though tobacco was not suspected at the time of his death.)[20] These early insights were confirmed in the 1850s, when a French physician by the name of Etienne-Frédéric Bouisson in Montpellier found that sixty-three of his sixty-eight patients with cancer of the mouth (*cancer des fumeurs*) were pipe smokers. (Extirpation of the afflicted organ was one of the most common operations at his hospital.)[21] The famous German pathologist Rudolf Virchow corroborated the connection in the 1860s, by which time the tobacco historian Friedrich Tiedemann had reported several cancers of the tongue brought on by smoking.[22]

Smoking remained a relative luxury throughout the nineteenth century, however, and the cancer contribution cannot have been substantial. As recently as the First World War, lung cancer was still a rarity in Germany as elsewhere in the world. A turn-of-the-century review put the entire number of cases known to medicine at only 140.[23] In 1912, when Isaac Adler produced the first book-length review of the anatomy and pathology of lung cancer, he felt he had to apologize for writing on such a rare and insignificant disease.[24] Medical professors when they did find a patient with the disease took special care to show it to their students, since they were not expected ever to see another case. Today, of course, it is the world's most common cause of cancer death, claiming more than 150,000 victims a year in the United States alone. China is soon going to have close to a million lung cancer deaths every year—thanks almost entirely, again, to cigarettes.

Smoking became more popular toward the end of the nineteenth century, in consequence of the development of mechanized cigarette rolling, tobacco advertising, and state promotion or monopoly—as in Austria or France—of cigarettes to generate tax revenues. Cigarettes were not even manufactured in Germany until the 1860s, and even then the factory girls of Dresden were able to produce only about 120 per hour.[25] *Zigaretten* (literally "little cigars") were said to be an appropriate indulgence for the faster pace of industrial society; cigarettes delivered a quick dose of nicotine to the blood, just as newly invented candy bars were delivering sugar, and prepackaged gun shells were speeding up reloading. Cigarettes were provided with rations to the soldiers of the First

World War (on both sides), facilitating the social acceptance of the habit in both Europe and America. German cigarette consumption rose from about eight billion cigarettes in 1910 to thirty billion only fifteen years later, culminating in eighty billion in 1942 (more on the meaning of this in a moment).[26] The introduction of milder types of tobacco and flue curing made it easier for smokers to inhale the burning fumes, encouraging a shift from pipes and cigars to cigarettes. The change was not a trivial one: indeed, as Henner Hess observes, we are talking about "a revolutionary development in the history of drug consumption, roughly comparable in significance to the invention of the hypodermic needle for opiate addiction."[27] By contrast with pipe smokers, cigarette smokers tended to draw the fumes more deeply into the lungs, delivering a much higher dose of tar, nicotine, and other noxious substances to their bronchial passageways.[28]

The cancer consequences were profound, as lung cancer rates grew by leaps and bounds. Dresden, Hamburg, and Berlin physicians were among the first to note the increase, around the turn of the century, followed by physicians in other German cities.[29] The dramatic growth of lung cancer in the 1920s and 1930s was not at first attributed to smoking: the influenza pandemic of 1918 was sometimes blamed, as were automobile exhausts, dust from newly tarred roads, diverse occupational exposures (including tars and chlorinated hydrocarbons), increasing exposure to X-rays, exposure to chemical warfare agents during the First World War, malnutrition in the aftermath of the war, or even the upsurge of racial mixing.[30] Some scholars doubted the reality of the increase—a 1930 article in the *Medizinische Klinik* argued that the widespread use of X-rays was simply allowing lung cancers to be diagnosed more often[31]—but the more common view by the middle of the Weimar era was that the disease was genuinely on the rise, for as yet unclear reasons.

Part of the difficulty, of course, was that many other things were on the rise which might plausibly be contributing causes of lung cancer. Automobility was growing faster even than lung cancer, which led some to suggest that engine exhausts might be the decisive factor—especially since many components of gasoline and