeck and Lang *op. cit.* (note 17), 270.

dedicated to electroshock therapy, it has been questioned as to whether Holzer had himself been involved in the deliberations over the use of his Elkra apparatus for 'euthanasia' murders.¹²⁵ Holzer had requested the foundation of a research institute, reasoning that his application was timely because of the legal issues surrounding the 'euthanasia question'. These attempts, according to Holzer, 'forced the psychiatrist to arrive at a decision.' However, Holzer did not make an allusion to a 'chance' presented by 'euthanasia',¹²⁶ but stressed instead that 'efforts around the basic problems of psychiatry and the development of therapies must be increased a thousand-fold in order to approach the euthanasia problems around psychoses at all'.¹²⁷

Summary

Myths, prejudices and clichés have prevailed in many accounts of the history of electroshock therapy in the Third Reich. However, the clinical introduction of the new shock therapy in the German Reich and occupied territories between 1936 and 1945 was neither especially swift nor 'radical'.

At the beginning, high-ranking members of the Nazi academic and state elite saw electroshock therapy, like the preceding shock therapies, insulin coma and cardiazol convulsive therapies, as a contradiction of the genetic dogma of schizophrenia. 'Core schizophrenia' was a recessively inherited disease whose only causal treatment was primary prevention by sterilisation. In 1942, however, the war-related shortages in insulin forced the commander responsible for the mental hospitals, Linden, to forbid insulin coma therapy and propose electroshock therapy as an alternative. Only after the end of the official 'euthanasia' murder operation T4 in August 1941, and increasingly confronted with the unexpected clinical successes reported by Bumke in Munich or Braunmühl in Eglfing-Haar, did the National Socialist Psychiatry officials start to promote electroshock therapy as a modern 'unspecific' treatment. Their wish was indeed to reframe psychiatry as an 'honorable' medical discipline that sought to relieve suffering, through either therapy or 'euthanasia'. However, war-related shortages even hindered the now politically supported production of electroshock devices. Conferences that might have had a promotional effect were cancelled due to the war. Moreover, clinics or asylums that received a device – with the exception of scientific centres and psychiatric hospitals especially interested in the new therapies and electroshock (Eglfing-Haar, Erlangen, Göttingen etc.) – often made very limited use of it, occasionally changing the diagnosis of schizophrenia after successful treatments to 'reactive psychosis'. Of course, further analysis of medical files from different clinics is necessary if we are to draw a definite picture.

There never was a special research institute for electroshock therapy in the Third Reich. The psychiatrist that indeed proposed the implementation of such a specialised institute, Holzer, was not one of the Nazi officials; in fact, he was not even given his medical post-doctoral qualification (*Habilitation*) until after the war and the fall of Nazism. Finally, the research done under Carl Schneider in Heidelberg focused on the problem of vertebral fractures, and thus the clinical safety of electroshock therapy, research which was shared internationally.

¹²⁵ Czech, *op. cit.* (note 5), 112: 'Holzer was in contact with the medical director of the T4 program, Professor Paul Nitsche, to promote his device and his plans for a research institute. . . . In a planning document submitted to the T4, he cited the window of opportunity opened by the ongoing euthanasia killings as the main motive for his project'; Hubensdorf, *op. cit.* (note 5), 375–8.

¹²⁶ As Czech, *op. cit.* (note 5), 112 suggests.

¹²⁷ Holzer, *op. cit.* (note 48), 10.

Industrial companies like SRW were decisive participants in the development of the electroshock technology, including in the solution of the therapy's safety issues. Ultimately, they pursued their own interests. While designing their own devices and electrode holders, SRW used the patents of slaughterhouse devices to protect themselves against competitors in the new electroshock therapy market. Indeed, 'the subordination of electroshock under the broader term anaesthesia and of patients under animals to be slaughtered . . . shall represent a unique curiosity for a leading electromedicine company': thus Holzer had deplored it in 1941.

With regards to the use of a self-made electroshock device in the Monowitz detainee hospital Auschwitz III, the working camp of the IG Farben, there is no evidence of dubious experimentation or 'misuse'. The therapy was 'allowed' with a view to reintegrating sick prisoners into the working process, and 'accepted' as a replacement for anaesthetic medication.

In conclusion, the introduction of electroshock therapy in the Third Reich is not adequately conceptualised under the paradigm of a 'dialectics of healing and killing'. It did admittedly have the potential to become a very special version of that dialectic, where the difference was in the 'dose', and where anaesthesia was paired with the possibility of a healing convulsion or killing, both caused by electric current. This was Cerletti's insight from the slaughterhouse studies, an insight that gave him justification to proceed to a clinical application, since the security margin was significant. Cerletti was, however, not the last person to realise this. While scientists and technicians made great efforts to make 'electroshock therapy' safe for patients and physicians, the officials of the 'euthanasia' murders reflected in 1944 on the possibility of utilising electroshock therapy devices as killing instruments. It was this horrifying scenario which was indeed realised in southern Austria.

On a theoretical level, the analysis of electroshock therapy in the Third Reich demonstrates mechanisms in the introduction of a new medical therapy that went far beyond questions of therapeutic efficacy. The design of the devices, the medical procedure and even the 'meaning' of 'electroshock therapy' were established in a highly flexible social process. Medical and clinical needs played only a subsidiary role when confronted with the commercial interest of the major industrial companies involved, who came to redefine 'electroshock therapy' as a problem of patent law. Under the peculiar conditions of National Socialism, Fascism and the Second World War, the process was in fact so flexible that it not only made electroshock therapy a state-of-the-art healing method utilised in proximity to the gas chambers of Auschwitz but also perverted it into an instrument of 'euthanasia' murder.