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ESSAY REVIEW

A Truly Impure Science

Researchers, Industrialists, and the Cigarette

By Ilana Löwy*

Robert N. Proctor. *Golden Holocaust: Origins of the Cigarette Catastrophe and the Case for Abolition.* x + 737 pp., illus., bibl., index. Berkeley/Los Angeles: University of California Press, 2011. \$49.95 (cloth).

In 1948, U.S. public health service (PHS) researcher John Cutler traveled to Guatemala to study the prevention of syphilis. The initial project was to recruit volunteers who would receive detailed information on the experiments' goals and risks, sign informed consent forms, and receive financial compensation. When it became clear that the study could not be implemented as planned, Cutler and his colleagues decided to experiment on uninformed and vulnerable people: soldiers, orphans, and, in the worst case of abuse, psychiatric patients. The syphilis experiments in Guatemala, revealed in 2010 by the historian Susan Reverby, were investigated by the Presidential Commission for the Study of Bioethical Issues. The commission's report reveals that the principal means employed by Cutler and his collaborators to enroll psychiatric patients was the distribution of cigarettes: "Each time a patient was used in an experiment or had blood or cerebro-spinal fluid withdrawn, he was given a packet of local cigarettes. Each time he was seen for a clinical observation he was given a single cigarette. The patients would often attempt to make numerous trips past the physicians for blood letting, cisternal puncture or examination, just to augment their supply of tobacco." Cutler also distributed cigarettes to secure the collaboration of workers at the psychiatric hospital. The main difference was that patients received local cigarettes, while hospital staff received cigarettes manufactured in the United States. Luckily, Cutler added, their budget was sufficiently flexible to allow for the purchase of tobacco: "without the availability of cigarettes, the type of patient management that we were able to achieve, we feel would have been impossible."¹

One of the main contributions of Robert Proctor's important new study, *Golden*

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¹ Cutler's documents can be viewed at <http://www.archives.gov/research/health/cdc-cutler-records/> (accessed 10 Aug. 2011). On his studies see Susan Reverby, "'Normal Exposure' and Inoculation Syphilis: A PHS 'Tuskegee' Doctor in Guatemala, 1946–1948," *Journal of Policy History*, 2011, 23:6–28; and Presidential

Holocaust, is to explain precisely how much scientific research and industrial know-how went into transforming cigarettes into an extremely efficient product. The apparent simplicity of the cigarette, Proctor explains in the first part of his book, is highly deceptive. This is an extremely sophisticated object, a real triumph of industrial engineering, designed to enhance seduction and addiction. He then proceeds to describe in detail how a nonregulated industry was able to diffuse its dangerous product worldwide. In the first part of this study we learn about the central role of the flue-curing revolution that led to the production of low-pH smoke that can be inhaled. This technological change was combined, circa 1913, with the manufacture of blended cigarettes—mild, sweet tasting, and flavorful. These two innovations favored massive consumption of a much more deadly product. The development of milder and more flavored cigarettes also favored the presentation of smoking as a civilized, urbane activity.

Other technical developments—the invention of matches, the development of cigarette-rolling machines, and improvements in cigarette paper—also enhanced the cigarette’s attractiveness and “optimized” the cigarette as a consumer product. The diffusion of this product was greatly helped by wars. During World Wars I and II, cigarettes were widely distributed to soldiers to boost their morale and help them withstand the harsh conditions of fighting. The official encouragement of cigarette consumption continued in the aftermath of World War II. For example, the Marshall Plan for reconstruction of the European economy included U.S.-made flue-cured cigarettes among the products distributed to war-ravaged Europeans, changing their consumption habits and at the same time increasing the profits of U.S. industry. Another key element in the cigarette’s success was the use of highly sophisticated publicity campaigns. From the 1920s women became one of the main targets of these campaigns. Advertisements in women’s magazines presented the smoking woman as sophisticated, refined, and, above all, liberated. Women, these advertisements insinuated, had now won the right to fulfill their aspirations, enjoy life—and smoke. Publicity for cigarettes also targeted children, who were offered chocolate cigarettes and toy cigarette packs, and young teenagers, to whom phony “anticigarettes” propaganda presented smoking as an “adult pleasure”—that is, as a highly desirable forbidden fruit. The combination of industrial engineering and marketing was highly successful. Cigarette smoking, a relatively limited pastime in the late nineteenth century, became in the mid-twentieth century an omnipresent activity. Cigarettes became one of the most successful commercial products ever.

In the second part of his book Proctor focuses on harms produced by cigarettes. In the 1950s epidemiologists showed that smoking induces lung cancer, then displayed links between cigarette consumption and heart disease, emphysema, and a myriad of other health problems. The tobacco industry reacted rapidly to these findings and used lies and deceit to hide, confuse, and obscure the message about the drastic health consequences of smoking. One of the main ways to achieve this goal was a sophisticated manipulation of the scientific community. Cigarette manufacturers enrolled an impressive array of academic researchers to conduct their own investigations on these topics. If the results were “favorable,” they were employed to counter studies made by independent scholars. If they were “unfavorable,” they were suppressed. *Golden Holocaust* investigates in detail specific episodes of this saga, such as the “tobacco friendly” research at the Medical College of Virginia, the industry-funded “survey of cancer research” conducted in 1953, the

clandestine cancer studies financed by cigarette manufacturers via the Damon Runyon Fund, and experiments made by the cigarette paper producers Ecusta to investigate the potentially carcinogenic properties of the paper. This last study confirmed that tobacco was the main culprit, and it was therefore rapidly hushed up.

One of the most telling episodes in the story of scientists' contribution to mass diffusion of a deadly product was the "light cigarette scam"—the strategies used by cigarette manufacturers to produce and distribute a "safer" cigarette, with lower tar content and lower residues and that was "ventilated." Many "accredited" studies supported their lesser harm. These studies, Proctor shows, focused on the supposed lower toxicity of "low tar" cigarettes but overlooked the fact that industrialists routinely "spiked" the supposedly "light" cigarettes with nicotine to maintain their addictive properties, making this product as deadly as the standard cigarette. Scientists also failed to investigate the continuous presence of toxic substances in cigarettes, whether "normal" or "light." Few smokers know that cigarettes contain an impressive array of dangerous products such as radioactive polonium, arsenic, lead, and pesticides. In overlooking issues such as the absence of full disclosure on cigarette composition, academics—even those who were believed to hold unbiased positions—played an important role in making cigarettes acceptable.

Scientists, like other experts, can be corrupted or bought. This is not, however, the whole story. The tobacco industry, Proctor persuasively demonstrates, was successful in mobilizing scientists by skillfully encouraging their tendency to reject homogeneous and therefore presumably "totalitarian" views. The combination of straightforward lies, semi-truths, and partial conclusions and the rejection of "uniform opinions" in the name of the defense of plurality and freedom was highly successful in undermining the credibility of data on cigarettes' harm and presenting these data as controversial or still unproven. The opponents of global warming have learned this lesson well. Today the manufacture of scientific doubt is a thriving industry.

Historians of science and medicine were also mobilized to neutralize the message about tobacco's harms. Cigarette manufacturers hired historians as consultants and enrolled them to testify in favor of the industry. Proctor provides a long list of medical historians—mainly North American—who were recruited to support the industry's claims and were frequently generously paid for their services. One may assume that historians who worked for the tobacco industry, like scientists who helped to elaborate more efficient (that is, more addictive) cigarettes, experts in communication engaged by tobacco companies to promote their products, and anthropologists who conducted studies on smoking habits funded by the Council for Tobacco Research (an industry front), successfully persuaded themselves that their collaboration with cigarette producers was entirely dissociated from their—presumably unbiased—scholarly opinion. Moreover, historians who defended cigarette manufacturers may have been able to uphold a self-image as brave nonconformists who promoted the freedom of research, defended unpopular views, fought against the tyranny of "political correctness," and helped people to continue to benefit from a pleasurable and not too dangerous activity.

The cigarette, Proctor repeatedly asserts in his book, is probably the deadliest product that has ever existed. In order to sensitize his readers to the magnitude of the loss of lives attributed to smoking, Proctor speaks of a "golden holocaust." The term "holocaust" is strongly associated with the killing of Jews by the Nazis during World War II. This particular use is, however, contested by people who see it as too metaphorical and loaded with religious undertones and who, when they speak about the Nazi extermination of Jews, choose descriptive terms such as "shoah" (a disaster), "genocide," or "mass mur-

der.” Paradoxically, the term “holocaust” may be more appropriate to describe the harm caused by cigarettes. In all probability tobacco industry executives do not want to kill people. Public debates about the role of cigarettes in producing illness and shortening lives damage their business, even if such damage is still limited. It is reasonable to assume that cigarette manufacturers would like to produce a truly safer cigarette, just as addictive but much less harmful than those currently on the market. And, in contrast to the Nazi criminals, they do not see smokers as a danger to be rid of but, rather, as a highly desirable source of profits. The premature deaths of heavy smokers deprive them of their best clients. Nevertheless, their income comes first. The term “holocaust” may therefore be seen as an adequate metaphor for an activity in which human lives are “going up in smoke,” sacrificed for industrial profits.

Robert Proctor was not the first to examine the role of the tobacco industry in spreading a deadly habit on an unprecedented scale. Historians have studied the globalization of cigarettes and the origins of the entrenched web of tobacco dependence that entangles not only smokers and the cigarette industry but also tobacco growers, retailers, advertisers, and governments that depend on tobacco revenue. Other scholars have already demonstrated the immense harm produced by the cigarette industry and the industry’s duplicity in concealing this harm.² Do we need yet another book that discusses something “everybody” already knows? The answer is an unqualified yes. Politics is an art of repetition, and when dealing with a problem of this magnitude five—probably even fifty—good books, published in as many languages as possible, would not be too many. *Golden Holocaust* is grounded in previously inaccessible documents and covers areas that have not been discussed by other authors. Its seven hundred pages are tightly packed with fascinating data and analyses. Moreover, many people—especially among the Western middle classes—believe that cigarettes are no longer a problem because they do not see many smokers in their immediate environment. They need to be reminded that the problem has not disappeared; it has just migrated elsewhere.

In the industrialized countries antitobacco propaganda has curbed smoking among the higher social classes. By contrast, the poor in industrialized countries and in populations of the Global South have maintained, sometimes even increased, their tobacco consumption. In the twenty-first century tobacco addiction, earlier distributed equally among social classes, has become increasingly associated with poverty and social suffering, one element in an overall pattern of “unhealthy” behavior of the underprivileged. People with low income, a low level of physical and financial security, a limited capacity to make meaningful choices in their lives, and high levels of stress may be more inclined to consume products that produce a short-term pleasure—from sweets to cigarettes. They may also be less willing to sacrifice an immediate gratification or relief from tension to increase their chances to live into their nineties. This group of smokers is often invisible. As is often the case, one counts only those who count.

Proctor analyzes the problem of massive diffusion of cigarettes in developing and intermediate countries, but he does not examine in detail the reasons poor people in

² On the globalization of cigarettes and the entrenched web of tobacco dependence see Jordan Goodman, *Tobacco in History* (London: Routledge, 1993). On the harm produced by cigarettes and industry duplicity in concealing it see Stanton A. Glanz, *The Cigarette Papers* (Berkeley: Univ. California Press, 1996); Richard Kluger, *Ashes to Ashes: America’s Hundred-Year Cigarette War, the Public Health, and the Unabashed Triumph of Philip Morris* (New York: Knopf, 1996); and, above all, Allan Brandt’s magisterial study, *The Cigarette Century: The Rise, Fall, and Deadly Persistence of the Product That Defined America* (New York: Basic, 2007).

Western countries continue to be addicted to tobacco. His main conclusion is that, in light of the disastrous consequences of smoking, governments should interdict the manufacture and commercial distribution of cigarettes. Interdiction of an addictive substance is, however, a more complicated issue than, for example, a ban on the use of asbestos. It is often successful only if reasonably good alternatives exist. The French were able to ban absinthe in the early twentieth century mainly because absinthe consumers could easily switch to other alcoholic beverages. Proctor's alternative proposal is to reduce the harm of cigarettes by drastically lowering their nicotine content, making addiction less likely, and increasing their pH, making inhalation difficult. These are eminently reasonable propositions. Nevertheless, it is probable that forbidding the sale of cigarettes or making radical changes in their properties would lead to the emergence of an illicit circuit of production and distribution of "old style" cigarettes, with high nicotine content and low pH. Such "illicit" cigarettes might follow the trajectory of other addictive substances like cannabis: small-scale, clandestine production units and centralized distribution by organized crime. Abolition might neutralize one element of the problem—the huge economic and political power of the tobacco lobby—since in the majority of countries mafia-type organizations do not directly influence parliamentary debates and do not employ scientists. However, in our greatly unregulated or underregulated world, it would probably not put an end to the problems produced by tobacco addiction. To deal efficiently with the latter, it might be necessary to tackle not only the manufacture of cigarettes but also the reasons why people become and remain addicted to that product.

Tobacco addiction has changed over time: from a relatively small-scale issue in the late nineteenth century, to the massive diffusion of cigarettes in all social classes in the mid-twentieth century, to a problem that disproportionately harms poorer inhabitants of the planet in the early twenty-first century. One of the main messages in Proctor's book is to affirm the key role of science and technology in the production of the worldwide cigarette disaster. The cigarette's success would not have been possible without the collaboration of experts in a myriad of domains, from agronomy and mechanical engineering to sociology, psychology, and the history of science and medicine. Accordingly, *Golden Holocaust* is not only a book about cigarettes. It displays the complex relationships between science and money, a much broader issue than that of the diffusion of an obviously harmful product. Proctor's study also invites meditation on the nature of the stories some scientists—and some historians—tell about the nature and limits of the activity called science. Merely stating that science is "never pure" may not be enough. It may be important to examine how precisely the economy and science—writ large—interact in specific periods and places and what the consequences of these interactions are.