

Mengele Medicus: Medicine's Nazi Heritage

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NAZI MEDICINE RAISES IMPORTANT QUESTIONS about the relationship of medicine and human life. These questions are relevant not only to the Nazi period but also to contemporary medicine. The purpose of this article is to emphasize that Nazi medicine did not exist only in the period from 1933 to 1945 but, in fact, extends beyond the Hitler period and continues today. Contemporary influences of Nazi medicine are examined in the context of their original contribution to Nazi health policies and practices, policies and practices that have come to exemplify the worst evils in the history of mankind. Four individuals whose conduct illustrates this problem are: Professor Dr. Ernst Rüdin, who helped establish the basis for eugenic and racial engineering through the Nazi program of compulsory sterilization; Professor Dr. Otmar Freiherr (Baron) von Verschuer, a leading academic eugenicist and geneticist in Nazi Germany who was Josef Mengele's mentor and sponsor; Dr. Josef Mengele himself; and finally, Dr. Sigmund Rascher, who conducted the infamous cold experiments in Dachau.

The Mengele of the title emphasizes the symbolic importance of Dr. Josef Mengele, who has come to represent all of Nazi evil in Auschwitz (Ascherson 1987). This article also addresses the work and influence of other physicians whose contributions to Nazi medicine have become lost in the Mengele myth. Also lost in this myth are Mengele's respectable professional origins, which include a citation

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in the *Index Medicus* of 1937. The three other physicians, whose reputations are not as well known, all bore a relationship, direct or indirect, to Josef Mengele's work. Dr. Ernst Rüdin taught psychiatry at the University of Munich, where Mengele studied medicine. Dr. Otmar von Verschuer played a major role in Mengele's professional development and career. Dr. Sigmund Rascher, while not directly associated with Mengele, was also an SS physician who conducted his satanic research with the same goal as Mengele—namely, the attainment of an academic career in medicine.

Dr. Ernst Rüdin: “Reichsführer for Psychiatry and Sterilization”

Swiss by birth and education, the psychiatrist Dr. Ernst Rüdin was an internationally recognized researcher in the field of psychiatric genetics, specifically the inheritance of schizophrenia. When Hitler came to power Rüdin was the director of the genealogical department of the Psychiatric Research Institute of Munich, part of the Kaiser-Wilhelm-Institut organization (Wistrich 1982; *Journal of the American Medical Association* 1933b). In 1935 he was appointed director of the newly merged German Society of Neurology and Psychiatry. Rüdin was one of the principal architects and advocates of the Nazi program of enforced eugenic sterilization, which was in essence an application of his work on the inheritance of psychiatric disorders. In a 1935 address, Rüdin stated that the bases of all race hygiene were the preservation of the healthy hereditary elements and the eradication of the pathologic elements (*Journal of the American Medical Association* 1933a). This philosophy had been legitimized in the July 1933 “Law for the Prevention of Hereditarily Diseased Offspring,” of which Rüdin was a principal author (Reichsausschuf für Volksgesundheitsdienst 1935). The program of enforced eugenic sterilization saw the rapid implementation of a program to sterilize approximately 50,000 German citizens a year, commencing in 1934. The sterilization program established a “scientific” basis for the mass control of reproduction with the objective of eliminating undesirable traits of human life that were considered to be hereditary. Rüdin's advocacy of sterilization earned him the nickname of “Reichsführer for Psychiatry and Sterilization” by a psychiatrist working in the Munich Institute. Criteria for sterilization

in the Munich Institute included being a conscientious objector, a frame of mind that was considered to be a form of schizophrenia and consequently classified as hereditary (Stern 1951).

The sterilization program was a critical link in the early phase of what was to become the holocaust (Mosse 1978; Lifton 1986). It established the political, legal, and operational feasibility of a massive program of eugenic control. It also demonstrated that a massive medical program requiring the surgical sterilization of 50,000 people annually was technically, financially, and professionally practicable. Sterilization of women included irradiation by X-ray or radium (*Reichsgesetzblatt-Legal Gazette* 1936; *Journal of the American Medical Association* 1939b).

In the evolving psychosis of Nazi Germany, disease was defined to include race (Elingens-Reiner 1948; Bosmajian 1966; Lifton 1986; Mommsen 1986). Race, as specifically applied to Jews by a definition legitimized in the September 1935 "Nuremberg Laws for The Protection of German Blood," was considered hereditary and consequently was subject to eugenic control. These implications were enunciated by the "Reichsführer of Physicians," the Munich general practitioner Dr. Gerhard Wagner, who publicly advocated the enforced sterilization of Jews (Hilberg 1985b; Wistrich 1982). Dr. Wagner's proposal arose during the formative period of the race laws, laws which he helped write (Hilberg 1985a; Bracher 1970). The Nuremberg race laws were claimed by Rüdín to have been an achievement for his eugenics movement (Wistrich 1982). In his address to the 1939 meeting of the Society of German Neurologists and Psychiatrists, Rüdín gave credit to psychiatry for its role in improving racial hygiene, which had been achieved by psychiatry's pointing out to the state and to the Nazi party the dangers latent in psychopathic persons, and for providing the impetus for the legal measures (i.e., the sterilization law) taken against such persons (*Journal of the American Medical Association* 1939a). In 1939 Hitler awarded Rüdín the Goethe Medal for art and science, and he was honored by Wilhelm Frick, the Minister of Interior, as the "meritorious pioneer of the racial hygiene measures of the Third Reich." In 1944 Hitler again decorated Rüdín, this time with a bronze medal bearing the Nazi emblem and praising Rüdín as the "pathfinder in the field of hereditary hygiene" (Wistrich 1982).

After the outbreak of the war the policy of enforced sterilization provided an operational framework for the Nazi racial program, which reached its most extreme application in the holocaust. Enforced ster-

ilization for racial purposes had been applied secretly in the Rhineland in 1937, on the so-called "Rhineland bastards," whose fathers had been soldiers of the occupying French and Belgian forces after World War I (Astor 1985). An option explored in seeking a "final solution to the Jewish problem" was sterilization. This option was actively discussed during the January 1942 Wannsee conferences on the "final solution" with particular reference to Germans of mixed blood, the so-called *mischlinge* (Davidowicz 1976). In German-occupied Holland, Jews of mixed marriages were given the option of exemption from anti-Jewish measures if they could prove their sterility, coercing some to subject themselves to surgical sterilization (Hilberg 1985b). Sterilization by involuntary irradiation was also considered for those Jews in death camps who were fit for work, thus ensuring a supply of slave labor while avoiding racial "contamination" (Mitscherlich and Mielke 1949; Tenenbaum 1956, 97–103). In Auschwitz, medical experiments were conducted to test sterilization by irradiation with follow-up oophorectomy and orchidectomy. Paradoxically, within the extralegal state of Auschwitz, legal sterilizations were also performed under the 1933 German law on hereditary disease (Hill and Williams 1965).

For those Jews who did not qualify for life, racially or physically, the methods of mass extermination used were those that had been developed in German mental hospitals for the medical euthanasia program: the gas chamber with disposal by cremation (Hilberg 1985b; Fleming 1982; Browning 1985).

Drs. Verschuer and Mengele: The Origins of Twins Research in Auschwitz

Doctor (Baron) Otmar von Verschuer was another internationally recognized geneticist whose particular field of expertise was research on twins, in which he is considered a pioneer (Scheinfeld 1967). His interests included the genetics of tuberculosis and eye color (*Journal of the American Medical Association* 1936b; Newman 1942). Von Verschuer was associated with the Kaiser Wilhelm Institute of Anthropology in Berlin-Dahlem under the directorship of Dr. Eugen Fischer. Subsequently, he became the founding director of the Institute for Heredobiologic Research in Frankfurt. The largest institute of its kind in Germany, the Frankfurt Institute was responsible for the racial-science

curriculum of the faculty of medicine at the University of Frankfurt (*Journal of the American Medical Association* 1935). Von Verschuer's international esteem was such that, as part of an exchange of professors with the Kaiser Wilhelm-Gesellschaft zur Förderung der Wissenschaften, he was invited to present a paper on June 8, 1939, at the Royal Society of London, on the subject of twin research (Von Verschuer 1939).

Von Verschuer's first assistant in Frankfurt was the young Josef Mengele. Mengele studied anthropology and medicine at the University of Munich, where one of his professors was Ernst Rüdin (Posner and Ware 1986). In 1935 Mengele was awarded a Ph.D. from Munich, his thesis being on the subject of racial morphological studies of the lower jaw. His research interest continued in hereditary abnormalities of the human jaw, in particular cleft palate, work which was considered to be of sufficient significance to be cited in the 1934 edition of *Index Medicus* (Mengele 1937) and in a 1942 English-language publication from Denmark on harelip and cleft palate (Fogh-Andersen 1942).

Mengele and Von Verschuer worked together in the racial courts established under the Nuremberg race laws (Posner and Ware 1986). These laws required a medical examination to determine hereditary and racial characteristics, a commission being appointed to arbitrate disputes as to racial origins (*Journal of the American Medical Association* 1936a). Mengele and Von Verschuer fulfilled this role as racial experts.

Mengele joined the General SS in May of 1938. Two months later, in July of 1938, he was awarded a degree in medicine from the University of Frankfurt. After the outbreak of the war he was drafted into the elite Waffen SS, with which he served in Poland and the Ukraine (Posner and Ware 1986). In German-occupied Poland, Mengele worked under the genealogical section of the Race and Resettlement Office of the SS (RuSHA) to determine racial suitability for settlement in the conquered territories. In German-occupied Poland this was a medically defined task, based on family history and physical examination for racial characteristics, which was undertaken by SS doctors (Posner and Ware 1986). For Mengele it was an extension of the role he and Von Verschuer had fulfilled earlier in Germany under the Nuremberg race laws. Late in 1942, after serving in the Ukraine, Mengele was posted with the Berlin headquarters of the Race and Resettlement Office (Posner and Ware 1986). In May 1943, after a war injury, he was appointed chief physician of the women's section of Auschwitz

(Lifton 1986; Zofka 1986). There, Mengele was engaged in two major activities: selection and experimentation. The SS physician's role in the Auschwitz death camp was that of professional gatekeeper, selecting arriving prisoners for execution or enforced labor based on a cursory examination at the railroad siding (Broszat 1968; Lifton 1986). The second aspect of Mengele's work was that of medical experimentation on humans, twins in particular. Mengele's medical experimentation almost certainly occurred under the auspices of Von Verschuer in Berlin. These experiments were funded by a grant from the German Research Council that was awarded, not to Mengele, but to Von Verschuer (Müller-Hill 1984). Mengele studied, performed experiments on, and collected human-specimen material from the Auschwitz inmates and this material was forwarded to the Kaiser Wilhelm Institute in Berlin-Dahlem, headed by Von Verschuer (Gilbert 1986; Lifton 1986). These specimens included human eyes, human heads, and blood samples (Mirchuk 1976; Lifton 1985; Posner and Ware 1986; Nyiszli 1960; Weindling 1985). People were maimed and killed solely for the purpose of these experiments and studies. Auschwitz, with its captive population totaling millions, represented a unique laboratory for Von Verschuer's research objective, namely the study of human twins who had been selected at random (Lifton 1985).

The Auschwitz experiments were seen by Mengele as being crucial in achieving his personal goal of an academic career. They were to be used as part of his "habilitation," which was required for university appointment (Lifton, 1986).

Dr. Sigmund Rascher and the Dachau Cold Experiments

The infamous Dachau experiments were performed to study the effects of environmental trauma associated with air warfare. Originally established under the Luftwaffe, these experiments were later transferred to the partial control of the SS, being funded under the "Ahnenerbe," an SS research institute (Mitscherlich and Mielke 1949; Kater 1974). The principal investigator was Dr. Sigmund Rascher, who worked closely with his common-law wife, a former singer and possibly one-time mistress of the SS chief Heinrich Himmler. Like Mengele, Rascher was a member of the SS with academic aspirations whose research activities in the death camps he considered to be critical in the pursuit

of his personal goal of a university appointment (Kater 1974). Rascher's experiments, which were reported directly to Himmler, included the exposure of concentration-camp inmates to freezing temperatures until unconscious, followed by various attempts at revival through rewarming. Defined as "terminal," the experiments were conducted with the full knowledge and intent that the subjects would die (Mitscherlich and Mielke 1949). The concentration camp at Dauchau was used because of the availability of the inmates, who, having been condemned to death, were considered to be "useless life" and thus available for potentially fatal experimentation. Himmler wrote that he "personally assumed the responsibility for supplying asocial individuals and criminals who deserve only to die "todeswürdig" from concentration camps for these experiments" (Himmler 1942). While Nazi Germany had enacted strong legislation protecting animals from abuse and medical experimentation (Seidelman 1986), within the "SS State" of the concentration camps the human species was without any protection, legal or otherwise (Broszat 1968). Some cold-water experiments were transferred to Auschwitz because the subjects, upon being exposed naked to the cold, would bellow loudly before losing consciousness, thus requiring a more isolated location where the distressing sounds were less likely to be heard (Rascher 1943). Shortly before the German surrender, Himmler had Dr. Rascher and his paramour murdered because of an alleged personal deception (Kater 1974). The clinical details of the experiments were compiled in a report by Dr. Leo Alexander which was published by the United States Department of Commerce in the hope "that it will be of direct benefit to U.S. science and industry" (Alexander 1945).

Thus, we have four examples of Nazi medical science, the legacy of which should serve as illustrations to science and to mankind of the potential evil of scientific endeavors through which one group of men attempts to achieve supremacy over another and in which human life is considered of lesser value than the information that could be derived from experimentation incompatible with life.

The Continuing Legacy

Despite the ultimate evil committed in the name of such science, the legacy left by these physicians continues to this day and has become

part of contemporary medicine. This legacy can be measured by a citation analysis of scientific journals (Garfield 1979). An examination of the index of references cited in the current scientific literature (*Science Citation Index*) during the past decade provides evidence that two of these men, Drs. Rüdin and Von Verschuer, continue to be referred to in the medical scientific literature without critical reference to their reputations or the context of their work. Each man has been cited at least 20 separate times in the past 10 years in some of the leading modern medical journals including *The New England Journal of Medicine* (Channick et al. 1981), *The American Journal of Psychiatry* (Baron et al. 1985), *The American Heart Journal* (Hamby 1981), *The American Journal of Cardiology* (Ten Kate et al. 1982) and *Chest* (Stone, Sherrid, and Cohn 1981). Citations included in *Science Citation Index* are only listed by the name of the principal author. Papers for which Rüdin and Von Verschuer may have been co-author but not principal author are not included. Textbooks of psychiatry continue to refer to Rüdin's original work on the inheritance of schizophrenia, research that established a scientific basis for the program of enforced mass sterilization. While one text on biological aspects of behavior states that "political events and the horror of Nazi pseudoeugenics put into disrepute the scientific exploration of genetic contributions to behaviour" (Rainer 1976), many texts make no reference at all to the ultimate lethal application of Rüdin's research or his role in Nazi Germany (Gottesman and Shields 1972; Planansky 1972; Gottesman and Shields 1982; Gelder, Gath, and Mayou 1983).

The references to Otmar Von Verschuer exemplify the spectacular professional resurrection of the man who was the professional sponsor of "The Angel of Death," Dr. Josef Mengele. At the time of the German surrender, Von Verschuer very probably destroyed his files on Auschwitz and Mengele (Lifton 1986; Posner and Ware 1986). After the war, Von Verschuer was "denazified" and fined 600 marks for his having been a Nazi fellow traveller (Kater 1987). In 1951 he was appointed to the chair in genetics at the University of Münster, becoming a full professor in 1953 (Weindling 1985; Müller-Hill 1987). In 1956 a journal on twin research, *Acta Geneticae. Medicae et Gemellologiae*, published a special issue in honor of Von Verschuer's 60th birthday. The testimonial editorial paying tribute to Von Verschuer referred to him as "master" and "example" (Gedda 1956). Twelve years later his biography is found included in "a biographical dictionary

of notable scientists from antiquity to the present” (Debus 1968). Dr. Von Verschuer continues to this day to be considered a respected pioneer in the field of research on twins. His work in genetics has become part of the complex field of mapping the human gene (McKusick 1982, 1983). The command Mengele shouted on the rail platform of Auschwitz, “Zwillinge heraus! Zwillinge heraustreten! (Twins out! Twins, step forward!)” (Lifton 1985), originated, not with a deranged monster working in isolation, but with an internationally respected scientist who remains a cited authority in the field of genetics.

Von Verschuer’s acolyte, Josef Mengele, has also become part of the respectable medical literature. While the citations to Mengele are far fewer than those to Rüdin and Von Verschuer, they provide stark testament to Mengele’s respectable origins. Mengele’s legacy continues in the field of oral embryology and the developmental anomalies of cleft palate and harelip. Mengele’s early work in this area, published while he was in Frankfurt working with Von Verschuer, has been cited in texts and articles on the subject (Witkop 1964; Drillien, Igram, and Wilkinson 1966; Caldarelli 1978). Ironically, the remains identified as those of Mengele in the grave in Brazil were identified, in part, from a developmental variation Mengele had studied as a young man, namely a gap between the teeth (Teixeira 1985).

The Dachau experiments represent another aspect of this complex issue. By themselves the experiments can only be considered as heinous examples of the most perverse form of medicine. The experimenters did not hesitate to publicize their work at an October 1942 meeting on “Medical Questions in Marine and Winter Emergencies,” attended by 95 scientists, some of whom were considered to be the most eminent in their field (Mitscherlich and Mielke 1949; Shirer 1960). When defeat appeared imminent, the Nazis, recognizing the potentially incriminating nature of the experiments, attempted to destroy the evidence for fear of the information becoming known to the Allies. However, some has survived. The information we do have is contained in the report by Dr. Alexander, which includes considerable clinical data obtained during the experiments. By themselves, the experiments would never have been published. They achieved a certain acceptance and respectability, however, under the proxied authorship of Dr. Alexander. Today, these experiments continue to be cited in the literature on cold exposure. It is impossible for anyone reading the Alexander paper on the cold experiments to avoid the graphic descriptions

of how they were carried out. Citing authors, therefore, cannot claim ignorance of the source. Two citations are made to the respectable authorship of Alexander without reference to either the nature of the experiments or the fate of the subjects (Harnett et al. 1980; Stoner, Frayn, Little et al. 1980). Three references describe the original source as "the infamous German experiments during World War II" (Frank 1980), "data derived from experiments with Dachau prisoners" (Hayward and Eckerson 1984) and "during the Dachau experiments the Nazis noticed" (Lloyd 1986). The discovery of some of these citations by an American newspaper reporter raised questions about the ethics of citing unethical research (Moe 1984). Ironically, a major reference on German aviation medicine during World War II avoids reference to these studies, citing animal experiments and data obtained from accidental human exposure to cold to support conclusions similar to those obtained from the Dachau experiments. The presumptive utility of the Dachau experiments is negated by this report (Grosse-Brockhoff 1971).

Conclusion: The Ethical Dilemma

The Nazi era has created an ethical dilemma for medicine that continues to unfold. It began with the war crimes tribunal at Nuremberg, which saw physicians tried and executed for crimes committed against humanity, crimes perpetrated in the name of healing or science. Out of those trials emerged the Nuremberg code of conduct in human experimentation (Alexander 1966). Since the Nuremberg trials, medicine appears successfully to have compartmentalized Nazi medicine as an example of isolated evil lacking relevance to medicine today. In the four decades since the end of the war there have appeared only two English-language books outlining the full extent of the role of Nazi medicine (Mitscherlich and Mielke 1949; Lifton 1986). Within West Germany itself there has been a persistent climate of professional denial and suppression, a climate that enabled Von Verschuer to resume his professional career (Kater 1987; Müller-Hill 1987). This climate of suppression continues. It is exemplified by a recent attempt to excommunicate a West-German physician professionally as a consequence of an English-language article he wrote on Nazi medicine which was published in *Lancet* (Hanuske-Abel 1986; Stock 1987).

In essence, medicine has been unable to confront the concept of

evil. This applies not only to specific acts carried out during the Hitler period but also to the physician as evil and knowledge itself being evil. The perversity of Nazi medicine did not end on the gallows of Nuremberg but continues until this day.

There is little difficulty accepting the fact that Mengele and Rascher were evil men. But what about their work? Mengele's death-camp experiments do not present a problem because, largely due to Von Verschuer's efforts, no physical evidence of them is extant. Rascher's work, however, continues to haunt us. Attempts to deal with the use of data derived from the cold experiments has resulted in a variety of responses ranging from acceptance without qualification to total rejection (Moe 1984; McDonald 1985; Levine 1986; Schafer 1987). One author expressed a wish that the data should have been burned (Spiro 1984). Attempts have been made to deal with this problem in the context of "unethical" research—i.e., research which may have been carried out without the informed consent of the subject. It has been suggested that unethical research be accepted on the condition that the publishing journal include an accompanying editorial addressing the ethical problem presented by the research (Levine 1986).

By considering the cold experiments in the category of "unethical" we may, in fact, be denying the concept of evil in medicine. The cold experiments were premeditated murder masquerading as research. They are one of the most clear-cut examples of evil in the history of medicine. What is at stake is the basic value system of medicine and science. What is the value of human life in medicine? If we compromise on murder what will remain? The use of this data could be considered an ethical compromise that opens the door to the publication of ethically dubious material (Spiro 1984). The most cogent response to this dilemma was expressed two decades ago by Beecher (1966) who stated: "There is no ethical distinction between ends and means." He drew a parallel with the admissibility of evidence in a legal proceeding; evidence illegally obtained is inadmissible no matter how crucial it may be (Beecher 1966). Medicine has yet to achieve a similar ethical standard.

What about the victim? Moe, who is responsible for important work on this subject, has suggested that by using the cold experiment data good may be derived from evil, provided the horror is addressed. She wrote: "A decision to use the data should not be made without regret or without acknowledging the incomprehensible horror that

produced them. We cannot imply an approval of the methods. Nor, however, should we let the inhumanity of the experiments blind us to the possibility that some good may be salvaged from the ashes' (Moe 1984). This proposal could be considered an intellectual rationalization conferring scientific martyrdom on innocent victims who, if given a choice, would have chosen life over becoming a statistic in a murderous experiment. By giving value to this research we are, by implication, supporting Himmler's philosophy that the subjects' lives were "useless." By accepting data derived from their misery we are, post mortem, deriving utility from otherwise "useless" life. Science could thus stand accused of giving greater value to knowledge than to human life itself.

If there is a lesson to be learned from this horror it is the lesson of the consequences of ethical compromise in scientific research. In science, professional success is determined by the publication of scientific research. Josef Mengele and Sigmund Rascher are worst-case examples of young scientists in pursuit of such a goal. Both were SS physicians with academic aspirations who viewed their murderous experiments as being critical to their personal goals of academic appointment. Their death-camp research was to be part of their "habilitation" toward appointment as academic physicians in a university. What needs to be published and studied today is not the "scientific" data from the experiments but a recounting of the consequences of ethical compromise where human life and dignity become secondary to personal, professional, scientific, and political goals.

While Mengele and Rascher may have been junior scientists pursuing academic careers, Otmar Von Verschuer was a respected senior scientist and academician who was party to an evil carried out by a junior colleague for whom he served as professional mentor and sponsor. Von Verschuer, residing in the detached academic environment of the Kaiser-Wilhelm Institute in Berlin-Dahlem (where Mengele's Auschwitz specimens were sent), cannot be separated from the horrors committed by Mengele in Auschwitz. The suppression and ignorance of Von Verschuer's role and responsibility resulted in the perpetuation of his professional activities and continuing scientific respectability. His postwar reputation is exemplified by the words of a sycophantic apologist:

Professor O. v. Verschuer belongs to a very significant and tormented period of medical science, as is every period of transition.

In fact, his scientific activity has manifested itself and imposed itself on the attention of the scientific world between the two European wars and is in full bloom. . . .

A Master of clear fame and creator of men who dedicate themselves to scientific research with the spirit of a vocation, Prof. O. v. Verschuer is also an example of hard work and discipline for all scientists and especially for all the geneticists, beyond the confines of his School and his Nation (Gedda 1956).

There is nothing to suggest that Von Verschuer's prewar or postwar work was unethical. He was, however, a senior respected scientist who was never held accountable for being a party to evil. Citations to Mengele's "creator," Von Verschuer, exemplify the consequences of such suppression and ignorance. Twin research, in which he is considered a pioneer (Gedda 1956), cannot be separated from the evils committed under his tutelage by his junior associate in Auschwitz. Because of Von Verschuer, there continues to be a thread connecting respectable research on twins today with Mengele's research on twins in Auschwitz. As science undertakes the mapping of the human gene, it should also consider the "example" of one of its pioneers in human genetics. (The relevance of Nazi science to contemporary scientific research, genetics and molecular biology is cogently explored by Müller-Hill [1987].)

Ernst Rüdin exemplifies the scientist as policy maker whose scientific ideas served as a rationale for a policy of evil. Rüdin's work on the genetics of schizophrenia served as a basis for the eugenic and racist policies of the Hitler regime. His academic and political career rested largely on this work which continues to be cited today, without comment, in respectable journals and texts. As medicine explores the puzzle of the inheritance of psychiatric disorder it must address itself to the consequences of the psychiatric genetics of a person whom it considers to be a pioneer in the field.

Dr. Josef Mengele, today considered the archetype of the physician as evil, had been a respectable physician whose prewar research and publications attest to his status. The citations to Mengele in the post-war English-language medical literature, long after he had become a fugitive, may be seen as validating his respectable origins and also testifying to the naiveté of the citing authors. While it can be argued that the published work of Mengele, Rüdin, and Von Verschuer was respectable and legitimate, what is not recognized is the relation

between their legitimate scientific pursuits and the horrors of Nazi medicine. With the outbreak of World War II, Nazi medicine did not undergo a sudden transformation into evil; the evolution was a gradual one, the origins of which have not been acknowledged. Consequently, Nazi medicine has now become a part of the professional genotype of modern medicine, providing a constant reminder of the evil potential of man, an evil that medicine is guilty of tolerating.

References

- Alexander, L. 1945. *The Treatment of Shock from Prolonged Exposure to Cold, Especially in Water*. Report no. 250. Washington: Office of the Publication Board, Department of Commerce.
- . 1966. Limitations of Experimentation on Human Beings with Special Reference to Psychiatric Patients. *Diseases of the Nervous System* 27:61–65.
- Journal of the American Medical Association*. 1933a. Foreign Letters: Berlin. 101:294.
- . 1933b. Foreign Letters: Berlin. 101:942–43.
- . 1935. Foreign Letters: Berlin. 105:1051–53.
- . 1936a. Foreign Letters: Berlin. 106:1214–15.
- . 1936b. Foreign Letters: Berlin. 107:1399–1401.
- . 1939a. Foreign Letters: Berlin. 113:1501–2.
- . 1939b. Foreign Letters: Berlin. 113:1823–24.
- Ascherson, A. 1987. The Death Doctors. *New York Review of Books* 34(9):29–33.
- Astor, G. 1985. *The "Last" Nazi: The Life and Times of Dr. Joseph Mengele*. New York: Fine.
- Baron, M., R. Gruen, J.D. Rainer, J. Kane, L. Asnis, and S. Lord. 1985. A Family Study of Schizophrenia and Normal Control Proband: Implications for the Spectrum Concept of Schizophrenia. *American Journal of Psychiatry* 142:447–54.
- Beecher, H.K. 1966. Ethics and Clinical Research. *New England Journal of Medicine* 24:1354–60.
- Bosmajian, H. 1966. The Magic Word in Nazi Persuasion. *ETC.: A Review of General Semantics* 23:9–23.
- Bracher, K.D. 1970. *The German Dictatorship: The Origins, Structure, and Effects of National Socialism*. New York: Praeger.
- Broszat, M. 1968. The Concentration Camps 1933–45. In *Anatomy*

- of *The SS State*, ed. H. Krausnick, H. Buchheim, M. Broszat, and H. Jacobsen, New York: Walker.
- Browning, C. 1985. *Fateful Months: Essays on the Emergence of the Final Solution*. New York: Holmes and Meier.
- Caldarelli, D.D. 1978. Incidence and Type of Otopathology associated with Congenital Palatopharyngeal Incompetence. *Laryngoscope* 88:1970–84.
- Channick, B.J., E.V. Adlin, A.D. Marks, B.S. Denenberg, M.T. McDonough, C.S. Chakko, and J.F. Spann. 1981. Hyperthyroidism and Mitral-Valve Prolapse. *New England Journal of Medicine* 305:497–500.
- Davidowicz, L.S. 1976. *A Holocaust Reader*. New York:Behrman.
- Debus, A.G. 1968. *World Who's Who in Science*. Chicago: Marquis-Who's Who.
- Drillien, C.M., T.T.S. Ingram, and E.M. Wilkinson. 1966. *The Causes and Natural History of Cleft Lip and Palate*. Edinburgh: Livingstone.
- Elingens-Reiner, E. 1948. *Prisoners of Fear*. London: Victor Gollancz.
- Fleming, G. 1984. *Hitler and the Final Solution*. Berkeley: University of California Press.
- Fogh-Andersen, P. 1942. *Inheritance of Harelip and Cleft Palate*. Copenhagen: Nyt Nordisk Forlag-Arnold Busck.
- Frank, D.H. 1980. Accidental Hypothermia Treated without Mortality. *Surgery, Gynecology and Obstetrics* 151:379–81.
- Garfield, E. 1979. *Citation Indexing: Its Theory and Application in Science, Technology, and Humanities*. Wiley: New York.
- Gedda, L. 1956. Un Maestro e un Esempio. *Acta Geneticae Medicae et Gemellologiae*. 5:241–48. (Suppl. 1).
- Gelder, M., D. Gath, and R. Mayou. 1983. *Oxford Textbook of Psychiatry*. Oxford: Oxford University Press.
- Gilbert, M. 1986. *The Holocaust*. London: Collins.
- Gottesman, I., and J. Shields. 1972. *Schizophrenia and Genetics*. New York: Academic Press.
- . 1982. *Schizophrenia: The Epigenetic Puzzle*. Cambridge: Cambridge University Press.
- Grosse-Brockhoff, F.G. 1971. *Pathologic Physiology and Therapy of Hypothermia*. In *German Aviation Medicine: World War II*, ed. Surgeon General U.S. Air Force, vol. 2, 828–42. New York:Scholium.
- Hamby, R.I. 1981. Hereditary Aspects of Coronary Artery Disease. *American Heart Journal* 101:639–49.
- Hanauske-Abel, H. 1986. From Nazi Holocaust to Nuclear Holocaust: A Lesson to Learn? *Lancet* 2 (August 2):271–73.

- Harnett, R.M., E.M. O'Brien, F.R. Sias, and J.R. Pruitt. 1980. Initial Treatment of Profound Accidental Hypothermia. *Aviation Space and Environmental Medicine* 51:680-87.
- Hayward, J.S., and J.D. Eckerson. 1984. Physiological Responses and Survival Time Prediction for Humans in Ice Water. *Aviation, Space and Environmental Medicine* 55:206-12.
- Hilberg, R. 1985a. *The Destruction of the European Jews*. Vol. 1. New York: Holmes and Meier.
- . 1985b. *The Destruction of the European Jews*. Vol. 2. New York: Holmes and Meier.
- Hill, M.M., and L.N. Williams. 1965. *Auschwitz in England: A Record of a Libel Action*. New York: Stein and Day.
- Himmler, H. 1942. Letter to General Milch: Dated 'B' November 1942. In *The Treatment of Shock from Prolonged Exposure to Cold, Especially in Water*. ed. L. Alexander, 26-27. Washington: Office of the Publication Board, Department of Commerce.
- Kater, M.H. 1974. *Das "Abnenerbe" der SS 1935-45: Ein Beitrag zur Kulturpolitik des Dritten Reiches*. Stuttgart: Deutsche Verlags-Anstalt.
- . 1987. The Burden of the Past: Problems of a Modern Historiography of Physicians and Medicine in Nazi Germany. *German Studies Review* 10:31-56.
- Levine, R.J. 1986. *Ethics and Regulation of Clinical Research*. Baltimore-Munich:Urban and Schwarzenberg.
- Lifton, R.J. 1985. What Made This Man? Mengele. *New York Times Magazine* (July 21):16-25.
- . 1986. *The Nazi Doctors: Medical Killing and the Psychology of Genocide*. New York: Basic Books.
- Lloyd, E.L. 1986. *Hypothermia and Cold Stress*. London: Croom Helm.
- McDonald, A. 1985. Ethics and Editors: When Should Unethical Research Be Published? *Canadian Medical Association Journal* 133:803-5.
- McKusick, V.A. 1982. The Human Genome through the Eyes of a Clinical Geneticist. *Cytogenetics and Cell Genetics* 32:7-23.
- . 1983. *Mendelian Inheritance in Man: Catalogs of Autosomal Dominant, Autosomal Recessive, and X-linked Phenotypes*. Baltimore: Johns Hopkins University Press.
- Mengele, J. 1937. Rassenmorphologische Untersuchung des vorderen Unterkieferabschnittes bei vier rassischen Gruppen. *Morphologisches Jahrbuch* 79:60-117.
- Mirchuk, P. 1976. *In the German Mills of Death: 1941-1945*. New York: Vantage.
- Mitscherlich, A., and F. Mielke. 1949. *Doctors of Infamy: The Story of the Nazi Medical Crimes*. New York: Schuman.

- Moe, K. 1984. Should Nazi Research Data be Cited? *Hastings Center Report* 14(6):5-7.
- Mommsen, H. 1986. The Realization of the Unthinkable: The 'Final Solution of the Jewish Question' in the Third Reich. In *The Policies of Genocide: Jews and Soviet Prisoners of War in Nazi Germany*, ed. G. Hirschfeld, 108-9. London: Allen and Unwin.
- Mosse, G.L. 1978. *Toward the Final Solution: A History of European Racism*. New York: Harper and Row.
- Müller-Hill, B. 1984. *Tödliche Wissenschaft: Die Aussonderung von Juden, Zigeunern und Geisteskranken 1933-45*. Hamburg: Rowohlt.
- . 1987. Genetics after Auschwitz. *Holocaust and Genocide Studies* 2:3-20.
- Newman, H.H. 1942. *Twins and Super-twins: A Study of Twins, Triplets, Quadruplets and Quintuplets*. New York: Hutchinson.
- Nyiszli, M. 1960. *Auschwitz*. New York: Fawcett.
- Planansky, K. 1972. Phenotypic Boundaries and Genetic Specificity in Schizophrenia. In *Genetic Factors in "Schizophrenia,"* ed. A.R. Kaplan, 141-71. Springfield, Ill.: Thomas.
- Posner, G.L., and J. Ware. 1986. *Mengele: The Complete Story*. New York: McGraw-Hill.
- Rainer, J.D. 1976. Genetics in Behavior and Psychiatry. In *Biological Foundations of Psychiatry* ed. R.B. Grenell, and S. Gabay. Vol. 1. New York: Raven.
- Rascher, S. 1943. Report to Heinrich Himmler. Dated 17, February, 1943. In *The Treatment of Shock from Prolonged Exposure to Cold, Especially in Water*, ed. L. Alexander, 32-33. Washington: Office of the Publication Board, Department of Commerce.
- Reichsausschuss für Volksgesundheitsdienst. 1935. *Law for the Prevention of Hereditarily Diseased Offspring* (Approved translation of the *Gesetz zur Verhütung erbkranken Nachwuchses*). Berlin. Copy preserved in the Archives du Centre de Documentation Juive Contemporaine, Paris. Document B.15.076.
- Reichsgesetzblatt-Legal Gazette. 1936. Order No. 5 for the Administration of the Law for the Prevention of Hereditary Diseased Offspring. Berlin. 25th February. Copy preserved in the Archives du Centre de Documentation Juive Contemporaine, Paris. Document B.15.076.
- Schafer, A. 1987. The Bloodstained Data: Can We Use Nazi Experimental Data in Good Conscience? *Canadian Doctor* 53:GP4-7.
- Scheinfeld, A. 1967. *Twins and Supertwins*. Philadelphia: Lippincott.
- Seidelman, W.E. 1986. Animal Experiments in Nazi Germany. *Lancet* 1:1214.

- Shirer, W.L. 1960. *The Rise and Fall of the Third Reich*. Greenwich, Conn.: Fawcett.
- Spiro, H.M. 1984. Eppinger of Vienna: Scientist and Villain? *Journal of Clinical Gastroenterology* 6:493-97.
- Stern, K. 1951. *The Pillar of Fire*. New York: Harcourt, Brace.
- Stock, U. 1987. Deutsche Ärzte und die Vergangenheit. *Die Zeit* (June 12):56.
- Stone, P.H., M.V. Sherrid, and K.E. Cohn. 1981. Correlation of HLA Types in Premature Coronary Artery Disease. *Chest* 79:381-85.
- Stoner, H.B., K.N. Frayn, R.A. Little, C.J. Threlfall, D.W. Yates, R.N. Barton, and D.F. Heath. 1980. Metabolic Aspects of Hypothermia in the Elderly. *Clinical Science* 59:19-27.
- Teixeira, W.R.G. 1985. The Mengele Report. *American Journal of Forensic Medicine and Pathology* 6:279-83.
- Tenenbaum, J. 1956. *Race and Reich: The Story of an Epoch*. New York: Twayne.
- Ten Kate, L.P., H. Boman, S.P. Daiger, and A.G. Motulsky. 1982. Familial Aggregation of Coronary Heart Disease and Its Relation to Known Genetic Risk Factors. *American Journal of Cardiology* 50:945-53.
- Von Verschuer, O. 1939. Twin Research from the Time of Francis Galton to the Present Day. *Royal Society of London: Proceedings* 128:62-81.
- Weindling, P. 1985. Race, Blood and Politics. *Times Higher Education Supplement* (July 19):13.
- Wistrich, R. 1982. *Who's Who in the Third Reich*. London:Weidenfeld and Nicolson.
- Witkop, C.J. 1964. Genes, Chromosomes and Dentistry. *Journal of the American Dental Association* 68(June):845-58.
- Zofka, Z. 1986. Der KZ-Arzt Josef Mengele zur Typologie eines NS-Verbrechers. *Vierteljahrshefte für Zeitgeschichte* 34:245-67.

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