

had become a popular method of inducing temporary sterility, both in Germany and in the United States. Racial hygienists saw this as a source of potentially devastating mutations; Hans Luxenburger, a eugenicist at Fischer's institute, in 1932 proposed the construction of an "archive of irradiated girls and women" to identify such women so they could be counseled against having children.⁴⁴

Eugenicists' worries over the health effects of radiation have to be understood in light of the fact that many of the physicians using X-rays and radium sources displayed a rather cavalier attitude toward radiation health and safety. With no formal guidelines on dosages, injuries were common—especially in the early 1920s, when high-dose irradiation became a fashionable means of treating cancer, skin diseases, and countless other ailments. According to Hermann Holthusen, an influential Hamburg radiologist, there was in the mid-1920s "not a major hospital in Germany without patients suffering from the delayed effects of radiation" applied in the early years after the First World War and prior to the establishment of accurate dosimetry and meaningful tolerances.⁴⁵ Radiologic negligence was propelled by the fact that the professional societies organized by radiologists and radiotherapists were far more interested in promoting the use of X-rays—primarily as a diagnostic tool—than in warning against a possible health hazard. The Bavarian Society for Roentgenology and Radiology, for example, was founded in 1931 "to represent the economic interests of radiologists" and "to promote roentgenology and radiology." Radiation health and safety were only secondary concerns.⁴⁶

Indeed, when it came to the question of whether to warn the public about possible long-term genetic damage, professional radiological societies were very clearly opposed. In 1931, when the German Genetics Society and the German Society for Racial Hygiene issued a formal warning that X-rays could cause genetic damage, the Bavarian Society for Roentgenology and Radiology produced a sharply worded rebuttal, noting that the eugenicists had relied "exclusively on experimental studies of insects and plants" to arrive at their conclusions. The society cautioned that the animal studies in question (the reference is clearly to Muller's work with fruit flies) could not be extrapolated to humans. It was

furthermore "extremely dangerous"—according to these early radiologists—to raise the specter of radiation hazards, given that one might thereby impede the advance of X-ray therapeutics and diagnostics.⁴⁷

Professional radiologists, interestingly, had allies on this question among the leaders of the Association of Socialist Physicians, Germany's most prominent left-wing medical association (driven into exile shortly after the Nazi seizure of power in 1933, since most of its members were Jewish).⁴⁸ Socialist physicians were among the earliest and most avid critics of both Nazism and racial hygiene; what may seem strange to us today, however, is that some socialists ridiculed the specter of long-term health damage from X-rays as yet another instance of racial scaremongering. Julian Marcuse, writing in 1932 in the association's journal, derided the Nazi distrust of X-rays as "racial fanaticism": this, oddly enough, is one of the first uses—perhaps the very first—of this expression in Germany.⁴⁹

The fact that Nazi racial hygienists came out on the "right" side of the X-ray/genetic damage issue—and that socialists scoffed at the danger—may be surprising, but one should also realize that the eugenicists' desire to limit radioactive exposure was no match for the power of professional radiologists. The Nazis were afraid of cancer, but they were even more afraid of tuberculosis, the second leading cause of death in Germany until the mid-1920s (when cancer moved into this spot). In the 1930s, mass X-ray screenings were implemented—of everyone in a factory, for example, or an entire student class—to identify potential carriers of the TB bacillus. On August 5, 1933, the *Deutsches Ärzteblatt* reported on a new requirement at the University of Munich that all students be X-rayed. The sixty students found to be infected and contagious (among a thousand screened) were barred from university classrooms.⁵⁰ Similar exams were required at other German universities, and in many other contexts (see fig. 4.1). At the Nuremberg party congress of September 1938, assembled dignitaries and the public all lined up to have themselves X-rayed. The SS roentgenologist Prof. Dr. Hans Holfelder of Frankfurt personally administered 10,500 X-rays to SS men over a six-day period, an "unprecedented achievement."⁵¹