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The Monstrous and the Prosaic



We are living in an enlightened age.

Adolf Radermacher, German cancer researcher, 1942

The fully enlightened earth radiates disaster triumphant.

Max Horkheimer and Theodor Adorno, German-Jewish émigré philosophers, 1944

THE STORY of cancer research and policy under the Nazis has tended to elude the attention of historians for various reasons, the most important being, perhaps, that it may not seem to be in anyone's interest to dredge up such things. The subject appears to fall into an "ideological gap": as with indoor domestic radon prior to the 1980s,¹ there are not strong predilections driving attention to the topic. Historical memory is selective in any event, and we seem to prefer to focus on the barbarism of the era, a move that allows us to neatly cordon off a sanctimonious "us" from a fallen "them."

The episode is intriguing, however, for the light it sheds on the experience of science and public health under the "extreme" conditions of a health-conscious dictatorship. The story is not simply one of the suppression of science or its unwilling conformity to political chicanery: public health initiatives were launched in the name of national socialism; Nazi ideals informed the practice and popularization of science, guiding it, motivating it, and reorienting it in ways we are only beginning to appreciate. The Nazi war on cancer shows that what many of us would consider "good" science

can be pursued in the name of antidemocratic ideals. Public health initiatives were pursued not just *in spite of* fascism, but also *in consequence of* fascism. It is therefore not enough to speak simply of the suppression or even the survival of science; one has to see how dictatorial ideals worked to inspire and guide the science of the time.

In these final pages, I would like to broaden this inquiry to encompass some of the legacies of Nazi-era cancer research, including the question of whether the cancer policies of the time might have had an impact on postwar cancer rates. I want to complicate how we think about quackery (not all Nazi doctors were quacks!), but I also want to draw attention to Posen's mysterious Reich Institute for Cancer Research, which seems to have served as a laboratory for biowarfare research, exploited after the war by Allied authorities. I will also say something about how we should interpret the Nazi war on cancer—and what it tells us about the nature of fascism.

I should caution, though, that my endpoint is not a very cheerful one. There is an eerie familiarity in Nazi cancer research that does not sit very well with how we customarily regard the winds that generated the Holocaust.

THE SCIENCE QUESTION UNDER FASCISM

Most people when they think about Nazi medicine think about the crimes for which the period is notorious. Nazi doctors sterilized some 350,000 Germans, murdered 200,000 mentally or physically handicapped people, and killed at least a thousand concentration camp inmates in the course of medical experiments designed to advance the cause of German military medicine. Nazi doctors collaborated in the exploitation of slave labor, and in the wholesale extermination of European Jews and Gypsies.

Nazi medical horrors are familiar, but it is also important that we recognize the political diversity and tensions of the era. We are accustomed to thinking of Nazi political culture as "totalitarian," but historians have also begun to appreciate the "polycratic"

nature of Nazi governance. There were competing factions with different agendas, and the policies undertaken were generally the result of struggles among different groups—the SS, the Interior Ministry, the powerful offices of Goebbels and Göring, not to mention Hitler's own predilections.

In science and medicine, too, it is wrong to speak of a coherent Nazi cancer research or policy. Rudolf Hess and his fellow romantics pushed for organic food and spiritual union, while Hans Auler and other champions of orthodoxy pushed for belt-tightening and technical finesse. Hitler eschewed meat, though some Nazi philosophers boosted pork as the *sine qua non* of Nordic life.² Anti-tobacco activists had to fight against industry apologists, of course, but also against the medical myopia that either disregarded statistics or focused exclusively on curing cancer rather than preventing it. Radiotherapists pushed X-rays and radium therapy, while racial hygienists pushed for strict controls on genetic hazards. Organists stressed the importance of exercise and fresh vegetables, while military planners were busy stockpiling thousands of tons of food in tins. Nazi science was not a monolith; there was rarely a simple translation between ideology and policy.

Conflicting agendas are clear, for example, in the contrary hazard histories of X-rays and radium. Radiation was known to be a cause of both cancer and genetic mutations prior even to the 1930s, and by the middle of the Nazi era one begins to encounter the view that there is no "threshold" dose below which radiation is completely safe. Racial hygienists were notoriously afraid of genetic damage, championing stringent rules to protect "healthy Germans" against exposure to radiation and to prevent the carriers of damaged genes from reproducing. Nazi fears of radiation, however, were more than matched by the (equally Nazi) push to root out illnesses (and sometimes individuals) perceived as threats to public health. The campaign to implement mass screening led to an enormous upsurge in X-ray exposures—riding roughshod over the cautions voiced by eugenicists. The people doing the exposing were not the same as those issuing the warnings—though the interesting difference is not between Nazis and anti-Nazis, but rather between different kinds of Nazis, with different sorts of training

and different conceptions of health. The SS radiologist Hans Holfelder, who spearheaded an ambitious drive to X-ray hundreds of thousands of Germans, was trying to identify illness so steps could be taken to treat or isolate afflicted individuals; Eugen Fischer's concern in warning against overexposure was the longer-term "genetic health of the race." Both were solid Nazis, but the two had very different conceptions of how to preserve the health of the favored race.

Similar complexities are visible in the case of radium. Radium was known since the 1920s to be a cause of cancers and fetal malformations, and warnings against breathing the emanating gases emerged within a few years of their discovery. People found it difficult to believe, however, that inhaling the vapors from a clean mountain spring could make you sick. Complacency was fostered by the fact that some of the most serious harms came only months or even years after exposure, but also by the fact that radium showed early promise as a therapy. Radium became a mark of international medical prestige, as nations competed to accumulate the precious element, often said to be "the rarest and most costly metal on the planet"³ (radium cost thousands of dollars per gram in the 1930s). New disciplines sprang up to explore the curative powers of the rays (e.g., radiology), leaving questions of potential hazards largely up to amateurs or ad hoc committees. Knowledge of potential benefits was privileged over knowledge of potential harms, the end result being that far more physicians came to see radium as a cure for cancer than as a cause of cancer.

Nazi ideology was not obviously relevant in many of these machinations. Radium research and therapy had an inertia that cannot be understood as a response of scientific actors to external political authority; there were ideologies other than Nazism suffusing the practice of medicine at the height of Nazi power.

What these examples suggest is that there was no one single "community of science" or medicine under the supposedly totalitarian conditions of Hitler's fascism—even after the exclusion of the Jews and the banishment of communists. What they also show, though, is that relations between "science" and "society" are more complex than is commonly imagined. Even in the microcosm of

Nazi cancer research we find very different ways that science can express politics, and vice versa. Scientists were boosting fascism, while fascists were boosting science. Fascists were arguing over what kinds of science should be supported, and scientists were arguing over what kinds of fascism should be supported. The boundary between science and politics was not (and can never be) a fast or formal one.

I should reassure the reader that I have no desire to efface the brute and simple facts—the complicity in crime or the sinister stupidities of Nazi ideology; I am also aware that complexity and nuance are sometimes the historian's cheap shot, an easy retreat from clear-line moral judgment. What I would maintain, however, is that we too often construct a scarecrow image of Nazi doctors—of monstrous and sadistic demons hell-bent on genocide and murderous experimentation. There were, of course, such men, but there were also fertile, creative faces of fascism, as perverse as this may sound.

COMPLICATING QUACKERY

To repeat, most people when they think about Nazi medicine think about the more bizarre, cruel, or murderous parts: Mengele's injection of dyes into eyes to see if they could be changed from brown to blue, or the horrific high-pressure, freezing, and transplant experiments exposed at Nuremberg.⁴ This is consistent with a larger view of science which holds that inquiries driven by ideologies are invariably corrupted in some fundamental sense. This conception of ideology as distortion (or worse) ignores the fact that passions are often involved in the pushing of science in one direction rather than another—for better or for worse. With such a puritanical conception of science, it becomes too easy for us to dismiss a body of widely held medical knowledge or practice as "quackery."

Cancer in the 1930s was a mysterious disease—as it still is today to a great extent. The failure of orthodox physicians to come up with a cure or even a satisfactory set of palliatives made it easy for countless quacks and charlatans to sell their wares, and even for

orthodox physicians to try out therapies that today sound somewhat flaky: Fritz Lickint X-rayed the spleens of cancer patients to stimulate the production of "cancer-fighting hormones";⁵ Karl Heinrich Bauer treated cancer patients with benzpyrene, the theory being that if something possessed the power to cause cancer, it could perhaps also cure it.⁶

After publishing his first cancer book in 1932, Erwin Liek received more than three hundred letters from people claiming to have discovered a cure for cancer: most claimed to have been ignored by moneygrubbing doctors, some declared themselves willing to divulge their secret for a very high price, several magnanimously declared themselves "ready to share the Nobel Prize" with the Danzig surgeon. Germans were not alone in their desperate enthusiasm: in 1931, a New York City Cancer Commission had announced a prize for anyone offering an effective remedy; some 3,500 entries were submitted, though none, according to Liek's account, was judged promising enough to warrant a follow-up.⁷

Nazi leaders were ambivalent about many of these "alternative," organic, or otherwise heterodox theories and therapies. On the one hand, there was a decided willingness to open up medical therapeutics, consistent with the ambient critique of myopic medical orthodoxy. The Reich Anticancer Committee in 1934, for example, set up a subcommittee to evaluate folk cancer remedies and eventually tested more than a hundred different kinds of cures. On the other hand, there was worry that charlatans would profit from untested methods, distracting attention from proven therapies while robbing sufferers of their hard-earned cash. Tensions of this sort persisted throughout the Nazi period, as they do to a certain extent even today. Doctors in the Nazi era were not unlike doctors of other times and places in wanting to establish standards to routinize practice and protect the public. The crackdown on quackery⁸ was part of this process.

We often hear that Nazi medicine was quack medicine,⁹ but what I find interesting is how the question of quackery becomes confused—in the eyes of some postwar observers—with the question of resistance. Quackery has been celebrated as a form of resistance, but then so has orthodoxy. Neither oversimplification holds

much water, as can be seen in postwar readings of the von Brehmer affair.

Wilhelm von Brehmer was one of the more controversial figures to become the target of Nazi antiquackery. Brehmer was an "organic" physician who maintained that cancer was an infectious disease caused by a microorganism (the "cancer bacterium"), that cancer cells could be detected by an "alkaline shift" in the blood, and that tumors could be successfully treated by blood transfusions and a chemotherapeutic agent consisting of mercuric cyanide and extracts from Chinese rhubarb. Academic cancer specialists were understandably skeptical: the contagion theory of cancer had been on the wane since the turn of the century, and Brehmer's bid to revive it—with support from Gauleiter Julius Streicher and others in the "Paracelsian wing" of the party—was widely regarded as false or even fraudulent. The issue came to a head in 1936, when a struggle arose over whether Brehmer was to be included in the German delegation sent to the International Congress of Pathology in Brussels. Brehmer wanted to present his findings at the congress, but Max Borst, the Munich pathologist who headed the delegation (he was also head of the Reich Anticancer Committee), opposed his inclusion on the grounds that it would embarrass German scientific medicine. Borst and others on the delegation resolved to boycott the meeting unless Brehmer were excluded; Borst also took the rather bold step of requesting a judgment from Hitler on the matter (he actually wrote a lecture explaining the controversy to the Führer).¹⁰ Hitler ordered an inquiry at the Nuremberg party congress of 1936; Leonardo Conti headed the commission and, after an investigation, rejected Brehmer's theory.¹¹ Brehmer was barred from attending the Brussels meeting and lost much of his influence from that time.

What is interesting about the Brehmer story is how differently it has been told by people with differing politico-medical agendas. Among advocates of alternative cancer therapeutics, for example, the incident has been turned into a tale of maverick, unorthodox science versus closed-minded Nazi obstinacy. David Hess in his book *Can Bacteria Cause Cancer?*, for example, states that Brehmer's blood microbe theory after the war "remained unpopular,

particularly among the former Nazi doctors who continued to practice and influence German medicine.¹² The implication is that Nazi dogmatists opposed the radical novelty of Brehmer's theory (which Hess clearly finds persuasive), an interpretation which ignores the fact that Brehmer had allies of the most despicable sort—like Julius Streicher, publisher of *Der Stürmer* and one of the most rabid antisemites the world has ever known (Streicher helped Brehmer establish his "Tumor Research Institute" at the Theresien Hospital in Nuremberg in 1935 where he was also head of the "Paracelsus Institute").¹³

There are also those, though, who take the suppression of Brehmer as evidence of the courage some doctors showed in standing up to Nazi ideology. Wolfgang Weyers in his recent *Death of Medicine in Nazi Germany*, for example, takes Brehmer's suppression as a sign of how "opposition to the Nazis was not only possible, but at times could be successful"¹⁴—ignoring the fact that Brehmer's opponents were generally as Nazi as his supporters, and that Brehmer saw himself as a victim of Nazi terror.¹⁵ Borst, it is true, was not a member of the Nazi party, but he did preside over the *Gleichschaltung* of Germany's Anticancer Committee¹⁶ and cannot be regarded as an opponent of Nazism. Hermann Druckrey was an ardent Nazi and an active opponent of von Brehmer (and a very good scientist, I should add). It should also not be forgotten that it was Leonardo Conti, the SS officer and future Reich Health Führer, who ultimately silenced Brehmer to save the science of the Reich from embarrassment. Brehmer was the victim of neither Nazi stodginess nor anti-Nazi orthodoxy; both accounts come up short.

What the story really shows is that health officials—in Germany, as elsewhere—often found it difficult, then as now, to sort out cancer fads from cancer facts. The confusion also illustrates the importance of distinguishing *Germans* from *Nazis*: Brehmer encountered opposition from German doctors—some of whom were Nazis (Druckrey and Conti) and others who were not (Borst). The same can be said for his supporters. It might be comforting to believe that good science tends to travel with good politics (however one defines either term), but that is unfortunately wishful thinking.

Another lesson of the Brehmer affair is that support from Nazi ideologues was not always enough to guarantee the survival of a theory or a therapy. That is also clear in the curious case of "earth rays"—a popular theory according to which diverse human ills were supposed to derive from exposure to invisible, underground "rays" or "currents" (*Erdstrahlen*) purportedly flowing through the earth. Devotees throughout Germany earned sizable fees for "dowsing" a piece of ground—to determine its suitability as a building site, for example—and installing "shields" of one sort or another to protect against the purported rays. The idea was already a hoary one in occult literature (it shares a certain kinship with geomancy), but its popularity must also have piggybacked on evidence emerging at this time that radon, X-rays, and even cosmic rays could cause cancer. In March of 1934, Baden's Anticancer Committee had supported a survey to test the theory; the prestigious homeopathic journal *Hippokrates* was publishing open-minded investigations into the question as late as 1937.¹⁷

Campaigns against quackery are as old as medicine itself, but the Nazi-era push for uniformity and "standards" does seem to have given courts a freer hand to quash unproven therapies. In 1937, the Reich Ministry of Justice declared there was no foundation for the view that "earth rays" (*Erdstrahlen*) could affect health, and no evidence even that such rays existed.¹⁸ In 1939, a man was convicted of selling thousands of "earth-ray shields" to protect against cancer and other maladies caused by the rays. The designer, a master mason from Potsdam, was asked to demonstrate his dowsing technique in court and, after failing the test, was declared a "dangerous chronic criminal" and sentenced to three years in prison.¹⁹

What is interesting about this "earth ray" business is that dowsing was suppressed despite its popularity among a number of high-ranking Nazi leaders. Hitler had had his Reichskanzlei dowsed in 1934, and several others in his entourage took similar precautions. Hess was probably the oddest of the lot: he was known to have suspended powerful magnets above his bed to draw out "negative magnetic forces" from his body—which bothered more down-to-earth Nazis like Joseph Goebbels, who used

Hess's May 1941 flight to England as an excuse to begin a clamp-down on occult medicine (see again chapter 2). Within days of Hess's flight, the propaganda minister wrote in his diary: "Anti-cancer film checked [the reference is to Auler's *Jeder Achte*]. Sharp attack on quackery. Now that that crazy Hess is gone, we can set this ball rolling."²⁰ Two months later, on July 16, naturopathic healers were barred from using "occult methods" (e.g., dowsing rods, "pendula," or shields against earth rays) to diagnose or treat diseases. Chiropractors were also barred from treating cancer.²¹ Natural healers were still allowed to treat cancer using "recognized practices" like homeopathy, natural herbs, and physical therapy (massage); they could also use "magnetism" and "biochemistry" in combination with these. Some local medical societies took a harsher view, condemning all treatment of cancer by non-physicians.²²

How should we understand the Nazi campaign against quackery? The most commonly expressed concern was that people would squander their money or their health on useless remedies, but the campaign must also be understood as a move by medical professionals to consolidate their monopoly over the healing arts. (Danzig's famous Cancer Law, for example, barred anyone except physicians from treating cancer patients.) The suppression of quacks was part of a larger quest for standards, a primary goal of which was to maximize medical efficacy. Quack medicine was (by definition) ineffective medicine, and ineffective medicine was regarded as a drag on German economic and fighting power.

What we cannot say, though, is that the medicine and medical research moved by "Nazi ideology" at this time was invariably "quack" or "bogus"—by the standards of the time or even by today's standards (since there is obvious disagreement even today over what is genuine and what is fraudulent in many spheres). That is the irony—and the complexity—of Nazi medicine: Nazi-inspired research was often idiotic, but not always.

Let me close this section with one last irony: the Nazi campaign to establish "truth in advertising." Nazi officials strengthened Weimar-era advertising laws, passing new measures designed to curb exaggerated claims for the potency of drugs or medical

procedures. Drug companies were barred from displaying letters of thanks from satisfied customers and from making unsubstantiated claims of efficacy. Ads for cancer drugs were allowed to be published only in medical journals, and ads construed as raising public fears (of cancer, for example) were banned altogether.²³ Auler was one of those calling for limits on what could be said about cancer: "The time is past when every physician and non-physician can publicly express his opinion about the nature of cancerous growths."²⁴ The campaign extended beyond cancer, as when Reich Health Leader Conti in 1939 stated that the regime would no longer tolerate "exaggerated advertising for infant formulas" which diminished a mother's "will to nurse" (*Stillwillen*).²⁵ The head of the government's Advertising Council boasted that the ads produced since the Nazi revolution were "far more honest" than ads published prior to that time; six years of Nazi rule had finally produced a genuine "truth in advertising."²⁶ The Nazis were obviously somewhat selective in their deceptions.

BIOWARFARE RESEARCH IN DISGUISE

It is important not to exaggerate the success of the Nazi war on cancer. Nazi militarism cut short many of the long-term hopes of the regime, including several of the most promising cancer initiatives. Anticancer efforts slowed dramatically as the war dragged on: in the face of mounting casualties on both fronts and the demand for breakneck production at home, more immediate priorities came to the fore. Hans Auler in 1943 complained that plans to conduct mass screening for cervical and uterine cancer had had to be scrapped,²⁷ and many other programs suffered. This is not hard to understand: nations offering up hundreds of thousands of men to be killed on the front are not likely to spend a lot of time thinking about how to prevent cancer at home. The same was true in other nations; in the United States, for example, Wilhelm Hueper's *Occupational Tumors and Allied Diseases*, the most comprehensive analysis of occupational cancer of the century, was essentially ig-

nored when it appeared in the spring of 1942, only a few weeks after the declaration of war against Japan.²⁸

This is not to say, however, that there were not important research initiatives undertaken during the five and a half years Germany was at war. The *Zeitschrift für Krebsforschung* and *Monatsschrift für Krebsbekämpfung* continued publishing through the end of 1944, as did several other journals reporting on cancer topics. Tobacco hazards research continued, as did experiments on food dyes, asbestos, hormones, and viral and radiation carcinogenesis. Efforts were even launched to find out whether the trauma and deprivation caused by the war might result in cancers. The *Monatsschrift für Unfallheilkunde* reviewed the medicolegal aspects of tumors caused by accidents, and whether gunshots could cause cancer. Such pursuits continued late into the war (e.g., explorations of whether frostbite or scarring or gas warfare could cause cancer).²⁹

Some of what passed for "cancer research," though, was not what it seemed to be on the surface. Ute Deichmann in her *Biologists under Hitler* has shown that participation in "cancer research" was successfully used to evade the draft, especially after the outbreak of war. Adolf Butenandt, winner of the 1939 Nobel Prize for his work on sex hormones, employed three DFG-supported scientists, all of whom obtained military deferments for their work. Then as now, it seems, the attachment of the label "cancer research" gave basic biology an aura of utility and respectability—and in Germany in the early 1940s could actually save your life. Richard Kuhn, head of Heidelberg's Kaiser Wilhelm Institute for Medical Research, in 1942 argued that the Göttingen cancer chemist Hans Lettré should be exempted from uniformed service on the grounds that his work had military potential: "In the U.S. this problem [of chemical carcinogenesis] is being actively researched, and the suggestion has been made that cancer-causing substances may be deployed in the war"³⁰—as biowarfare agents, in other words. Suggestions such as this may help explain why some of Germany's leading cancer researchers tried to marry cancer research and biowarfare work, as we shall see in a moment.

Several of the projects proposed in the final months of the war border on the comical. In late February or early March of 1945, for example, when the Russians were already chopping into German territory, Himmler wrote SS Reichsarzt Ernst Grawitz, asking him to investigate why there were "no people with cancer" in Germany's concentration camps:³¹

It would be interesting to determine exactly what these people [concentration camp prisoners] are dying of. The mortality in the camps is, as you know, no higher, on average, than outside the camps. [And since so few are dying from cancer] it makes no sense to test new cancer therapies on these prisoners. But there is another question that can be asked from a somewhat different angle: How many people are suffering from cancer in the German population as a whole? What percent of the population finds itself at the beginning or some other stage of cancer? If you were to apply this proposition to our prisoners, many of whom are foreigners, you could calculate how many cancer patients you would expect among our 700,000 prisoners [This figure seems to include prisoners outside the concentration camps, and possibly POWs—RP]. I am therefore assigning you the task of exploring why the prisoners are not getting cancer. I think that in this way we can do an even greater service to science.³²

It is hard to say which is the most bizarre aspect of this proposal: the idea that cancer was absent in the camps, that the prisoners were healthy ("robust"), that Grawitz would still have the wherewithal to conduct such studies, or that whatever results might be obtained would have meaning for the population as a whole. Himmler by this time must have been living in a kind of fantasy world—the would-be cancer sage was spending the last weeks of his life exterminating Jews as fast as was humanly possible; he also apparently hoped to have one last go at *Volksfeind Krebs*.

Himmler's cancer follies might be dismissed as the musings of a murderous tyrant, but there was another cancer project of the war years that was far more substantial—with major support from the German Research Council and the Kaiser Wilhelm Gesellschaft—yet remains somewhat enigmatic even today. The Reich Institute for Cancer Research (Reichsinstitut für Krebsforschung) was estab-

lished in the fall of 1942 in Nesselstedt, near Posen (Poznań), about two hundred kilometers east of Berlin in "what used to be Poland." The institute is remarkable for the timing of its establishment (in the middle of the war, when one would imagine cancer research a low priority) and its placement (deep in conquered Poland). Most curious of all is how generously it was funded: from July 1943 through December 1944, the institute received a total of 1.5 million reichsmarks, an enormous expenditure at a time when most other scientific projects were being curtailed. Why the funding on such a scale?

Plans for the establishment of a Reich Institute for Cancer Research began in the early 1940s, primarily through the efforts of Rudolf Mentzel, president of the German Research Council, and Kurt Blome, deputy Reich Health Leader and Plenipotentiary for Cancer Research and one of the most powerful men in German medicine.³³ Cancer journals from the early 1930s had lamented the absence of a single, Reich-wide institute to coordinate German cancer research, and though some had argued forcefully for a decentralized campaign,³⁴ the example of centralized institutes in other nations was too tempting to ignore. Italy had the Milan Institute for Cancer Research, and the United States had had its National Cancer Institute since 1937. England's Imperial Cancer Research Fund was already four decades old,³⁵ and other countries had comparable institutes. Germany, while a leader in cancer research, had no central research institution; the Reich Institute was designed to fill this gap.

Hopes were high for the institute when construction began in the fall of 1942. Hitler was at the height of his power, with much of Europe under his heel. Expectations were still that the Russians would fold in fairly short order: the capture of the German Sixth Army at Stalingrad, the turning point in the war, did not take place until January of 1943. The Institute for Cancer Research was launched with great media fanfare: Hermann Göring visited the site while it was under construction, and Heinrich Himmler made several inspections. The institute boasted separate divisions for gynecology and physiology and a sizable "tumor farm" to raise animals for use in experiments. Hopes were also high for its neighbor

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and affiliate, the Reich University of Posen, the second jewel in the crown of the Reich, the other being the Reich University of Strassburg. ("Hermann Göring University" and "Adolf Hitler University" were two names considered for Posen's new university, though Hitler apparently did not like either idea.)

A closer look at the "cancer research" performed at Nesselstedt, however, reveals a rather suspicious gap between the advertised mission and the actual research conducted. As Friedrich Hansen of Hamburg has shown, the Reich Institute for Cancer Research appears to have been, among other things, a camouflaged operation for the production of biological warfare agents.³⁶

The evidence for such a claim, while indirect, is persuasive. For one thing, there are the extreme security measures taken to protect the facility. A three-meter wall was built to surround the compound, topped by several layers of barbed wire. The institute had its own special SS unit to guard the grounds, an unusual precaution for a nonmilitary installation. There is also the fact that several of the scientists working at the institute came from military backgrounds, with no obvious experience or interest in cancer. Karl J. Gross, for example, was an Austrian physician and SS officer with expertise not in cancer but in tropical medicine. It was Gross who supervised the construction of the site, which included a crematorium and the already-mentioned tumor farm, but also several "animal experimental chambers," each of which contained a toilet, a washbasin, and a bed—leading, of course, to questions of what kinds of "animals" were envisioned as experimental subjects. (Gross had earlier experimented on 1,700 prisoners at Mauthausen, many of whom died in the course of the experiments.)³⁷ Hundreds of Polish laborers were conscripted to build the institute; the walls were made of a special cement designed to resist the penetration of bacteria.³⁸ The biowarfare hypothesis is further bolstered by the fact that several of the institute's personnel—notably Kurt Blome, who directed the Nazi biowarfare effort beginning in 1943—ended up working for American military authorities after the war as part of the secret "Project Paperclip" initiated to exploit Nazi scientific talent. Blome admitted to postwar American inter-

rogators that Himmler had ordered him to conduct plague vaccine experiments on camp inmates in 1943; he also confessed to having volunteered the Nesselstedt facility as an appropriate site for such tests. (The Nazi biological warfare project, code-named *Blitzableiter*, or lightning rod, was apparently granted to German military leaders as compensation for Hitler's refusal to pursue a more aggressive atomic bomb effort.)³⁹ The institute may have been overrun by Soviet troops before Blome ever got a chance to begin the experiments. The paper trail is ambiguous on this point, which may have saved his hide at Nuremberg. It certainly made it easier for him to join the postwar American biowarfare effort.⁴⁰

Yet another piece of evidence comes from the fate of the institute's personnel and papers after the Allied conquest. The bombardment of nearby Posen began in the fall of 1944, by which time Wehrmacht commanders had ordered the evacuation of war-important facilities into the German hinterland. The equipment and personnel of the Nesselstedt facility were transferred to a new location near the town of Geraberg, southwest of Arnstadt, in a valley (the Jonastal) envisioned as a "last refuge" for Nazi leaders fleeing Allied armies. Blome fled to the valley with his bacterial cultures in January of 1945, apparently hoping to develop a biological *Wunderwaffe* that might allow his countrymen to snatch victory from the jaws of defeat. Funding for the relocated institute was substantial: 300,000 RM in October 1944, followed by another 500,000 RM at the end of the year.⁴¹ American armies moving into Thuringia discovered some of the institute's papers and equipment (the region was later handed over to the Russians in exchange for West Berlin) and recognized the site for what it was—a cancer research institute with biowarfare research and development capabilities.

There is surely more to the Nesselstedt story than what we now know; the secret must lie buried in American or German (or Japanese?) archives. It is to be hoped that more documents will surface on whether and to what extent Germany's first centralized "cancer research institute," masquerading as a civilian scientific enterprise, came to produce bioweapons of mass destruction.

ORGANIC MONUMENTALISM

A lot has been written about whether Hitler was "modern" or "antimodern"—which has always struck me as a rather fruitless debate, given the ambiguity of the terms. Does modernity mean technical finesse? Secular or rationalized institutions? Gender and/or racial equalities? A certain aesthetic style or attitude toward urbanization? Things that are sort of recent?

Nazism should not, of course, be regarded as totally foreign to the "modern" world we live in, something alien and otherworldly, but there is also a "back to nature" aspect of its ideology, expressed (for example) in the push for natural foods and "rural values" and much else that smacks of an imagined Teutonic yesteryear. There is a twisted mix of enlightenment and romance in this view of the world: many in the Hitler camp were opposed to cities, to "the artificial," and to several central trends in twentieth-century physics (notably quantum mechanics and relativity theory), but there is also a kind of retread classical/technical monumentalism that we must appreciate. A stadium designed to seat half a million people—the largest in the world—lies unfinished and rotting in Nuremberg, a testament to the Führer's passion for monumental spectacle. Grandiose plans for intercontinental ballistic missiles, rocket-powered bombs and planes, and high-speed freeways are all reflections of this monumentalist vision, as are the era's ambitious cancer registries and mass screening programs.

Monumentalism also pervades the Nazi organic impulse. The largest swastika in the world today, for example, is a grove of conifers planted in a farmer's field near Berlin in the form of a huge, one-hundred-meter *Hakenkreuz*. More than sixty years after planting, the design emerges every autumn, as the surrounding deciduous trees change colors. It is visible only from the air.

Another interesting example of this organic gigantism can be seen in the Nazi era's promotion of herbal remedies. From 1934 to 1937, the amount of land devoted to herbs and healing plants (*Gewürz- und Heilkräuter*) increased by more than a factor of ten—from 820 hectares to 3,896 hectares (a hectare is about two and a

half acres). Cultivation was especially strong in the forests of Thuringia and north-central Germany, but every part of the country was involved.⁴² Popular magazines celebrated the importance of natural foods and drugs, and professional apothecaries took steps to evaluate the efficacy of medicinal herbs. Schoolchildren were urged to gather local herbs, and military men even took an interest. Naturopathic medicine aroused so much excitement that academics felt obliged to warn against the potential hazards of gathering such plants. (Natural botanicals often contain strong chemicals, and prolonged exposure—from contact with the skin through gathering or processing—could and did result in poisonings.)⁴³

In the late 1930s, SS botanists under Himmler's direction established extensive herbal gardens at Dachau to grow spices and botanicals for experimental purposes and for distribution to the SS and Wehrmacht. Germany's first concentration camp eventually boasted the largest medico-botanical research station in the world, with a thousand prisoners cultivating, drying, and packaging herbal medicines and spices from two hundred tediously tilled acres on the "Dachauer Moor."⁴⁴ According to Auschwitz commandant Rudolf Höss, the *plantage* produced almost all of the army's seasonings for the duration of the war. The operation was a profitable one, earning hundreds of thousands of marks for the SS every year—so profitable, in fact, that it was continued for several years after 1945 as a local cooperative, employing hundreds of former KZ prisoners.⁴⁵

I am a historian of science by profession, and if there is one thing members of my clan like to stress, it is that scientific ideas do not flourish in a vacuum. Ideas often have a "value-slope" (Iain Boal's felicitous phrase), are pushed or pulled by social forces in odd and intricate ways that reveal an often torn or permeable membrane between science and society. In the Nazi era, one expects to find intellectual efforts tied somehow to larger nationalist, xenophobic, and racio-purist currents. I have already mentioned many examples, but there are, of course, many others. In the Nazi conception of landscape architecture, for example, native indigenous plants were to be favored over exotic species. Trees in the Reich were supposed to be tall and unyielding, not bent or "degenerate" like

the contorted hazelnut or beech. The Nazi garden was similar in certain respects to the "wild garden" favored by fin de siècle English landscape gardeners such as William Robinson—though the stress on eliminating the exotic set the German movement somewhat apart. A new discipline of plant sociology—a kind of agro-eugenics—was invoked to incorporate Nazi ideals into garden architecture,⁴⁶ and plans were made to harmonize natural landscapes with military/political goals (e.g., by planting hedgerows north-to-south in occupied territories of the east to slow potential tank attacks of the future).

At the risk of straying further still from cancer, let me mention one last example of the Nazi era's paternalist, Nordic supremacist organicism, expressed in Walther Schoenichen's 1942 book on nature conservation. Schoenichen's book is a remarkable defense of environmental ethics, conservation, and ecological restoration (*restituierender Naturschutz*); it also contains a review of world genocide and of steps taken to protect indigenous cultures. The book presents an elaborate plan for the "conservation of native peoples in their native habitats," conceived as part of a larger design to save the world's vanishing flora and fauna.⁴⁷ Schoenichen conceded that the disappearance of "primitive human races" was often a necessary part of the struggle for existence, but he also rejected the two dominant paths carved out by followers of the "liberalistic worldview"—the "extermination model" of the Americans and the Australians, and the "assimilation theory" of the French. Nazi native policy rejected both of these models, favoring instead "the development of indigenous peoples according to their own racial heritage." In Schoenichen's view, at least, such a policy would include bans on intermarriage, to preserve racial integrity; on tourist travel into or out of native reservations (reservations "were not zoos"); on colonial settlements; and on the importation of alcohol and cotton (to prevent the *Verkitschung* of indigenous cultures). These and other policies were to ensure that the native highlanders of New Guinea, for example, would avoid the twin "liberalistic" fates of extermination or assimilation. Movement within reservations was to be tightly controlled—the "dwarf Papu-

ans," for example, were to be allowed to travel only as far as the capital of Ambon. Travel further than this—to Java or even Europe—would only harm the natives: "all too soon they would burn their wings on so much light."⁴⁸

Schoenichen's "enlightened" confinement model of native/nature preservation is typical of a great deal of Nazi environmental/anthropological thought: racist exclusions are mingled with organic prescriptions for things (or peoples) to remain in their proper place, macromanaged by superstates with superior reach and designs to make the world a purportedly better place. Nazi cancer policy can also be understood in these terms: registries, routine exams, and the sanitary body and workplace were all supposed to strengthen the German Volk as they beautified the world.

DID NAZI POLICY PREVENT SOME CANCERS?

The Nazis envisioned a manipulation of organic life unprecedented in the modern world, but it is difficult to say whether Nazi cancer policy—or any other nation's cancer policy, for that matter—had any noticeable effect on cancer rates. The question is immediately mired in complexity: the agonies and upheavals of the age must have affected long-term health, quite apart from the physical and mental savageries on battlefields and in death camps, but it is difficult to say how and to what degree.

Medical historians are well aware, of course, that wars can have dramatic and often unexpected consequences for human health. The Dutch famine of 1944–1945 is a particularly striking case: the famine was the result of a Nazi transport embargo launched in response to a Dutch strike organized in anticipation of a British liberation; even though the famine lasted only six months—until May 7, 1945—it exacted a terrible toll on the population. Babies born during that period were often small or premature, and showed an increased incidence of birth defects, including mental retardation.⁴⁹ There are many similar examples from other parts of the world: there is evidence that the Persian Gulf War of 1991, for

example, resulted in the deaths of a million Iraqis—most very young and elderly—mainly from lack of medicine and maladies caused by poor-quality drinking water.

There are also well-known cases, however, where aspects of human health actually *improved* as a result of wartime privations. We know from the First World War, for example, that while rickets and other vitamin deficiency diseases rose in many European nations (from the low consumption of fresh fruits and vegetables), diabetes rates actually plunged from the unavailability of refined sugar. Many similar effects were observed after the Second World War—low rates of arteriosclerosis, for example, caused by the low consumption of meat and fat.⁵⁰

What can we say about long-term cancer consequences in the German case? One interesting fact is that, over the period 1950–1990, German women appear to have experienced one of the most dramatic declines in cancer rates of any First World population. Female age-adjusted cancer mortality rates dropped by about 12 percent from 1952 to 1990—while many other populations of the world continued to show increases.⁵¹ Since cancer rates today are generally expressions of exposures twenty or thirty years previously, it is not inconceivable that Nazi social policies—combined with the low-fat diet of the war and the postwar poverty—may have played a role in these declining rates.

When I began work on this book, I imagined that Nazi policies toward women—financial support for female athletics and for childbearing, for example, along with incentives for women to nurse their own children—might have played a role in the decline of female cancer rates. It now appears, however, that this was not the case—or at least not to any substantial degree. I say this because German breast cancer rates, precisely the rates that, according to what we now believe, should have declined in response to the above-mentioned policies, do not in fact show a decline in the postwar period. From 1952 to 1990, the West German age-adjusted breast cancer mortality rate showed a growth of more than 40 percent, from 16 per 100,000 to 23 per 100,000.

How then do we explain the fact that the overall cancer rate for men has grown in the postwar period, while that for women has

TABLE 7.1
West German and U.S. Lung Cancer Mortality,
per 100,000 Inhabitants^a

	West Germany		United States	
	1952	1990	1952	1990
Men	22	49	25	75
Women	4	8	5	32

Sources: Deutsches Krebsforschungszentrum (Nikolaus Becker); American Cancer Society.

^aAll figures are age-adjusted.

declined? The crucial point seems to be that, apart from sex-specific cancers (breast and cervical cancer, for example, or testicular and prostate cancer), the most important cancer from which males and females suffer dramatically different rates is lung cancer. The difference is substantial. In 1952, the annual lung cancer death rate among German women was only 4 per 100,000; that same year, however, the rate for German men was 22 per 100,000. By 1990 the rate for women had climbed to 8 per 100,000, while the rate for men had increased to a whopping 49 per 100,000 (see table 7.1). In Germany today, more men die from lung cancer than from any other kind of cancer. Among women, by contrast, lung cancer is still in third place, behind breast and colon cancer. The difference in lung cancer mortality between the sexes is so great that if this particular difference were somehow to vanish, most of the difference in overall cancer mortality between men and women would also disappear.

How can we explain the difference in the lung cancer mortality between German men and women? One could plausibly argue that German men were far more likely to be exposed to dangerous chemicals in the workplace, but such an argument cannot help us explain why American women's lung cancer rates have grown so much higher than German women's rates.⁵² There is, in fact, a better explanation. I would suggest that the most important factors behind the relatively slow rise of female lung cancer rates by comparison with male rates in Germany and female rates in the United States, are: (1) Nazi *paternalism*, which discouraged, often with police force, women from smoking; and (2) Nazi *militarism*, which

forced large numbers of males into a situation where smoking was not just tolerated but de facto encouraged (recall that the proportion of men smoking increased, while the average cigarette consumption decreased).⁵³ The Nazis failed to stop the growth of overall tobacco consumption, which culminated in 1942, but they did manage to channel most of that growth away from women. What did cut tobacco use—and dramatically—was the poverty and rationing of the war years and immediate postwar period.

One can never know how many women's lives may have been saved by the campaign against tobacco and the 1945 collapse of the tobacco industry. Even so, it is still perhaps worth noting that far more women would have died of lung cancer had German rates continued to grow as rapidly as they did in the United States. American women's lung cancer rates increased by more than a factor of six between 1952 and 1990 (see again table 7.1). German women's rates, by contrast, only doubled. Had the German rate increased as rapidly as the American rate, about twenty thousand more women would have died than actually did die. One could plausibly argue that whatever prevented German women from taking up the habit as rapidly as American women, eventually prevented the lung cancer deaths of some twenty thousand German women.

PLAYING THE NAZI CARD

Nazism remains a powerful symbol, and it is hardly surprising that it has been exploited for a circus of philosophical and commercial ends. Nazism is the moral low point of many of the "slippery slopes" that bioethicists worry about, the dangerous potential end of everything from euthanasia to abusive experimentation. It is difficult to overestimate the impact of Nazism on medical ethics, race relations, and much else as well; but I would also maintain that the "implications" of Nazi medicine are not as obvious as some would like us to believe. There is no immediate or unproblematic comparison, for example, between the Nazi extermination of the handicapped and current efforts to allow people to choose

the manner and timing of their death (through "living wills," for example). Bioethical discussions are full of facile identifications of Nazism with everything from abortion and rationalized medicine to doctor-assisted suicide. I would tend to agree with Michael Burleigh that "the Nazi analogy is pretty marginal to contemporary discussions about euthanasia"; I would also agree with Arthur Caplan that comparisons invoking Nazi medicine must be drawn with care lest we mischaracterize contemporary policies or diminish the genuine extremity of the Nazi experience.⁵⁴

Bioethicists are not the only ones eager to draw out "lessons" from the Holocaust, however. Pro-tobacco advocates have begun to play the Nazi card, with talk of "NicoNazis" and "tobacco fascism." In 1997, when antitobacco activists in Winthrop, Massachusetts, tried to ban all sale of tobacco within the city limits, an offended tobacco merchant suggested that the Board of Health was "taking up where Hitler left off."⁵⁵ A Toronto newspaper has accused antitobacco activists of being "NicoNazis" and "health fascists."⁵⁶ The most stunningly offensive case I know of came in the summer of 1995, when Philip Morris of Europe ran ads in many European magazines seeking to identify smokers with ghettoized Jews and antismokers with Nazis. The ads showed a map of Amsterdam with an area near the traditional Jewish quarter cordoned off and labeled "Smoking Section." The headline asked, "Where will they draw the line?"—implying that society's efforts to restrict smoking are comparable to Nazi efforts to isolate Jews (see fig. 7.1). We are likely to see more efforts to play the Nazi card, as anti-antitobacco campaigns move into higher gear.

IS NAZI CANCER RESEARCH TAINTED?

A great deal of ink has been spilled over the question of what is to be done about "tainted" Nazi data—the most common conundrum being whether it is proper for contemporary researchers to "use" scientific information generated under suspect circumstances. The debate is often raised amid a number of misconceptions—as if "the Nazi data" were something singular and well

Where will they draw the line?



The passion to regulate down to the finest detail of people's lives can lead to infringements of personal liberty.

Philip Morris Europe S.A.

17,500 European Employees serving Europe's 97 million smokers

For more information write to: Philip Morris Europe S.A., Rue Joseph II, 69, 1049 Brussels, Belgium

FIG. 7.1. "Where will they draw the line?" Philip Morris identifies smokers with Jews, and antismokers with Nazis. The company does not point out that the German tobacco establishment eagerly embraced the Nazi cause, nor that tobacco companies fought the antitobacco movement tooth and nail, then as now. Source: *Newsweek* (European edition), June 25, 1995, n.p.

defined, as if hidden gems of wisdom lie waiting, unexplored, in the archives of concentration camps. There is also the titillation value: in an era of fashionable interest in cover-ups and conspiracies, the imagination flies to the idea that people in high places have been sitting on great and potent secrets of one sort or another, barred perhaps from bringing them to light by military secrecy or some other lofty and powerful taboo.

Much of the discussion has been carried out with this tone, the idea being that unexploited "Nazi data" may harbor cures or treatments that could save lives. Use of "Nazi data" is therefore defended, according to this logic, as a kind of atonement: the argument is that people may not have died in vain if some medical use may be found for the tainted data.⁵⁷

The truth, I think, is rather less sensational. For one thing, it is not as if Americans were not interested from the beginning in Nazi scientific talent. Nazi science and technology became the object of American military attention prior even to the end of the war, when the Office of Strategic Services and other agencies began assembling files on Nazi science, art, and culture.⁵⁸ Spy missions were launched to find out how far along the Germans had come in their project to build an atom bomb,⁵⁹ and German work on biological weapons began to come under scrutiny. After the war, the U.S. government set up the FIAT commission (with help from the French and the British) to summarize and review the achievements of German scientists and engineers; the result was a veritable encyclopedia of German wartime science—some fifty volumes altogether—on topics ranging from biophysics to viral diseases of man.⁶⁰ One cannot question whether "Nazi data" should be used without recognizing that it *has* been used, from day one, by Allied military authorities.

There are admittedly cases, however, where the ethical question remains a real one. The most notorious example in recent years has been what to do about the *Pernkopf Atlas*, a widely used anatomical text that may have used victims of Nazi terror as subjects for its anatomical illustrations.⁶¹ The atlas is sometimes regarded as the greatest of its kind ever created, "the standard by which all other illustrated anatomical works are measured."⁶² Surgeons consult it

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prior to surgery, and even computer-generated atlases reference the volume, much admired for its precision and realism.

The volume first aroused suspicion in the mid-1980s, when an American medical illustrator noticed that early editions contained hidden swastikas and the double lightning-bolt symbol of the SS (e.g., in the signature of an illustrator by the name of Karl Entresser). Suspicions then arose that the cadavers used as models may have been harvested from the Nazi campaign against Jews and Gypsies, or from the "euthanasia operation"⁶³ (the heads of several of the cadavers are closely shaved, concentration camp-style, and at least one of the models was circumcised). Suspicions also derived from the fact that Prof. Dr. Eduard Pernkopf himself had been an ardent and influential Nazi, having joined the Austrian branch of the party, secretly, in 1933. Following Austria's "return to the Reich" on March 15, 1938, he was appointed dean of the University of Vienna medical faculty, whereupon he ordered the dismissal of 153 of the university's 197 professors, including everyone of Jewish extraction or communist conviction. As a reward, Pernkopf was named president of the university in 1943. And though he was imprisoned for three years after the war (he was never convicted of a crime), he still managed to publish the third and final volume of his magnum opus in 1952.

What should be done if it turns out that the cadavers used for the Pernkopf atlas were victims of Nazi terror? Should the book be suppressed? Withdrawn from library shelves? Dedicated to the memory of the victims? What difference does it make if the persons portrayed were Jews, or euthanasia victims, or anti-Nazi patriots, or common criminals? The volume has been routinely used by physicians since the 1950s, with apparently little knowledge of its origins (the 1990 English translation received glowing reviews in both the *Journal of the American Medical Association* and the *New England Journal of Medicine*—with no reference to the politics of its author or the questionable origins of his cadavers).⁶⁴ That is the dilemma: what to do with a text that has (potentially) immoral origins yet might still be of medical value.

The University of Vienna has launched a historical inquiry into the case; as of this writing, its report is expected to be available by

the end of 1998. (A great deal of prodding by medical historians and Holocaust-memorial activists was needed to launch the investigation.)⁶⁵ The American company that now owns the copyright—Waverly, Inc.—has required that every volume sold in Germany carry a disclaimer stating that the author's Nazism and antisemitism "cast a shadow" on the book, but others have called for stronger measures. At least one medical library (at the National Eye Institute in Bethesda) has inserted into the front of each volume a notice describing Pernkopf's political background and the questionable origins of his specimens (a similar notice was put into the computerized card catalog), while other medical librarians have "expunged" the book from their collections. A New Jersey physician summed up the outrage of many physicians in a 1996 letter to *JAMA*:

The Nazis, Nazi physicians, and their era represented a horrible, unprecedented evil, repugnant to all humanity and medical tradition. The extraordinary aberration of Nazism transcends the usual concerns regarding perceived responsibilities to retain or disseminate science (and arguably also art, literature, and music). Many historians and ethicists concur that the Nazi medical legacy should be expunged from our legitimate professional heritage and literature, preserved symbolically to remind us that Pernkopf and his ilk were outside the bounds of human decency.⁶⁶

How tainted must a work be, though, to deserve such treatment? Is membership in the Nazi party or SS sufficient to warrant banishment from the pantheon of cited scholars? That, of course, would rule out much of the cancer work I have discussed, plus a sizable chunk of postwar German science (much of the field of human genetics, for example), since a good deal of it was produced by former Nazi sympathizers. And what about other kinds of crimes? If a philosopher commits an act of murder, should this be noted in the copies of library volumes? (Louis Althusser, the prominent French communist philosopher, murdered his wife and then committed suicide—but no steps have been taken to deface his works, so far as I am aware.) What about scholars who worked on the atom bomb, or once owned slaves, or committed other

reprehensible acts (if these are considered reprehensible)? And how far does the stain extend? To people who cite the tainted the work? To the funders of such work?

Such questions are by no means limited to medicine. Similar quandaries confront the reflective reader of Martin Heidegger, the Nazi rector of the University of Freiburg, who celebrated the "inner truth and greatness of Nazism" while purifying that university of Jews,⁶⁷ or Paul de Man, the literary theorist who authored pro-Nazi Belgian tracts prior to becoming the dean of American deconstructionists. But what about the anarchic Paul Feyerabend, who spent 1943 and 1944 as an officer of the German army on the eastern front but recalls that period in his autobiography as a kind of fog,⁶⁸ or Karl H. Bauer, who enjoyed postwar success as chief of Germany's National Cancer Institute, despite having enthusiastically supported the Nazi Sterilization Law? The question is easier asked than answered, once we broaden the inquiry: does Plato's defense of slavery blacken the elegance of his ethics and aesthetics? Is Jefferson the statesman diminished by Jefferson the slave-owner?

In the Pernkopf case, most commentators agree that it was wrong to have ignored the origins of the victims, and that steps must be taken to find out who they were. The forgetfulness we find with regard to Nazi-era cancer research raises different issues, but is also similar in certain respects. The Nazi war on cancer has been ignored because we do not seem to be comfortable with the idea that people with rotten ethical ideals could have been "ahead of their time" in the spheres of medicine and public health. The more comfortable image seems to be a sweeping chiaroscuro: if Nazism is the absolute embodiment of evil, we need not look at the disturbing links to what came before or after. We need not dwell on Hitler's vegetarianism, or campaigns to ban food dyes, or struggles against tobacco, radiation, and asbestos that were at least partly inspired by Nazi ideology.

Nazi medicine is rightfully remembered for its murderous legacy—but that is only part of the story and, if taken for the whole, distorts our understanding. Not because the crimes have been exaggerated—that would be difficult—but rather because there is a

danger of our failing to understand the origins and appeal of German fascism. We have to understand the fertility of fascism and not just its cruelty. Nazism has to be seen as more than a demonic caricature, a straw man fabricated to efface the links to other times and places. It is not very pleasant to think about American doctors debating the gassing of their mental patients,⁶⁹ or the fact that Josef Mengele has a paper listed in the *Index Medicus*,⁷⁰ or that Nazi doctors looked to America to defend their policies of racial sterilization, racial segregation, and abusive experimentation. We need to challenge the comfortable notion that Nazi Germany was unique and defies comparison. The threads stretch before 1933 and after 1945, east into the communist block and Asia, and west into the rest of Europe and the Americas.

THE FLIP SIDE OF FASCISM

By focusing on Nazi efforts in the area of public health, my goal has not been to fabricate banalities (that "good can come from evil," for example), or to rescue the honor of this era. My point is not to deflect attention from well-documented atrocities, or to "put Hitler behind us," as James Watson has urged (to get the biotechnology ball rolling in the Federal Republic of Germany).⁷¹ My intention is not to argue that today's antitobacco efforts have fascist roots, or that public health measures are in principle totalitarian—as some libertarians seem to want us to believe.⁷²

My point is rather to show that the Nazification of German science and medicine was more complex than is commonly imagined. The history of science under Nazism is a history of both forcible sterilization and herbal medicine, of both genocidal "selection" and bans on public smoking. We do not want to forget Mengele's crimes, but we should also not forget that Dachau prisoners were forced to produce organic honey and that the SS cornered the European market in mineral water. Both elements—the monstrous and the prosaic—are key.

I do not believe, per Horkheimer and Adorno, that there is an inherently authoritarian tendency in modern science or an

"indefatigable self-destructiveness" of enlightenment;⁷³ such pessimism ignores the diversity of ends for which science can be practiced, not to mention the power of *scientia* to act in opposition, in resistance, in restoration.

What I do believe, though, is that we need to better understand how the routine practice of science can so easily coexist with the routine exercise of cruelty. The history of Nazi cancer suggests that not everything the Nazis did can be regarded as stifling public health, and in some instances Nazi policies actually promoted it—at least for a time, and for certain segments of the population. The exclusive focus on the more horrific aspects of Nazi scientific practice makes it easy to relegate the events of this era to the monstrous or otherworldly, but there is more to the story than "medicine gone mad." The Nazi campaign against tobacco and the "whole-grain bread operation" are, in some sense, as fascist as the yellow stars and the death camps. Appreciating these complexities may open our eyes to new kinds of continuities binding the past to the present; it may also allow us better to see how fascism triumphed in the first place.

10 cigarettes per day in the middle of the war; see Ernst G. Schenck, *Zur Frage der Sonder- und Konzentrat-Verpflegung der Waffen-SS* (n.p.: SS-Wirtschafts-Verwaltungshauptamt, n.d. [1944?]), p. 17. One of the curious contradictions of the era is that Jews and political prisoners in concentration camps, like upstanding German women outside the camps, received half rations throughout the war. There is an interesting logical oddity here: "healthy" German women received half rations because tobacco was known to be bad for you; Jews and concentration camp prisoners received half rations because tobacco was also viewed as precious and in short supply. See Dr. Kreitmair of Vienna to the Reichsstelle für Kaffee und Tabak, August 19, 1944, R8 XII/53, BAK.

CHAPTER 7 THE MONSTROUS AND THE PROSAIC

1. An indoor domestic radon hazard was identified in Germany as early as 1907, and then periodically rediscovered in the 1930s, 1950s, and 1970s, before political events drew attention to the hazard—especially the Arab oil crisis and the subsequent insulation of homes, but also the accident at Three Mile Island; see my *Cancer Wars*, pp. 197-216.

2. Richard Walther Darré, *Das Schwein als Kriterium für nordische Völker und Semiten* (Munich: Lehmann, 1933).

3. Fr. W. Landgraeber, "Radium-Mineralien und Lagerstätten auf der Erde," *Wiener klinische Wochenschrift* 52 (1939): 777.

4. Deaths caused by human experimentation were actually a minuscule fraction of the total medical murders committed during the Nazi era: roughly 1,000 people died from the effects of human experimentation, whereas 200,000 people were killed in the "euthanasia operation"; see my "How Many People Died from Nazi Human Experiments?" unpubl. MS.

5. Fritz Lickint, "Die konservative Behandlung des Krebses," *Hippokrates* 7 (1936): 668.

6. Karl H. Bauer et al., "Weitere Erfahrungen mit cancerogenen Stoffen," *Langenbecks Archiv* 193 (1938): 499-502; Bauer to Deutsche Forschungsgemeinschaft, July 13, 1938, R73/10179, BAK.

7. Liek, *Der Kampf*, pp. 19-20.

8. In Hanover in 1937, for example, a naturopathic healer treated a woman complaining of stomach pains with homeopathic remedies; he also found a lump in her breast that he identified as cancerous, yet continued to treat her with homeopathic preparations. The healer advised the woman to have an operation, but she refused. In April of 1939 the tumor ulcerated; the woman went to a licensed physician who ordered her into a hospital, but it was too late for surgery. She was treated with radium but died in June of 1940. The naturopathic healer was convicted of "negligent manslaughter" (*fahrlässige Tötung*) and sentenced to four months in prison "for having failed to insist that the woman submit to an operation." See Bruno Steinwallner, "Zur fahrlässigen Behandlung von Krebskranken," *Monatsschrift für Krebsbekämpfung* 10 (1942): 160-61. In a similar case in 1941, a Gräfelting woman was convicted of manslaughter for the death of a cancer patient under her care; the woman was

Ernst G. Schenck, *Zur Frage*
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 centration camps, like up-
 ed half rations throughout
 "healthy" German women
 o be bad for you; Jews and
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declared "a danger to the community" and sentenced to six months in prison. The *Monatsschrift für Krebsbekämpfung* ridiculed the punishment, asking, "Why only six months?" ("*Mitteilungen*," 9 [1941]: 179). Additional cases can be found in Nagel to Reichsärztekammer, April 27, 1937, E 1496, THW.

There are other cases where cancer literature was suppressed for the criminal activities of its authors. In 1936, for example, a physician by the name of Josef Wetterer, editor of *Kampf dem Krebs*, was sentenced to two and a half years in prison for fraud and profiteering. (Auler to Landesausschuss, December 15, 1936, E 1493, THW.) Wetterer was barred from the German Radiological Society, his journal was banned, and his book, *Heraus aus der Krebsnot*, for which he had won the Cadilhac Prize, was confiscated by the Gestapo. The court ordered a psychiatric evaluation (by euthanasia experts Schneider and Schwenniger), which found him suffering from "grotesque greed" and "a pathologic drive for profit and power"; see "*Mitteilungen*," *Monatsschrift für Krebsbekämpfung* 5 (1937): 29.

9. It is not obvious to me that the level of fraud or dishonesty was higher in the Nazi era than in most other periods of history. One rarely hears stories of plagiarism, or falsification of data, or other kinds of "misconduct" in the narrow definition of this term sometimes worried about in governmental research institutions; see, however, Robert L. Berger, "Nazi Science—The Dachau Hypothermia Experiments," *New England Journal of Medicine* 322 (1990): 1435-40.

10. Hans Stroink, "Borst and the Von Brehmer Incident," *American Journal of Dermatopathology* 8 (1986): 522-24. Stroink threw out the only known copy of Borst's speech in the spring of 1998, two months before I contacted him.

11. Documentation can be found in E 1496, THW. Military authorities about this time asked the Reich Health Office to conduct a separate investigation; see G. Zeugerle to Reichsgesundheitsamt, March 4, 1936, and the undated review by H. Dieckmann, "Zusammenfassender Bericht über die amtliche Nachuntersuchung der v. Brehmerschen Krebsdiagnostik," R86 2764, BAK. Reiter's office concluded that the technique had "no diagnostic or therapeutic value."

12. David J. Hess, *Can Bacteria Cause Cancer? Alternative Medicine Confronts Big Science* (New York: New York University Press, 1997), p. 41.

13. Brehmer headed the Paracelsus Institut at the Theresien Hospital in Nuremberg from 1935 to 1937; in a postwar text he says that Hitler dissolved the institute in 1937, but he does not mention that it was Streicher who brought him there in the first place. He does say that he came under Gestapo surveillance and was "silenced" after 1937, though he was able to continue his research at a tumor research laboratory in Berlin. See Wilhelm von Brehmer, "*Siphonospira polymorpha v.Br.*" (Haag/Amper: Linck-Verlag, 1947), p. 170.

14. Wolfgang Weyers, *Death of Medicine in Nazi Germany: Dermatology and Dermatopathology under the Swastika* (Philadelphia: Prometheus Medical, 1996), p. 138. Erik Enby presents similar misrepresentations in his *Hidden Killers: The Revolutionary Medical Discoveries of Gunther Enderlein* (Saratoga: S & G Communications, 1990), pp. 5-9.

15. Hermann Druckrey evaluated Brehmer's claims and found them "völlig haltlos" (totally without merit); he also cautioned that the refutation of Brehmer's therapy "should teach us not to undertake therapeutic experiments

on humans without first checking and rechecking the results in animal tests" ("Ergebnisse," p. 113). Brehmer after the war claimed that his life had been threatened, his speeches and publications banned, and that he had been put under Gestapo surveillance; see his "*Siphonospira*", p. 170.

16. Borst and Gruneisen, "Niederschrift über die Mitgliederversammlung des Reichsausschusses für Krebsbekämpfung am 1. Dezember 1933," E 1498, THW.

17. "Geschäftsbericht," R86 2764, BAK; A. Rothacker and H. Degler, "Das magische Reis und seine Probleme," *Hippokrates* 8 (1937): 331-58.

18. "Mitteilungen," *Monatsschrift für Krebsbekämpfung* 5 (1937): 116. The court also ruled that it was the duty of every German to alert the police to anyone's trying to sell such devices.

19. "Mitteilungen," *Monatsschrift für Krebsbekämpfung* 9 (1941): 159.

20. Goebbels, *Tagebücher*, p. 651 (entry for May 20, 1941).

21. "Mitteilungen," *Monatsschrift für Krebsbekämpfung* 9 (1941): 219.

22. See Albert Hellwig, "Keine Krebsbehandlungen durch Nichtärzte," *Ärztblatt für das Sudetenland*, no. 13 (1941), reporting on a three-year sentence imposed on a quack healer.

23. Werberat, *Volksgesundheit und Werbung*, p. 28.

24. Auler, *Der Krebs und seine Bekämpfung*, p. 4.

25. Werberat, *Volksgesundheit und Werbung*, pp. 7-10.

26. *Ibid.*, p. 33; the words are those of Heinrich Hunke.

27. Hans Auler and Heinrich Martius, *Diagnostik der bösartigen Geschwülste* (Munich: Lehmann, 1943), preface.

28. See my *Cancer Wars*, pp. 36-48.

29. "Referate: Geschwulst," *Monatsschrift für Unfallheilkunde* 46 (1939): 280-81; Dietrich, "Krebs als Kriegsfolge."

30. Deichmann, *Biologen unter Hitler*, pp. 126-29. This ruse of using cancer research to obtain military deferment was apparently practiced often enough to raise some eyebrows: Richard Kuhn in October of 1942 informed the Reich Research Council that "work in the cancer area . . . should not automatically disqualify one from military service" (*ibid.*, p. 126).

31. Himmler pointed out that as of February 20, 1945, there were 28,145 KZ prisoners over the age of fifty and 4,898 over the age of sixty (it is clear he is talking only about camps on German soil—though he does point out that the recent "clearing" of Auschwitz and Monowitz may have elevated the German figures). Himmler in January of 1945 had asked Grawitz to test certain cancer chemotherapeutic agents at Joachim Mrugowski's Hygiene Institut der Waffen-SS; Grawitz had already had Hermann Druckrey test a bismuth compound known as "del Franco" in 1944. Druckrey tested dozens of other substances in his capacity as senior adviser on toxicology for the Wehrmacht; see Grawitz file, BDC. I would like to thank Ulf Schmidt for drawing these files to my attention.

32. Himmler to Grawitz, n.d. (after February 20, 1945), Grawitz file, BDC.

33. Blome was a doctoral student under Reich Health Office chief Hans Reiter and, like Reiter, sported dueling scars from his student days. Blome also

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was an ardent antisemite and friendly with Weimar foreign minister Walther Rathenau's murderers; ten years prior to the *Machtergreifung* he was already distributing Nazi propaganda in his office for his patients to read; see his *Arzt im Kampf—Erlebnisse und Gedanken* (Leipzig: Barth, 1942), pp. 25, 130, 220, 242; Peter-Ferdinand Koch, *Menschenversuche* (Munich: Piper, 1996), pp. 206-26. Ferdinand Lönne suggested to Blome the need for a centralized institute in 1938; see Blome, "Krebsforschung," p. 411. The Reich Institute for Cancer Research was administered by the Kaiser Wilhelm Gesellschaft and included on its board of directors, apart from Mentzel and Blome: Prof. Erich Schumann, head of the Abteilung Wissenschaft im Oberkommando der Wehrmacht; C. H. Lasch, deputy director of the Landesverbände für Geschwulstforschung in Berlin; Ernst Telschow, general director of the Kaiser Wilhelm Gesellschaft; Kurt Huchzermeyer of the NSDAP's Public Health Office for the Reichsgau Wartheland; and Hanns Streit, Kurator der Reichsuniversität, Posen ("Satzung des Zentralinstituts für Krebsforschung e.V." June 18, 1942, R2/12540 BAK). Keitel approved the facility (Klee, *Auschwitz*, pp. 87-93). Hermann Göring named Kurt Blome Bevollmächtigter für Krebsforschung in April of 1943. For further background, see Deichmann's excellent *Biologen*, pp. 211-24.

34. Ramm, "Systematische Krebsbekämpfung."

35. Joan Austoker, *A History of the Imperial Cancer Research Fund 1902-1986* (Oxford: Oxford University Press, 1988).

36. Friedrich Hansen, *Biologische Kriegsführung im Dritten Reich* (Frankfurt: Campus, 1993).

37. Götz Aly, "Die schwarze Ratte im U-Boot," *Frankfurter Allgemeine Zeitung*, March 9, 1994; Klee, *Auschwitz*, pp. 87-93.

38. Other scientists appointed to the institute included Dr. (Bodo?) Trappe, as Oberassistent, and a Dr. Dehn, responsible for animal experiments. Not everyone at the institute had suspicious origins—Friedrich Holtz, for example, had been head of the physical chemistry laboratory of Berlin's Allgemeines Institut gegen die Geschwulstkrankheiten (from 1935 to 1938) prior to being named director of the Nesselstedt facility in 1943; his primary research focus in the 1930s was on cancers caused by ultraviolet light (Hansen, *Biologische Kriegsführung*, pp. 141-52).

39. *Ibid.*, pp. 158-61.

40. Klee states that experiments on Russian POWs "probably were performed" at Nesselstedt (*Auschwitz*, p. 88). Blome was recruited in 1951 to work for the U.S. Army Chemical Corps under its secret "Project 63"; he had been acquitted of wrongdoing in Nuremberg (his incriminating interrogation by U.S. intelligence officials had not been admitted as evidence), but the U.S. consul in Frankfurt ruled him inadmissible for immigration on the basis of the intelligence report. Blome eventually agreed to work as a Project 63 physician at Camp King; see Linda Hunt, *Secret Agenda: The United States Government, Nazi Scientists, and Project Paperclip, 1945 to 1990* (New York: St. Martin's, 1991), pp. 180-81. Blome helped with Himmler's plan to develop a vaccine against the rinderpest virus at the Reich Research Institute on the island of Riems; Riems was captured by the Russians in 1945 and reestablished as a biowarfare

laboratory that operated until 1948 (*ibid.*, p. 186). Koch notes that some of Blome's bacterial cultures were captured by the Russians at Alt-Rehse's Doctors' Führer School (*Menschenversuche*, p. 264).

41. Hansen suggests that the 500,000 RM allocated for Nesselstedt in December of that year actually went to the construction of the Geraberg facility, which was never completed. American soldiers discovered the unfinished buildings, along with bacterial flasks and other laboratory equipment, when they captured Geraberg in April of 1945 (*Biologische Kriegsführung*, p. 141). It would be interesting to explore the extent to which Japanese-German medical contacts during the war were organized to further collaboration in the field of biowarfare; Hansen points out that Dr. Enryo Hojo lectured on the topic at the Military Medical Academy of Berlin in October of 1941 (*ibid.*, p. 87). See also Hellmut Haubold, "Deutschlands und Japans Zusammenarbeit im Gesundheitswesen," *Die Gesundheitsführung*, March-April 1944, pp. 54-56.

42. Walter Vöcking, "Die Entwicklung des Heil- und Gewürzpflanzenbaues im Deutschen Reich," *Die Deutsche Heilpflanze—Beilage*, July 1939, p. 30.

43. Ludwig Lendle, "Über Vergiftungsmöglichkeiten bei Anbau, Sammeln und Verarbeitung einheimischer Arzneipflanzen," *Die Deutsche Heilpflanze—Beilage*, November 1934, pp. 11-12.

44. Walter Wuttke-Groneberg, *Medizin im Nationalsozialismus: Ein Arbeitsbuch* (Tübingen: Schwäbische Verlagsgesellschaft, 1980), pp. 188-202.

45. Enno Georg, *Die wirtschaftlichen Unternehmungen der SS* (Stuttgart: Deutsche Verlags-Anstalt, 1963), pp. 62-65.

46. Groening and Wolschke-Bulhman, "Some Notes," pp. 120-23. Early American eugenicists regarded the magnificent redwoods of California as Aryans of the forest; the "Save-the-Redwoods League" established in 1918 counted at least eleven eugenicists among its members, including Madison Grant, Henry Fairfield Osborn, and Vernon Kellogg. See Susan R. Schrepfer, *The Fight to Save the Redwoods: A History of Environmental Reform 1917-1978* (Madison: University of Wisconsin Press, 1983), pp. 43-44.

47. Walther Schoenichen, *Naturschutz als völkische und internationale Kultur-aufgabe* (Jena: Gustav Fischer, 1942), pp. 405-10. Schoenichen cited the words of Paul Sarasin at the First International Nature Protection Congress in Geneva that "the most important task of world nature protection must be to protect the last remnants of primitive human races from extermination, and to preserve them as undisturbed as possible for future generations" (pp. 406-7). Schoenichen added that it was important to make such demands in the name of biology and anthropology, and not some mushy humanitarianism (*verwaschenen Menschlichkeitsidee*) that throws "Hottentots, Jews, and Aryans all into one pot" (p. 408).

47. *Ibid.*, pp. 406-18, and for background, see Raymond H. Dominick, *The Environmental Movement in Germany: Prophets and Pioneers, 1871-1971* (Bloomington: Indiana University Press, 1992), pp. 85-115.

49. Mervyn Susser, "Timing in Prenatal Nutrition: A Reprise of the Dutch Famine Study," *Nutrition Reviews* 52 (1994): 84-94.

50. J. M. Winter, "The Impact of the First World War on Civilian Health in

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Britain," *Economic History Review*, 2d ser., 30 (1977): 487-507; Marks, *Progress of Experiment*, pp. 164-228.

51. Nikolaus Becker, Elaine M. Smith, and Jürgen Wahrendorf, "Time Trends in Cancer Mortality in the Federal Republic of Germany: Progress against Cancer?" *International Journal of Cancer* 43 (1989): 247; personal communication, Nikolaus Becker.

52. German women were often employed in weapons work during the war, though more often in supervisory positions; see Angelika Ebbinghaus, *Opfer und Täterinnen: Frauenbiographien des Nationalsozialismus* (Nordlingen: F. Greno, 1987).

53. There is indirect evidence that military men were more likely to smoke than civilians. A 1944 survey showed that lung cancer was the most common cause of cancer death among soldiers in the early years of the Second World War. In the German male population as a whole, by contrast, stomach cancers still outnumbered lung cancers by more than two to one. This peculiarity in the military was not due to its younger population, as shown by the fact that lung cancer was the most common cause of cancer death even after age-adjustment of the data (11 soldiers over 45 died of lung cancer; 10 soldiers over 45 died of stomach cancer); see Dietrich, "Krebs als Kriegsfolge," pp. 198-99. Given its long latency, many of these lung cancers would have begun to grow prior even to 1933, reflecting smoking patterns before the Nazi seizure of power.

54. Michael Burleigh, *Ethics and Extermination: Reflections on Nazi Genocide* (Cambridge: Cambridge University Press, 1997), pp. 4 and 150-51; Arthur L. Caplan, "The Doctors' Trial and Analogies to the Holocaust in Contemporary Bioethical Debates," in Annas and Grodin, *Nazi Doctors*, pp. 258-75.

55. Carey Goldberg, "Massachusetts Man's Goal Is to Rid Town of Tobacco," *New York Times*, October 7, 1997.

56. Rosie DiManno, "The New Rednecks: NicoNazis Pushing Bigotry's Borders," *Toronto Star*, March 10, 1997, p. A7.

57. For sources, see Arthur L. Caplan: *When Medicine Went Mad: Bioethics and the Holocaust* (Totowa, N.J.: Humana, 1992).

58. Barry M. Katz, *Foreign Intelligence: Research and Analysis in the Office of Strategic Services, 1942-1945* (Cambridge: Harvard University Press, 1989).

59. Mark Walker, *Nazi Science: Myth, Truth, and the German Atomic Bomb* (New York: Plenum, 1995).

60. See chap. 1, n. 9.

61. Eduard Pernkopf, *Topographische Anatomie des Menschen: Lehrbuch und Atlas der regionär-stratigraphischen Präparation*, vols. 1-3 (Berlin: Urban & Schwarzenberg, 1937, 1943, and 1952, plus subsequent editions and translations). For background, see Jonathan Broder, "The Corpses That Won't Die," *Jerusalem Post*, February 22, 1996, pp. 24-25.

62. Carl Schoettler, "Is Lifesaving Tool a Product of Evil?" *Baltimore Sun*, August 1, 1997.

63. David J. Williams, "The History of Eduard Pernkopf's *Topographische Anatomie des Menschen*," *Journal of Biomedical Communication* 15 (1988): 2-12.

- Atlas, *JAMA* 276 (1996): 1633-34.
67. Elisabeth Young-Bruhl, *Hannah Arendt: For Love of the World* (New Haven: Yale University Press, 1982), pp. 443 ff.
68. Paul Feyerabend, *Killing Time: The Autobiography of Paul Feyerabend* (Chicago: University of Chicago Press, 1994), pp. 42-53.
69. See my *Racial Hygiene*, pp. 179-180 and 380 n. 11.
70. Seidelman, "Mengele Medicus."
71. Robert Koenig, "Watson Urges 'Put Hitler Behind Us,'" *Science* 276 (1997): 892.
72. Jacob Sullum, *For Your Own Good: The Anti-Smoking Crusade and the Tyranny of Public Health* (New York: Free Press, 1998).
73. Max Horkheimer and Theodor W. Adorno, *Dialectic of Enlightenment* (1944) (New York: Herder and Herder, 1972), p. xi.