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in History and Culture

AN ENCYCLOPEDIA



JORDAN GOODMAN
Editor in Chief

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Addiction–
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Tobacco in History and Culture: An Encyclopedia

Jordan Goodman

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Preface

Tobacco in History and Culture: An Encyclopedia is a unique resource. It is a single authoritative encyclopedia on every aspect of tobacco, one of the world's most pervasive substances. We expect this encyclopedia to be used by a wide variety of groups. While it is a useful resource for high school and college curricula in courses on history, business, health, and political science, it is also a scholarly resource for those doing research related to tobacco and its history.

There are over 130 entries in this encyclopedia, each written by an expert in his or her field. The editorial team has assembled the best contributors from all the fields in which tobacco exists—historians, anthropologists, sociologists, economists, botanists, chemists, pharmacologists, physicians, epidemiologists, biostatisticians, lawyers, activists, policy makers and analysts, and collectors. Many of our authors fit more than one of these descriptors. We have endeavored to cover the entire history of tobacco, from its prehistory in Mesoamerica to the most recent developments. Because tobacco knows no political boundaries, the scope of this encyclopedia is international.

In the pages that follow the reader will find a vast array of information, historical and contemporary, from throughout the world. Entries cover the scientific aspects of tobacco, its botany, chemistry, and pharmacology. Here the reader will find out what the tobacco plant is, how it grows, and the chemicals it makes. Special attention is given to nicotine, the plant's psychoactive ingredient. Some chemicals are present in the plant but others are produced when tobacco is burned. These, too, are discussed in the encyclopedia, with the most up-to-date information available.

The tobacco plant requires special cultivation and processing in order to bring it to the point at which it can be consumed. There are specialized entries on all the aspects of bringing tobacco leaf to market. Slave plantations, sharecropping, peasant and tenant farming, and other methods of organizing tobacco cultivation and the labor associated with it are fully considered; as are the methods of growing, harvesting, and curing the leaves and getting them to the manufacturers. The reader will learn in these pages of the diverse types of tobacco leaf and the different ways tobacco is consumed. "Virginia," "Burley," "flue-cured"—words that are often used when talking about tobacco—are given clear definitions.

Tobacco leaves have been consumed in many ways, all of which, with the exception of the modern cigarette, were known in the Americas before the arrival of Christopher Columbus at the end of the fifteenth century. The pipe, the cigar, and the cigarette are the most common forms of consuming the smoke from burning tobacco, but there are many other, more local, forms of smoking that are less common. While we are now accustomed to think of burning the leaf as the most common way of consuming

tobacco, it has not always been so. Tobacco has been consumed as a drink, in the form of an infusion; it has been chewed; and it has been taken in powder form in the mouth and as a nasal preparation. While we generally think of tobacco as a recreational substance it has not always been that way. For many centuries, and up to quite recently in the west, tobacco was used for medical needs, in the form of poultices for abrasions and infections and enemas for ailments of the gut. The reader will find a wealth of fascinating material about these methods of consumption in the encyclopedia.

The cigarette—shredded tobacco leaf in a paper wrapper with or without a filter—is a recent addition to the myriad ways of consuming tobacco. It is the icon of the modern tobacco industry. In the encyclopedia, the reader will find entries on all aspects of the cigarette, from its first appearance in the early nineteenth century to its industrialization with mass-production machinery in the late nineteenth century and to its contemporary dominance over all other methods of consuming tobacco throughout the world. Entries on the business side of cigarette production discuss big players, both companies and individuals, in the history of this singular object; the role of advertising; globalization; and competition.

Tobacco has always been a regulated substance, whether in pre-Columbian America or early twenty-first century New York City. The history of regulation forms an important part of the encyclopedia. Select entries deal with local, national, and international regulation; with anti- and pro-smoking organizations; with advertising and sponsorship bans; and with age and gender proscriptions.

Consuming tobacco has its own varied and highly fascinating history. Whether we think about it as a sacred and highly ritualized substance in native America or as a recreational substance in a secular setting, tobacco has cultural meanings in all the societies in which it has had a place. The means of consuming tobacco, as well as the practices associated with that consumption—the technologies, the artifacts (cigarette papers and packs, cigar boxes, snuff bottles and boxes), the paraphernalia (cigarette cases and holders, tobacco containers, lighters, ashtrays, and clothing), even the gestures—are culturally active. These are discussed in the pages that follow.

Smoking, in particular, has spawned a substantial cultural industry. Whether through literature, art and photography, film, or music, both popular and classical, tobacco has been the object of cultural comment. The representations of tobacco and its consumers have been a powerful element of the history of the substance and entries on its cultural manifestation abound in the encyclopedia.

Tobacco has been a powerful agent of European settlement overseas and European colonialism. The economic development of Spanish America, Brazil, the Chesapeake colonies of Virginia and Maryland, the Caribbean islands, French and Dutch possessions in the Americas, Africa, and Southeast Asia has been, to a greater or lesser extent, affected by tobacco cultivation and its culture. Almost as soon as they realized that taxing tobacco was a lucrative business, whether by imposts or by regulating manufacture and sales through monopolies, European governments have recognized the value of growing tobacco in their distant possessions. This has been true from the sixteenth to the twenty-first century, and users of the encyclopedia will be rewarded with full discussions of tobacco's role in extending European power worldwide over this long period of time.

The second half of the twentieth century witnessed a remarkable change in our relationship with this remarkable plant. Tobacco has been implicated as a major cause of some of the deadliest of diseases and has been blamed for millions of premature deaths worldwide. Attacks on the use of tobacco have come from a wide variety of directions, from the health sector, from environmental groups, from nutritionists and fitness experts, from workers exposed to secondhand smoke, from human rights groups, not to mention government agencies themselves, often using scientific evidence

to make their case. In response, other groups have sought to argue against these findings, appealing to the importance of tobacco growing and sales to local economies and the right of the individual to choose to use tobacco. Both sides have wrangled over issues of risk, addiction, economics, and politics. The encyclopedia has entries on all of these conflicts. Other entries discuss several high-profile legal cases, which have led to extraordinary settlements, between individuals and governments, on the one hand, and tobacco companies on the other. The release of sensitive and highly secret documents from the tobacco industry, an outcome of the lawsuits, is also covered in the pages that follow.

It is well, however, to remember that conflicts over and around tobacco are not new. The encyclopedia covers the historic relationship between tobacco and religion, tobacco and the state, and tobacco and medicine, and brings out the nature of our complex association with the plant over the many centuries and in virtually every society.

We believe that this encyclopedia is unique in that it brings together, in one place, the extensive connections between tobacco and human life. We hope that our approach to tobacco will stimulate readers to appreciate the powerful ways in which this plant has made history.

***

I wish to thank Sarah Turner, and the development team—Nathalie Duval, Frank Menchaca, and John Fitzpatrick—for initiating this project. I also want to thank the entire editorial team—especially Cindy Clendenon and Ken Wachsberger—for bringing the project to completion.

To the authors of the many entries, I wish to acknowledge my gratitude for their support and contributions. Finally, I would like to express my warmest and deepest thanks to my outstanding editorial colleagues, Marcy Norton and Mark Parascandola, for their unstinting efforts in giving this encyclopedia its ultimate shape and contents.

▮ JORDAN GOODMAN, EDITOR IN CHIEF



Timeline

c. 50,000 B.C.E.: Australia populated. Humans there may have begun chewing tobacco species: *Nicotiana. gossei*, *N. ingulba*, *N. simulans*, *N. benthamiana*, *N. cavicola*, *N. excelsior*, *N. velutina*, and *N. megalosiphon.*

c. 15,000–10,000 B.C.E.: Americas south of the Arctic populated. Humans there may have begun to pick and use wild tobacco species.

c. 5000 B.C.E.: Maize-based agriculture develops in central Mexico, probable beginnings of tobacco cultivation as well.

c. 1400–1000 B.C.E.: Remains of cultivated and wild tobacco dating from this period have been found in High Rolls Cave in New Mexico. Dates established by radiocarbon methods.

1492: Columbus sees Taíno (Indians of Greater Antilles) with leaves that are probably tobacco. Two men among Columbus's crew explore the interior of Cuba and see people smoking.

1518: Juan de Grijalva, leader of expedition to Yucatan and Gulf of Mexico, accepts offerings of cigars or pipes.

1535: Publication of Gonzalo Fernández de Oviedo's *Historia general de las Indias*, which has first published reference to tobacco. It condemns it as a "vile vice" but also notes that the habit spread to "Christians" and black slaves as well.

1535: Jacques Cartier encounters natives using tobacco on the island of Montreal.

1555: Franciscan Friar André Thevet of Angoulême (France) witnesses Brazil's Tupinamba Indians smoking tobacco; following year sows tobacco seeds in France.

1560: Jean Nicot, France's ambassador to Portugal, writes of tobacco's medicinal properties, describing it as a panacea. Nicot sends *rustica* plants to French court.

1561: Nicot sends snuff to Catherine de Medici, the Queen Mother of France, to treat her son Francis II's migraine headaches.

1565: Sir John Hawkins's expedition observes Florida natives using tobacco.

1571: Publication of Nicolas Monardes's *Segunda parte del libro, de las cosas que se traen de nuestras Indias Occidentales, que sirven al uso de medicina* [The second part of the book of the things brought from our Occidental Indies which are used as medicine], which has the most extensive and positive description of tobacco to that date.

1583: Council of Lima declares that priests cannot consume tobacco in any form before saying mass, under threat of excommunication.

1585: Francis Drake expedition trades for tobacco with Island Caribs of Dominica.

1587: Gilles Everard's *De herba panacea* (Antwerp) is first publication devoted entirely to tobacco.

1588: Thomas Hariot publishes *A Brief and True Report of the New Found Land of Virginia*, in which he describes Virginia native people smoking tobacco.

1595: Anthony Chute publishes *Tabacco*, the first book in the English language devoted to the subject of tobacco.

1600: Franciscan missionary presents tobacco seeds and tobacco tincture to Tokugawa Ieyasu, who will become Shogun of Japan in 1603.

1603: Spanish colonies of Cumaná and Caracas (Venezuela) produce 30,000 pounds of tobacco.

1604: King James I publishes *A Counterblaste to Tobacco*, in which he condemns tobacco smoking as unhealthy, dirty, and immoral.

1606: King of Spain prohibits the cultivation of tobacco in Caribbean and South America to thwart contraband trade between Spanish settlers and English and

Dutch traders. Edict rescinded in 1612.

1607: Inhabitants of Sierra Leone seen sowing tobacco.

1607: Jamestown, the first permanent English colony in the Americas, is founded.

1612: John Rolfe raises Virginia's first commercial crop of "tall tobacco."

1617: Mughal Shah Jahangir (reigned 1605–1627) bans smoking because tobacco consumption creates "disturbance in most temperaments."

1624: Texts by Chinese physicians Zhang Jiebin (1563–1640) and Ni Zhumo (c. 1600) mention tobacco in section on pharmacopoeia.

1627: Tobacco cultivation in Ottoman territory is banned.

1636: First state tobacco monopoly established in Castille (Spain).

1642: Papal Bull forbids clerics in Seville from using tobacco in church and other holy places.

1674: Tobacco monopoly established in France.

1682: Virginia colonists rebel when the government fails to decree a cessation in tobacco crops after bumper crops lead to low prices. Disgruntled planters destroy thousands of tobacco plants; six ringleaders are executed.

1698: In Russia, Peter the Great agrees to a monopoly of the tobacco trade with the English, against church wishes.

1724: Pope Benedict XIII learns to smoke and use snuff, and repeals papal bulls against clerical smoking.

1753: Linnaeus names the plant genus *nicotiana*. and describes two species, *nicotiana rustica*. and *nicotiana tabacum*.

1760: Pierre Lorillard establishes a "manufactory" in New York City for processing pipe tobacco, cigars, and snuff. P. Lorillard is the oldest tobacco company in the United States.

1794: U.S. Congress passes the first federal excise tax on snuff, leaving chewing and smoking tobacco unaffected.

1827: First friction match invented.

1828: Isolation of nicotine from tobacco by Wilhelm Posselt and Karl Reimann.

1832: Paper-rolled cigarette is invented in Turkey by an Egyptian artilleryman.

1839: Discovery that flue-curing turns tobacco leaf a bright brilliant yellow and orange color. The bright-leaf industry is born.

1843: French tobacco monopoly begins to manufacture cigarettes.

1847: In London, Philip Morris opens a shop that sells hand-rolled Turkish cigarettes.

1849: J. E. Liggett and Brother is established in St. Louis, Missouri, by John Edmund Liggett.

1854: Philip Morris begins making his own cigarettes. Old Bond Street soon becomes the center of the retail tobacco trade.

1868: British Parliament passes the Railway Bill of 1868, which mandates smoke-free cars to prevent injury to nonsmokers.

1880: James Bonsack is granted a patent for his cigarette-making machine.

1881: James Buchanan (Buck) Duke starts to manufacture cigarettes in Durham, North Carolina.

1889: Five leading cigarette firms, including W. Duke Sons & Company, unite. "Buck" Duke becomes president of the new American Tobacco Company.

1890: *My Lady Nicotine*, by Sir James Barrie, is published in London.

1890–1892: Popular revolts against imposition of British-controlled monopoly on sale of tobacco take place in Iran.

1899: Lucy Payne Gaston founds the Chicago Anti-Cigarette League, which grows by 1911 to the Anti-Cigarette League of America, and by 1919 to the Anti-Cigarette League of the World.

1902: Imperial Tobacco (U.K.) and American Tobacco Co. (U.S.) agree to market cigarettes in their respective countries exclusively, and to form a joint venture, the British American Tobacco Company (BAT), to sell both companies' brands abroad.

1907: The U.S. Justice Department files anti-trust charges against American Tobacco.

1908: The U.K. Children Act prohibits the sale of tobacco to children under 16, based on the belief that smoking stunts children's growth.

1910: Gitanes and Gauloises cigarette brands are introduced in France.

1911: U.S. Supreme Court dissolves Duke's trust as a monopoly, in violation of the Sherman Anti-Trust Act (1890). The major companies to emerge are American Tobacco Co., R.J. Reynolds, Liggett & Myers Tobacco Company (Durham, N.C.), Lorillard, and British American Tobacco (BAT).

1913: R.J. Reynolds introduces the Camel brand of cigarettes.

1913: China has its first harvest of Bright leaf tobacco, grown from imported American seeds and using American growing methods.

1916: Henry Ford publishes an anti-cigarette pamphlet titled *The Case against the Little White Slaver.*

1924: Philip Morris introduces Marlboro, a women's cigarette that is "Mild as May."

1927: Long Island Railroad grants full rights to women in smoking cars.

1933: United States Agricultural Adjustment Act of 1933 compels tobacco farmers to cut back on output by reducing acreage devoted to tobacco production, in return for price supports. They are saved from economic ruin.

1938: Dr. Raymond Pearl of Johns Hopkins University reports to the New York Academy of Medicine that smokers do not live as long as nonsmokers.

1950: Five important epidemiological studies show that lung cancer patients are more likely to be smokers than are other hospital patients.

1954: Results from two prospective epidemiological studies show that smokers have higher lung cancer mortality rates than nonsmokers. The studies were conducted by E. Cuyler Hammond and Daniel Horn in the U.S. and Richard Doll and Austin Bradford Hill in the U.K.

1957: First Japanese-made filter cigarette, Hope, is put on the market.

1964: *Smoking and Health: Report of the Advisory Committee to the Surgeon General*, the first comprehensive governmental report on smoking and health, is released at a highly anticipated press conference. It concludes that smoking is a cause of lung cancer, laryngeal cancer, and chronic bronchitis and "is a health hazard of sufficient importance in the United States to warrant appropriate remedial action."

1965: U.S. Congress passes the Federal Cigarette Labeling and Advertising Act, requiring health warnings on all cigarette packages stating "Caution—cigarette smoking may be hazardous to your health."

1970: U.S. Congress enacts the Public Health Cigarette Smoking Act of 1969. Cigarette advertising is banned on television and radio.

1970: World Health Organization (WHO) takes a public position against cigarette smoking.

1972: First report of the surgeon general to identify involuntary (secondhand) smoking as a health risk.

1977: American Cancer Society (ACS) sponsors the first national "Great American Smokeout," a grassroots campaign to help smokers to quit.

1986: Congress enacts the Comprehensive Smokeless Tobacco Health Education Act, requiring health warnings on smokeless (spit) tobacco packages and advertisements and banning smokeless tobacco advertising on radio and television.

1988: Liggett Group (L&M, Chesterfield) ordered to pay Antonio Cipollone $400,000 in compensatory damages for its contribution to his wife Rose Cipollone's death (she died in 1984). First-ever financial award in a liability suit against a tobacco company. However, the verdict was later overturned on appeal, and the lawsuit was dropped when the family could no longer afford to continue.

1988: Publication of *The Health Consequences of Smoking: Nicotine Addiction*, the first surgeon general's report to deal exclusively with nicotine and its effects.

1990: Airline smoking ban goes into effect, banning smoking on all scheduled domestic flights of six hours or less.

1991: U.S. Food and Drug Administration (FDA) approves a nicotine patch as a prescription drug.

1992: World Bank establishes a formal policy on tobacco, including discontinuing loans or investments for tobacco agriculture in developing countries.

1994: Six major domestic cigarette manufacturers testify before the U.S. House Subcommittee on Health and the Environment that nicotine is not addicting and that they do not manipulate nicotine in cigarettes.

1995: *Journal of the American Medical Association (JAMA)* publishes a series of articles describing the contents of secret documents from the Brown & Williamson Tobacco Corporation indicating that the industry knew early on about the harmful effects of tobacco use and the addictive nature of nicotine.

1996: President Bill Clinton announces the nation's first comprehensive program to prevent children and adolescents from smoking cigarettes or using smokeless tobacco. Under the plan, the Food and Drug Administration would regulate cigarettes as drug-delivery devices for nicotine.

1998: California becomes the first state in the nation to ban smoking in bars.

1999: U.S. Department of Justice sues the tobacco industry to recover billions of dollars spent on smoking-related health care, accusing cigarette makers of a "coordinated campaign of fraud and deceit."

1999: Attorneys general of 46 states and 5 territories sign a $206 billion Master Settlement Agreement with major tobacco companies to settle Medicaid lawsuits.

2000: In Canada, Health Minister Allan Rock unveils new health labels that include color pictures.

2000: U.S. Supreme Court issues a 5–4 ruling that existing law does not provide the Food and Drug Administration with authority over tobacco or tobacco marketing, thus invalidating the 1996 Clinton Administration's regulations.

2001: BAT breaks into Vietnam market, announces that it has been granted a license for a $40 million joint venture with

Vintaba to build a processing plant in Vietnam.

2003: First stage of the Tobacco Advertising and Promotion Act 2002 bans new tobacco sponsorship agreements, advertising on billboards and in the press, and free distributions. The ban also covers direct mail, Internet advertising, and new promotions.

2003: New York City's smoking ban goes into effect, forbidding smoking in all restaurants and bars, except for a few cigar lounges.

2004: Complete public smoking ban goes into effect in Ireland.

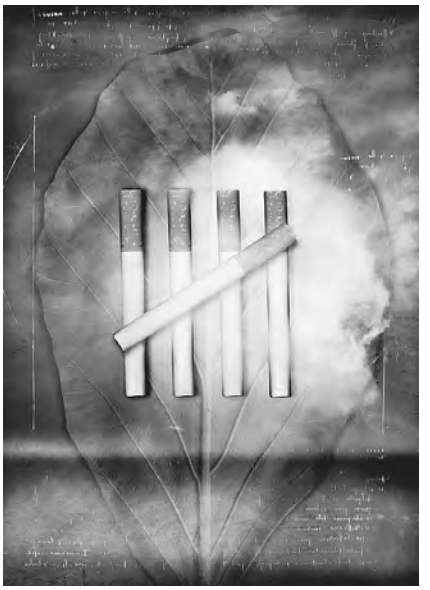


Addiction

For most of the twentieth century, cigarette smokers counted in the millions and smoking was regarded as a willful behavior. Health care practitioners did not view smoking as a drug addiction, nor was it considered a major cause of premature death. A drastic change in thinking occurred during that century, and smoking was viewed in a new light by the dawn of the twenty-first century.

An explosion of research on the effects of nicotine took place during the last quarter of the twentieth century that profoundly changed how the health care field viewed tobacco products. The leading force was an overwhelming scientific base, which proved the deadly and addictive effects of tobacco beyond deniability even by the tobacco industry itself. The United Nation's World Health Organization (WHO) led the development of a Framework Convention treaty to control tobacco use and tobacco-caused diseases. Two driving motivations of the WHO Framework Convention provoked this change: the recognition that nicotine was an addicting drug and that tobacco addiction would lead approximately one-half of the world's more than 1 billion tobacco users to premature death. The WHO views addiction to nicotine as a powerful biological force that needs to be countered by powerful social, medical, and public health forces.

Why is tobacco recognized as an addicting substance? How do tobacco products compare to other addicting substances in their addicting power? Could nicotine-addicted tobacco users reduce their risk of disease without giving up nicotine? These are some of the key questions being addressed by governments around the world, regulatory agencies such as the U.S. Food and Drug Administration, and the United Nations through the WHO.



Because each puff on a burning cigarette delivers only a small amount of nicotine, the addicted smoker must renew the dose via hundreds of daily puffs and one cigarette after another. © ROYALTY-FREE/CORBIS

History of Nicotine Science

Ludwig Reimann and Wilhelm Heinrich Posselt, chemists at the University of Heidelberg, first isolated nicotine from the tobacco plant in 1828. It was quickly discovered that nicotine was a potent and powerful

chemical that could be absorbed through the skin, which made it an effective pesticide that is still used around the world. By the 1890s John Langley, a physiologist at the University of Cambridge, began a series of studies on nicotine that covered three decades and generated discoveries profoundly important to understanding nicotine actions as well as how the nervous system works. His research showed that nicotine produced strong effects on the nervous system that were transmitted through what he termed "receptive substances" on nerves, known simply as "receptors." His studies showed that the strength of the effect was closely related to the amount administered (the "dose"); that repeated dosing led to weaker effects ("tolerance"); and that the effects could be countered by other chemicals such as curare ("antagonists"). This pioneering research on nicotine helped lay the foundation for modern research techniques with other nerve acting agents including morphine, cocaine, and drugs used to treat various psychiatric disorders and muscle diseases.

Many observers of behavior (writers, psychologists, religious leaders) documented tobacco's power to lead some of its users to habitual behavior. Understanding tobacco as a truly addicting substance similar to morphine or cocaine, however, developed slowly, and understanding nicotine was a key finding in this discovery. Louis Lewin's classic analysis of addicting drugs, *Phantastica* (University of Berlin, 1924) concluded that "the decisive factor in the effects of tobacco, desired or undesired, is nicotine." Lewin's conclusions fueled decades of investigations that ultimately confirmed his conclusions that nicotine was a critical determinant not only in the effects of tobacco but of why people used tobacco and of the difficulty in giving up tobacco. His ideas were a source of motivation for considerable subsequent research and further theory although scientific confirmation of his theory was not established until the 1980s.

NICOTINE RESEARCH AND ADDICTION. The path to confirmation was complicated, however, by evolving concepts of what defined addicting drugs. During the 1940s and 1950s, WHO reports highlighted the personality disorders of some individuals vulnerable to addictions, and how tranquilizing agents (such as morphine) and intoxicants (such as alcohol) produced addiction. Easily observable and powerful withdrawal symptoms, such as the flu-like symptoms of morphine withdrawal and convulsions from alcohol withdrawal, were also assumed to be hallmarks of addicting drugs. Cocaine addiction did not fit these symptoms but it was recognized as addicting in part because the pure drug was sought by people who were exposed and who had no apparent medical need except that the drug itself seemed to fuel powerfully persistent use in some of those who were exposed.

By contrast, many if not most users of tobacco were upstanding citizens who did not have personality disorders; experience intoxication with nicotine (although it could occur in first-time users or in overdose); or show readily apparent signs of withdrawal (the withdrawal syndrome was assumed to be psychological in nature until the studies of the 1970s and 1980s, which confirmed physical and psychological components). Finally, although few challenged Lewin's core conclusions, the absence of evidence that pure nicotine would substitute for

tobacco or be sought by users left in doubt the conclusion that nicotine was truly addicting. Even the landmark 1964 report of the U.S. Surgeon General on smoking and health, which concluded that cigarette smoking caused cancer, stated that smoking was most appropriately categorized as a habitual behavior not as drug addiction.

An explosion of research on the effects of nicotine took place during the 1970s and 1980s and continues to the 2000s. These studies confirmed that in compulsive users, the strength of the addiction and difficulty in quitting could be as strong for cigarettes as for heroin or cocaine. Studies of nicotine absorption revealed that the cigarette did for nicotine what crack did for cocaine, namely, provide a portable means of producing tiny but explosively fast spikes of drug in the brain that set off a cascade of biological effects that the smoker wanted to repeat. Other studies showed that there was a nicotine withdrawal syndrome that involved impairment of mental functioning, nicotine craving, and other symptoms. This work contributed to the development of objective standards by major health organizations, including the World Health Organization, for diagnosing the tobacco addiction–related disorders, which were technically termed "withdrawal" and "dependence." Basic research studies mapped the actions of nicotine in the brain and showed that nicotine could produce powerful changes in brain function. Similar to cocaine and morphine, nicotine produces the entire range of physical and behavioral effects characteristic of addicting drugs. These effects include activation of brain reward systems that create behavioral effects and **physiological** cravings that lead to chronic drug use, tolerance and physical dependence, and withdrawal upon discontinuation.



physiology the study of the functions and processes of the body.

Research on nicotine showed that it was possible to become addicted to pure nicotine, which led to the development of nicotine-delivering medicines, such as chewing gum containing nicotine and nicotine patches, to relieve withdrawal symptoms and make it easier to quit smoking. Thus, the scientific understanding of nicotine and tobacco as well as the concept of addiction changed during this productive period, which culminated in the 1988 report of the U.S. Surgeon General, *The Health Consequences of Smoking.* This report concluded that cigarettes were addicting; nicotine was the drug that caused addiction; and the underlying processes were similar to those that determined addiction to other drugs such as heroin and cocaine. These conclusions had radical implications for public health efforts to prevent tobacco use, medical efforts to help people quit smoking, and regulatory efforts to control the sale, distribution, and advertising of tobacco products.

Cigarettes: The Most Addicting Form of Nicotine

All tobacco products deliver addicting levels of nicotine and can lead to addictive patterns of use. The risk of addiction, however, varies across tobacco products. Oral smokeless products such as **snuff** and chewing tobacco do not produce as rapid an effect on the brain as cigarette smoke inhalation. In similar fashion, although many cigar and pipe smokers become addicted, these tobacco products are generally taken up later in life, are less likely to be inhaled, and lead to somewhat muted effects. The overall risk of addiction from these products is lower when compared to cigarettes. Speed of delivery is most remarkable with cigarettes,



snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

which both require and reinforce smoke delivery to the lung with nicotine "hits" to the brain within seven seconds.

The modern cigarette is a technological, albeit addictive and deadly, marvel from the perspective of engineering and pharmacology. It delivers a chemical cocktail of substances and is designed to be maximally addicting through this combination of chemicals. Other design features increase the ease and acceptability of obtaining high daily doses of nicotine. The tobacco industry recognized and took advantage of its knowledge of the impact of cigarette designs and ingredients and their effects on smokers. By the 1950s it was actively engaged in its own highly confidential research on topics such as the effects of nicotine on the nervous system and hormone regulation, how to manipulate the nicotine dosing capacity of cigarettes, and how to increase nicotine absorption efficiency. Its knowledge and efforts, however, were not extensively revealed until the 1990s by investigations of government agencies and lawyers who were suing the tobacco industry. Documentation of these studies was then posted on the Internet and today is readily accessible worldwide. Among the tobacco industry's documents is the following conclusion about the fundamental nature of the cigarette from a 1972 report by a leading scientist at Philip Morris Tobacco Company, Dr. William Dunn:

> *The cigarette should be conceived not as a product but as a package. The product is nicotine. Think of a cigarette as a dispenser for a dose unit of nicotine. Smoke is beyond question the most optimized vehicle of nicotine and the cigarette the most optimized dispenser of smoke (Hurt and Robertson).*

Scientific studies have made it clear that the cigarette has many characteristics that make it such a powerfully addicting form of nicotine. Compared to a cigar, because the cigarette is a small package of nicotine, it must be used often, putting the user on a nicotine "roller coaster" that must be constantly refueled by hundreds of daily tiny puffs. This contributes to powerfully conditioned behavior in the user that can become inextricably entwined with nearly every aspect of the user's life.

The modern cigarette is more than simply a package of nicotine. It is a highly engineered device that employs state-of-the-art drug delivery technology, engaging physicists who specialized in topics such as drug dosage controls and the physics of smoke particles and other aerosols, combustion technology, and a combination drug delivery system to provide an extraordinarily addictive form of nicotine. Physicists working with tobacco companies helped them to develop cigarettes in which the size of smoke particles was controlled to be of the optimal 0.5- to 1-micron median diameter to allow deeper penetration into the lung. Chemists helped to develop concoctions with substances such as **menthol** and propylene glycol to sooth the throat and reduce the irritant effects that might prevent deep inhalation. Pharmacologists helped to understand and develop the balance of ingredients and processing materials to provide more explosively addictive forms of nicotine that were devoid of the electrical charge that so-called ionized nicotine molecules carry in their naturally occurring state. This yielded a non-ionized form of nicotine more commonly called "free-base" nicotine, which was more efficiently carried from the cigarette to the bloodstream. There can be no doubt that the modern cigarette has been designed to be the most addicting form of nicotine delivery.



menthol a form of alcohol imparting a mint flavor to some cigarettes.

LOW-TAR OR "LIGHT" CIGARETTES. The conclusion of the 1964 Surgeon General's report—that cigarettes caused lung cancer and that cancer risk was roughly proportional to the amount of smoking—led the Surgeon General to advocate for reduced levels of **tar** from cigarettes. Although there was no conclusive evidence that nicotine caused cancer, lower levels of nicotine were also encouraged because of the then-suspected role of nicotine in other illnesses such as heart disease. This led to a system of testing cigarettes for tar and nicotine levels known as the Federal Trade Commission (FTC) method in the United States and the International Standards Organization (ISO) method in most other countries. The method involved testing cigarettes in smoking machines programmed to take relatively small and infrequent puffs comparable to the behavior of most smokers.



tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

The tobacco companies quickly learned to modify their cigarettes to produce much lower levels of tar and nicotine delivery but to enable smokers to continue to obtain high levels of tar and nicotine when they smoked cigarettes. The technology was sophisticated and extensive, and included features such as burn accelerants to make the cigarettes burn faster in smoking machines and hidden air vent holes that diluted the smoke in the machines but could be unknowingly blocked by the smoker's lips or fingertips. The end result, as documented by the U.S. National Cancer Institute in a 2001 landmark report on "light" cigarettes, was that low tar or "light" cigarettes did not reduce disease risk. The report concluded that the problems involved two major findings: (1) the design of the cigarette enables smokers to easily get much higher doses of tar than implied by the FTC or ISO tests; and (2) the powerful biological drive of addiction led smokers to inhale more smoke if it was diluted with air or lower in tar and nicotine content.

Treating Nicotine Addiction to Reduce Cancer and Other Diseases

The understanding that nicotine addiction drives the process of tobacco use has been met by safer ways of satisfying and treating the addiction. For example, some people can be counseled to gradually reduce their dependence on nicotine and thus break the addiction over time, that is, typically a few months. Others can be treated with nicotine-delivering medicines (chewing gum, skin patch, inhaler). Most people who quit smoking using this method usually discontinue the medicine within two to three months of use of the medicines. By the 1990s medicines delivering nicotine were available in several forms including chewing gum, skin patch, nasal spray, and lozenge. Also by the 1990s medicines that did not contain nicotine were recognized as effective including clonidine, nortriptyline, and bupropion. The dawn of the twenty-first century witnessed yet new generations of medicines including vaccines intended to keep former smokers from going back to smoking by preventing nicotine from getting to the brain in those who tried to resume smoking.

Some people, however, appear unable to discontinue nicotine use. Finding safer ways other than smoking to feed their addiction may be lifesaving. Thus, although not advocated by the pharmaceutical companies that make nicotine-delivering medicines, many health professionals recommend that these smokers continue to use nicotine gum or patches as long as needed to remain abstinent from tobacco.

International public health organizations recognize that many people will be unable to give up their addictions completely and that tobacco products should be made as low in actual harmfulness as possible. The international Framework Convention for Tobacco Control includes articles that could lead to the genuine reduction of the toxicants in tobacco products through government regulation and thus to reduced disease risk in people who do continue to use tobacco. However, public perception that smoking regulated cigarettes might be less hazardous may discourage some smokers from quitting, ultimately leading to a net increase in tobacco-related disease and death. These efforts may take decades to implement and have not yet been proven effective. Therefore, for many years to come the most reliable way to reduce tobacco-caused death and disease will be to address the addiction with a nontobacco delivery system, and ultimately to achieve complete nicotine and tobacco abstinence.

See Also Chemistry of Tobacco and Tobacco Smoke; Chewing Tobacco; Cigarettes; Documents; "Light" and Filtered Cigarettes; Nicotine; Product Design; Psychology and Smoking Behavior; Quitting Medications; Snuff.

JACK E. HENNINGFIELD
PATRICIA B. SANTORA

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Additives

Nearly all commercial tobacco products contain chemical additives. As long ago as the sixteenth century, Spanish sailors applied licorice water to tobacco as a preservative (Browne, p. 55). Today, both cigarette and smokeless tobacco manufacturers publicly acknowledge the use of hundreds of additives in their products. The modern U.S.-style cigarette contains about 10 percent additives by weight, mostly in the form of

sugars, humectants, ammonia compounds, cocoa, and licorice. Smokeless tobacco likewise incorporates moisteners, sweeteners, and flavors such as cherry juice. These additives may affect the flavor of the product, sensory properties such as smoothness and impact, and other important product characteristics. Additives can also be used to enhance or alter nicotine delivery, a practice denied by manufacturers.

Role of Additives in Product Design

The flavor of a tobacco product is primarily determined by the tobacco leaf blend, while additives are used to modify or enhance tobacco flavor characteristics. **Menthol** is the only commonly recognized tobacco flavor category, although vanilla, cherry, orange, and other product flavors have been introduced commercially. Most additives are used in very small amounts—less than .01 percent of total weight. As a result, although the cumulative effect of additives on tobacco flavor may be significant, it is often difficult or impossible to assess the impact of specific flavorants.

menthol a form of alcohol imparting a mint flavor to some cigarettes.

Additives perform a number of roles in addition to altering product flavor. For example, additives may also control cigarette burn rates, properties of tobacco such as moisture and consistency, and delivery of specific smoke constituents. Not surprisingly, the most widely used additives—including sugars, cocoa, and licorice—demonstrate important sensory, **physiological,** and respiratory effects. Both theobromine, the principal alkaloid of the cocoa bean, and glycyrrhizin, the active component in licorice, act as bronchodilators, relaxing the bronchial muscle and therefore enhancing respiratory inhalation. Likewise, the addition of sugars helps to offset bitterness, improve smoothness, and reduce irritation caused by tobacco smoke. Highly aromatic compounds, such as vanillin, may also be used to alter the aroma of sidestream smoke (the smoke produced from the lit end of the cigarette between puffs).

physiology the study of the functions and processes of the body.

Some additives demonstrate properties that significantly alter product chemistry. A number of additives in both cigarettes and smokeless tobacco products are used for modification of "smoke pH," which is a measure of its acid/base chemistry. Increased "smoke pH" allows more nicotine to be present in the chemical freebase form, which is more readily available for absorption and use in the body (much as crack cocaine is a more potent freebase form of cocaine). Other additives increase or alter the effects of nicotine, or produce their own effects on the central nervous system and brain. For example, pyridine, a cigarette additive, acts as a **depressant** in much the same way that nicotine does, although it is less potent.

depressant a substance that depresses the central nervous system. The most common depressant is alcohol.

Manufacturers have used modified forms of tobacco, in combination with other design changes, to reduce the amount of **tar** produced per cigarette and to cut production costs. Modified tobaccos, such as reconstituted tobacco (combined from stems, leaves, and other tobacco scraps), rely on additives to maintain their physical integrity, to promote consistency, and to control resulting tobacco and smoke chemistry. Additional flavorants or enhancing agents may also be used to counteract the loss of sensory or other subjective response in these reduced delivery products.

tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.



Bidi cigarettes, particularly popular among urban youth, are displayed on a counter in Chicago, 11 December 2000. As of 1 January 2001, the potent imported cigarettes that come in almond, cinnamon, clove, root beer, strawberry, and vanilla flavors were banned in Illinois. The flavors mask the fact that bidis have more than twice the amount of tar and nicotine delivery as unflavored cigarettes. AP/WIDE WORLD PHOTOS

Many products today are marketed with the claim "no additives." However, a true evaluation of additives must include not only the flavors applied directly to the tobacco but also other chemicals used during stages throughout the production and manufacturing process. Additives are used as tobacco processing agents, as treatment for cigarette papers or filters, or even applied to product packaging (which then allows transfer to the finished product). The hundreds of pesticides and other chemicals used in the growing or harvesting of tobacco may also be present as residues in manufactured tobacco products.

Physiological and Behavioral Effects

Additives may produce important changes to the effects of tobacco, altering dependence, toxicity, or use behaviors. For example, additives may increase the addictive character of tobacco smoke by altering the effects of nicotine or by exerting other pharmacologic effects on the user. Changes to the physiological properties of nicotine could also radically alter the character of tobacco dependence. Additives that enhance the body's interaction with nicotine or other constituents may increase their addictive or toxicological effects. For example, menthol has been shown to enhance drug absorption and demonstrates effects on metabolism that could alter the pharmacological action of other substances in tobacco smoke. Moreover, industry research has demonstrated a 50 percent increase in the binding of nicotine to brain receptors in the presence of the additive levulinic acid. These and other additives could

significantly alter the effects of nicotine and other constituents, again without noticeably changing the amount of nicotine delivered.

Changes in chemical composition of tobacco products could alter the site and rate of uptake of nicotine and other constituents. For example, a greater percentage of nicotine delivered in freebase form may result in increased rates of absorption in the mouth (in the case of smokeless tobacco) as well as faster absorption from the lower respiratory tract to the brain (in the case of cigarettes). These changes could alter the intensity of response and increase dependence. The addition of bronchodilators to cigarettes may have similar effects by allowing deeper inhalation and deposition of smoke constituents in areas of the respiratory tract where they are more likely to be absorbed.

One primary use of additives in cigarettes is to counteract the irritation of tobacco smoke and its active component, nicotine. The perception of smoother smoke may facilitate increased or deeper inhalation of tobacco smoke by removing physical barriers. Similarly, reduced irritation may encourage or support increased frequency of use. Published research suggests that increasing ease of inhalation may be linked to increased rates of initiation among youth. Candy-like flavors, such as cherry, may also be used to target youth.

Health Risks and Regulation

No systematic assessment has been conducted of the hundreds of additives used in tobacco products. However, a number of these additives are known to pose direct health risks. Deer tongue extract, once a widely used tobacco flavorant, was banned in some countries and ultimately phased from use due to its high concentration of coumarin, a known animal **carcinogen.** The combustion products of cigarette additives may pose additional health risks even though the additive from which they were generated is considered safe. For example, cocoa, although harmless on its own, produces carcinogenic compounds when burned. Another significant health issue is exposure to environmental tobacco smoke (ETS). Research suggests that additives may be used to reduce the visibility, irritation, or odor of ETS, possibly increasing nonsmokers' exposure, without rendering the smoke less harmful.



carcinogen a substance or activity that can cause cancer. Cigarette smoking has been proven to be carcinogenic, that is, cancer causing.

Tobacco manufacturers emphasize in public statements that the majority of additives have been shown to be safe when eaten in foods. However, compounds are significantly more toxic when inhaled or absorbed directly into the bloodstream rather than ingested. In the digestive system, additives and other complex molecules are broken down by enzymes into simpler chemical structures and/or transformed into other compounds. These processes render most substances less toxic to the body. In contrast, tobacco additives escape the metabolic pathways that would help make them less toxic. Although a number of additives are present in commercial products only in small concentrations, it does not follow that these can be considered harmless. Since people often use tobacco products for decades, their long-term exposure must be taken into account.

Even though the use of additives raises significant concerns regarding increased health risks, the tobacco industry has largely been left to police itself. Many countries regulate tar and nicotine levels of tobacco

products and require that this information be reported to the public. In most cases, however, legislative authority does not extend to disclosure of additives. Only a handful of countries (Thailand, Canada, Ireland) have enacted meaningful additive disclosure laws, and in each case the availability of information to the public has been severely limited. Some countries have limited or banned use of particular additives, or specify additives that may be permitted for use. In Canada, the list of permitted additives for use in cigarettes is quite small; as a result, Canadian cigarettes differ significantly from cigarettes sold elsewhere.

In 1994 in the United States, major cigarette manufacturers voluntarily released to the public a list of 599 potential additives for use in their products. A similar list was produced by smokeless tobacco manufacturers. Both lists were composite and did not provide brand-specific information. Some tobacco manufacturer websites provide an updated summary of additives used in their products, including maximum levels, although again this information is composite rather than brand-specific. Overall, the information provided by tobacco manufacturers is not sufficient to provide a reliable assessment of the effects of additives on addiction and toxicity.

See Also Addiction; "Light" and Filtered Cigarettes; Menthol Cigarettes; Nicotine; Processing; Product Design; Regulation of Tobacco Products in the United States; "Safer" Cigarettes; Toxins; Youth Marketing.

GEOFFREY FERRIS WAYNE

Increased Addictiveness: Ammonia and Acetaldehyde

The use of ammonia in Marlboro cigarettes has been widely publicized. Ammonia compounds, especially ammonium hydroxide and diammonium phosphate (DAP), are used in the ammoniation of reconstituted tobacco. The ammonia compounds are reacted with sugars at a high temperature to produce pyrazines and other flavors through a chemical process known as Maillard browning. These flavors demonstrate unique sensory and pharmacological effects. The ammoniated tobacco produces a characteristic mild smoke, increased "smoke pH," and a more efficient transfer of nicotine, all of which combine to make the cigarette more addictive. Early adoption of DAP in tobacco processing in the 1950s is widely believed to be responsible for the unique flavor of Marlboro cigarettes and, ultimately, their success worldwide.

In the early 1980s, the research scientist Victor DeNoble and coworkers at Philip Morris studied the behavioral effects of nicotine and acetaldehyde (a byproduct of sugar) in rats. The results of this research showed that the two compounds work together to produce greater addictive effects. DeNoble later claimed in public testimony that based on this information, Philip Morris increased the level of acetaldehyde in Marlboro cigarettes by 40 percent between 1982 and 1992 through the addition of sugars (Bates 1999).

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Advertising

From humble beginnings in the 1700s, advertising has become the tobacco industry's primary mechanism for the promotion of tobacco use to each new generation of smokers. Whereas in 1900 tobacco advertising targeted mainly white Western men, by the year 2000 tobacco was promoted to women, men, and even children, in markets across the globe. Although the influence of tobacco advertising is hotly debated, control of advertising is now at the heart of initiatives to reduce tobacco consumption.

Early Tobacco Promotions

Tobacco manufacturers have, at least from the eighteenth century, used strategies to promote their wares. Trade cards, which were used in tobacco distribution in North America from the seventeenth century, and also tobacco wrappers, featured a range of images including those of American Indians, tobacco leaves, **snuff** boxes, and other tobacco accessories. Promotion efforts were taken a stage further with the introduction of branding, which was one of the earliest forms of advertising.

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

Branding allowed a manufacturer to sell a range of products but this was dependent on the ability to standardize production: "The Brand acted as a source of information for the nature of the product determined by either advertising, a previous sale, or the connotations provoked by the brand name itself or its image" (Hilton 2000). By the 1850s, tobacco products in the United States and Britain were increasingly given brand names and, through these, specific identities. Cherry Ripe and Wedding Cake were brands of chewing tobacco available in the United States, while in Britain Bishops Blaze and Best Bird's Eye competed for the pipe smoker's attention. Symbols also emerged as branding devices. The image of a bull was used effectively on the wrappings and advertisements for the Bull Durham brand of smoking tobacco manufactured by a North Carolina firm in the 1860s.

Advertising of tobacco products took off toward the end of the nineteenth century in the United States, and afterward in Britain. In the United States, Buck Duke organized his own polo team named after one of his leading cigarette brands, Cross Cut. In Britain, one tobacco company published a magazine, *Cope's Tobacco Plant* (1870–1879), to promote smoking in general and its products in particular. Sponsorship of events was utilized effectively to promote Bull Durham's smoking mixture in 1877. Advertisements appeared on billboards, and colorful posters that reproduced the images on cigar labels and cigarette advertisements were available from suppliers in the United States and Britain.

Packaging was a particularly important aspect of advertising. For example, from the 1860s to the early 1900s North American cigar boxes were decorated with attractive and technically sophisticated labels that could take up to a month to create. Images of "exotic" women were a common feature of these labels. **Cigarette cards,** which were used initially to strengthen soft paper cigarette packets, were also well established in the tobacco industry's advertising repertoire by the 1890s. Seductive images of beautiful, and often scantily clad, women were used

cigarette cards paper trading cards sometimes featuring sports personalities or movie stars packaged with cigarettes and offered as an incentive for purchase.





Advertisements for Alba cigarettes (left), and Riz La + tobacco paper (right), both c. 1925. Since tobacco products are essentially similar, image has long been an important marketing tool in cigarette industry advertising. BOTH PHOTOS © SWIM INK/CORBIS

on cigarette cards on both sides of the Atlantic, although there were also more conservative themes such as the Kings and Queens of England and famous sports personalities. These cards were desirable in themselves and highly collectible.

Twentieth-Century Advertising

The prominence of advertising at the turn of the twentieth century was precipitated by a need for new markets for tobacco products and, in particular, mass-produced cigarettes. Mass demand was required to realize the profit potential of new cigarette manufacturing techniques, in particular the introduction of the Bonsack machine. The "tobacco war" between the American and British tobacco industries in 1901 and 1902 added impetus to cigarette advertising, as did advertising wars inside the United States from 1913. Advertising became a major area of expenditure by tobacco manufacturers in the twentieth century, and the biggest area since 1945.

Image was central to tobacco, and especially cigarette, advertising. Although there are clear taste differences between Turkish, Virginian, and mentholated brands, in other respects cigarettes are "fundamentally homogenous products" (Chapman 1986). To enhance the effectiveness of advertising, the tobacco industry enlisted the help of public relations experts, psychologists, and psychoanalysts. In interwar United States,

Washington Hill, the president of American Tobacco, worked with public relations expert Edward Bernays to promote Lucky Strike cigarettes. John B. Watson, one of the founders of behavioral psychology, worked closely with the tobacco industry, and Walter Dill Scott's *Psychology of Advertising* (1902 and 1921) was one of the guiding texts of the industry.

The media emerged as a principal means of direct and indirect cigarette advertising in the twentieth century and the tobacco industry was quick to exploit new types of media: newspapers, periodicals, film, and television. However, in Australia traditional forms of advertising such as counter displays and shop signs continued to dominate the sale of tobacco for pipes and roll-your-own cigarettes until 1950.

National advertising campaigns became common in the West following the expansion of the popular press. The North American Bull Durham brand was promoted in the 1880s using local newspapers and large dailies. Extensive newspaper advertising appeared during World War I when the U.S. tobacco industry initiated campaigns to provide cigarettes for soldiers. The American Tobacco Company struck a deal with one newspaper for a daily front-page display box along with three or four column articles or displays at the top of an inside page. In Britain, too, newspaper advertising grew in importance from the late nineteenth century, and, by the interwar period, 80 percent of advertising expenditure was spent on the press.

Women's magazines have been an important source of cigarette advertising in the West since the 1930s. Although when television and radio advertising became available in Britain and the United States in the 1950s, magazine advertising slumped; later, when bans were imposed on tobacco advertising in television and radio, cigarette advertisements re-emerged in women's magazines. In the 1970s and 1980s most major U.S. women's magazines took cigarette advertisements and in 1979 cigarettes were the most advertised product in some U.S. magazines. In Britain, a survey of fifty-three magazines aimed at fifteen- to twenty-four-year-old women in 1985 revealed that two-thirds featured cigarette advertising.

The potential of film to promote smoking, especially of cigarettes, was also realized by the tobacco industry. Film stars endorsed De Reszke cigarettes in a string of advertisements in Britain's *Vogue* magazine in 1919; by the 1930s this was common practice on both sides of the Atlantic. Although smoking appeared in silent films, and was common from the 1930s, there is little explicit evidence of tobacco industry interventions. In the 1980s, however, the tobacco manufacturer Phillip Morris admitted to paying Sylvester Stallone to smoke Kool cigarettes in the action movies *Rhinestone* (1984) and *Rambo: First Blood, Part 2* (1985). Unofficial sources also indicate that films have been used deliberately to advertise cigarettes through product placement. Marlboro vans, for example, appeared in the background of *Superman II* (1980). An increased occurrence of smoking and of major cigarette brand names has been noted in films released between 1990 and 1996.

The availability of television after 1950 provided important new channels for advertising a range of tobacco products in the West. In the United States in 1968 the largest tobacco company, R.J. Reynolds, concentrated 80 percent of its advertising budget on television promotions,



The use of prominent persons, public figures, and entertainers in cigarette advertising was already common by the turn of the twentieth century. These trade cards for Between the Acts & Bravo brand cigarettes featured minor female stars of the theatre: (l to r) Josie Hall, Carrie Coote, and Kate Claxton. © BETTMANN/CORBIS

until a ban in 1971. In Britain, too, bans on television and radio advertising closed off these channels as direct forms of advertising. Direct advertising was not, however, the only form of tobacco promotion on television. Indirect advertising also occurred, particularly when the tobacco industry sponsored major sporting or cultural events. This strategy was commonly used to circumvent restrictions on television and radio advertising. During two state football finals in Australia in 1982, tobacco hoardings were on screen 1,412 times each for an average of 3.7 seconds. This amounted to 26.6 percent of total program time.

In the context of increased restrictions on tobacco advertising since the 1960s, indirect forms of advertising have flourished. One strategy that has allowed the tobacco industry to circumvent advertising bans is the practice of "brand-stretching" whereby tobacco-brand logos appear on nontobacco goods such as Camel boots and Salem holidays.

Whom Do Advertisements Target?

Pipe tobacco and cigars were firmly masculine products in the nineteenth century and remained so throughout the twentieth century. Tobacco advertisers therefore targeted men. The cigarette market was also conceptualized almost exclusively as male prior to World War I, although there were sporadic appeals to Western women smokers before 1918. In Britain, advertisements for mass-produced brands such as De Reske and Players targeted women as smokers from 1919. It was not until 1926 that a U.S. advertisement for a mass-produced brand

addressed women as smokers, and not until 1927 that a woman was featured actually smoking. By the 1930s, North American advertising routinely featured women smoking cigarettes and even offering them to their male companions. In Australia, too, women smokers were regular features of cigarette advertising by this time. But although roughly one-quarter of all Australian cigarette advertisements included images of women between 1927 and 1937, only 6 percent focused exclusively on them. Since World War II, cigarette advertising has increasingly targeted women on a global scale.

Promotion of cigarettes outside Europe and North America began around 1900. China was the main foreign market for British American Tobacco and, in the early 1900s, cigarettes were promoted using outdoor advertising, handbills, wall hangings, posters, and window displays. The global dimensions of cigarette advertising escalated dramatically after World War II. Latin America was targeted in the 1960s and the newly developed countries of Asia in the 1980s. Eastern Europe, territories previously in the USSR, China, and Africa were targeted aggressively in the 1990s. Tobacco brand advertising budgets were some of the largest of any product in countries such as Malaysia, Hong Kong, Kenya, Indonesia, and South China in the late 1980s. In many cases advertising was, and still is, unregulated.

The tobacco industry claims that its advertising does not target children. However, proportionately more ads were placed in U.S. women's and youth magazines between 1960 and 1985 than in those which targeted other groups of the population. In Britain in the 1980s, a study of magazines aimed at women and young people discovered that 58 percent with a readership predominantly under twenty-five years of age featured cigarette advertising, and that of those magazines whose numerically largest readership group was between fifteen and twenty-four years old, 93 percent carried cigarette advertisements. Young people were also being targeted in the 1980s in the new markets of Asia and Africa; for example, a group of teenagers breakdancing appeared in an advertisement on display in Malaysia. Scholars argue that direct advertising is not the only means by which young people are targeted by the tobacco industry. Representations of adult life can also be very appealing to teenagers: "Any marketer of products and services for adolescents knows that to appeal to youth, one needs to construct a campaign that looks as if it is a product for adults" (Chapman). An investigation into the advertising practices of the producers of Viceroy cigarettes in the 1970s revealed that young people were being deliberately courted by the American tobacco industry. Similar results emerged from an inquiry in 2000 into advertising for the U.K. tobacco industry.



Although cigarette advertising was directed mostly toward white Western men in 1900, smoking among children was common as shown in this postcard of a child smoking a cigarette, 1910. © RYKOFF COLLECTION/CORBIS

Advertising Themes

National identity was a particular prominent theme in British pipe tobacco advertising around 1900 and included images of Queen Victoria, aristocrats, the military, aspects of British heritage and the British countryside. In Australia during World War I, themes of war, nationalism, and masculine identity were used to sell traditional forms of tobacco to men. In interwar Australia, where pipe and roll-your-own tobacco continued to surpass the sale of tailor-made cigarettes, advertisements emphasized masculine identity with stress on defending

male space against female intrusion. Advertisements for cigars and pipe tobacco have continued to have male subjects and masculine themes.

Men and masculinities remained a staple of cigarette advertising. In interwar Australia, themes relating to male camaraderie and masculine anxieties were to the fore in the press. Cigarette advertising on Australian radio was also dominated by a series of masculine sea shanties. In the United States, most cigarette advertisements featured men even when women were targeted as smokers from the late 1920s. In Britain, too, men and masculinities were highly visible; indeed the most famous British icon was the sailor that appeared in advertisements for Player's cigarettes. Initially women were featured in tobacco advertisements to add a seductive element, but after 1920 they were increasingly visible as smokers in their own right.

Emancipation was a key theme in early cigarette advertising to British women. Women's liberation re-emerged in the late 1960s and 1970s as a theme in Western advertisements for "female cigarettes," most notably Virginia Slims: "You've come a long way, baby." Emancipation remained a prominent motif in 1980s and 1990s advertising to women in the former socialist countries of central and eastern Europe, plus Japan, Hong Kong, and Africa. Promising liberation as well as westernization to Hong Kong women in the 1980s, an advertisement for Virginia Slims declared, "You're on your way."

In advertisements, cigarette smoking has been associated with a high quality of life: health, leisure, pleasure, sexual attractiveness, affluence. Health and body issues were common themes in interwar advertisements targeted at Western men and women. Craven "A" cigarettes, for example, were marketed widely as "made especially to prevent sore throats." Smoking was also associated with feminine beauty and, in the United States, it was explicitly linked to slimness. Leisure has also been a prominent theme and from the 1930s companionate leisure often provided the context for smoking in advertisements in Australia, the United States, and Britain. Physical activity and the outdoors featured prominently in the 1930s as men and women smoked after a tennis match or while motoring together in the countryside. After World War II, joint leisure activities were more subdued and intimate; for example, bathing on a beach or relaxing by a roaring fire. A Western definition of the "good life" has remained a feature of much advertising to low and middle income countries; in the 1980s, a Fijian advertisement for Rothmans referred to a "great English tradition" while an Indian advertisement for Chesterfield's promoted "the smooth American experience."

From the 1960s, amid widespread publicity about the health risks of smoking, image became increasingly important to cigarette advertising, "not only because it was meant to confer its qualities on the smoker, but because it was designed to blind consumers to the true nature of what they were buying" (Taylor 1985). However, with the introduction of restrictions on tobacco advertising, advertisers have also been forced to rely less on featuring people and to make more inventive use of symbolism as in the 1980s campaigns for Benson & Hedges and Marlboro cigarettes. When advertising restrictions meant that the cowboy could no longer appear in Marlboro advertisements, Marlboro resorted to using the image of wild horses: "They knew that people would look at a pack of Marlboro and still see the cowboy" (Chapman).

Impact of Advertising

Concerns about children's exposure to tobacco advertising are underpinned by the belief that advertising is influential; this influence extends also to adults. Amid knowledge of the health risks of tobacco consumption, the tobacco industry has come under intense criticism for promoting smoking to new groups of potential smokers, especially children and women, and sustaining levels of consumption in established markets.

The influence of advertising is, however, strongly contested by the tobacco industry. The industry's position is that the sole purpose of advertising is to encourage smokers to change their allegiance to brands, and that advertising does not lead people to smoke or hinder their efforts to stop. The scholar Simon Chapman questions the veracity of this claim on three counts. First, all advertising seeks to maximize sales and even advertising industry workers are not convinced that the tobacco industry is any different. Second, advertising is used even in countries where the government has a monopoly on tobacco sales and where there is, therefore, no competition. Third, if advertising only influenced current smokers then it still follows that a ban on advertising may help reduce smoking.

Establishing a causal relationship between advertising and levels of smoking is not, however, straightforward. Methodological problems bedevil attempts to isolate and assess the influence of different types of advertising: "Unlike the effects of nicotine, advertising cannot be dosed and its effects observed physiologically" (Chapman). The reasons why people smoke are complex: "Tobacco advertising is . . . only one factor among many that appears to influence the decision to smoke. These include social, religious, parental, sibling and peer smoking behaviour and attitudes, price and disposable income, age limit proscriptions, measured intelligence and social class" (Chapman).

Isolating the significance of advertising for the promotion of smoking in the past is also difficult, as evident in the debate about the role of advertising in introducing Western women to cigarette smoking before World War II. The sociologist Michael Schudson argues that women did start to smoke prior to the first advertisements that targeted them and that news coverage of smokers helped in "the first instance to legitimise women's smoking"; advertising merely went on to reinforce and "naturalise" this practice (Schudson 1985). Others acknowledge that smoking had appeal for women prior to their direct targeting, but they argue that advertising "indirectly sought women smokers through images that emphasized the sociability and allure of the cigarette" (Brandt 1996). Cheryl Warsh points out that "cigarette advertising could have shaped women's views of what was masculine and therefore what would be an attractive aspiration for 'new women'" (Warsh 1998). Following the initiation of direct appeal to women in the United States, researchers argue, women's smoking increased at a faster rate than before.

Precise measurement of the effect, past and present, of tobacco advertising is elusive. It is, however, widely established that cigarette advertising contributes to a culture in which smoking is normalized and has a positive image. "Whether advertising initiates consumer trends or only reinforces them . . . it is impossible to ignore their wider role in providing people a general education in goods" (Schudson). Unattractive and

negative ways of understanding smoking have often been suppressed by threats from the tobacco industry to deprive the media of advertising revenue. This threat is being eroded by the introduction of national bans on advertising. Studies indicate that a comprehensive set of tobacco advertising bans can reduce tobacco consumption, but that a limited set of advertising bans has little or no effect.

See Also Sponsorship.

PENNY TINKLER

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Advertising Restrictions

As the modern antismoking movement gathered force in the 1960s, public health advocates focused much of their attention on limiting advertising of tobacco products. Some countries took steps to ban cigarette ads from television and radio during this period, and since then many industrialized democracies have placed limits on broadcast, print, or display advertising. These moves had to confront not only the opposition of the tobacco industry and media interests that depended on tobacco advertising revenue, but also the question of whether such bans were truly an effective strategy for curbing consumption. Further, countries such as the United States and Canada with constitutional safeguards on freedom of expression had to decide whether the marketing messages of corporations warranted the same types of protections accorded to political or artistic speech.

Early Moves in the 1960s and 1970s

In the wake of the 1964 Surgeon General's report, there was public support for a total ban on advertising in the United States, but the tobacco lobby was able to forestall such regulation. It was only through a series of circuitous legal and political maneuvers that the first restrictions were enacted. An activist lawyer, John Banzhaf, filed a petition with the Federal Communications Commissioner (FCC) demanding that broadcasters allocate air-time to presenting antismoking advertisements to counter the effect of tobacco industry messages. The result was a series of powerful "kick the habit" ads that ran for three years. In 1968, when the FCC called for a ban on cigarette advertising on television and radio, the tobacco industry supported the move out of self-interest: the antismoking spots—which would cease once cigarette ads themselves left the airwaves—were hurting

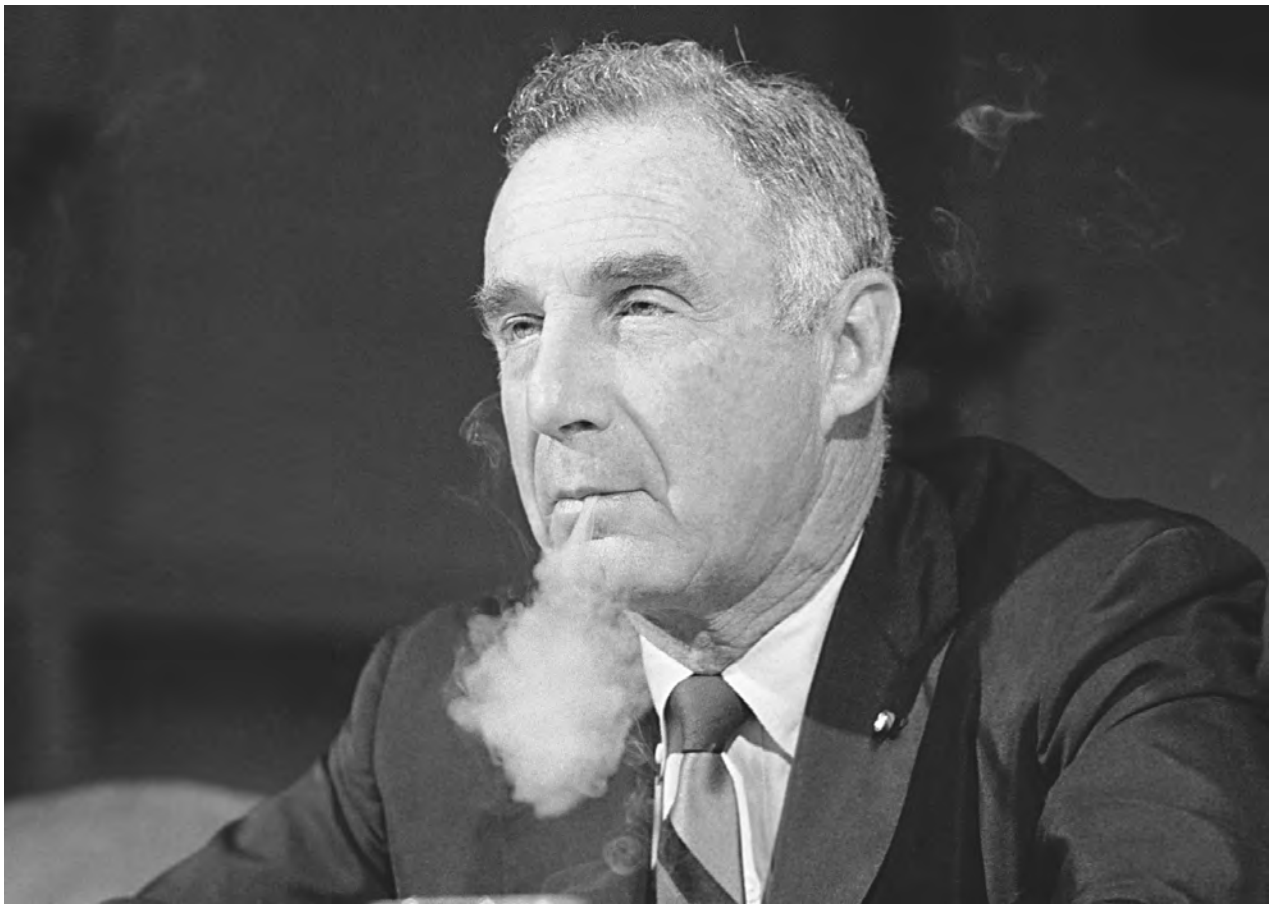
their business more than the industry's own ads were helping it. At the beginning of 1971, cigarette ads were taken off the air in the United States, and a subsequent analysis suggested that the tobacco industry's assessment was correct. During the three years that the antismoking ads had aired, per capita cigarette consumption declined markedly, but when the ads went off, consumption began to inch back upward. The industry simply shifted its dollars to the print media; total spending on magazine advertising doubled and newspaper advertising quadrupled.

During this period, television bans went into effect in other countries, including Great Britain, France, Germany, and Australia. In some cases the tobacco industry negotiated voluntary agreements with governments to reduce or eliminate broadcast ads in order to head off potentially more far-reaching restrictions. However, other forms of marketing remained common, including newspaper and magazine ads, billboards, sponsorship of sporting events, posters and retail displays, and promotional items featuring product logos.

Economic and Political Constraints

The powerful influence of tobacco manufacturers, retailers, and other corporate interests has been evident in countries as different as Australia, which has one of the world's most far-reaching antitobacco regimes in place, and Japan, which has one of the least. In Australia, the industry negotiated a voluntary agreement in 1976 that banned broadcast advertising but contained a provision allowing continued industry sponsorship of sporting events, one of its most popular forms of promotion (where, public health advocates charged, its signs and posters would reach a predominately youthful audience). During the following decade when attempts were made to close the loophole and extend the ban to print advertising, the government was reluctant to antagonize the country's most powerful media barons, who derived significant income from tobacco advertising and sporting events (one of whom also served on the board of Philip Morris). Eventually the ban was extended to all advertising, due in part to the actions of a well-organized antitobacco movement, and even perimeter ads at sporting events, which had been the most contentious issue, were eventually prohibited.

In Japan, where tobacco production was for many decades a state monopoly and continues to have major fiscal importance, a modest set of restrictions that discouraged "excessive" advertising (but provided no sanctions for violating the guidelines) was put in place in 1984. The Japanese cigarette market was closed to foreign producers at this time, and smoking rates among men were the highest in the industrialized world, so manufacturers saw little threat in the limited restrictions. The opening of the Japanese cigarette market to foreign competition changed this dynamic. As American manufacturers began competing with Japanese, the government was forced to issue new guidelines so that domestic producers would not be put at a competitive disadvantage. In 1998, the government issued a more comprehensive set of restrictions, including efforts to limit advertising aimed at youth, that brought Japan closer in line with other countries, but even these rules rely entirely on the voluntary cooperation of industry.



Joseph F. Cullman III, chair of Philip Morris Inc., and chair of the Tobacco Institute, blows smoke as he testifies before the Senate Commerce subcommittee on 22 July 1969. Cullman announced that the cigarette industry, bowing to public and government pressure, had offered to end all television and radio advertising by September 1970. © BETTMANN/CORBIS

Freedom of Speech and the Effects of Advertising

During the 1980s, a broad spectrum of public health groups in the United States pressed for more comprehensive restrictions that would extend the television and radio ban to other forms of promotion. But their efforts were constrained by the constitutional question of what protections, if any, were due to commercial speech. The United States Supreme Court had handed down inconsistent rulings on the issue, ultimately determining that while advertising did not warrant the same First Amendment protections that applied to political or artistic speech, limits on commercial expression had to be narrowly tailored and advance a compelling state interest.

A similar challenge confronted public health advocates in Canada. That country's Supreme Court declared in 1995 that a sweeping ban passed several years earlier on all forms of advertising was a violation of constitutionally guaranteed freedom of expression. The government responded by modifying the law to ban only "lifestyle" advertisements, those that sought to portray smoking in general as glamorous or appealing, while allowing "brand preference" ads designed to attract smokers to a particular brand.

In addition to legal principles, the debates over the scope of advertising restrictions hinged on a much-disputed empirical question: Did bans on advertising really serve to reduce the use of tobacco? Although

the belief that advertising stimulated overall consumption was powerfully intuitive—why would the industry devote billions of dollars to it each year if such expenditures did not increase their market?—there were few data to support either this relationship or the converse hypothesis that limits on ads would result in reduced consumption. Research into these questions had produced conflicting results, but showed that the effect of advertising bans on consumption was modest at best. Cigarette manufacturers, for their part, insisted that advertising served only to lure smokers from one brand to another, not stimulate demand among people who would not otherwise take up the habit. As long as tobacco products remained legal, they claimed, the government had no grounds for limiting consumers' information about them.

A corollary issue that assumed great salience in debates over banning advertising was the effect of ads on young people. Since the majority of smokers began the habit as minors, even those who took a strong antipaternalist stance in opposing restrictions had to concede that the protection of youth from the manipulation of the tobacco industry might provide an acceptable rationale for government intervention. The extremely successful Joe Camel campaign beginning in 1988 galvanized antitobacco activists to press for greater restrictions in order to protect youth, especially after research indicated that the perpetually smoking cartoon character was almost as recognizable to six-year-olds as Mickey Mouse. During the 1990s, protecting children was the basis for increasingly vehement calls for a total ban on advertising in the United States, even though there was considerable doubt whether such a move would be constitutionally permissible.

The Limits of Restrictions

In the United States, a comprehensive set of advertising restrictions was put in place under the Master Settlement Agreement (MSA) that was reached between the tobacco industry and 46 state attorneys general in 1998. The guidelines prohibited advertising targeting youth, and banned billboards and ads on public transportation and in arenas, stadiums, and shopping malls. Retailers were still allowed to post signs up to fourteen feet square. In 2001 the Supreme Court, in a case originating in Massachusetts, addressed the question of how far individual states could press beyond these restrictions. The state had imposed a sweeping set of restrictions geared toward protecting youth. Outdoor advertising within 1,000 feet of schools and playgrounds was banned, and ads placed lower than five feet off the ground, at the eye level of children, were prohibited.

When the rules were challenged by a consortium of tobacco producers and retailers, the Supreme Court agreed with the plaintiffs' claim that they were overbroad. The guidelines would amount to a de facto ban on tobacco advertising in much of the state, the court held, and were thus in violation of the First Amendment. The ruling posed a conundrum for those committed to reducing tobacco use. A growing body of **econometric** research suggested that partial advertising bans had little or no effect on consumption. Only a total ban—the type most likely to be found unconstitutional in the United States—would be effective.



econometrics the study of economic data usually employing statistical methodologies.

Internationally, in 2003, the World Health Assembly adopted the Framework Convention on Tobacco Control, a comprehensive treaty that required all signatories to move toward a comprehensive advertising ban within five years. The document required that countries whose constitutions did not allow complete bans restrict advertising within the limits of their laws. Although the United States signed on to the document after dropping its earlier opposition, it had not formally ratified the treaty as of mid-2004.

See Also Advertising; Antismoking Movement Before 1950; Antismoking Movement From 1950; Marketing.

JAMES COLGROVE

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Africa

It is not known exactly when tobacco was introduced to Africa. However, it is generally accepted that the Portuguese were the first to take tobacco to Africa, probably sometime in the early-to-mid-sixteenth century. It appears that within fifty years of Vasco da Gama's historic circumnavigation of the world in 1497–1499, Portuguese merchants were trading tobacco along the east coast of Africa. In that same period, the Portuguese also introduced tobacco into West Africa through a series of trading posts they were establishing along the coast.

The Early Propagation of Tobacco

Following its introduction along the east and west coasts, tobacco spread into the interior of Africa fairly rapidly. Its cultivation moved quickly eastward from the coastal regions of modern-day Senegal, along the trade routes of interior West Africa during the later half of the sixteenth century, and into the region north of the lakes Nyanza (formerly Victoria) and Albert in east-central Africa by the mid-seventeenth century. Christopher Ehret has demonstrated that "we can track this diffusion through the spread of a single word, *taba*, for tobacco all the way across Africa" (Ehret 2002). By the early 1600s European traders visiting the area of present-day Sierra Leone reported that local Africans were cultivating tobacco next to their homes, that both men and women were smoking, and that they were trading tobacco, along with indigenous produce like bananas, rice, and wood, to crews of European ships.

Tobacco was introduced into other parts of Africa no later than the middle of the seventeenth century. It apparently spread into the interior of the Saharan region of North Africa, along centuries-old caravan routes, after being introduced by the Portuguese to the coastal zones of the southern Mediterranean Sea in the first decade of the seventeenth century. The Portuguese also traded tobacco in the northeast region of Africa, where it was grown extensively in the southern provinces of the area that is modern-day Ethiopia.

The Dutch facilitated the spread of tobacco through the southern regions of the continent, introducing it into the Cape region of modern-day South Africa in the middle of the 1600s. The Dutch East Indies Company first established a trading post at the Cape in 1652 and reportedly immediately began to cultivate tobacco. It sold tobacco to crews of primarily company-owned ships on their way to, or returning from, the Company's principle trading areas of Indonesia, and used tobacco as one of several trade items to induce the local Khoikhoi pastoralists to supply the Company with cattle. The meat from slaughtered cattle was then used to refit Dutch ships stopping at the Cape. By the end of that century, the Company had taken the land from many Khoikhoi, who increasingly took jobs on Dutch-owned estates in order to survive. It has been reported that one of the main attractions for the Khoikhoi working on these estates was the tobacco provided by their employers as part of their wages. From this initial introduction of tobacco at the southernmost tip of Africa, it followed traditional trade routes into south-central Africa, reaching areas north of the Zambezi River by the early eighteenth century at the latest.

Iain Gately has partially explained this extremely rapid dispersal of tobacco throughout the African continent by noting that "Africans already had pipe and smoking cultures of their own" prior to the introduction of tobacco during the sixteenth and seventeenth centuries. Gately argues that African peoples "had long had an herbal friend whose fumes they drank. **Cannabis,** or *dagga*, as this other combustible weed was known, was valued for its **psychoactive** properties, in particular its ability to generate sensations of well-being." In addition, some African peoples, such as the Masai pastoralists of East Africa, while not smoking tobacco, did develop an affinity for sniffing finely ground tobacco leaf (Gately 2001). For whatever reason, it is clearly evident that African peoples across the continent had taken up the smoking of tobacco by the mid- to late 1600s. This assertion is supported by accounts made by



cannabis hemp-derived intoxicants such as marijuana and hashish.

psychoactive a drug having an effect on the mind of the user.



Djombe natives working on tobacco plantation in German South West Africa, 1918. © BETTMAN/CORBIS

Europeans travelers in Africa during this period. From a 1607 account by the British merchant William Finch, as noted in Berthod Laufer's "The Introduction of Tobacco into Africa" (1930), inhabitants of Sierra Leone planted tobacco

> *about every man's house, which seemeth half their food; the bowl of their tobacco pipe is very large. . . . In the lower end thereof they thrust in a small hollow cane, a foot and a half long, through which they suck it . . . both men and women . . . each man carrying in his snap-sack a small purse (called* tuffio*) full of tobacco, and his pipe.*

Seventy-five years later the Dutch trader O.F. von der Groeben reported that the people of the same area "smoke tobacco—men, women and children indiscriminately, and are so fond of its fumes that they inhale them not only at daytime, but also at night hang small bags of tobacco around their necks like a precious gem." Twenty years later, W. Bosman, a British trader, observed that the people of the Guinea coast, north of Sierra Leone, "were so passionately fond of tobacco that they gladly sacrificed their last penny to get it, and would rather hunger than be without it" (Laufer).

Tobacco's Role in African Trade

From the mid-seventeenth century to the early decades of the nineteenth century, tobacco played an important role in the transatlantic trade. The primary areas concerned were Brazil in South America, the coastal and hinterland zones of the Gold Coast (modern-day Ghana) in West Africa, the Congo River basin, and Angola. In the period between

1637 and 1642, the Dutch replaced the Portuguese as the principal European trading power along the West African coast. However, the Dutch merchants soon realized that their ability to trade with the local peoples was greatly restricted because they did not have access to the one trade item most favored by Africans in the area—tobacco produced in the Bahia region of Portuguese Brazil. Africans along this stretch of the West African coast valued a particular type of Bahian tobacco—a third-grade tobacco manufactured from scrap, or rejected leaves, from the best quality plants, rolled into the form of a thick rope, and then soaked with molasses. To rectify this problem the Dutch were forced to allow Portuguese traders to import tobacco, but no other goods, from Bahia into those areas of West Africa controlled by the Dutch. Portuguese ships from Brazil were obliged to stop at the Dutch fort at Elmina, in present-day Ghana, to have their cargoes inspected and to pay a tax of ten percent of their tobacco. Although Portuguese ships avoided stopping at the fort whenever possible, the system succeeded because both sides benefited from the arrangement. The Portuguese needed to procure African slaves for their **plantations** in Brazil, and the Dutch got the Bahian tobacco they required to trade with local Africans. That trade could be very profitable. For instance, in the first decades of the eighteenth century Africans were willing to trade a pound of ivory for every ten pounds of Bahian tobacco.

plantation historically, a large agricultural estate dedicated to producing a cash crop worked by laborers living on the property. Before 1865, plantations in the American South were usually worked by slaves.

The tobacco growers of Bahia were the only ones to perfect this type of manufacturing process and were therefore able to establish a monopoly of trade for this particular type of tobacco. C. R. Boxer, a historian of the Portuguese Empire, notes in *The Portuguese Seaborne Empire, 1415–1825* (1969) that "the monopoly of this third-grade Bahian tobacco consequently gave the Portuguese an advantage over all their European rivals for the whole of the eighteenth century." In his *Way of Death: Merchant Capitalism and the Angolan Slave Trade, 1730–1830* (1988) the historian Joseph Miller has added that "given the African smokers' partiality toward the Bahian leaf, it became a small gold mine in itself for the growers and merchants—sometimes literally so, since Bahians sold it also to the Dutch on the Gold Coast for African gold."

By the eighteenth century tobacco was not only an important part of trade relations between Africans and Europeans, it had also become an important component of trade between African societies. For example, in the Congo River basin tobacco was grown by Africans who traded it, along with locally produced alcohol, for salt, cassava, and palm cooking oil. Further south, along the fringes of Portuguese-controlled Angola, Africans in the Kwango valley grew large amounts of tobacco and exported their surpluses into areas to the east of Portuguese control. A final example, from the early nineteenth century, was reported from central Angola, where local African farmers participated in sophisticated dealings, exchanging tobacco for beeswax.

Domestic Cultivation of Tobacco

Historical evidence for the propagation and use of tobacco in the interiors of eastern and southern Africa is limited for the period prior to the mid-nineteenth century. However, existing evidence demonstrates

clearly that tobacco had long been incorporated into both the economies and social habits of the peoples of those regions by that period. In the late eighteenth century tobacco was one of four new crops introduced into the northeastern part of present-day Tanzania. People grew small amounts of tobacco around their homes, primarily for personal use. They packed surpluses into small, round, hard cakes known as *mzungu*, which could be exchanged in local markets for billy goats or other consumer goods. The tobacco was usually consumed as **snuff,** but older men were reported to also smoke it in pipes.

In another part of Tanzania in this same period, men of the Shambaa kingdom sold surplus tobacco and bought cattle in local markets, while others took theirs to trade on the coast. During the middle of the nineteenth century three British explorers, Richard Burton, David Livingstone, and Henry Stanley, all "noted the ubiquity of tobacco and found time to marvel at African pipe design" (Gately). In 1879 a European visitor to the central Tanzanian coast reported the abundant growth of tobacco in the territory, and in 1896 a German named Schele reported that tobacco was commonly grown in the same region, along with millet, maize, and rice.

In southern Africa during the nineteenth century, Africans also grew tobacco both for personal use and as a trade commodity. After Brazil won its independence from Portugal in 1822, Portuguese colonial officials began to encourage African farmers in Angola to increase their production of tobacco and a number of other crops that they had been producing for internal trade purposes for at least one hundred years. In South Africa, the Thlaping people initially avoided growing tobacco, but after missionaries introduced both irrigation and a new variety of tobacco in mid-century, they began to grow it fairly extensively and used it in trade with neighboring peoples. T. M. Thomas, a missionary to the Ndebele kingdom in southwestern Zimbabwe from 1859 to 1870, noted that not only did every Ndebele village he visited have its own tobacco crop, but the Ndebele also imported a large quantity of tobacco, which they smoked in pipes, from Shangwe growers in central Zimbabwe. The Shangwe people specialized in growing and **air-curing** large quantities of tobacco, which they then traded throughout the regions of modern-day Zimbabwe and southern Mozambique. Finally, in the late 1800s, King Khama III of the Ngwato people of present-day Botswana both encouraged his people to cultivate tobacco and grew it himself as a commercial crop.

By 1900 the European imperialist conquest of Africa was nearly complete, and in the period of European colonial rule that followed tobacco played an important part in several regions of Africa. For instance, in colonial Tanzania, following the failure of food crop production in several districts in the 1920s, the government encouraged African farmers to begin growing tobacco as a cash crop. While over 6,000 African farmers in the Songea district in the southcentral part of the territory eventually grew tobacco, the vast majority produced amounts too small to allow them to develop economic self-sufficiency. When tobacco farmers in that district attempted to form themselves into a growers' **cooperative** in the mid-1930s, in an attempt to maximize prices being paid by Asian buyers, the government refused to allow them to become a fully recognized organization, fearing that would threaten the governing system of the colony.



snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.



air-curing the process of drying leaf tobacco without artificial heat. Harvested plants are hung in well-ventilated barns, allowing the free circulation of air throughout the leaves. Air-curing can take several weeks. Burley tobacco is air-cured.



cooperative a member-owned organization for buying or selling as a group rather than as individuals. In the early twentieth century, tobacco growers in several states attempted to form cooperatives to raise prices of leaf tobacco.



A Kuba man smokes a pipe, c. 1950. The Kuba tribe, which is now extinct, lived between the Sankuru and Lulua rivers in the Belgian Congo, which later became Zaire. © OTTO LANG/CORBIS



flue-cured tobacco also called Bright Leaf, a variety of leaf tobacco dried (or cured) in air-tight barns using artificial heat. Heat is distributed through a network of pipes, or flues, near the barn floor.

MALAWI. Tobacco was most significant in the British colonies of southern Africa. It was particularly vital to the colonial economy of Southern Rhodesia (present-day Zimbabwe), and its history is covered elsewhere in this collection. Another important tobacco region was colonial Malawi (formerly Nyasaland). Although local Africans were growing tobacco prior to the British occupation of the region in the early 1890s, **flue-cured** tobacco was first grown as a commercial crop by a European in 1889 and was first exported in 1893. At the time, that first small shipment of tobacco was described as the first tobacco imported into England from the empire since the loss of the American colonies. By the 1899–1900 growing season, over 1,300 kilograms of tobacco were exported, primarily to colonial Zimbabwe. After that, production increased at a rate of about 75 percent a year for the following decade, with exports reaching more than 1.7 million kilograms at the end of the 1912–1913 growing season.

Production continued to increase on European-owned farms, and tobacco became the colony's most valuable export. In 1928, however, overproduction in Malawi and its neighboring British colonies caused the price of tobacco to plummet on the English market. This resulted in a large number of growers abandoning their farms and a large reduction in Malawi's total production for the next several years. Another result was that African-produced, dark, fire-cured tobacco surpassed European-produced tobacco in export value for the first time in 1929.

By 1950 African tobacco farmers were producing more than 10 million kilograms of tobacco annually, 89.6 percent of the country's total. That level of production dropped by nearly 20 percent at the beginning of the 1960s. However, following national independence in July 1964, production levels began to slowly recover as the postindependence government increased support for large estates that specialized in producing tobacco for export. Also, by the early 1970s the government encouraged small-scale farmers to increase their production of tobacco. As a result of these policies tobacco exports steadily grew and by 1994 had regained the 10 million kilogram annual level of production, making Malawi one of the world's top tobacco producers. It remains the country's major export crop and accounts for over 60 percent, by value, of Malawi's exports (Crosby 1993).

ZAMBIA. A third African colony where tobacco played an important role in the economy was Zambia (formerly Northern Rhodesia). While local African populations grew tobacco prior to European occupation in the early 1890s, European settlers only produced it for the first time in about 1914. By 1927 tobacco was Zambia's top export, but in the following year it was greatly affected by overproduction in Zambia and neighboring countries. Tobacco made a slight comeback as a commercial crop after World War II but never recovered pre-war production levels. At national independence in 1964 tobacco was primarily produced by African **smallholders** and had ceased to be a major export. It continued, however, to be produced for local consumption by Africans over the next twenty-five years. In the early 1990s the government introduced a land privatization policy and began to actively encourage tobacco production. While production levels rapidly rose, exports still accounted for only a small percentage of gross national product.



smallholders farmers and other rural folk who own modest-sized farms and provide their own labor.

Late-Twentieth-Century Developments

By the 1990s, only Zimbabwe and Malawi could be considered major producers of tobacco by world standards, but a number of African states nonetheless became significant tobacco producers. In countries like Kenya, Mozambique, Nigeria, South Africa, Tanzania, and Uganda, African peasant farmers took up tobacco production for export. This trend has not been generally supported by their governments but has not been discouraged either, as tobacco exports, although small, are valuable sources of foreign currency. For example, in June 2001 the United States Department of Agriculture reported that the trade value of African-produced tobacco had risen from approximately $125 million in 1961 to nearly $800 million in 1999.

Of equal, if not greater, concern for African governments has been the rising rate of smoking by both men and women, and particularly by children. While taxes on cigarettes and other tobacco goods have become important sources of revenue for cash-strapped African governments, increased smoking has also added to the health care costs and increased death rates in many countries. In 1999 a report by the Commonwealth Secretariat warned that by the year 2030 tobacco consumption was expected to be the biggest cause of death in sub-Saharan Africa. The rise in consumption has resulted from both increased production in African countries and a major campaign across Africa by

international tobacco companies to promote smoking. The International Non-Government Coalition Against Tobacco clearly stated the problem in 2000 when it announced that Africa "is now the target for profit accumulation by the [international] tobacco industry" (Masebu 2003).

See Also Brazil; British Empire; Dutch Empire; Portuguese Empire; Zimbabwe.

STEVEN C. RUBERT

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Age

Smoking has always been a pleasure associated with adult males and, as such, it has always held attractions for the young and a range of connotations for women. Young boys have always experimented with tobacco, and its use in certain initiation ceremonies in Native American culture confirms the link between smoking and adulthood. Countless examples exist of women smokers and takers of **snuff,** especially in the courts of early modern Europe, but smoking remained a largely adult male pastime until the end of the nineteenth century. It was with the introduction of the modern, machine-made cigarette from the 1880s that new demographics of smoking emerged, or at least societies perceived a new problem among smoking youths and women.



snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

Demographics in the Early Twentieth Century

The sight of poor, urban boys smoking cheap, mass-produced cigarettes gave impetus to several antismoking groups around the world, principally in France, Britain, Australia, Canada, and the United States. Early opposition came from Frances Willard's Woman's Christian



In the late twentieth century smoking among young women was increasing even as the health risks of smoking were reasonably well known. Despite the efforts of antismoking campaigns, smoking is often seen by young people as cool, sophisticated, and even rebellous.
© UPI/CORBIS BETTMANN

cigarette cards paper trading cards sometimes featuring sports personalities or movie stars packaged with cigarettes and offered as an incentive for purchase.

Temperance Union and later from such luminaries as Henry Ford and the health advocate and cereal producer, Dr. John Harvey Kellogg. Most zealous of all was Lucy Page Gaston, the self-styled "extremist of extremists." In 1899 she created the Anti-Cigarette League of America, an organization that eschewed the education and reform of the sinful smoker and advocated instead outright prohibition.

The Anti-Cigarette League's medico-moral rhetoric, which connected smoking with a whole range of degenerative vices and illnesses, proved popular among Anglo-Saxon Protestants who associated cigarettes with immigrants and urban delinquent youth. By the outbreak of World War I, the movement had succeeded in outlawing cigarettes in thirteen states, with bills in six others pending (virtually every state had already banned the sale of cigarettes to minors). Similar legislation was enacted in Britain in 1908, where cigarettes were blamed for the supposed deterioration of the nation's racial stock and their increase in sales to an apparent effeminacy in a generation eschewing the more manly pipe and cigar. The legislation was, however, largely ineffective and World War I quickly put to an end the critique of young men's cigarette smoking. Cigarettes were easier to smoke than pipes in the trenches of the Western Front and tobacco companies, the military, governments, and newspapers organized the constant supply of cigarettes to the troops, an official recognition of the importance of tobacco in offering immediate relief to physical and psychological stress. By 1918, for participating states, the cigarette had emerged as the normal tobacco initiation for teenage boys.

The war too witnessed the growth of smoking among women. Prior to 1914, women's smoking was associated with actresses and prostitutes, an image fixed in popular imagination through the literary and artistic portrayals of Prosper Mérimée's and later Georges Bizet's gypsy factory girl, Carmen, as well as images of scantily clad music hall and vaudeville stars featured on the very first **cigarette cards.** Various metropolitan "new women" of the 1890s smoked in defiance of respectable codes of femininity, though their numbers were relatively small and it was only in New York in 1908 that city legislators were sufficiently shocked so as to ban women smoking in public. In the interwar period, cigarette smoking rates across Europe increased as women experienced much less resistance to their habit.

By 1929, women in the United States were estimated to consume 14 billion cigarettes, or 12 percent of total consumption. Advertisers were quick to take advantage of this new smoking trend and Philip Morris introduced their Marlboro brand in 1925 targeting the emerging female market. More often, however, advertisers recognized that women were far more likely to smoke the same brands as men. Therefore, Chesterfield's, in 1926, urged women to "blow some my way" and Lucky Strike, in 1928, suggested they "reach for a Lucky instead of a Sweet." Certainly, advertising was of some influence—and manufacturers were prepared to pay approximately 20 percent and more of the total cost of the product on promotion—but women, men, and youths took the lead offered by peers, parents, and cinema stars such as Clara Bow, Louise Brooks, Tallulah Bankhead, Marlene Dietrich, James Cagney, Spencer Tracy, Gary Cooper, Humphrey Bogart, and Lauren Bacall.

Later Trends

By 1950, around half the population in most western states smoked (between 44% and 47% in the United States), though such averages hide the fact that in countries such as the United Kingdom up to 80 percent of adult men were regular smokers. Following the smoking and health controversy of the 1950s, smoking rates fell, but far from equally for men and women. The first antismoking health campaigns tended to direct their message to adult men and it is indeed in this demographic that smoking rates have fallen most persistently. In the 2000s, smoking rates are roughly equal for adult men and women in both the United States and Europe (between one-quarter to one-third of the adult population in Europe) but many commentators still argue that smoking is a feminist issue since women are seen to smoke more often "when life's a drag."

Moreover, in the late twentieth century, smoking among youths increased, first among girls, and then among boys. While the health risks of smoking may be reasonably well known across all demographics, popular culture still promotes smoking as a cool, sophisticated adult activity. One study of Hollywood films, for example, found that smoking images had increased fourfold between 1990 and 1995 and that smoking was more often associated with rebellion and sophisticated **individualism.**

individualism an independence of spirit; the belief that self-interest is (or should be) the goal of all human actions.

See Also Consumption (Demographics); Film.

MATTHEW HILTON

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Agriculture *See* Processing; United States Agriculture.

Air Travel

The growth of air travel in the 1920s and 1930s paralleled the popularization of cigarette smoking. Originally, smoking was prohibited because of the risk of fire, but by the 1950s passengers could light up except on take-off or landing, and sample packs of cigarettes were distributed on board. In the 1960s, flight attendants, pilots, and passengers

began to question the advisability of smoking on airlines because they were suffering from respiratory illnesses and they were concerned for the safety of the passengers and crew. American Airlines flight attendant Patty Young began organizing coworkers to seek an end to smoking on commercial aircraft. In 1969 consumer advocate Ralph Nader unsuccessfully petitioned the Federal Aviation Administration (in charge of safety rules) and the Civil Aeronautics Board (responsible for accident investigation) for such a ban, but by 1973 he had convinced regulators that polls of air travelers showed support for separate smoking and nosmoking sections. However, the 1973 rule requiring segregation of smokers and nonsmokers proved problematic as it did not specify how to segregate smokers (in the back, in the front, or on one side) and the demarcation did not prevent smoke from penetrating the nonsmoking sections.

In 1972, Surgeon General Jesse Steinfeld, against the wishes of Secretary of Health, Education, and Welfare Elliott Richardson, issued a Non-Smokers' Bill of Rights calling for measures to protect against exposure to tobacco smoke. Strong evidence to support the need for restrictions on smoking on airlines and other confined spaces was provided several years later by the 1981 studies of epidemiologists Takeshi Hirayama and Dimitrios Trichopoulos documenting a causal relationship between passive smoking and lung cancer. In addition, physicist James Repace found high levels of cotinine (a chemical created by the body's processing of nicotine) in the blood and urine of nonsmokers exposed to tobacco smoke, demonstrating that they had breathed in chemicals from tobacco smoke.

In 1984 the Civil Aeronautics Board banned pipe and cigar, but not cigarette, smoking on commercial aircraft. The mounting scientific evidence implicating tobacco smoke as a cause of disease and disability, compellingly summarized by U.S. Surgeon General C. Everett Koop in his 1986 report *The Health Consequences of Involuntary Smoking*, empowered antismoking advocates to urge Congress to pass comprehensive legislation. During hearings in 1987 before the House of Representatives Aviation Subcommittee, flight attendants testified that they were suffering from bronchitis, sinusitis, and other diseases attributable to their chronic exposure to cigarette smoke. Citing two cigarette-caused fires aboard commercial jets in mid-flight in 1973 and 1983, killing 123 and 33 people respectively, the flight attendants also reminded legislators that smoking jeopardized all passengers.

On 23 April 1988 a ban on smoking on flights of less than two hours took effect. Opponents of the law, principally the Tobacco Institute, lobbied for its repeal, but the ban proved so popular that it was extended to all domestic flights in 1990. In 1991 a class action lawsuit was filed against the tobacco industry by flight attendant Norma Broin, who had never smoked and claimed to have contracted lung cancer as the result of her exposure to the cigarette smoke of passengers and coworkers. The largest settlement of any class action lawsuit against the industry was reached in 1997, as cigarette manufacturers agreed to give $300 million to establish the Flight Attendant Medical Research Institute to conduct further research on the effects of passive smoking.

In the 2000s most air carriers worldwide have banned smoking on at least some of their flights. Smoking is not permitted on most international

flights of foreign carriers that serve the United States and many of these carriers prohibit smoking on all flights.

ALAN BLUM

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Alcohol, Tobacco, and Other Drugs

The spread of tobacco usage in the late-sixteenth and seventeenth centuries was part of the global drug confluence resulting from the European voyages of discovery, expanded trade, and the colonial plantation system. As tobacco gained in popularity, users learned to combine it with more familiar substances, often smoking or chewing them together. Drinkers chased their spirits with a pipe full of tobacco, then bought another round. Critics thought tobacco users likelier to consume intoxicants and to come to grief. They were right. Tobacco did interact with other drugs in ways that magnified **psychoactive** and toxic effects. Scientific research has confirmed early intuitions about tobacco, mainly that it was a gateway drug and that combined use multiplied its charms as well as its harms.

psychoactive having an effect on the mind of the user.

Historical Development

By the early 1600s tobacco was established in western Europe as both a medical and recreational drug. People bought and consumed tobacco in apothecaries, alehouses, and, later, cafés, all places where other psychoactive substances, from chocolate to liqueurs, were available. It would have been natural to use them while using tobacco. Soldiers and sailors, those most responsible for spreading the use of tobacco within and beyond Europe, took their leisure in brothels and taverns. The sailor in port, with a drink in one hand and a pipe in the other, puffing away to the amazement of the natives, unconsciously broadcast a cultural message about smoking behavior, that this strange thing should be done with alcohol.

By whatever emulative means, two customs of male conviviality had been established throughout Europe by 1700. They were smoking while drinking alcohol and smoking while drinking caffeinated beverages. The latter practice was also popular in Islamic coffeehouses, where



Tobacco and alcohol were not only consumed together, they were often advertised together, as in this 1876 calendar for cigars and champagne. Note the association of cigars with black labor, still widely employed in tobacco cultivation throughout the Americas.

garrulous men kept the hookahs bubbling. The more tobacco they smoked, the more coffee they drank, for smokers metabolized caffeine half again as fast as nonsmokers.

Though not a drug per se, sugar figured in the emerging tobacco–alcohol–caffeine complex. Merchants used sugar or molasses to coat smoking and chewing tobacco; distillers used it to make distilled beverages; and coffee and tea drinkers used it to sweeten their bitter infusions. Someone enjoying an after-dinner smoke over a cup of sweet coffee with a shot of rum consumed three forms of sugar as well as three distinct drugs. All came to market through the toil of unfree laborers. What made possible the mass consumption of popular drugs and their sweeteners was the steadily declining price of these commodities. What brought down the price was expanded plantation agriculture using indentured and slave labor, the economic common denominator of the early modern drug revolution.

The spread of tobacco usage outside Europe and the Middle East led to other joint practices. Chewing betel quid—the seed of the areca palm wrapped in a betel leaf with lime—was an ancient practice in south and south east Asia. Depending on local custom, betel users sweetened and flavored their quid with sugar and spices like fennel. The spread of tobacco cultivation in Asia during the seventeenth century let them add tobacco leaves, mingling two potent stimulants, nicotine and arecaidine. Subsequent migrations introduced the betel–tobacco combination to



What seems at first glance in this French ad to be a two-drug combination, alcohol and tobacco, is actually three drugs. Absinthe, wormwood dissolved in liquor, also contains the hallucinogen thujone. Though it enjoyed a vogue in the late nineteenth and early twentieth centuries, absinthe's evil reputation and concerns over military preparedness led to widespread bans by 1914. Smokers went back to relaxing with ordinary alcohol. © SWIM INK/CORBIS

Africa and Europe. It even became common in such places as London's Bangladeshi neighborhoods, which were also hot spots for oral cancer.

Arab traders brought **opium** to China in the eighth century, though it was not until after the introduction of tobacco that the Chinese had a ready means to smoke the drug. The mixture, called *madak*, consisted of shredded tobacco leaves and semi-refined opium. Around 1760 the Chinese learned to smoke purified opium in a separate pipe, a practice that spread from the wealthy to all classes over the next century. Tobacco remained a frequent companion, though no longer taken in the same draw. The mastermind of China's twentieth-century cigarette revolution, the American tobacco baron James B. Duke, said he hoped to lure the Chinese from their opium pipes. Charles B. Towns, who treated thousands of addicts in both America and China, thought Duke's cigarettes were simply a means to get the Chinese to spend even more on tobacco than they did on opium.

Cannabis was another Old World plant that became intertwined with New World tobacco. The consumption of cannabis folk medicines, such as liquid *bhang* mixtures, seems not to have been particularly tied to tobacco. However, recreational smokers, mostly men, learned to mingle the two drugs in the same pipe, cigarette, or cigar. In Morocco *kif* smokers added ground-up tobacco leaves to locally grown cannabis. If tobacco were missing from the mix, the smoker would complain that his *kif* "didn't have salt." In hindsight, it also lacked the nicotine necessary to forestall withdrawal symptoms.

opium an addictive narcotic drug produced from poppies. Derivatives include heroin, morphine, and codeine.

cannabis hemp-derived intoxicants such as marijuana and hashish.

Guilt by Association

Tobacco's links to other drugs did not go unnoticed. In the West, the most controversial association was with drinking. The American physician and educator Benjamin Rush, an early critic of alcohol and tobacco, was appalled to see groups of boys, some as young as six, strolling through the streets and smoking cigars. The habit annoyed others, wasted time, and encouraged idleness, the font of vice. However consumed, tobacco gave rise to a thirst which, Rush wrote, could not be slaked with water. "A desire of course is excited for strong drinks, and these when taken between meals soon lead to intemperance and drunkenness" (Rush 1798).

This idea—boys smoke, boys drink, boys go to hell—became a commonplace in nineteenth-century temperance literature. Of all forms of tobacco, cigarettes offered the surest road to ruin. The Keeley Institute, an American addiction-treatment franchise, would not accept cigarette smokers. Experience taught that they had slipped into the use of alcohol and narcotics easily, and that, while they smoked cigarettes, they could not abstain from other drugs. Prohibitionists sought laws against cigarettes for the same preventive reason. It seems not to have occurred to them that boys who were impulsive, defiant, and prone to keep bad company might have used intoxicants anyway. Reformers like the Illinois school teacher Lucy Gaston insisted on blaming the cigarette.

Charles Towns, a lay addiction specialist, offered a more sophisticated critique. Except for a few women, Towns wrote, every alcoholic and addict he had treated had a history of excessive tobacco use. Smoking magnified any personal predisposition toward inebriety "because the action of tobacco makes it normal . . . to feel the need of stimulation." Its irritating effects could be blunted by alcohol, on which the smoker in turn became dependent. Then came narcotics to allay hangovers and other unpleasant effects of drinking. "Cigarettes, drink, opium is the logical and regular series" (Towns 1915).

Towns saw that smoking was socially as well as physiologically conducive to addiction. Boys sought out the back rooms of pool halls and saloons to smoke in secrecy and there learned to gamble and drink. Better-educated men who refrained from smoking until they entered college found themselves "out of it" if they did not light up. Sociability was tobacco's most seductive attraction, and its social utility made it that much harder to quit. Worse, tobacco's use scandalized others, tempting them to follow the same path to intoxication. The very openness and permissibility of the vice, Towns decided, made tobacco the worst of the drug habits.

The notion of biosocial linkages between tobacco and other drugs had an uneven history during the mid-twentieth century. It persisted in otherwise disparate groups—Nazis, Mormons, Evangelical Protestants—that shared an unremitting hostility toward tobacco. But, as millions of ordinary men and women took up cigarettes, the idea that smoking led, or caused relapse, to harder drugs faded. Pamphlets at the Lexington Narcotic Hospital told new patients where to buy their cigarettes; clouds of smoke hung over Alcoholics Anonymous meetings. Researchers shifted their attention toward alcoholism as a separate, phased disease. They tended to ignore nonalcoholic drinking, let alone tobacco products that might encourage it.

Scientific Research

The paradigm shifted again in the last quarter of the twentieth century and in the direction that the early critics of tobacco had anticipated. Epidemiologists found strong statistical support for the anecdotal evidence linking tobacco to other drugs. For example, U.S. adolescents aged twelve to seventeen who reported smoking in the past month were 16 times more likely to drink heavily and 11.4 times more likely to use illicit drugs than their nonsmoking peers. The more they smoked, the higher the likelihood of other drug use. Adolescents who smoked fifteen or more cigarettes a day were twice as likely to use illicit drugs than those who smoked less frequently. These associations were not limited to smoking. High school students who regularly used spit tobacco, when compared to nontobacco users, were 16 times more likely to concurrently use alcohol, 4 times more likely to concurrently use marijuana, 3 times more likely to have ever used cocaine, and 3 times more likely to have ever used inhalants.

The relationship between tobacco and alcohol turned out to be more complex than that between tobacco and illicit drugs. U.S. data indicate that more individuals began their drug use with alcohol than with tobacco, but only a minority of these drinkers went on to smoke (Substance Abuse and Mental Health Services Administration 1999). By contrast, the majority of those who started with cigarettes went on to drink alcohol. Smokers over the age of twelve who reported using cigarettes in the previous month were 3 times more likely to binge drink (have five or more drinks in a row) than nonsmokers. Pack-a-day smokers were also 14 times more likely to binge drink than nonsmokers.

In the 1970s epidemiologists began describing tobacco as a gateway drug, an early step in a drug-use progression that begins with licit substances and advances to illicit ones like marijuana, cocaine, amphetamines, and heroin. In order to qualify as a gateway, a drug has to precede the use of another drug with which it is statistically associated. So, while 86 percent of smokers consumed coffee as compared to 77 percent of nonsmokers, tobacco was not a gateway for caffeine because smokers did not move from tobacco to coffee in a regular progression. The gateway hypothesis was probabilistic. It did not imply that all smokers would move on to illicit drug use, or that all nonsmokers would refrain. But the odds of progressing clearly lay with those who smoked.

Other studies have found gateway effects in different ethnic groups in countries outside the United States, including France, Israel, and Japan. The major sequence—alcohol/cigarettes to marijuana to cocaine to heroin—recurs throughout the literature, with heavier use of a particular class of drugs often preceding movement to the next level. More men than women reach the so-called higher stages, but there is no significant difference in route between the sexes.

The gateway hypothesis remains a statistical description rather than an explanation. The actual process by which tobacco users move on to other drugs involves at least three types of causes—social, learning, and neurochemical. None is necessary or sufficient to induce other drug use, but they all work to increase its likelihood. The social category, or "enabling factors," refers to the sort of bad influences Towns had in mind when he described boys lighting up in the pool hall. Adolescent smokers are more likely to be part of peer groups in which



Young woman smoking a marijuana cigarette while sitting in a park during a drug legalization rally in Albuquerque, New Mexico. Critics have long suspected—and statistical studies have confirmed—that tobacco predisposes its users toward other forms of drug use, including illicit drugs like cannabis. This idea has come to be known as the "gateway hypothesis." AP/WIDE WORLD PHOTOS

alcohol and other drugs are accessible, to become curious about them, to be able to observe how they are used, and to receive praise if they try them.

Learning also plays an obvious role. Smoking is an acquired skill. By learning to inhale smoke into their lungs, individuals acquire the behavior necessary for consuming marijuana and crack cocaine. Because underage smoking is illegal, adolescent tobacco users also learn to develop a set of masking behaviors that can serve to hide later illicit drug use.

Finally, there is the effect of tobacco itself. Smokers have significantly lower levels of monoamine oxidase-B, the enzyme responsible for breaking down **dopamine** in the brain. As a result, they are able to sustain higher levels of dopamine for longer periods of time, particularly if they continue smoking. Elevated dopamine means elevated pleasure; tobacco works synergistically with alcohol, cannabis, cocaine, and narcotics to provide a sustained high. Hence alcohol and other drug users tend to smoke more heavily. The reverse is also true. Alcohol, a **depressant,** mitigates some of the adverse effects smokers experience, such as an increased heart rate. And alcohol activates nicotine-metabolizing enzymes, which makes it necessary to consume more tobacco to achieve the accustomed effect.

The relationship between nicotine and caffeine is complex, but researchers have shown that rats chronically exposed to caffeine self-administer nicotine at higher-than-control levels. Compared to non-smokers, heavy smokers also prefer more heavily caffeinated beverages, such as coffee rather than tea. In addition to caffeine, other drugs shown to increase nicotine consumption in animals include pentobarbital, amphetamines, methadone, and heroin.

dopamine a chemical in the brain associated with pleasure and well-being. Nicotine raises dopamine levels and intensifies addiction to cigarette smoking.

depressant a substance that depresses the central nervous system. The most common depressant is alcohol.

Health Consequences

While the combined use of tobacco and other drugs can increase their pleasurable effects, it can also have grave health consequences. Individuals who smoke and drink heavily are 38 times more likely to develop oropharyngeal (mouth–throat) cancer. By comparison, those who just drink have 6 times the risk, those who just smoke, 7 times. The risk of combined use is closer to being multiplicative than merely additive. One clue lies in studies showing that long-term alcohol consumption increases levels of cytochrome P450, a metabolic enzyme responsible for converting the **tar** in cigarettes to cancer-causing chemicals.



tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

Smokers who regularly use tobacco in combination with marijuana or crack cocaine likewise run an increased risk of cancer when compared to single-substance users. Many of the carcinogenic chemicals present in tobacco are found in marijuana, some at substantially higher levels. Individuals who smoke both drugs receive double doses of carcinogens.

Not all combinatory effects are unhealthful. By normalizing levels of vasopressin, a neurochemical messenger, nicotine can help counteract alcohol-induced memory impairment. Nicotine can also mitigate alcohol-related motor and coordination difficulties—hence the drinker who lights up to "steady his nerves." On balance, though, the use of tobacco with other drugs is plainly unhealthful, both because of the tendency to consume more of the combined substances and because of specific interactive effects like multiplied cancer risk.

See Also Addiction; Chemistry of Tobacco and Tobacco Smoke; Hallucinogens; Slavery and Slave Trade; Social and Cultural Uses; Therapeutic Uses; Youth Tobacco Use.

▮ ANDREW M. COURTWRIGHT
▮ DAVID T. COURTWRIGHT

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American Tobacco Company



James Buchanan Duke, founder of American Tobacco Company, New Jersey, 1890, and pioneer in the era of mass consumption in the United States.
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cartel a group of related business that join together to limit competition and fix prices of a certain product.

The formation of the American Tobacco Company in New Jersey in 1890 and its forced dissolution by legal decree in 1911 stand as landmark events in the business history of the United States. During this twenty-one year period, the company created by James Buchanan (Buck) Duke utterly dominated the American tobacco market. The company's manufacturing methods, its system of distribution, and its brand promotion campaigns helped pioneer the era of mass consumption in the United States. Ironically, however, American Tobacco's ultimate legacy has proved to be the London-based British-American Tobacco Company (now British American Tobacco), a joint venture that it formed in conjunction with the Imperial Tobacco Company in 1902, which eventually bought out its American founder for $1 billion in 1994.

Origins

The mechanization of cigarette production during the 1880s facilitated tremendous advances in the volume of output, and by the end of the decade cigarette manufacturing in America had become concentrated into the hands of a small group of enterprises. The firm that emerged as the industry leader during this period was the Durham-based company of W. Duke, Sons & Co. Under the leadership of the dynamic Buck Duke, by 1889 this firm had moved ahead of the more established cigarette manufacturers through a combination of cost-effective production and astute marketing.

As in other industries where mechanization encouraged a move toward large-scale production, Duke's firm collaborated with its four leading competitors to bid down the price of leaf. Informal **cartel** arrangements of this kind drew a hostile political response and led Congress to enact legislation designed to prevent such interfirm cooperation through the Sherman Act of 1890. However, at about the same time the state of New Jersey enacted a set of laws that allowed the formation of holding companies. This latter development enabled a single holding company to be formed that effectively merged the operations of a group of previously independent firms. Taking advantage of this new company legislation, Duke was able to persuade his leading competitors to pool operations and rationalize their production facilities to gain maximum benefits from the new form of cigarette production.

The Sherman Antitrust Act

President Benjamin Harrison and Congress enacted the Sherman Antitrust Act in 1890 in response to public concern over the dominance of monopolies, or trusts, in American business. Written by Senator John Sherman, the law stipulates that "every contract, combination, or conspiracy, in restraint of trade or commerce among the several states, or with foreign nations, is hereby declared illegal." The law was not enforced until the administration of President Theodore Roosevelt, which began in 1901.

On 19 July 1907 the Justice Department filed a petition against the tobacco trust American Tobacco Company for violating the Sherman Act. In *United States v. American Tobacco Co.* the company was found guilty under the Sherman Antitrust Act of 1890 of monopolizing the cigarette industry through "unreasonable" business practices, among them buying out competitors, excluding competitors from access to wholesalers, and rapacious pricing. The decision was finalized on 29 May 1911, and American Tobacco was split into sixteen successor companies.

The victory of the U.S. government in this case forever changed American business and the development of antitrust law. Further, it demonstrated the government's interest in promoting competition in U.S. markets.

Growth and Dissolution

The American Tobacco Company was thus a five-firm merger—W. Duke, Sons & Co., Allen & Ginter, Kinney Tobacco Co., William S. Kimball & Co., and Goodwin & Co.—that created a manufacturing concern with a virtual monopoly of production over machine-made cigarettes. Duke used American Tobacco's strength in the cigarette segment to extend its control across the market for tobacco goods as a whole, setting up a network of distribution facilities under the company's own management. A modern corporate enterprise was created in which specialized divisions managed the various functions of sales, production, finance, and procurement. In the mid-1890s the American Tobacco Company made substantial inroads into the market for chewing tobacco **(plug),** acquiring in the process control of firms such as R.J. Reynolds and Liggett & Myers. The company also expanded rapidly abroad, initially through the development of an export trade but later through a strategy of mergers and **acquisition.**



plug a small, compressed cake of flavored tobacco usually cut into pieces for chewing.

acquisition the purchase—sometimes called a merger—of a smaller company by a larger one. During the late twentieth century, major tobacco companies diversified their holdings through acquisition of non-tobacco products.

After 1900, however, American Tobacco began to experience a number of difficulties. Duke's pioneering use of acquisitions to develop the company's foreign markets ran into serious opposition. In Germany its products were boycotted. In Japan, where its purchase of a controlling interest in the Kyoto-based Murai Brothers Tobacco Company was the first-ever case of a foreign takeover, the government introduced legislation that culminated in American Tobacco's expulsion in 1904. And in Britain, where its export trade was supplemented through the purchase of the Ogden Tobacco Company in 1901, the leading British tobacco manufacturers banded together to oppose the American invader. The Imperial Tobacco Company, formed as an alliance of thirteen leading British tobacco firms, waged a commercial war with American Tobacco that ended with the formation of the London-registered British-American Tobacco Company in September 1902. This new company was handed control of all the foreign-related assets and trademarks of both the American Tobacco Company and Imperial and, under Duke's chairmanship, developed into a vast multinational enterprise.

In fact, Duke's attention was soon shifted back to domestic affairs as antitrust pressures began to gain increasing political momentum following the successful prosecution of the Northern Securities holding company in 1904 under the Sherman Act. In 1907 the American Justice Department convened a grand jury to investigate charges of trade restraint leveled against American Tobacco and its executives. In November 1911 the Supreme Court ordered the company to be broken up into a number of independent, competing concerns. The company was also forced to sell its majority holding in British American Tobacco. Under the terms of the dissolution, the majority of the company's cigarette manufacturing capacity was divided up between three successor firms: Liggett & Myers, Lorillard, and a reconstituted American Tobacco Company.

Loss of Leadership and Diversification

market share the fraction, usually expressed as a percentage, of total commerce for a given product controlled by a single brand; the consumer patronage for a given brand or style of product.

The subdivision of assets between the successor companies left the reformed American Tobacco Company with a substantial **market share,** for it retained many of its successful cigarette brands, notably Pall Mall. Duke stepped down as chairman and was replaced by Percival S. Hill, a longtime accomplice from Durham. In the competitive melee that followed the dissolution, however, it was the newly independent R.J. Reynolds that emerged as the leading cigarette manufacturer in the United States. Focussing their entire marketing effort on a single brand, Reynolds in 1913 launched Camel cigarettes, which quickly captured one-third of the market. American Tobacco countered with the brand Lucky Strike and gradually clawed back market leadership under the more progressive management of Percival Hill's son George Washington Hill.

hegemony control or superior influence over.

By the time the younger Hill died in 1946, American Tobacco had consolidated its position of market leader. However, the failure of the company under his long-term successor, Paul Hahn, to deliver a successful filter-tipped brand during the 1950s in response to the stimulus of the health scares fatally weakened its brand portfolio. Despite the fact that the unfiltered Pall Mall remained the leading individual cigarette brand until 1966, American Tobacco's **hegemony** in the U.S. cigarette market was drawing to a close. Hahn's successor, Robert Walker, failed to rectify the problem despite numerous brand launches during the 1960s.

Although the company acquired a significant interest in the successful U.K. cigarette manufacturer Gallaher during the late 1960s, under Walker's management American Tobacco ultimately began to look for investment opportunities outside the tobacco industry. By the end of the 1960s the firm's non-cigarette business—consisting mainly of wine and spirits (Jim Beam whiskey), office equipment (Acco office products), and golf equipment (Titleist brand)—amounted to 23 percent of its sales volume, and in 1969 it formed American Brands as a new diversified holding company. Continuing this strategy, American Brands sold American Tobacco to British American in 1994 and exited from the tobacco industry completely by spinning off its shareholding in Gallaher in 1997, assuming the new corporate title of Fortune Brands.

See Also Antismoking Movement From 1950; British American Tobacco; Globalization; Lucky Strike.

HOWARD COX

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Antismoking Movement Before 1950

Antismoking activism in the late nineteenth and early twentieth centuries was especially influential in the United States compared with other parts of the world, and focused on cigarettes in particular rather than other forms of tobacco, such as cigars and pipe smoking.

The rapid expansion of the American cigarette industry in the late 1880s alarmed many people in the United States, including temperance workers, religious leaders, health reformers, businesspeople, educators, eugenicists, and even a few manufacturers of pipe tobacco and cigars, who resented the competition. These people shared the conviction that cigarette smoking was a dangerous new habit, particularly seductive to the young, and likely to lead to the use of alcohol and other drugs. They also believed that cigarettes were addictive and unhealthy; that secondhand smoke could harm the health of nonsmokers; and that exposure to parental smoke was harmful to children, including unborn children.

These sentiments gave rise to an anticigarette movement that enjoyed a surprising degree of legislative and judicial success during the Progressive era (roughly the first two decades of the twentieth century). A total of fifteen states, beginning with Washington in 1893 and ending with Utah in 1921, banned the sale, manufacture, possession, or use of cigarettes altogether (see sidebar). At least twenty-two other states and territories considered such legislation. Many municipalities imposed further restrictions, including making it illegal for women to smoke in public, outlawing smoking in or around school buildings, and outlawing certain kinds of advertising.

Congress rejected several petitions to prohibit the sale, manufacture, and importation of cigarettes at the federal level, but at least one congressional committee was sympathetic to the idea. Responding to a

State Cigarette Prohibition Laws (in Order of Adoption)

Washington: enacted 1893, repealed 1895, reenacted 1907, repealed 1911
North Dakota: enacted 1895, repealed 1925
Iowa: enacted 1896, repealed 1921
Tennessee: enacted 1897, repealed 1919
Oklahoma: enacted 1901, repealed 1919
Indiana: enacted 1905, repealed 1909
Wisconsin: enacted 1905, repealed 1915
Arkansas: enacted 1907, repealed 1921
Illinois: enacted 1907, law declared unconstitutional six months later, formally repealed 1967
Nebraska: enacted 1909, repealed 1919
Kansas: enacted 1909, repealed 1927
Minnesota: enacted 1909, repealed 1913
South Dakota: enacted 1909, repealed 1917
Idaho: enacted 1921, repealed by same session of legislature, 1921
Utah: enacted 1921, repealed 1923

petition from the Woman's Christian Temperance Union (WCTU) in 1892, the Senate Committee on Epidemic Diseases agreed that cigarettes were a public health hazard and urged the petitioners to seek remedies from the states. Although a number of lower courts ruled that states did not have the constitutional authority to restrict cigarettes, the U.S. Supreme Court upheld the validity of such laws in an important decision (*Austin* v. *Tennessee*) announced in 1901.

A New Threat

Cigarettes attracted opposition partly because they were new to the American market and thus less entrenched than other forms of tobacco. Americans chewed more tobacco than they smoked, and when they smoked, they overwhelmingly preferred pipes or cigars. Some of the most vociferous opponents of cigarettes were themselves users of other kinds of tobacco. For example, the inventor Thomas Edison puffed his way through ten to twenty cigars a day, yet he believed cigarettes were "poison" and refused to hire anyone who smoked them.

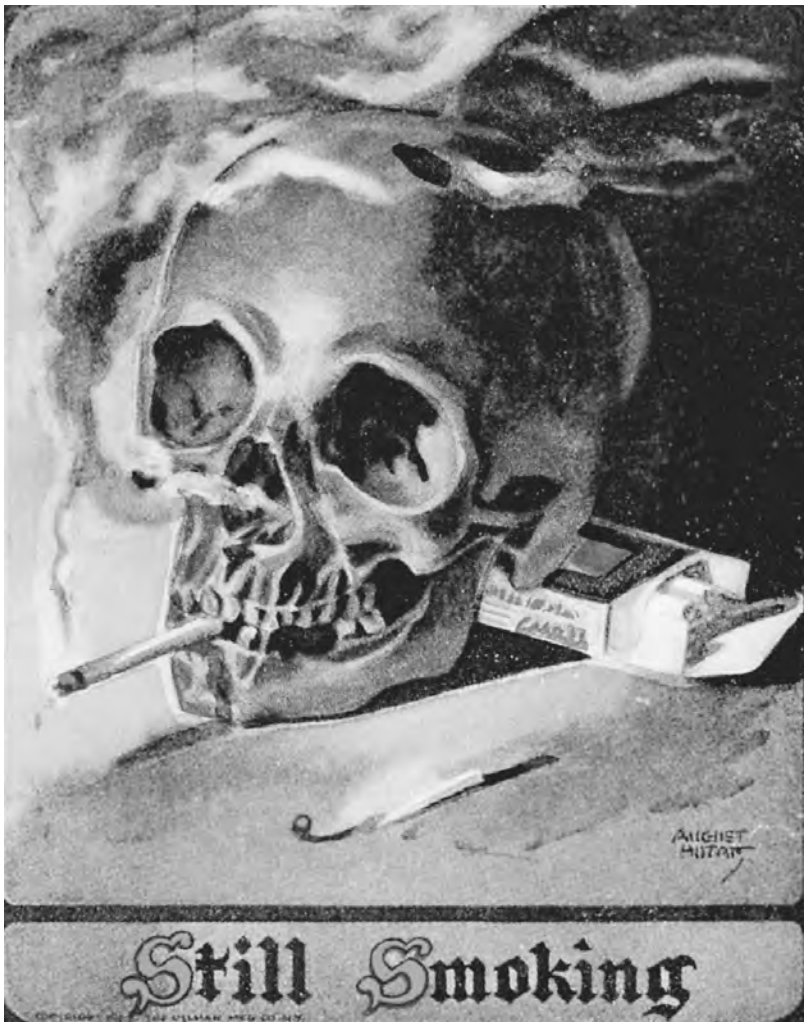
Cigarettes were targeted because of their cultural connections. The first significant groups to smoke machine-made cigarettes in the United States were immigrants from southern and eastern Europe, where cigarette smoking was common. Daring members of the upper classes smoked expensive hand-rolled brands. Middle-class reformers in the American heartland deeply distrusted the habits of both the avant-garde and the foreign born. Even the *New York Times*, usually a voice of urbane opinion, warned that "the decadence of Spain began when the Spaniards adopted cigarettes, and if this pernicious practice obtains among adult Americans the ruin of the Republic is close at hand" in a 29 January 1884 article.

The case against cigarettes included the charge that they were unhealthy, even fatal. Newspapers published stories with headlines such as "Cigarettes Killed Him" and "Cigarette Fiend Dies." Although organized medicine took little interest in the subject until the 1950s, health reformers such as John Harvey Kellogg (the breakfast cereal entrepreneur) identified cigarettes as a cause of heart disease, emphysema, and most of the other health problems associated with smoking in the twenty-first century. The major exception was lung cancer, which was relatively rare until the 1930s. Cigarettes became known as "coffin nails" in the late nineteenth century because of their association with disease.

A Gateway Drug

The people who launched the first war against cigarettes were not primarily concerned about the impact of smoking on health. They gave much more attention to the role of cigarettes as a gateway to alcohol and drug use and from there to gambling, prostitution, and crime. As one writer warned, "The boy who smokes at seven, will drink whiskey at fourteen, take to morphine at 20 or 25, and wind up with cocaine and the rest of the narcotics, at 30 and later on" (Bremer 1892).

The reformers disagreed about exactly how smoking led to drinking. Some thought a particular component in cigarette smoke somehow blunted the nervous system, making smokers more susceptible to the allure of alcohol. Edison blamed acrolein, which he thought was produced by the combustion of cigarette paper. The substance, he said,



Postcard warning against smoking, features skull smoking and caption, "Still Smoking," c. 1909. Early antismoking campaigns focused largely on cigarettes as opposed to pipe or cigar smoking. Although health effects had not yet been confirmed by the medical establishment, early detractors predicted that smoking was associated with lung cancer, emphysema, and heart disease.
© RYKOFF COLLECTION/CORBIS

caused "permanent and uncontrollable" degeneration of the brain cells, leaving the smoker at the mercy of baser instincts (Ford 1914). In any case, of all the charges against cigarettes during the Progressive era, the one that was most influential was the one that linked them to alcohol. At that time many people believed that the abuse of alcohol was a serious social problem; they were receptive to any effort to curb it.

Because cigarettes became more available to American consumers at a time of heightened concern about narcotics, they also came under suspicion as agents of drug use, either directly or indirectly. Cigarettes were often called "dope sticks" or "paper pills" (pill was a common term for **opium** after it was prepared for smoking); people who smoked them were "cigarette fiends"; people who manufactured and sold them were engaged in "the cigarette traffic." These pejoratives implied that cigarettes were part of a web of vice that included prostitution and drug abuse.

opium an addictive narcotic drug produced from poppies. Derivatives include heroin, morphine, and codeine.

"Race Poison"

The tenets of Social Darwinism provided another part of the framework for the antismoking movement. Using Charles Darwin's theory of evolution as a starting point, writers such as Josiah Strong, a Congregationalist minister and author of the best-selling *Our Country* (1885),

concluded that Americans of white, Anglo-Saxon, Protestant heritage were destined to rule the world. However, this destiny could be thwarted by the devitalizing influence of alcohol and tobacco.

Although Strong himself did not single out cigarettes as being any more debilitating than other forms of tobacco, many of his followers did. As proof, they pointed to Spain, which had embraced cigarettes earlier and with more enthusiasm than any other country. In an era of rapid industrial growth and imperial expansion, Spain was being eclipsed by nations that favored pipes or cigars. The outcome of the Spanish-American War in 1898 (which Spain lost) seemed to offer further evidence of the negative effects of cigarette smoking.

Social Darwinism led to eugenics, an effort to encourage the reproduction of people with supposedly superior genetic characteristics (and to discourage reproduction among people with "inferior" characteristics). Eugenicists attacked tobacco as a "race poison" that caused infertility in adults and infirmity in any children born to tobacco-smoking parents. Cigarettes were considered particularly dangerous because their smoke was more likely to be inhaled, and thus could cause greater damage to internal organs, including those involved in reproduction. Adolf Hitler would use similar arguments as a rationale for enacting a strong antitobacco program in Nazi Germany in the 1930s and early 1940s.

The Anti-Cigarette League

The anticigarette campaign gained momentum in December 1899, when Lucy Page Gaston, an alumna of the Woman's Christian Temperance Union (a group that advocated laws to restrict the sale of alcohol and drugs in the United States), founded the Anti-Cigarette League of America. The League was endorsed by a broad range of prominent Americans, including David Starr Jordan, the first president of Stanford University; Harvey W. Wiley, the first administrator of the U.S. Food and Drug Administration; Benjamin B. Lindsey, a famous juvenile court judge; Irving Fisher, a leading economist; and automaker Henry Ford, whose interests ranged from prohibition to peace. By 1901, the League claimed a membership of 300,000 (mostly schoolchildren), with a paid staff overseeing chapters throughout the United States and Canada.

The League's primary support came from groups advocating the prohibition of alcohol, including the WCTU; and temperance-oriented Protestant service organizations, such as the Young Men's Christian Association (YMCA) and the Salvation Army. (Advocates of temperance sought to discourage the use of alcohol but did not necessarily campaign for prohibitory laws.) William Booth, founder of the Salvation Army, condemned all smoking as unclean, injurious to health, wasteful, disagreeable to others, unnatural, and self-indulgent. Officials of the YMCA disapproved of smoking in general but particularly objected to cigarettes. The organization provided a forum for anticigarette activists in the United States, and published their writings, publicized their activities, and invited them to lecture in YMCA facilities.

The League's activities included demonstrations for schools and churches, temperance and business groups. For example, the field secretary for Michigan reported that he had lectured in eighty-five churches during one four-month period in 1912. These efforts brought in little money, but they kept the League's name and its cause before the public.

Lucy Page Gaston

Lucy Page Gaston, a schoolteacher and later a journalist in Illinois, was a key figure in the first anticigarette campaign.

Gaston was born on 19 May 1860, in Delaware, Ohio, and raised in Lacon, Illinois, near Chicago. She grew up in a family that was strongly committed to the principles of moral reform. Her father, Alexander Hugh Gaston, was a nonsmoking, nondrinking abolitionist. Her mother, Henrietta Page Gaston, was active in the Woman's Christian Temperance Union (WCTU). A younger brother, Edward Page Gaston, was a prominent prohibitionist in the United States and Great Britain. (Prohibitionists sought laws to ban the sale, manufacture, and use of beverage alcohol.)

As a student at the Illinois State Normal School in Bloomington in 1881, Gaston led raids on local saloons and gambling halls. She later became friends with American prohibitionist Carry Nation, who became famous for smashing fixtures in bars with a hatchet; and with Frances Willard, president of the WCTU.

Gaston became interested in cigarettes as a social issue while working as a schoolteacher in the early 1880s. She was disturbed by the boys she saw sneaking behind the schoolhouse to smoke cigarettes. She believed cigarette smokers were more likely to drink, use other drugs, gamble, visit prostitutes, and otherwise slide into moral decay.

By the early 1890s, she was working as a journalist for reform-oriented newspapers and magazines near Chicago but devoting more and more time to the campaign against cigarettes. After founding the Anti-Cigarette League of America in 1899, she spent the rest of her life in a quest to rid the world of what she called the "evil" or the "curse" of cigarettes. Her slogan was "A Smokeless America by 1925."

Gaston and the League played a role in the adoption of anticigarette legislation in a dozen states, including Illinois, in the years before the United States entered World War I. The League also operated stop-smoking clinics, distributed antismoking materials to schoolchildren, and sent lecturers to schools, churches, and civic groups around the country.

However, Gaston's impolitic statements against the distribution of cigarettes to soldiers during the war cost her the leadership of the anticigarette movement. In a letter to Secretary of War Newton D. Baker, she said it was "the greatest folly" to "dope up" soldiers with cigarettes (Tate). She remained committed to legislating cigarettes out of existence long after most of her earlier supporters had changed their minds about the value of such laws. She was forced to resign as superintendent of the League in 1918.

Gaston made several attempts to set up rival organizations, but these all failed. With no regular salary, she was forced to rely on handouts from relatives and charities. Even in these reduced circumstances, she continued to campaign for the prohibition of cigarettes. She kept up the battle until January 1924, when she was run over by a streetcar after leaving an anticigarette rally in Chicago. She died six months later, at age sixty-four. Ironically, the cause of death was throat cancer, a disease often linked to the use of tobacco.

The League also promoted a stop-smoking "cure" that involved painting the smoker's throat with silver nitrate. The chemical reacted with elements in cigarette smoke to produce extreme nausea. The League featured the cure at three stop-smoking clinics (at its headquarters in Chicago, Illinois; and in Detroit, Michigan, and Cincinnati, Ohio). Other antismoking activists opened similar clinics in New Jersey, California, and Washington State. Several were administered by juvenile court judges, who offered young offenders a choice between taking the cure or going to detention, on the theory that cigarettes encouraged criminal behavior.

"Smokes for Soldiers"

On the eve of the U.S. entry into World War I in 1917, the sale of cigarettes to adults as well as minors was illegal in eight states and

anticigarette bills were pending in nearly two dozen other states. By the end of the war, however, the first anticigarette movement had begun to collapse.

The war undercut the opposition to cigarettes in several ways. It diverted the attention of reformers who had previously supported the cause. At the same time, the war elevated the image of cigarettes, turning them into icons of manliness and virtue. Congress ordered the War Department to include cigarettes in the rations issued to soldiers overseas and to make them available at low prices to soldiers at home and abroad. Americans from all walks of life supported private "Smokes for Soldiers" campaigns to augment these supplies. Many groups that had once been hostile to cigarettes—including the YMCA and the Salvation Army—helped provide them to servicemen.

A primary rationale for distribution was that cigarettes could help soldiers avoid the temptations of what one newspaper editor called "bad liquor and worse women" (Tate 1999). The reformers were determined to "make the world safe for democracy" with an army that was chaste and sober. Cigarettes were both a distraction from and a compensation for the deprivations of military life. One YMCA report quoted a soldier as saying that the troops could "keep sober a long time" if they had enough cigarettes (Tate).

After the war, the only groups with the potential power to mount an effective campaign against cigarettes in the United States were preoccupied with ratifying and then enforcing the Eighteenth Amendment to the U.S. Constitution, which prohibited the sale of alcohol. There was a brief flurry of proposed anticigarette legislation in the early 1920s, much of it prompted by increased smoking by women, but little of it passed. By mid-decade, adults could legally buy and smoke cigarettes in every state but Kansas, which finally capitulated in 1927. Only those laws intended to protect minors (by setting minimum age limits for buying cigarettes) survived the decade.

Representatives of the tobacco industry lobbied for the repeal of anticigarette laws but a more significant factor was the need to replace revenue lost to prohibition. With states no longer able to collect money by licensing and taxing the sale of alcohol, many turned to cigarettes as a substitute. North Dakota, Iowa, and Kansas imposed state taxes and license fees when they legalized cigarettes. Legislators also were sympathetic to lobbyists from the American Legion and the Veterans of Foreign Wars, who argued that anticigarette laws were unpatriotic.

The Next Generation

Yet even as the first anticigarette movement was dying out in the United States, the groundwork was being laid for its successor. After largely ignoring the issue for decades, the medical profession began giving more attention to the impact of smoking on health. The *New England Journal of Medicine* published the first of a new generation of studies showing a statistical link between smoking and disease in 1928. Researchers H. L. Lombard and C. R. Doering studied 217 cancer victims in Massachusetts and found that most of those with site-specific cancers (lung, lips, cheeks, and jaw) were heavy smokers. The next year an article in the *Journal of the American Medical Association* suggested that **sidestream smoke** might be harmful to nonsmokers. German scientists working



sidestream smoke the smoke that rises from a burning cigarette.

under Hitler conducted studies that suggested a link between smoking and lung cancer. By 1940, more than forty studies identifying cigarettes as a health risk had been published. Three important **epidemiological** studies provided even more powerful evidence of the link between smoking and lung cancer in 1950. These reports, carrying the authority of modern science, provided the basis for an anticigarette campaign that began in the 1960s.

epidemiological pertaining to epidemiology, that is, to seeking the causes of disease.

The first generation of anticigarette activists differed from their modern counterparts primarily in the matter of emphasis. These activists gave more attention to saving individual smokers than to protecting nonsmokers; they sought to prohibit the sale of cigarettes altogether rather than simply limit their use in public; and their rhetoric was focused on morality more than health. Like present-day reformers, they attempted to use the power of government to institutionalize their objections to cigarettes; to a limited degree, they succeeded.

The early activists had the advantage of challenging a product that was just beginning to establish a foothold in American culture. Their successors had to confront a product that had gained wide acceptance. However, medical science has handed today's reformers potent new weapons, including the argument that secondhand smoke is dangerous to the health of nonsmokers. Even many smokers consider the act of lighting a cigarette in public—once considered a social act—to be antisocial.

CASSANDRA TATE

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Antismoking Movement From 1950

The modern-era antismoking movement (1950s to present) developed out of a direct link to earlier efforts to control tobacco use and prohibit cigarette sales. Specifically, the common links between the work of such organizations as the Anti-Cigarette League of America (1899—1930s) and later efforts beginning in the 1950s were the temperance movement

and strategies developed out of Christian-based morality. While understanding the similarities to earlier crusades is an important part of the examination of the emergence of present-day antismoking activism, more important is an understanding of the differences—namely that the moral campaign (and campaigners) against smoking that emerged in the post-war era were now fueled with scientific evidence to back claims made about the association (and later causation) between tobacco use and adverse health effects.

Morality Meets Science

By 1950, the cigarette-smoking population in the United States (and most other developed countries) was well on its way to reaching its peak (more than 42% of the U.S. population smoked in 1964), despite the fact that the worldwide scientific community for nearly two full decades already had been asserting the link between cigarette smoking as a major cause of cancer (especially lung cancer) and other diseases. The scientific inquiry between 1910 and 1950 was largely a combination of retrospective epidemiological studies, clinical observation, and autopsy review. During this period, a few prominent researchers emerged as activists, most notably Dr. Alton Ochsner, a surgeon from New Orleans who provided one of the first scientific voices to the antismoking movement by campaigning publicly against cigarette smoking, basing his claims on his own and others' research findings.

The early 1950s was a pivotal period in the history of the antismoking movement in that important studies appearing in the medical literature resulted in widespread publicity through the media. Perhaps the best summary (for a lay audience) of the scientific literature at that time was written by Isroy (Roy) M. Norr, a former public relations consultant to the soap industry and to the Radio Corporation of America. In the October 1952 issue of the *Christian Herald*, Norr's article, "Smokers Are Getting Scared" became the basis for his own national campaign against smoking, after a condensed version of the article was published a few months later by *Reader's Digest* under the title "Cancer by the Carton" (Norr 1952). Norr went on to work closely with the American Temperance Society (supported by the Seventh Day Adventist Church) in developing educational films about the health hazards of smoking and launched his own national newsletter (published between 1955 and 1963), the *Norr Newsletter about Smoking and Health*, which was devoted to providing a layperson's review of the mounting scientific literature on smoking and health issues. The *Norr Newsletter* also covered legislative and congressional proceedings, excerpts from media coverage of smoking and health issues, and formal statements and announcements made by other organizations, such as the American Cancer Society. But the *Norr Newsletter* also focused on the need for challenging the tobacco industry and its hired allies. In nearly every issue, Roy Norr challenged cigarette manufacturers, or what he called "the cigarette cartel," "the cigarette pushers," and "tobacco propagandists."

As much as the 1950s was a decade of continued discovery and mounting scientific evidence against cigarette smoking, it was also a period of trial and error for an emerging antismoking movement. While the case against cigarettes was building, this scientific knowledge was not immediately translated into a coordinated, decisive plan of action by the

public health community. It wasn't until October 1957 that the American Cancer Society (ACS) formally accepted the cause-and-effect relationship between smoking and lung cancer. The resolution adopted (unanimously) at the forty-fourth annual meeting of the ACS called on the Public Health Service (PHS) and other agencies to "proceed with such measures as present knowledge indicates are needed for the protection of the health of people in this respect." U.S. Surgeon General Leroy Burney also released a statement on 12 July 1957 declaring the official position of the Public Health Service to be that "the weight of the evidence is increasingly pointing in one direction: that excessive cigarette smoking is one of the causative factors in lung cancer." A copy of Burney's statement and supporting evidence was sent to state medical societies and all state superintendents of education. However, Burney maintained that the agency would limit its action to disseminating new scientific information to state health departments and would not initiate an antismoking campaign or national health education effort aimed at the general public.

Verdict: Guilty; A Call for Action

On 1 June 1961, the American Cancer Society, the American Heart Association, the National Tuberculosis Association, and the American Public Health Association sent a joint letter to President John Kennedy pressing for the appointment of a special commission to examine the responsibilities of government and business in relation to smoking and health. After much discussion, President Kennedy announced that he was assigning the responsibility of a study on smoking and health to then-Surgeon General Dr. Luther Terry, who established the Advisory Committee on Smoking and Health. The committee's report, *Smoking and Health: A Report of the Surgeon General's Advisory Committee*, was released on Saturday 11 January 1964 to substantial media attention. The report concluded that smoking caused lung cancer and chronic bronchitis and "is a health hazard of sufficient importance in the United States to warrant appropriate remedial action." The first major policy response to the 1964 surgeon general's report was the 1965 Cigarette Labeling and Advertising Act, which mandated warning labels on all cigarette packages.

Within days of the release of the 1964 surgeon general's report, the American Medical Association (AMA) struck a deal with six of the nation's leading tobacco manufacturers and formed its own committee to conduct research. Three of the members of the AMA's committee also had served on the surgeon general's advisory committee, while two others also served on the industry's Council for Tobacco Research. The AMA had rebuffed previous requests to get involved in the issue. It would be fully 14 years (and nearly $18 million from the tobacco industry) later before the AMA, the leading medical professional society in the country, would finally endorse the 1964 report of the surgeon general.

One of the first major nongovernmental antismoking initiatives was launched in 1967 by John Banzhaf, at the time a young attorney who successfully petitioned the Federal Communication Commission (FCC) to apply the Fairness Doctrine (an FCC regulation that required broadcasters to allot time to contrasting points of view on controversial topics) to cigarette advertising, thus requiring broadcasters to air antismoking commercials. The effect (an initial, significant reduction in cigarette consumption) was short-lived. In response, tobacco companies

removed their advertisements from the airwaves (thereby removing the antismoking commercials at the same time as the fairness doctrine would no longer apply), a policy that was made law by the 1969 Public Health Cigarette Smoking Act. However, a limited form of cigarette advertising on television continued indirectly through the sponsorship of televised sport and sporting events. In 1968, Banzhaf founded the organization Action on Smoking and Health (ASH), which has remained a force in the antismoking movement, especially in the area of clean indoor air legislation.

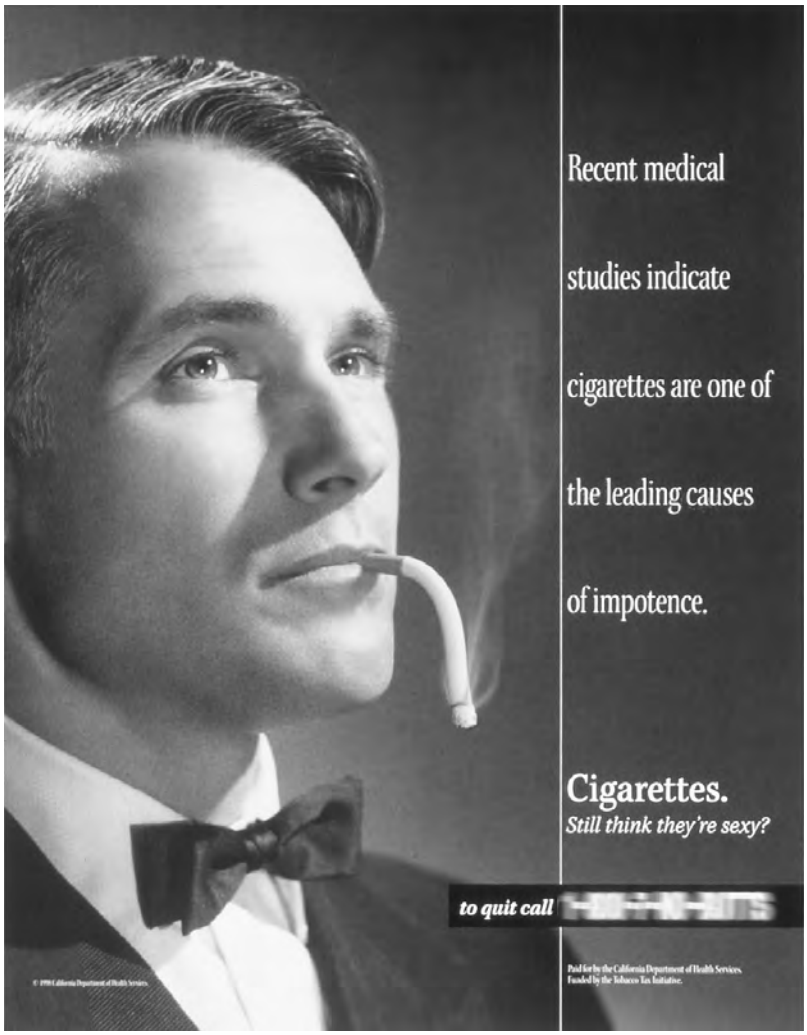
Emerging Activism

Beginning in the 1960s and into the 1970s and 1980s, antismoking efforts in the U.S. began to develop into a more diverse movement, with a broad constituency consisting of traditional public health organizations (i.e., governmental, voluntary and professional health, medical and scientific agencies) and the formation of collaborative efforts. This trend included the priority of advocating for new policy and regulation at all levels, such as cigarette advertising restrictions, warning labels on cigarette packs and in cigarette advertising, increases in cigarette excise taxes, and clean indoor air legislation.

This was also a period where activism emerged in the form of independent organizations and individuals with a focus on restricting and eliminating smoking in public places. Local and statewide grassroots organizations, such as GASP (Group Against Smoking Pollution), were formed in the early 1970s in order to address both the nuisance and public health threats posed by the inhalation of secondhand smoke. Such grassroots efforts had begun in the 1960s by individuals, most notably flight attendants who fought to ban smoking on U.S. commercial airlines (something that would not happen until the 1990s). In 1971, in conjunction with the release of an updated report on smoking and health, U.S. Surgeon General Dr. Jesse Steinfeld called for a nonsmokers' rights movement, citing the accumulating evidence of adverse health effects caused by secondhand smoke. Dr. Steinfeld called for a ban on smoking in all confined public places including restaurants, theaters, airplanes, trains, and buses. This call was later echoed by succeeding Surgeons General Drs. Julius Richmond (1977–1981) and C. Everett Koop (1981–1990), which helped to fuel the already-growing public sentiment for smoke-free public places.

Shifting the Focus: Tobacco Industry Becomes Target

During the 1970s, however, the action by government agencies did not match the priorities advocated by outspoken public health individuals and grassroots organizations. The National Cancer Institute (NCI), the federal government's leading cancer research arm, focused its research efforts primarily on studying potentially "less hazardous cigarettes" rather than studying methods for preventing youth smoking or helping adult smokers to quit. It was not until 1978, after lawyer Joseph Califano became Secretary of the Department of Health, Education, and Welfare under the incoming Carter Administration, that a strong antismoking campaign became a priority for the federal government.



Poster from antitobacco campaign of the California Department of Health Services. Medical studies indicate cigarettes are one of the leading causes of impotence.
CALIFORNIA DEPARTMENT OF HEALTH SERVICES

In January 1978 Califano outlined his battle plan in a public speech in which he called cigarette smoking "Public Health Enemy Number One" and "slow motion suicide." However, Califano was fired by President Carter the following year, allegedly because of his outspoken stand against tobacco.

During the late 1970s and throughout the 1980s, the antismoking movement realized a primary shift of focus—away from the behavior of people who smoke and toward the behavior of the tobacco industry. In 1977, a family physician, Dr. Alan Blum, founded DOC (Doctors Ought to Care). Drawing from the grassroots successes of GASP organizations, DOC organized physicians and other health professionals to take action on smoking in the clinic, classroom, and community. In the late 1970s and early 1980s, DOC became best known for its "housecalls" made at tobacco-sponsored sports and cultural events. These orchestrated protests were designed to call public attention to and ridicule such events as the nationwide circuit of Virginia Slims Tennis Tournaments, the Benson and Hedges Film Festival, and the KOOL Jazz Festival. The organization used humor and satire in its efforts and pioneered the strategy of paid counteradvertising in the mass media. Many of

DOC's concepts and strategies were born from the frustration of failed government and voluntary health agency efforts, and the feeling that such organizations were simply providing lip service to tobacco problems (i.e., the benefactor of the 1976 Virginia Slims Tennis Tournament in Miami was the local division of the American Cancer Society).

The efforts of DOC sparked a nationwide effort to reform the antismoking movement (at its peak in the late 1980s DOC had established more than 150 local chapters in nearly every state). Other grassroots organizations were formed with a focus on developing new viewpoints and strategies to counteract tobacco use and promotion. In 1985, STAT (Stop Teenage Addiction to Tobacco) was formed by Joe Tye, a hospital administrator, to draw attention to cigarette manufacturers' targeting of children with advertising and promotion, and to advocate for policies restricting the sale of cigarettes to children. Several organizations, with missions similar to the GASP groups formed in the 1970s, began popping up around the country. One of the earlier groups, Arizonans Concerned About Smoking (ACAS), and its director Don Morris relied on the leadership and support from former Public Health Service leaders, including Dr. and Mrs. Luther Terry and Dr. Leland Fairbanks. In the late-1980s, the organization SmokeFree Educational Services was founded by Joe Cherner in New York to work for clean indoor air legislation, as was SmokeFree Pennsylvania established by Bill Godshall. While many of these organizations were originally formed to strengthen clean indoor air laws at the local and state levels, most evolved into multi-focus groups, developing collaborative strategies with other activist organizations.

Meanwhile, during this period, the voluntary health organizations were working to develop federal policy initiatives (including, among others, to increase the federal excise tax, ban cigarette advertising, and improve the language of mandated health warnings on cigarette packs and in advertisements). The Coalition on Smoking OR Health, initially established by the American Cancer Society, American Lung Association, and American Heart Association (other organizations would join as sponsors later), set out to serve as a national leader for advocating policies to govern and regulate the tobacco industry at the federal level. For much of the 1980s and into the 1990s, this was the major national antismoking initiative of these organizations. The demise of the Coalition on Smoking OR Health in the mid-1990s came after the announcement of the formation of the Campaign for Tobacco-Free Kids, a new national organization based in Washington, D.C., and funded by the Robert Wood Johnson Foundation, the nation's largest health foundation and a newcomer to the tobacco issue.

The 1990s also witnessed a dramatic expansion in litigation as a major antitobacco strategy involving major political players—state attorneys general, well-financed plaintiffs lawyers, former tobacco company employees testifying for plaintiffs (so-called whistle-blowers), class action status among some suits, and the efforts on behalf of a host of third-party plaintiffs (the states, health insurance companies, pension funds). The State of Mississippi and its Attorney General Mike Moore are credited with the first major success in tobacco litigation, having brought suit against the major U.S. cigarette manufacturers in 1994 (stating claims for reimbursements the state made for Medicare costs due to smoking-related illnesses) and settling before trial for nearly

$4 billion in 1997—to be paid out to the state over 25 years. It was the first suit of its kind, and other states began to follow this legal model shortly after Mississippi filed its claim. The end result (but not the end of tobacco litigation) was the development and ratification of a Master Settlement Agreement in 1998 between six major U.S. cigarette manufacturers (other, smaller tobacco companies have joined the settlement) and 46 states in the U.S. (the tobacco industry had settled separately with Mississippi, Florida, Texas, and Minnesota). The total sum to be paid by the tobacco industry to the states over 25 years was $206 billion (the total, including the four states that settled separately, was $246 billion).

Success or Failure?

During the 1990s, the National Cancer Institute conducted a large nationwide intervention study—the American Stop Smoking Intervention Study, known as Project ASSIST. With a budget of approximately $120 million over seven years (two years for planning and five years for the actual intervention), the overall goal of Project ASSIST was to reduce smoking in the U.S. by 50% by the year 2000. This reduction was to be accomplished through the implementation of a public health model for what was by 1991 being called "tobacco control." Specifically, Project ASSIST provided funding to seventeen states for the development and support of coalitions at the state and local levels to plan a multi-layered approach for implementing antismoking messages in an effort to change social norms. The goal of ASSIST was to change the social, cultural, economic, and environmental factors that promote smoking by utilizing four policy strategies: promoting smoke-free environments; countering tobacco advertising and promotion; limiting youths' access to tobacco products; and raising excise taxes to increase the price of tobacco products. The interventions were developed and implemented by networks of state and local tobacco control coalitions. The most recent analyses of data from the impact of ASSIST have showed a greater reduction in smoking prevalence (the number of people who smoke) in states participating in the ASSIST program than in non-ASSIST states, but the effect seen has been modest.

The 1990s also realized a major political move by antismoking forces through successful ballot and legislative initiatives in several states designed to increase the cigarette excise tax and earmark funds for antismoking programs. California (which actually passed its ballot measure, Proposition 99, in 1988) was followed by similar initiatives in Massachusetts, Arizona, Florida, Alaska, and Oregon, where tax increase initiatives ranged from 25 cents per pack to over $1 per pack. But controversy and debate also arose in each state when the money became available for antismoking programs over how the funds should be spent. The funds in most states were, among other purposes, supposed to buy the best minds in advertising to counteract smoking through paid advertising campaigns. While some ad campaigns won awards (most notably in California and later in Florida), they lacked the frequency needed to make a more significant impact.

More recently, the Master Settlement Agreement (MSA) has been considered a landmark development in the antismoking movement, primarily for two reasons: 1) It established several restrictions of cigarette

advertising and promotion to be phased in over several years; and 2) it provided substantial funding ($1.7 billion) for the establishment of a national foundation (later named the American Legacy Foundation) to develop a major antismoking initiative. There was also the promise by attorneys general and the private lawyers handling the state cases (also serving as settlement negotiators) that states receiving settlement funds would earmark an annual percent to fund state antismoking programs. However, state legislatures in a number of states have not stuck by their promises and have redirected money from the windfall settlement into programs other than antismoking efforts. The states, some activist charge, have become "addicted" to the cash flow from the settlements to close their budget deficits (the tobacco companies raised the price per pack to cover the expense). Meanwhile, some antitobacco advocates have warned that the dependence of public health programs on tobacco industry payments may divert organizations away from their primary public health mission.

See Also Advertising Restrictions; Air Travel; Litigation; Politics; Prohibition; Smoking Restrictions.

▮ ALAN BLUM
▮ ERIC SOLBERG

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Antismoking Movement in France

There has been an antitobacco movement in France ever since tobacco was first introduced into the country in the middle of the sixteenth century. Among those individuals who opposed its use were Louis XIV, his personal doctor Fagon, the prelate Bishop Jacques-Bénigne Bossuet, the writer Balzac, and the statesman Charles-Maurice de Talleyrand, all of whom spoke out against its dangers. Their point of view was, in turn or simultaneously, moralistic, religious, or social. Balzac claimed that tobacco "infests the social state" (1839); a journalist from the period wrote that it is "a fashion that nicely darkens your teeth, perfumes and softens your breath, and makes your mouth look like a chimney" (*Journal* 1807). Despite such strong objections to the substance, tobacco use continued to be popular.

At the time, however, there was little scientific understanding of the effects of tobacco, so the warnings did not carry much weight. In the early 1800s, the French chemist Louis-Nicolas Vauquelin extracted a "potent, volatile, and colorless substance" from tobacco which he named "essence de tabac." The substance was later named "nicotine" after Jean Nicot, the French ambassador to Portugal who first brought tobacco into France. Nonetheless, tobacco continued to be popular among the French people in the form of pipes, cigars, and, soon after, cigarettes. This democratization of use began to worry those interested in public health.

The first antitobacco association dates back to the Second Empire (1852–1870). It brought together some one hundred people, all aiming to prove that tobacco abuse played a role in weakening family ties and harming the moral interests of society. Among these hundred or so pioneers were not only important figures in the world of science, such as the French chemist and microbiologist Louis Pasteur, but also ordinary doctors and teachers. In fact, the antitobacco movement must be seen as part of a larger trend, that of promoting healthy living to regenerate the French population. At the end of the nineteenth century, the association supported a law that would protect minors and ban smoking in army barracks, on public transportation, and in post offices. But the State, which received close to 10 percent of its revenue from tobacco sales, did not respond to their demands.

It was not until the 1950s, after revelations from America and Britain about the harmful effects of cigarette smoke on human lungs, that a new movement took off. The Right to Clean Air National Committee, a nongovernmental organization, was founded in 1959; it became the National Anti-Tobacco Committee in 1968, and in 1977 the group was formally recognized by the government, allowing it to receive state subsidies and have legal standing. The State finally acknowledged tobacco's risk to public health by passing a law proposed by Health Minister Simone Veil in 1976. This new law limited the amount of tobacco advertising and required disclosure of tar and nicotine levels on cigarette packs. Additionally, the National Committee for Health and Education launched national antismoking multimedia campaigns via newspapers, posters, radio, and television.

Antitobacco Pioneer Émile Decroix (1821–1901)

An ardent and original mind anxious about social progress, Émile Decroix, who served as a veterinarian in the Imperial Army, made the double commitment during the campaign of Morocco in 1859 to propagate the use of horse meat for human consumption and to fight the use of tobacco. Appointed to the National Guard upon his return to Paris and honored with the Knight's Cross of the Legion of Honor, Decroix enjoyed sufficient authority to found a committee for the propagation of the consumption of horse meat. Then, in 1868, he convinced his colleagues on the committee to take on a new mission, this time against tobacco. In both of these endeavors, Decroix believed that he was both enlightening the people about health and morality and giving them the means to satisfy their basic needs.

Prior to his death Decroix wrote many books and articles against tobacco use. To give more momentum to his cause, In 1877 he founded the French Association Against Tobacco Abuse, which attempted to promote instructional campaigns, especially for the youth in schools, and also lobbied with the authorities. Due to lack of funding, the association shut down at the beginning of the twentieth century.



Cigarette packs with new labels were seen in Paris on Thursday 26 June 2003. New regulations required much larger labels, some with the message "Smoking kills" (left) or "Smoking can reduce blood flow and causes impotence" (center). AP/WIDE WORLD PHOTOS

Finally, in 1991, the Evin law was passed. It outlawed all pro-tobacco propaganda in all forms of media—press, radio, and television; restricted considerably the smoking sections in public areas; and triggered a huge rise in cigarette prices when the State raised taxes and the manufacturers raised prices accordingly. The Evin Law is one of the most restrictive in Europe. However, the law has not been strictly enforced. Many lawsuits have been brought against violators and cigarette manufacturers in recent years, with limited success.

See Also Antismoking Movement Before 1950; Antismoking Movement From 1950; French Empire; Tobacco Control in Australia; Tobacco Control in the United Kingdom.

▮ DIDIER NOURRISSON

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Appetite

Among the many reasons people give for smoking today, one is that they believe smoking helps them lose weight or maintain a lower weight, either because smoking acts as a substitute for food, or because it suppresses hunger. This belief is particularly common among women and young girls in countries that place a high cultural value on thinness, such as the United States, equating it with success and desirability. Women are also more likely to be worried about putting on weight after quitting smoking. Although in reality the average weight gain upon stopping is only about 5 pounds (2.3kg), the perception is that it will be much greater.

The Historical Context of Smoking and Appetite

The association of smoking, particularly cigarette smoking, with slenderness is one that has been promoted by advertising throughout the twentieth century, but its roots lie in the earliest recordings of tobacco use. European visitors to the Americas from the late fifteenth century onward heard tales of the indigenous population smoking an herb that was both intoxicating and an appetite suppressant. One of the earliest writings to mention tobacco, *Joyful News of Our Newfound World*, written in 1565 by a Spanish physician, Nicolás Monardes, records that chewing tobacco mixed with lime suppressed hunger and thirst. He suggested it was the juices of tobacco that eased hunger. A French physician, Edme Baillard, writing a century later about **snuff,** also noted that it reduced hunger and thirst.

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

Historians have suggested that one reason tobacco became popular in Europe from the sixteenth century onward, particularly among poorer people, was because it alleviated hunger. In the sixteenth century, tobacco smoking was known as "tobacco drinking" or "fog-drinking," language that implies that smoking is a form of nourishment, an idea further reinforced by the practice of swallowing (inhaling) tobacco smoke or chewing tobacco. These ideas persisted. For example, a medical treatise on tobacco published in 1839 describes how Native Americans used tobacco to allay hunger when food was scarce, while several journals noted the inverse relationship between smoking and body weight in the nineteenth century. However, this was also seen as a negative consequence of smoking, as antismoking campaigners were concerned that men were spending money on tobacco instead of nutritious food for their families. By the early twentieth century, a common concern in antismoking literature was that juvenile smoking stunted the physical growth of young boys.

Although not much was known about exactly how tobacco worked to reduce the appetite, it was a concept that became important in the 1920s when cigarette manufacturers were seeking to expand their market to include more women smokers. With the fashionable new slim silhouette of the 1920s, diet, exercise, and weight became a concern among girls and young women anxious to fit in with new trends.



Research shows that some people, particularly girls and women, use smoking as a way of controlling their weight.
© CORBIS

Cigarette manufacturers picked up on this with images of young, fit, fashionable, thin, and attractive women in their advertising. In the United States, the manufacturers of Lucky Strike cigarettes, American Tobacco, went one step further. According to the story, the president of the company, George Hill, was driving to work one day when he saw a large woman chewing on gum or a sweet. On the same journey, he saw a slender woman in a taxi, smoking a cigarette. From these two images, his new advertising campaign was born with the slogan, "Reach for a Lucky instead of a sweet." Although the confectionary industry complained, the campaign was enormously successful.

However, the Federal Trade Commission recommended that American Tobacco tone it down, removing the implicit claim that smoking

was a way to diet. The subsequent campaign placed slim people inside fat silhouettes and exhorted people to "avoid the future shadow" by choosing Lucky Strike. The British manufacturers of Kensitas cigarettes duplicated this approach in their advertising. Using images of both sexes, the company warned people not only against eating too much, but also against "harsh reducing," in other words, dieting. Instead, they advocated moderation in both nourishment and smoking.

Tobacco advertising also indirectly suggested that smoking could be used as a food substitute by promoting the "taste" of the cigarette and the fact that it was kind "on the palate." The use of **menthol** in particular was one way in that the taste of cigarettes was enhanced, and the marketing—images of freshness and coolness—led some smokers to think that these cigarettes were actually healthier. However, research has shown that women who smoke menthol cigarettes actually inhale more deeply and could be more nicotine-dependent than those who smoke nonmenthol cigarettes.

menthol a form of alcohol imparting a mint flavor to some cigarettes.

From the early Lucky Strike advertisements onward, the tobacco industry has continued to exploit the idea that smoking helps prevent weight gain, a message particularly aimed at women. In the 1950s, one firm developed a cigarette called Trim, which they sought to market as a weight-reducing product. In the 1960s, manufacturers developed so-called "slim" cigarettes, which were longer and slimmer than normal cigarettes. Of these, Virginia Slims has been one of the most enduringly popular brands. Over the years its advertising has combined ideas of independence and success ("You've come a long way, baby") with ideas of thinness ("Slimmer than the fat cigarettes men smoke"). As the health risks of smoking became known, cigarette manufacturers turned toward lower **tar,** lower nicotine cigarettes. The subtle message that cigarettes can be used to help stay thin was reinforced with terms such as "light," "thin," and "ultralight." One brand, Kim, launched in the 1980s, was described as "a light tasting, low nicotine cigarette with a small circumference." These products were aimed at young women in the 20 to 28 age group.

tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

The Scientific Context of Smoking and Appetite

Exactly how and why smoking has an effect on body weight has been a focus of research since the mid-twentieth century, both within the tobacco industry and outside it. Tobacco industry documents dating from the 1950s suggest that industry was researching the relationship between smoking and appetite and looking for ways of exploiting and enhancing the apparent appetite-suppressing qualities of cigarettes. In 1956, for example, a patent application filed by Philip Morris related to the development of an appetite satient, a product designed to suppress the appetite without supplying calories and to be smoked in a cigarette. The application acknowledged that people who smoked generally ate less and were thinner, explaining this as the psychological effect of sucking at the cigarette. The product sought to combine this psychological effect with a **physiological** one, by creating a sense of dryness in the mouth, and thus increasing the sucking reflex of the smoker. Other research suggested that appetite was a result of the stomach contracting when it was empty. Researchers thought that smoking a cigarette could stop these contractions for up to an hour.

physiology the study of the functions and processes of the body.



The perception that tobacco use can suppress appetite has existed since the sixteenth century. In the 1920s the American Tobacco Company found great success with the ad campaign encouraging women to "Reach for a Lucky instead of a sweet." © KELLY A. QUIN. REPRODUCED BY PERMISSION

Most research on smoking and appetite has explored the way in which the inverse relationship between smoking and body weight works. Until the 1990s, this originally centered around the assumption that smoking led to a change in energy balance, for example, by increasing expenditure of calories, either through exercise or increasing the metabolic rate, or by reducing the number of calories consumed (by suppressing appetite or influencing the type of food eaten). There is no evidence that suggests that smoking makes people more physically active, but there is evidence that suggests that smoking and nicotine intake increases the metabolic rate. One way this works is by stimulating the nervous system to produce catecholamines, or hormones that cause the heart to beat faster and therefore make the body burn more calories. Catecholamines help explain some, but not all, of the change in body weight found by smokers when they change smoking status.

Another physiological effect of smoking is that it lowers the insulin level in the body, which accounts for the decreased consumption of sweet foods observed in smokers. However, research has found that smokers do not eat less overall than nonsmokers. Indeed, a number of studies conducted in the late 1980s and early 1990s suggested that smokers actually eat more, and their choices are less healthy (more caffeine and alcohol in particular and less fruit, vegetables, and minerals) than nonsmokers, although this may be due to education and personality differences rather than smoking alone.

However, research has also shown that smokers tend to eat more when they quit smoking. There are a number of possible explanations for this phenomenon. Smoking reduces anxiety and other negative feelings and eating, particularly sweets and chocolate, may serve the same purpose, as carbohydrates increase the levels of serotonin in the brain. In one study, smokers who were given a serotonin reuptake inhibitor, fluoxetine, did not put on as much weight when they gave up smoking as would have been expected (Gilbert). However, other studies have shown that changes in diet after giving up smoking to include more fat and carbohydrates were transient, often lasting only a few weeks. If eating helped to allay negative feelings in the same way as cigarettes, increased consumption of sweet foods would be expected to continue. Another explanation is that smoking adversely affects taste and smell, and this is reversed when smokers give up; thus they enjoy food more.

One current theory (late 1990s to early 2000s) about the relationship between smoking and body weight is that appetite and the amount of food consumed is not directly related to smoking or not smoking, but is a result of the effect of nicotine itself on the brain. Nutritionists argue that body weight, like body temperature and the amount of body water, is physiologically regulated for each individual. The body adjusts both the intake and expenditure of calories to stabilize the weight of an individual at this set level, known as the body weight set-point. Nutritionists believe that the body weight set-point is controlled by hypothalamic mechanisms (from the part of the brain that controls hunger, thirst, and satiety). Researchers have suggested that nicotine affects the regulation of food intake in the hypothalamus. This lowers the body weight set-point, and therefore the weight gained on stopping smoking is merely a return to the body's natural weight set-point. Nicotine replacement therapy may delay any weight gain when stopping smoking.

However, there is no effective way of countering the weight gained when stopping smoking and antismoking groups tend to focus their efforts on dealing with the perception of weight gain. The amount of weight gained is relatively small and the health effects minimal in relation to the substantial benefits from giving up smoking.

"When I did stop smoking, I had put on so much weight. I was on a diet to try and lose weight. I started smoking again when I had just two pounds to lose. Then it was OK because I smoked to keep my weight down."—Female oral history respondent, aged 54, interview with author, 27 March 2000.

"Last week I smoked quite a bit because I was trying to diet again . . . if not I'd have eaten."—Female oral history respondent, aged 53, interview with author, 9 November 2000.

See Also Body; Psychology and Smoking Behavior; Women.

ROSEMARY ELLIOT

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Archaeology

Tobacco has an extensive prehistoric past. Archaeologists have investigated several aspects of the prehistory of tobacco. Much of this research focuses on North and South American contexts, where evidence of the earliest documented use of tobacco can be found.

Methods

Archaeology depends upon material evidence left behind by past societies. Material evidence for tobacco can be divided into two types: direct and indirect. Direct evidence refers to physical remains of the tobacco plant in association with evidence of prehistoric human activity. Indirect evidence refers to material remains that are commonly associated with tobacco use in the absence of direct material evidence of the plant. While direct evidence is preferable, as it presents a much stronger case for past tobacco use, it is much rarer in the archaeological record. Accordingly, many archaeological studies have focused on indirect evidence.

The most common type of direct evidence archaeologists use to study tobacco use is macrobotanical remains, especially seeds. Tobacco seeds are distinctive and can be identified to species. Tobacco seeds are also extremely small in size and therefore difficult to recover archaeologically. Palynological analyses (the identification of plant pollen), while able to identify the presence of ancient tobacco, often cannot make a direct connection between tobacco and human use of the plant, since plants disperse pollen over a wide area. Phytolith analysis (the identification of mineral inclusions in plant cells) may have potential to identify prehistoric tobacco use, but this has been disputed (Adair 2000; Piperno 1988), and a systematic analysis of tobacco phytoliths from archaeological contexts has not yet been published. A final type of direct evidence with a high degree of accuracy in detecting ancient tobacco use is residue analysis, where techniques derived from analytical chemistry are used to detect the residues of compounds known to be present in tobacco but not in other plants, such as nicotine.



Selection of pipes and tobacco from the Civil War. Cigars, pipes, tobacco, and match safes from the Civil War were popular trade commodities. © TRIA GIOVAN/CORBIS

Indirect evidence consists of the material culture of tobacco use, the most common of which is the smoking pipe. Pipes have a long history and are commonly made of durable materials. There is, however, a wide variety of plants that could have been smoked prehistorically, even within societies known to have also smoked tobacco. The use of smoking pipes as indirect evidence of tobacco use is greatly strengthened when it proceeds in conjunction with residue analysis or other direct evidence. While other artifacts, such as tobacco pouches or **snuff** boxes, may also contribute to archaeological knowledge of tobacco use, these artifacts are generally of organic material and do not preserve in archaeological contexts in most situations.

Two other types of indirect evidence have been used by archaeologists. Iconographic representations of smoking, or of smoking pipes, can also provide circumstantial evidence for tobacco use; this type of evidence has been used for Mayan sites. A final type of indirect evidence is early **ethnohistorical** accounts of smoking. This is placed in the category of indirect evidence since, for the earliest accounts of tobacco use especially, it is often unclear exactly what plant the society being observed was using, as some observers were confused by what was to them a strange practice.

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

ethnohistory the study of the past or background of a particular ethnic group



radiocarbon dating a method of discovering the age of dead organic matter by measuring the presence of the carbon-14 isotope, which decays at a known rate. For example, scientists can date an ancient campsite by radiocarbon dating the charred firewood.

North and South America

Current evidence indicates an origin for tobacco use in South America. The oldest **radiocarbon dates** for tobacco seeds from that region are from Peru and range from 2500 to 1800 B.C.E. (Pearsall 1992). There is a substantial gap in both time and space between the earliest South American evidence and the earliest North American evidence. Early evidence from Mexico is generally lacking, and the geographic route by which tobacco smoking diffused northward is unknown. Small amounts of tobacco from Arizona date to as early as the fourth century B.C.E. (Adams and Toll; Winter 2000). Early evidence from Plains sites date to as early as 450 C.E. (Adair; Benn 1981). The earliest direct evidence from eastern North America comes from sites in the Midwest, dating to approximately 200 C.E.. Recent residue analysis shows that tobacco may have a longer history in eastern North America, as a small sample of pipes dating between 500 and 300 B.C.E. have tested positive for nicotine (Rafferty 2002).

Beyond North and South America

Old World dates for tobacco use post-date the European Age of Exploration during the sixteenth and seventeenth centuries. Evidence purported to indicate a pre-Columbian diffusion of tobacco into the Old World is unsubstantiated. This evidence is based on residue of nicotine from Old World mummies (probably a result of contamination) and has been posited to prove that tobacco was brought to the Old World through early transatlantic trade, no other evidence of which has been substantiated. Tobacco was one of many New World plants that spread during the European expansion, and smoking pipes are material correlates of this spread. Initially it was common to find European-manufactured clay elbow pipes, but native-made pipes incorporating indigenous raw materials and iconography were soon developed wherever tobacco was used.

Large-scale importation of tobacco into Europe did not occur until the early 1600s. Old World direct evidence in the form of clay smoking pipes is found in a wide variety of European contexts dating to that period. First arriving in Africa with sixteenth-century Portuguese traders, tobacco soon spread throughout much of the continent, especially in East, West, and South Africa. Pottery smoking pipes have been found in post-Medieval contexts at the West African trade city of Timbuktu. Smoking pipes are common artifacts in late precolonial West Africa, such as eighteenth- and nineteenth-century examples from Ghana. Tobacco has been demonstrated by residue analysis to be at least one plant smoked in these West African examples. Tobacco also had a secondary introduction to Asia, by means of contact from Europeans. Tobacco was introduced into China via Japan and the Philippines during the later sixteenth century, and into Japan earlier that century through shipwrecks. While numerous indigenous Australian tobacco species indicate possible pre-seventeenth-century use by aboriginal populations, evidence for this is currently circumstantial.

Pipes

Archaeologists trace indirect evidence for tobacco back farthest in eastern North America. Tubular stone pipes from the Late Archaic Period (3000 B.C.E.–1000 B.C.E.) date to as early as 2000 B.C.E. (Lewis and Lewis



Inuit ash and quid boxes. Archeologists use such items, known as indirect evidence of tobacco use, to study the prehistory of tobacco use. © PETER HARHOLDT/CORBIS

1961; Walthall 1980). Tubular smoking pipes, straight stone or clay tubes with the distal end open and proximal end constricted, were used throughout prehistory, but are most commonly associated with the Ohio River Valley from approximately 1000 B.C.E. to 200 C.E. The period from 200 to 1000 C.E. is dominated by platform pipes. These pipes feature a flat platform that contains the pipe bore, with a cylindrical bowl located in the center and perpendicular to the platform. Rarer and more elaborate were effigy forms where the bowl was replaced by an animal figure; bird of prey effigies dominated, but other woodland animals (wolf, bear, reptiles) were found. Prey animals (such as deer) are generally lacking.

Late prehistory, from approximately 1000 to 1500, in North America is characterized by elbow pipes. While elbow pipes had existed as minority styles in preceding eras, they became the most common form of smoking implement from the eleventh century onward. Disk-shaped elbow pipes are included in this characterization. Figurine pipes are also important during later prehistory, especially during the Mississippian Period (c. 900–1500 C.E.). Mississippian pipes often include stylistic elements that relate to the constellation of motifs known as the Southeastern Ceremonial Complex. Evidence of tobacco's association with **psychoactive** plant remains and ceremonial artifacts points to its ritual importance during this period.

psychoactive having an effect on the mind of the user.

During the Contact Period (c. 1500–1600), some areas preferentially used native pipes rather than the increasingly available Euroamerican clay or pewter trade pipes. Other areas show a hiatus in native pipes followed by a resurgence (especially in effigy forms) during the 1600s, possibly some form of nativistic response to empower indigenous populations in the face of domination by European colonization. In addition, some areas saw a decrease in the use of durable materials, with perishable wooden pipes replacing clay or stone pipes.

The best-known Native American prehistoric pipes relate to the historically documented calumet ritual (Hart 1980). The calumet ritual

was a widespread practice in the Plains and Eastern Woodlands where tobacco, smoked in stemmed pipes, was used to facilitate intergroup interactions through references to a shared cosmology. Calumet rituals may have arisen out of mourning rituals and adoption ceremonies in the Plains region, and the practice's ability to maintain peaceful interaction between potential enemies may have been in large part responsible for its spread in the early first millennium C.E.

Historic archaeology primarily deals with clay smoking pipes of European manufacture, or local versions thereof. Most archaeological discussions of historic smoking pipes are typological or chronological in focus. The use of pipe bore diameters as a chronological measure is a prime example. There have been regular and predictable changes in the size of historic pipe bores, and measuring a sample pipe stem's bore and comparing it to known and dated samples can provide a probable time period for that pipe's construction. Notable exceptions are recent studies of Middle Eastern and Australian contexts, which place pipes in an interpretive social context. Tobacco pipe studies in North America and in Europe have studied social class (e.g., use of pipes by lower versus upper classes), ethnicity (e.g., pipes incorporating ethnic symbols used in immigrant populations), cultural contact (e.g., smoking of tobacco during trade between Native Americans and Europeans to foster positive relations), working class ideology (e.g., pipes including labor slogans), and gender relations (e.g., traditionally male-made pipes made by women).

See Also Africa; Calumets; Middle East; Native Americans; Pipes; South and Central America; South Asia; South East Asia.

SEAN M. RAFFERTY

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Architecture

In the United States the landscape of the southern countryside was vitally influenced by tobacco. Consequently, the very buildings that supported the industry became integral components of the American landscape. While many of these buildings have long ago disappeared as tobacco's economic clout has waned, remnants of this unique architecture still remain.

Landscape

The fundamental architecture of tobacco, of course, is the natural landscape, which contains the tobacco crop itself. Usually no more than an acre, these fields see the greenish leaf mature throughout the summer before **stripping** in the fall.

Beyond the natural borders were a series of buildings that together constituted a common staple to those involved in tobacco production. Because of the labor-intensive nature of tobacco production, and the fact that so many growers were **tenant farmers,** the houses of growers were little more than hastily constructed shacks. These small houses were simple, square and rectangular homes with pitched roofs and minimal adornment and saw little in the way of paint or modern conveniences. Families came and went in these houses, which almost always rested on the plot of tobacco they raised, and the houses were often in need of extensive repair. They were excessively hot and humid in the summer, while the poor construction of the homes allowed for cold drafts to penetrate the walls throughout the winter. While not normally associated with the acres of tobacco that dotted the southern landscape, the houses of countless farmers served as a certain respite from their daily toils.



stripping in the Burley and fire-cured tobacco cultures, cured leaves must be separated from the dead stalk. This is called "stripping."

tenant farmers landless farmers who rented acreage from landowners. The tenant family usually moved to a house on the rented land where they lived and worked. The rental was payable in cash or sometimes a specified amount of produce. The tenant often owned draft animals and implements and had established credit. Tenants were typically more independent than sharecroppers and occupied a higher place in the hierarchy of rural America.

Barns

Much better known than landscape features are the tobacco barns, which were central to the curing and storing of the crop before taking it to market. Barns were built with function in mind; since so many Burley barns were air-cooled, ample ventilation was essential. In many cases, barns were built by farmers and their neighbors, adding to the sense of community in the tobacco fields. Since the design was rather simple, they could be constructed by experienced farm hands within days.

Barns had considerable interior room for hanging and curing tobacco. With a sturdy foundation, the rectangular barns were almost always finished with wooden planks with shutters and ventilators.



Rows of tobacco dry in a barn near Cahors, Dordogne, France. The tobacco barn remains an easily recognizable structure in tobacco-growing regions worldwide.
© MICHAEL BUSSELLE/CORBIS

tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

The planks were rarely painted, but in some Burley areas they were stained with a durable black **tar** mixture. Roofing was often tin, although asphalt was used in the more modern barns. Surrounding the barns were sheds or other buildings used to house tools or to strip tobacco as it came from the fields. These outlying sheds could also be used to store the seedlings in the early spring before transplanting. The tobacco barn was nonetheless the central aspect of the local farm community, and when not used for curing tobacco it could also be used as a dance hall or as a place where neighbors might come together for a variety of functions.

Since a good deal of tobacco was fire-cured, the barns that contained the small fires with the hanging crop were veritable tinderboxes, and without constant supervision, were likely to catch on fire at a moment's notice. Burned-out barns, unfortunately, also became a relic of the tobacco culture.

Warehouses

Tobacco warehouses were vast colorless and windowless edifices located in the cities and towns along the tobacco market. These structures were often large enough to house a football field or two and were no more than a single story tall. Many surviving warehouses have aluminum siding, with no windows and slightly pitched roofs. In order to generate some ventilation, large fans would sometimes be placed in the upper reaches of the building. Inside, the creaky wooden floors were broken

only by the timbers supporting the roof. Throughout the year, the constant aroma of loose-leaf tobacco would waft throughout the buildings and the surrounding areas.

Today, many warehouses are vacant and in disrepair. In some areas, such as Durham, North Carolina, the old warehouses have been remodeled to house modern shopping centers and restaurants. In other areas, these empty dinosaurs sometimes see tobacco come in the late fall, but are often used for flea markets, or by antique dealers, wholesale distributors, and building suppliers.

The architecture associated with tobacco thus stands as a certain symbol of what the crop meant for countless people in the industry—a world of constant work and worry, with the ever-present dread of bad weather or bad prices always present.

See Also Plantations; Processing.

TRACY CAMPBELL

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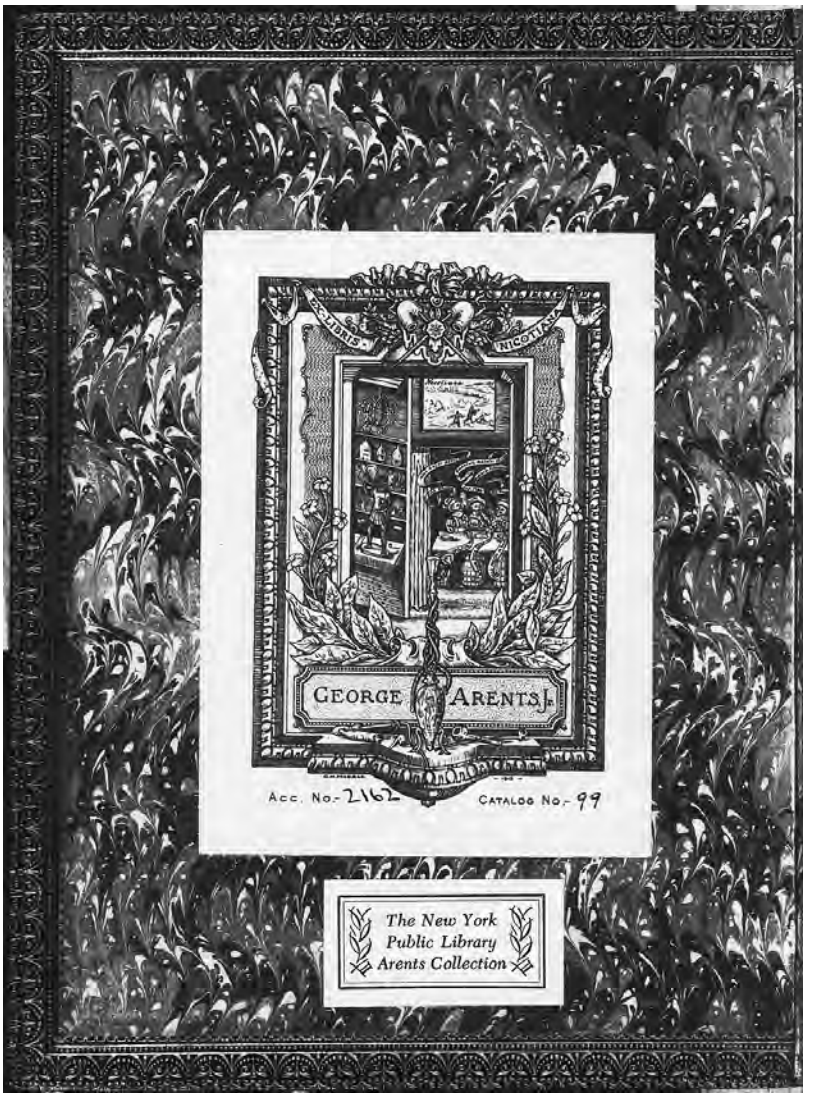
Arents Collection

"It is impossible to print on tobacco leaves," George Arents Jr. (1875–1960) told his fellow book collectors at the Grolier Club in 1941, although he found that the plant occupied many of the leaves of literature (Arents 1942). The pursuit of literary and artistic tobacco leaves was for Arents a lifelong endeavor.

Beginnings

Taking the lead from his uncle, Major Lewis Ginter, a man who "knew the art of living," Arents began his collection of rare books on tobacco in 1898. Major Ginter was an important figure in the history of tobacco in America, and his name lives on in the Lewis Ginter Botanical Gardens that were established on the grounds of his distinguished Richmond home, Bloemendaal Farm. In 1875 he became a partner in Allen and Ginter, a Richmond tobacco firm. Allen and Ginter pioneered the use of Virginia tobacco in their cigarettes at a time when other manufacturers used more expensive imported tobacco and they were one of the first tobacco firms to distribute collectible **cigarette cards** with their products. In 1890 the firm was incorporated into the American Tobacco Company. In 1896, during the summer between his junior and senior years at Columbia University, Arents followed the family tradition and joined

cigarette cards paper trading cards sometimes featuring sports personalities or movie stars packaged with cigarettes and offered as an incentive for purchase.



Print of George Arents' bookplate taken from the frontispiece of Matthias de L'Obel's Perfuming of Tobacco (London, 1611) ARENTS COLLECTION, THE NEW YORK PUBLIC LIBRARY, ASTOR, LENOX, AND TILDEN FOUNDATIONS

subsidiary in commerce, a branch or affiliate of a larger unit that provides components or support services.

the American Tobacco Company. In 1900 he became a founding member of the board of directors of the American Machine & Foundry Company (AMF) and its **subsidiary** the International Cigar Machinery Company. Arents served on the board of AMF for over fifty years, during which time the company emerged as the world's largest manufacturer of cigar- and cigarette-making equipment.

By his own account, his uncle had encouraged the young Arents to develop a hobby that would engage his interest beyond work and family. A casual dinner conversation with William Evarts Benjamin, a family friend and a dealer of rare books and manuscripts, provided the stimulus, and the following day Arents purchased his first book on tobacco. In his autobiographical account on book collecting Arents noted that the first book he purchased was the 1840 edition of *A Pinch of Snuff* by Benson Earle Hill.

When he began collecting, Arents acquired items that described the plant and its products, manufacture, and trade from the European's first

encounter with the plant in the early sixteenth century through the twentieth century. Soon the scope of the collection widened to include texts that made incidental references to tobacco or smoking. Any book, manuscript, image, or object related to tobacco met the criteria to be included in the collection, although Arents pursued only the most rare and interesting items. He was partial to acquiring previously unpublished manuscripts of poetry and prose by important English authors. He also had a penchant for association copies—those copies of important items owned by individuals who were influential in their own right. He took his collecting to extreme lengths, at one point making the transatlantic crossing to London solely to acquire Sir Francis Bacon's own copy of *Counterblaste to Tobacco* by King James I.

The Collection

Like most book collectors Arents evaluated his own collection in terms of its high spots. It is easier to describe the important books that are not in the collection, chiefly because they do not mention tobacco or smoking, than it is to list the many works of important authors, artists, statesmen, and scientists that are represented. The list ranges from Martin Waldseemüller's account of the second voyage of Amerigo Vespucci in *Cosmographiae introductio* (1507), where the first published reference to tobacco is found, to the American author George Ade's wistful letter to Victor Richard Rubens, on 27 May 1928, in which he blames an illness for robbing him of the pleasure of smoking. As for the missing items, the first folio edition of *Mr. William Shakespeares Comedies, Histories, & Tragedies* (1623) is not in the collection. Arents was fond of pointing out that he wished that it were, although Shakespeare's works contain not a single reference to tobacco or smoking. Even so, the collection is inspiring in its diversity and depth.

The collection was exhibited at the Library of Congress in 1938, and the press reported that the exhibit contained 360 different titles in seventeen languages. The books were arranged into fourteen different categories, including illustrated botanical books; the history of tobacco in the Americas; ceremonials, rituals, and the mythology of tobacco; the European discovery of tobacco; therapeutic medical texts; the tobacco controversy; treatises on the legislation, importation, and taxation of tobacco; the manufacture and commerce of tobacco products; and books relating to smoking and snuffing with descriptions and depictions of all the required equipment and devices. The George Arents Collection also includes selected examples of containers and the devices designed to hold or burn tobacco products. The turn-of-the-century tobacconist's trade sign, the cigar store Indian, is also represented.

In 1942 Arents agreed to give his collection to the New York Public Library. During the years that followed, his books, accompanied by their librarian Sarah Augusta Dickson, moved from the library at Hillcrest, his home in Rye, New York, to the specially prepared George Arents Tobacco Room in the library's building on Fifth Avenue. Upon his death in 1960, he willed the collection to the library with funds sufficient to purchase books, manuscripts, literary material, objects, and rarities of a character appropriate to its development and improvement. Comprised of works from Arents's own collection as well as materials subsequently acquired by the library's curators, the collection is available

to researchers in the Special Collections of the Humanities and Social Sciences Library.

See Also American Tobacco Company; Connoisseurship.

VIRGINIA BARTOW

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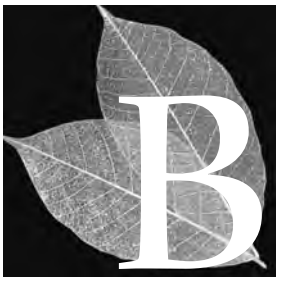
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Bad Habits in America

In the early twentieth century, using tobacco was one of the minor vices. Chewing and smoking tobacco were generally viewed as part of a larger group of social practices, along with drinking, gambling, sexual misbehavior, and other bad habits that were rebellious and naughty, but on some level attractive. Over time, popular attitudes about tobacco use have evolved and become more complex.

Beginnings as a Stereotypical Behavior

In sixteenth-century Europe, tobacco was used primarily as a medicine, later metamorphosing into a recreational drug in which rituals of use became more important than the substance itself. With increasing use came criticism of tobacco, but the moral condemnation of **snuff,** cigars, pipes, and chews focused primarily on the social impact of tobacco use (the mess, fumes, and spit) rather than alleged health effects.

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

Nevertheless, before 1950, tobacco producers and marketers were not aware that their industry was perceived as antisocial. Indeed, they were proud of their business and its tradition, and they viewed themselves as benign figures in their communities. At the same time, antitobacco efforts and laws regulating the sale of tobacco products were aimed primarily at underage consumers, typically "bad boys," rather than adult smokers.

During the nineteenth century, tobacco had different connotations for different users. For example, "respectable" women did not smoke or chew while men did. Male cigar and pipe smoking was both respectable and middle class, but tobacco use by marginal men could take on rebellious connotations. Ruffians and toughs, attempting to be supermasculine, used tobacco as part of their public image. Thus, the pleasurable act of smoking took on an element of rebellious defiance, especially in the presence of ladies or upper-class nonindulgers.

In the nineteenth century, tobacco use often occurred in disreputable, or at least questionable, public spaces; no saloon, gambling place,



Tobacco advertising in the 1800s often used sexually suggestive images, as illustrated by this cigar box label for Good Shot cigars. The contrast of respectability and social transgression is evident by the impish, derby-hatted, cigar-smoking angel sitting on a reclining lady's knee. The setting appears to be either a saloon, a gambling hall, or a bordello. © BETTMANN/CORBIS

or bordello would have been without the use of tobacco. This association with the Victorian era underworld of saloons, red light districts, gambling, and brutal games was publicly resisted by tobacco manufacturers and retailers. As late as 1919, the Independent Retail Tobacconists organization resolved, "We are doing all we can to show that the tobacco industry is a legitimate occupation and is not conducted by thugs, gamblers or men who are not good members of society."

Taking on a Special Relationship to Vice

In the decades before World War I and with the introduction of the cigarette, tobacco use came to be further associated with the unrespectable minor vices. The first clear sign of this was the sizable social fuss about boys, always naughty boys, who used tobacco.✦ The cigarette-smoking boy of the late nineteenth century represented defiance of social norms based on common wisdom that smoking was bad for children. Cigarette-smoking boys were more likely to swear and be otherwise mischievous and disrespectful. Additionally, soft pornographic images typically showed a partially clad woman smoking a cigarette. Another marginal user of cigarettes was the dubious bohemian. Respectable men generally used cigars and pipes, but not cigarettes.

✦ *See "Youth Tobacco Use" for a 1906 photograph of boys smoking cigars.*

As new technology allowed for the mass production of cigarettes at a marginal cost, they came into much wider use, and as a result, cigarettes came to be identified with the lower social classes. Cigarettes were frequently sold individually, making them affordable to just about everyone, while pipes and cigars remained out of financial reach

for the poor. Moreover, in the attempt to market the large output of cigarettes, tobacco makers offered premiums, particularly illustrated cards that came with each package of cigarettes. Often these cards carried pictures of "actresses" who were scantily clad. James B. Duke of the American Tobacco Company shocked his father, who had founded the company, with the offensive cards his company was using. But the tactic foreshadowed the way in which cigarette advertising would evolve to tie tobacco more firmly to drinking, gambling, and sexual naughtiness.

During World War I increased use of cigarettes further enhanced their image as a cheap thrill. In the war trenches, both British and American troops took to the quick, convenient smoke one could get with a cigarette. Soldiers received free smokes, or they pooled their money to buy a plentiful supply to enjoy in the rough atmosphere of the barracks.

Another development of this period was that smoking was identified as part of the new cabaret ideal being introduced from continental Europe. The old male-oriented saloon was already, before Prohibition, giving way in big cities to a new public space for drinking and casual mixing of the sexes. The cigarette advertisers saw their chance to upgrade the cigarette to appeal to people of a higher social class who might patronize cabarets.

Associations in a Consumer Culture

In the 1920s, the main taboo to be broken was that women—specifically middle-class women—did not smoke. At first, cigarette ads that depicted fashionable women in the act of smoking shocked people, but through movies and advertising smoking among both men and women began to take on a more glamorous image. Movies and other media of the 1920s and 1930s pictured high-status people smoking and drinking in cabarets or aboard luxurious gambling ships that sailed out of Los Angeles and other cities. Advertisers used conventions about gender roles in their advertisements to persuade women to adopt what had been primarily a male behavior. A witness at the time described what he saw: "First the woman appears in the advertisement—merely a pretty girl who becomes part of the pictures; then she is offering the man a **fag;** next she asks him to blow the smoke her way; finally she lights hers by his."



fag (archaic) a slang term for a hand-rolled cigarette.

While smoking occurred as part of a pattern of vices and bad behaviors, it was viewed in a manner different from the use of alcohol or narcotics. More important, although smoking could be habit forming, it did not cause people to lose control of their senses. Thus, throughout the first half of the twentieth century, cigarette smoking, when compared with excessive alcohol use, which frequently led to car accidents and bar brawls, appeared relatively harmless. In the late twentieth century, social scientists as well as popular opinion and the media tied smoking not only to rebelliousness, but specifically to illegal drug use and other addictive and ritualistic social transgressions.

See Also Advertising; Class; Film; Visual Arts; Youth Tobacco Use.

JOHN C. BURNHAM

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Black Patch War

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

monopoly a marketing environment in which one vendor has exclusive control of a product. Monopolies suppress competition and fix prices.

cooperative a member-owned organization for buying or selling as a group rather than as individuals. In the early twentieth century, tobacco growers in several states attempted to form cooperatives to raise prices of leaf tobacco.

guerilla warfare usually small groups of volunteer soldiers, often operating behind enemy lines, who carry out small-scale raids and surprise attacks.

authoritarian demanding unconditional obedience; dictatorial.

The Black Patch War began in 1904 in the western regions of Kentucky and Tennessee. This area was known as the Black Patch because it produced so much dark-fired tobacco, which was used primarily in the production of **snuff** and chewing tobacco. Confronted by the dual specter of prices below the cost of production and the **monopolistic** American Tobacco Company (ATC), growers in the region organized into the Planters' Protective Association (PPA), led by the attorney John Foster, the wealthy grower Felix Ewing, and Joel and Charles Fort. The PPA's goal, taking its cues from the earlier Farmers' Alliance efforts, was to organize growers into marketing **cooperatives,** enabling growers to sell their crops in bulk and affording them greater leverage when confronting the ATC. Beginning in 1904, PPA recruiters attempted to enlist area growers and found their task formidable.

The PPA was successful in enlisting nearly one-third of the area growers in their cooperative, but the ATC responded by offering higher prices to those who refused to join. Frustrated and desperate farmers took matters in their own hands and began a vigilante campaign against the company and those growers who refused to join the PPA. From 1905 to 1909, armed bands of so-called night riders plagued the region, burning tobacco barns and warehouses and shooting into the homes of noncompliant farmers and African Americans in an attempt to scare them away, a tactic known as whitecapping. Company buyers and warehousemen also were targets in an effort to persuade them to purchase from the cooperative. Livelihoods and lives were destroyed in the process.

In 1907 one of the most dramatic moments of the conflict occurred when armed riders invaded Hopkinsville, Kentucky, setting fire to major tobacco warehouses. The governor of Kentucky and even President Theodore Roosevelt became involved. State militia brought to the region to restore order could do little to stop what amounted to **guerilla warfare** by local growers who felt they were defending their way of life against corporate encroachment.

Leaders of the PPA, meanwhile, disavowed the growing violence, but knew that their cause actually benefited from the actions of the night riders. Yet PPA members soon grew angry with Ewing and the PPA itself, which they regarded as too **authoritarian.** When growers learned that Ewing broke a PPA charter and paid himself a lucrative salary from the pool's proceeds, the PPA ceased being a democratic alternative to the designs of the ATC, and its popularity faded. The night riders, too, faded from view after 1909. By this time, dark tobacco had become primarily an export crop. Yet when World War I commenced and major foreign shipping lanes suddenly closed, the growers of the Black Patch had no markets left to which to ship their goods. Consequently, the PPA soon collapsed.

Besides burned barns and warehouses, broken tools, and some deaths, the remnants of the Black Patch War were felt for generations. Rifts between neighbors on opposite sides of the conflict remained. Perhaps more significantly, the position of farmers in 1904 had only worsened a decade later, and farmers saw their cooperative efforts fail. For succeeding generations, poverty and despair came to mark the life of the growers in the Black Patch. The war from 1904 to 1909 had been only a temporary interlude.

See Also American Tobacco Company; Kentucky.

TRACY CAMPBELL

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Body

The consumption of tobacco is related to the human understanding and view of the body, in terms of health and illness, as well as aesthetics and social and political connotations.

Tobacco as a Healing Commodity

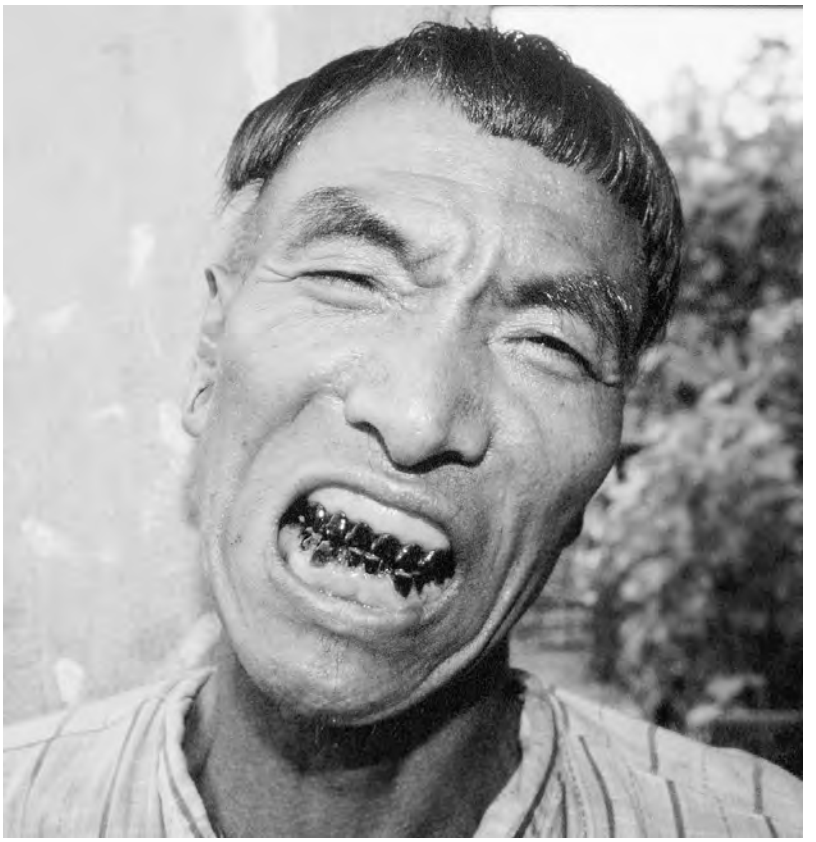
When tobacco was introduced to Europe in the sixteenth century, it was hailed as an addition to the pharmacopoeia and incorporated into the medical practice of the time, based on the Galenic four-humors system. According to this methodology, tobacco was believed to be hot and dry, and as such good for removing phlegm and mucous from the body. Health practitioners of the era believed that smoking tobacco was a prophylactic against epidemic diseases such as the plague, while tobacco was used to treat a variety of bodily problems including headache when taken as **snuff,** asthma when smoked, and topical pain and ulceration when supplied as a poultice of tobacco leaves. Tobacco was also believed to allay hunger and thirst, to steady the nerves, and to improve judgment. However, tobacco use was also known to have an intoxicating effect on the body and by the seventeenth century the populace was using it for recreational and social purposes.



snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

Changing Ways of Consuming Tobacco

Tobacco was initially smoked in pipes, but by the eighteenth century taking snuff had replaced pipe smoking among the aristocracy. There was an art to taking snuff, as laid out in instruction manuals: The snuff,



A Konyak man displays his teeth, blackened by tobacco, opium smoking, and pann chewing, Nagaland, India. © EARL AND NAZIMA KOWALL/CORBIS

a fine tobacco powder, was to be neatly laid out, pinched between the fingers of the right hand, brought up to the nose, and then taken in evenly through both nostrils. This would cause sneezing, coughing, and expectoration, all of which were believed to be healthy as the mucous was being removed. By the mid-nineteenth century, smoking again became the fashionable way of consuming tobacco, this time in the form of cigars, and by the late nineteenth century the cigarette began growing in popularity. With the advent of the cigarette, women also began to smoke more frequently. This phenomenon can be attributed to the fact that cigarettes were milder to smoke, as well as to social changes that saw women enter educational establishments and the workplace in greater numbers, gaining economic and social independence. The growing popularity of cigarettes among men and women coincided with more aggressive advertising and images of young, fit, attractive bodies of both sexes have been a staple image of marketing material ever since.

Of all the ways of consuming tobacco, the cigarette has proved the most enduring. It is the most efficient way of getting nicotine into the body, as the smoke from cigarettes is inhaled deeply into the lungs, rather than into the mouth as with smoking pipes and cigars. Small blood vessels lining the lungs absorb the nicotine present in the smoke and from there it is pumped around the body. In cigar and pipe smokers, nicotine is primarily absorbed through the lining of the mouth. Nicotine affects neurotransmitter systems in the brain, affecting the emotional state of the smoker in different ways, as a stimulant or **depressant** depending on other factors. Smokers also gain pleasure from

depressant a substance that depresses the central nervous system. The most common depressant is alcohol.



Cigarette ad from the "Up in Smoke" exhibit in New York City, 29 November 2000. The exhibit featured ads praising and attacking cigarette smoking opposite each other in the same room, illustrating how advertising can manipulate public opinion. © SCOTT HOUSTON/CORBIS SYGMA

the act of smoking; the sight, smell, and taste of a lighted cigarette, pipe, or cigar; and the psychological aspects of smoking, including the simple act of handling a cigarette.

Critics of Tobacco Use

The spread of tobacco use was also criticized. Critics focused on the effect of tobacco on the body, arguing that tobacco use physically corrupted the individual and the social body. One of the most famous critics was James I of England [VI of Scotland] who, in *A Counterblaste to Tobacco* in 1604, described the way in which smokers' bodies were "soil[ed] and infect[ed] with an unctuous and oily kind of soote" (Rait 1900). This description referred to the blackened internal organs of smokers found at autopsy. Physical contamination of smokers' bodies was paralleled by the contamination they caused to those around them: "the filthy smoke and stinke thereof" (Rait 1900) that was breathed over food and through the air.

Other texts warned of the violent purgative effects of tobacco and the fact that it was poisonous in large quantities. The fact that it was "hot" and "dry" was thought to lead to sterility. Satirical writers referred to the fumes that surrounded smokers and compared them to chimneys and furnaces. Smokers were criticized on moral grounds, as

tobacco use was thought to increase the sins of drunkenness and lust. James I responded to the increasing popularity of tobacco by taxing its use; in other countries, actions against smokers were more serious. In seventeenth-century Turkey, for example, those who defied a prohibition on smoking could be faced with summary execution.

Criticism on medical and moral grounds continued in the nineteenth century when smoking regained popularity. Opponents of smoking argued that it caused diseases and health conditions ranging from lunacy to cancer to diarrhea, that it impaired the mind and the senses, and that it induced dependency, wasted money, and led to excessive alcohol consumption. Among women, smoking was believed to harm reproductive function. Where medical evidence was provided for such arguments, it tended to be based on single case studies and clinical impressions until the large-scale **epidemiological** studies of the mid-twentieth century.

epidemiological pertaining to epidemiology, that is, to seeking the causes of disease.

The Effects of Smoking on the Body

In the 2000s, the most well-known risks of smoking are lung cancer and heart disease, but prolonged smoking increases the risk of getting cancer in practically every other part of the body. As well as lung cancer, smoking can lead to respiratory conditions such as emphysema and chronic bronchitis. Moreover, there are other, less publicized, effects of smoking on almost every other body part. Smoking weakens the immune system, leaving the body vulnerable to disease. It prematurely ages the skin, causing wrinkles, and can increase the risk of getting psoriasis. It interferes with the mouth's chemistry, contributing to tooth decay, and reduces the levels of oxygen in smokers' blood, leading to problems such as osteoporosis. Smoking raises blood pressure, leading to heart conditions, and can damage the blood vessel walls, making it harder for the heart to pump blood around the body. It can impair fertility in both men and women and lead to problems in pregnancy and birth among women.

Among women in particular, fear of weight gain is one of the reasons smokers give for continuing smoking. There is conflicting evidence as to whether this is the case and the consensus among researchers seems to be that the weight gained will be a small amount (approximately 5 pounds or 2.3 kg). However, research has shown that smoking affects the distribution of weight on the body. Smokers are more likely to store fat on the waist and torso, rather than the hips, which puts them more at risk of developing diabetes, heart disease, and other problems. Smoking also has an aesthetic impact on the body, particularly among heavy smokers, as nicotine can cause discolored fingers and teeth, and many people object to the smell.

The risks of passive smoking are well documented as environmental tobacco smoke has a negative effect on the health of those around smokers, making tobacco smoking a social as well as an individual problem. It is this fact more than any other that has arguably proved most effective in regulating tobacco use in Western societies.

See Also Appetite; Fitness.

ROSEMARY ELLIOT

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Botany (History)

Twenty-first-century botanical classifications include more than 240 denominations for the various species, subspecies, and varieties of the genus *Nicotiana*, which belongs to the family Solanaceae, subclass Asteridae, class Magnoliopsida (Dicotyledoneae). In spite of divergences in the formal nomenclature (system of naming) and in the eponyms (name of person, often abbreviated, linked to scientific name of species) used to identify its various species, botanists generally consider the genus *Nicotiana* to include more than 60 distinct species.

Origination of *Nicotiana*

Majority opinion among botanists holds that the genus originated in the Andean region, from which it spread throughout most of the American continent and adjacent islands before European colonizers settled the New World. Through the colonizers, it spread to the rest of the world, becoming established in wide areas of Europe, Asia, Africa, and Oceania. Of all the species of *Nicotiana*, two—*N. tabacum L.* and *N. rustica L.*—predominate in the world. Most other species have remained wild or have returned to the wild along the borders of agricultural regions.

Early European Classifications

European scientists' acquaintance with tobacco predates the **consolidation** of botany as a science, a process that began in the second half of the eighteenth century and has traditionally been associated with the generalized acceptance of the Linnaean system of taxonomy and nomenclature, as outlined by the Swedish botanist Carl Linnaeus. As occurred with many other botanical species, the classification, denomination, and technical description of the tobacco plant was well underway in European botany before Linnaeus identified this genus of plants in his *Species Plantarum* (1753).

Divergences in the specific denominations should not negate the practical unanimity achieved among botanists by the end of the



consolidation when numerous smaller units are combined into a larger one. In agriculture, consolidating small farms into one large farm usually makes operations more efficient and profitable.



Tobacco Plant by Elizabeth Blackwell, 1782. The genus *Nicotiana* belongs to the family Solanaceae, subclass Asteridae, class Magnoliopsida (Dicotyledoneae).
© STAPLETON COLLECTION/CORBIS

sixteenth century in classifying the various species of tobacco as belonging to a distinct genus, associated with other similar genii, grouped within the family Solanaceae. These included plants of both European (henbane, belladonna, mandrake) and American (pepper, potato, tomato) origin. Initially, some European authors considered tobacco a species of henbane (*hyoscyamus* in the Latin form of the Greek term *hyoskyamos*), which, owing to the medicinal uses stemming from its analgesic and narcotic properties, had already appeared in the medicinal plants treatise of the Greek medical practitioner Dioscorides in the first century C.E.

Nonetheless, from the time Gonzalo Fernández de Oviedo provided a precise botanical description (in his *Historia general y natural de las Indias occidentals* (The General and Natural History of West Indies, 1535), it was clear that the similarities with henbane were circumstantial and not decisive insofar as the plant's classification as a species within the same genus was concerned. The European dissemination of the plant's image and pharmacological description via the work of Nicolás Monardes, *Historia medicinal de las cosas que se traen*

de nuestras Indias Occidentales (History of Medical Things Brought from Our West Indies, 1571), gave further credibility to separation of tobacco and henbane.

Despite the two sources, confusion of tobacco with henbane continued for some time in peripheral scientific circles. In the English-speaking world, for instance, the denomination "Henbane of Peru" gathered considerable strength because of its utilization by the English botanist John Gerard in his influential *The Herball, or generall historie of plantes* (1597).

When Monardes' work achieved wide circulation by way of several Latin versions by Charles de l'Écluse (Carolus Clusius) and numerous translations into Italian (Annibale Briganti), French (Jacques Gohory), and English (John Frampton), the classification of tobacco as a species of *Hyoscyamus* was definitively rejected. Thus, the Swiss botanist Caspar Bauhin's *Pinax theatri Botanica* (1623)—the seventeenth century's key reference work on botanical systematization, taxonomy, and nomenclature—definitively established the view of *Nicotiana* as a separate genus, although linked by family to *Solanum*, *Hyoscyamus*, *Mondragora*, and *Papaver*, among others.

From that point on, the botanical classification of tobacco would not undergo major changes. Thus, at the beginning of the second half of the seventeenth century, when the English and French took on the task of advancing the botanical systemization that the Italians, the Dutch, and the Swiss had developed in previous generations, the systemization did not change markedly. Both Robert Morison (*Hortus regius blesensis*, 1669) and John Ray (*Historia Plantarum*, 1704) viewed tobacco as a separate genus. Morison identified three separate species within the genus *Nicotiana* (*N. major latifolia*, *N. major angustifolia*, and *N. minor*), while Ray identified two species within a genus called *Tabacco* (*T. latifolium* and *T. angustifolium*) and two more within *Nicotiana* (*N. minima* and *N. minor*). Joseph Pitton de Tournefort's influential classification (*Institutiones rei herbariae*, 1700–1703) established the genus *Nicotiana* with more than six different species. Practically, these were the same species that Linnaeus would adopt in his proposal, though he would reduce their names to his definitive binomial notation, which used two Latin names: the first one for the genus, the second one for the species.

Linneaus's Classification

In spite of the fact that almost all Western languages have adopted the common name "tobacco," whose origin lies in the extinct Taino language spoken by the first inhabitants of the Greater Antilles, the denomination *Nicotiana* has been definitively established in botanical science since its selection by Carl Linnaeus in his *Species Plantarum.* This work provided a complete account of specific plant names, and is considered the foundation for the modern system of botanical nomenclature.

Linnaeus chose one of the denominations that had circulated among European botanists through the nearly two centuries that had elapsed since the first contact of the Spanish colonizers with tobacco. Concretely, the denomination *Nicotiana* was the Latinization—an indispensable process for the science of that era when internationalizing any proposal of this type—of the surname of Jean Nicot, French ambassador to the court of Lisbon, where he had become acquainted with the plant around 1559 and sent it to France. The proposal to dedicate the plant's

Latin name to Nicot first arose in a French manual of agricultural techniques published by Jean Liébault in 1567, but for nearly two hundred years it had to compete with other proposals that appeared in numerous works by European botanists, including "herba sancta" and "herba di Santa Croce" (both used in several Italian treatises), "picietl" (from the nahuatl name of the Mexican Indians, reported by Francisco Hernández after his expedition in 1570–1577), and "herba petum" (from the name of the Brasilian Indians, reported by Portuguese navigators and made well known in Europe thanks to Clusius' work).

Linnaeus's work, moreover, established the scientific names for the two most common species—*N. tabacum L.* and *N. rustica L.*—that have remained definitive ever since, and proposed the names of five other species: *N. fruticosa*, *N. glutinosa*, *N. paniculata*, *N. pusilla*, and *N. urens*. Over the course of the succeeding two centuries, this initial classification has been the object of various challenges, culminating in the proposal of Thomas H. Goodspeed (1954) for the entire genus, which is the scheme most commonly accepted by taxonomists today.

See Also Tobacco as an Ornamental Plant.

JOSÉ PARDO-TOMÁS

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Brazil

Tobacco was an important commodity to the colonial Portuguese Empire of the seventeenth and eighteenth centuries. It played a crucial role in the Portuguese slave trade. The Portuguese were eager to acquire slaves for the sugar industry that they had established in northeastern Brazil. They found that there was a high demand in West Africa for

fumo de corda—tobacco sweetened with honey and twisted into rolls—and therefore used this commodity to purchase slaves.

At this time most of the tobacco was produced on relatively small rural dwellings, usually called *fazendas*, where agricultural activities were carried out by both family and slave labor. In the eighteenth century it was reported that "Everyone within the family is involved, adults and children, the elderly and youngsters, white and black, free men and slaves, and only the work of twisting and rolling is left to the slaves" ("Discurso").

The Portuguese Crown's **monopolistic** trade practices and excessive taxation contributed to a movement for independence in Brazil, which was declared on 7 September 1822. The British prohibition of the slave trade in 1807 and growing pressure to abolish slavery in the country, which eventually transpired in 1888, led to a decrease in the exportation of *fumo de corda*. Tobacco leaves (or *fumo em folha*) were then exported to Europe, where Bahian tobacco was especially popular among German cigar aficionados.

monopoly a marketing environment in which one vendor has exclusive control of a product. Monopolies suppress competition and fix prices.

Bahian Tobacco

Prior to the late nineteenth and early twentieth centuries, sugar was the most important crop in Bahia, a state in eastern Brazil on the Atlantic. Sugar planters allowed their slaves to dedicate small parcels of land to the cultivation of tobacco, resulting in a steady growth of its production. The abolition of slavery and a worldwide economic crisis led to a dramatic decline of labor-intensive sugar production. The freed slaves switched to small-scale peasant agriculture and tobacco became their most important commercial crop. The harvesting of the tobacco leaves depended on thousands of small-scale cultivators who dried and cured the tobacco in (and often outside) their sheds.

After the tobacco was harvested, the peasants brought it to warehouses in São Felix and Cruz das Almas, cities in Bahia's central tobacco region, the Recôncavo. There, local merchants (called *enfardadores*) selected, repacked, and labeled the tobacco in preparation for sale to European tobacco companies. Because of its specific neutral taste that allowed it to be mixed easily with other kinds of tobacco, European consumers considered Bahian tobacco indispensable for their cigars.

The popularity of Bahian tobacco in Europe gave rise to a number of important tobacco-processing companies in the region that both processed tobacco for export and produced cigars of their own. While the first cigar factory in the region, Juventude, was founded in São Felix in 1842 by the Portuguese businessman Francisco José Cardoso, the two most notable cigar producers in the region's history, Dannemann and Suerdieck, were not established until the 1880s. Both companies were founded by German entrepreneurs, Gerhard (later: Geraldo) Dannemann and August Suerdieck, who settled in the region in 1872 and 1888 respectively. In their heyday these companies employed hundreds of local laborers. They maintained great local and regional political influence in the first decades of the twentieth century. Their owners were central figures in the regional German community and they maintained good relations with local and national politicians.

In the twentieth century, tobacco was an important source of revenue for the state. Between 1900 and 1910 it even was the single



Brazilian cigarette packs depicting hard-hitting pictures and health warnings about the possible damage caused by smoking. Brazilian Ministry of Health's captions warn that "smoking causes heart attacks" (top), "smoking causes sexual impotence" (bottom, left), and "in the case of pregnant women cigarette may cause premature childbirth, newborns with weight below the normal and increased probability of contracting asthma" (bottom, right).

most important source of tax income for the government. The export taxes on tobacco provided between 20 and 30 percent of the state finances in that period. In 1900 it was almost 50 percent. The crop retained its regional importance well into the twentieth century. From the 1900s until the beginning of World War I in 1914 the German cities of Hamburg and Bremen were the chief destinations of Bahian tobacco. When Bahia was cut off from the German markets during the war, U.S. companies became more essential to the tobacco trade. Representatives of the British-American Tobacco Company started to buy tobacco in that period. When the war was over, the German monopoly had been broken. From then on, the market became much more competitive. As Overbeck noted in 1923, "an end has come to the dominant position [of Germany] and its capacity of decisively influencing the market."

Companies from the Netherlands, Spain, and the United States started to buy tobacco and posed a formidable competition to the German interests. When Brazil entered World War II in 1942, the German companies were placed under state control. They lost their close connections with their partners in Germany and had to survive on their own. They were never able to recuperate after the end of the war. Suerdieck eventually disappeared. The brand name Dannemann was

sold to a Swiss company in 1954. In this way the company survived and it exists into the 2000s as a producer of high-quality cigars.

Tobacco Production in the South

Around 1920 planters in the southern states of Rio Grande do Sul and Santa Catarina began farming Virginia tobacco. This resulted from a large immigration of German farmers to the region. Helped by an improved infrastructure (roads and railroads), these farmers established a prosperous and quite sophisticated sector of production, mainly geared toward the production of cigarettes. The cultivation of these types of tobacco required considerable investment, which was too great for small family farms. Consequently, the southern tobacco environment was vastly different from that of the Bahian region. It was not a peasant sector, but rather a sector of large-scale farms often owned by limited liability companies.

Southern Brazil also came to host large-scale industrial cigarette production facilities, although traditional tobacco cultivation in rural areas that often produced *fumo de corda* continued to be important in the interior, especially in the states of Minais Gerais, Goias, and Sao Pãulo. The cigarette industry was concentrated in the larger cities of the states of São Paulo, Rio de Janeiro, and Rio Grande do Sul.

Over time, the cigarette industry became dominated by foreign interests. Filling the niche left by the German importers during World War I, British American Tobacco (BAT) entered the Brazilian scene in the early twentieth century. It rapidly increased its financial interests. In 1914 the company allied itself with the firm of Souza Cruz, which was established in 1903 by the Portuguese immigrant Albino Souza Cruz. Rapidly the firm developed a market based on its own brands of cigarettes. It also used American-trained experts to support the local farmers. In the 1980s Souza Cruz controlled approximately 80 percent of the Brazilian cigarette market. As a result, the weight of the Brazilian tobacco industry shifted from the north to the south.

These developments led to a considerable increase in Brazilian tobacco production in the twentieth century. In 1939 the country produced 90,000 metric tons. Tobacco production in 1980 had grown to over 400,000 metric tons and in 2000 reached approximately 700,000 metric tons. In the twentieth century only approximately 30 to 40 percent of this tobacco was exported; the remainder was processed in Brazil for the country's large internal market of more than 30 percent of the Brazilian adult population. From the late 1990s onward, the Brazilian cigarette industry has been boosted by the opening of the regional markets. The establishment of Mercosur, a free trade agreement with a number of Latin American countries, opened Latin American markets for Brazilian cigarettes.

Brazilian Tobacco Today

Today Brazil may rightly be called a tobacco superpower. Its leaf exports more than doubled between 1975 and 1997, making Brazil the world's leading exporter. Furthermore, its production of cigarettes increased by 1,000 percent between 1981 and 1996, making Brazil the tenth largest cigarette producer in the world at the end of the twentieth century.

The cigar industry in Bahia has shown some signs of revitalization. Increased demand for high-quality cigars, especially in the United States, has resulted in a modernization of the sector. The firm Dannemann has become involved in the cultivation of tobacco by closely supervising tobacco agriculture from the 1990s onward. In the process it implemented sophisticated technology, such as computer-controlled barns and strictly controlled fertilizing. It used tobacco to better position itself in the increasingly profitable international cigar market. While Bahian tobacco will always constitute a very small component of the Brazilian tobacco industry, the fact that its producers are continuously adapting to new national and international developments demonstrates that it will continue to be important to the nation in the years to come.

See Also Portuguese Empire.

MICHIEL BAUD

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British American Tobacco

subsidiary in commerce, a branch or affiliate of a larger unit that provides components or support services.

British American Tobacco (BAT) boasts the relatively unusual distinction of being born as a fully fledged multinational enterprise. The company was created in 1902 as a jointly owned **subsidiary** of the leading tobacco companies of the United States (James Duke's American Tobacco Company, which owned two-thirds of BAT's share capital) and Great Britain (the Imperial Tobacco Company). Its initial productive assets comprised the brand rights, export factories, and overseas operations of the two founders, which included cigarette production plants in Germany, Canada, Australia, Japan, and South Africa. BAT can claim that, between the two world wars, it was the world's most geographically extensive



Detlef Zimmermann, chair of the German section of British American Tobacco (BAT), poses prior to a results press conference Thursday, 5 June 2003, in Hamburg, northern Germany. BAT announced that Lucky Strike, HB, Gauloises Blondes, Pall Mall, and Lord were the most successful brands at the German market. AP/WIDE WORLD PHOTOS

multinational company, pioneering techniques of international marketing and human resource management. Heavily criticized for its role in promoting smoking in the Third World and recently subject to numerous cases of litigation in the United States, in the era of globalization the company has nevertheless consolidated its position as the producer of many of the world's leading cigarette brands, with factories in over sixty countries and operations in 180 distinct markets.

Formation and Early Growth

The agreement that created BAT in 1902 formed part of a global market-sharing arrangement between American Tobacco and the Imperial Tobacco Company through which the new company would become the jointly owned overseas arm of the two founders. Although initially BAT's main business lay in the export trade, the company increasingly expanded its production capacity via direct investments abroad. Its main focus for expansion during the first ten years was China, where both American Tobacco and Imperial had already developed a market based around Shanghai. Under the supervision of Duke's master salesman, James Thomas, BAT created a sales network for its cigarettes in China that transcended even the legendary scope of Standard Oil's kerosene



boycott an economic sanction imposed by an interest group to influence policy. In the 1900s, tobacco growers in Tennessee and Kentucky refused to sell leaf to the American Tobacco Company until prices were raised.

distribution process there. Many Chinese merchants were integrated into the BAT selling system, and cigarette brands were created and marketed that appealed to local tastes. In spite of intermittent political obstruction and **boycotts** of its products, BAT's investments in China provided the firm with a platform for growth and a blueprint that could be adopted for other, similar markets as it expanded into India, South East Asia, Latin America, and the Middle East in the years preceding and following World War I.

A particular hallmark of this early phase of international growth was the encouragement given to the local cultivation of tobacco leaf suitable for use in cigarettes. Allying local production of raw materials to their own cigarette factories meant that in many markets BAT's operations became largely independent, although invariably before World War II these affiliated companies were managed by expatriates from the United States and, increasingly, Britain. With its headquarters based in London, management of the company from the outset inclined more toward the United Kingdom than America, but this was given a decisive tilt after the dissolution of American Tobacco in 1911 forced that company to sell off its holding in BAT, thus making Imperial the largest shareholder. Duke's active interest in the company effectively ended in 1914, and his position as the company's leading figure was assumed by the autocratic Englishman Hugo Cunliffe-Owen.

The Cunliffe-Owen Era

Under Cunliffe-Owen's tutelage the company continued to expand into Asia, Africa, and Latin America, but also made important investments in Germany and the United States, where it purchased the Brown & Williamson Corporation in 1927. The company developed an international management system between the wars in which accounting practices were harmonized globally but where the local "Number One" expatriate director was given a good deal of managerial latitude. The London-based directors, meanwhile, maintained a watching brief that required them to spend six months each year on tour. This system of international management was especially well suited to the conditions that prevailed during the 1930s and 1940s when the dislocation of the world economy and the rise of nationalism meant that autonomy of operations and a strong local presence paid dividends. Although the company's earning power dropped after 1929, BAT nevertheless was able to consolidate its position as the world's only true international tobacco firm.

Postwar Difficulties and Diversification

The postwar years saw BAT grappling with problems both internally and externally. Cunliffe-Owen's death in 1947 created a crisis of succession that was only resolved during the chairmanship of Duncan Oppenheim between 1953 and 1966. In this period the company's top management became more internationally diverse, and human resource management and training was systematically developed. The 1949 communist revolution in China, meanwhile, led to the loss of the company's largest market, and other major setbacks were experienced in Egypt, Indonesia, and India. Furthermore, while firms such

as R.J. Reynolds, Philip Morris, and Rothmans International experienced growth during the 1960s and 1970s, when the market for international king-size filter tipped cigarettes and American blends expanded, BAT's **hegemony** of the international cigarette market was eroded because it lacked an international brand to compete with Winston, Marlboro, and Rothmans King Size. Accession of the United Kingdom to the European Economic Community in 1973 also led Imperial to sell off its shareholding in BAT during the course of the 1970s. Allied with the emerging evidence of the health consequences of smoking, BAT made concerted efforts under the successive leadership of Denzil Clarke, Richard Dobson, and Peter Macadam to diversify from tobacco into industries such as paper, cosmetics, and retailing, culminating in the formation of BAT Industries as a general holding company in 1976.

hegemony to exert control or superior influence over; to hold dominion over.

A Modern Tobacco Giant

During the 1980s, under the chairmanship of Patrick Sheehy, BAT successfully expanded into financial services. In 1989 the company repulsed an audacious takeover bid by Hoylake Investments, a consortium of financiers led by James Goldsmith, but the event signaled the end of BAT's almost thirty-year campaign of diversification. Tobacco and financial services became the core of BAT's business in the 1990s, and Sheehy's successor, Martin Broughton, oversaw the **acquisition** in 1994 of American Tobacco, an important move that brought the company global ownership of brands such as Pall Mall and Lucky Strike that could be used to combat Philip Morris's phenomenal success with Marlboro. The fall of Soviet communism boosted tobacco sales, and in 1998 BAT decided to sell its financial services to Allied Zurich and revert to being a purely tobacco-based company. In 1999 BAT merged with Rothmans International, the world's fourth-largest tobacco company, raising at a stroke its share of the premium international brands segment of the market from 11.3 percent to 17.6 percent through the addition of brands such as Rothmans King Size, Peter Stuyvesant, and Dunhill International.

acquisition the purchase—sometimes called a merger—of a smaller company by a larger one. During the late twentieth century, major tobacco companies diversified their holdings through acquisition of nontobacco products.

See Also American Tobacco Company; Globalization.

HOWARD COX

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Navigation Acts laws passed by the British Parliament that forced the American colonies to sell only to Britain, buy only from Britain, and ship only in British vessels. The Navigation Acts were one of the background causes of the American Revolution.



British Empire

Tobacco was the first great commercial success of England's empire in America. Indeed, if we date the creation of a formal imperial structure to the passage of the **Navigation Acts** in the mid-seventeenth century, then it was tobacco that called the empire into existence.

Before the middle of the seventeenth century, the British Empire in America had been an informal structure, bound together by the subordination of the several colonies to the crown, by the common culture and identities of the colonists, and, most important, by the activities of London merchants involved in colonial trades, who linked the relatively distinct enterprises scattered along the Atlantic from New England to the Caribbean into a coherent commercial whole. In this period the tobacco trade was already a major part of England's external trade, employing hundreds of ships and thousands of seamen while attracting the interest of some of the most prominent and richest merchants involved in colonial trades. By 1650, England imported roughly 10 million pounds of American tobacco, worth roughly 12 million pounds sterling in the colonies but worth several times that sum once safely delivered to markets in England.

Navigation Acts

The first navigation laws in 1650 were written in part by tobacco merchants determined to prevent the Dutch from wresting that valuable trade from their control. Although it is likely that evidence of Dutch inroads into the American tobacco trade has been greatly exaggerated, the English merchants had good reason to worry. During the Dutch revolt against the Hapsburgs, English merchants had been able to take advantage of Dutch distractions to seize control of trade to the Levant and in the Baltic. Once their issue with Spain was settled, the Dutch were able to use their commercial superiority and more efficient shipping to take back control of the trades previously lost to the English. English colonial merchants feared that the American trades might be next, so they turned to the state and wrote the Navigation Acts to protect their interests.

The navigation laws laid down only a few simple rules to regulate colonial commerce. First, all trade with the colonies had to be conducted in ships that were English-built, English-owned, and English-crewed. Although colonials were considered English for the purposes of the Navigation Acts, this rule effectively excluded foreigners from American trades. Second, certain commodities, tobacco among them, were designated as enumerated, which meant that they had to be shipped first to England no matter what their destination.

Expansion and Settlement

The tobacco trade continued to grow under the new system: By the early 1680s, England was annually importing from its American colonies about 20 million pounds of tobacco worth roughly 80 million sterling at the farm and much more at English markets. Most of this

crop came from the Chesapeake colonies Maryland and Virginia. Tobacco, however, was a good small man's crop, and as such it played an important role in creating the opportunities that attracted so many to the colonies. A profitable crop could be grown by a man working alone or with the help of a few family members and perhaps an **indentured servant** or two on a small patch of ground, using only simple tools. Tobacco played an important role in the settlement stage of several colonies. Before the 1640s, several of the Caribbean islands had also shipped substantial quantities of tobacco to England, but with the sugar boom of that decade, Caribbean tobacco production soon faded to insignificance.



indentured servant a person who agreed to work for another for a specified term (usually a few years) to satisfy a financial obligation. During the American colonial period, immigrants sometimes paid their passage with indentured service.

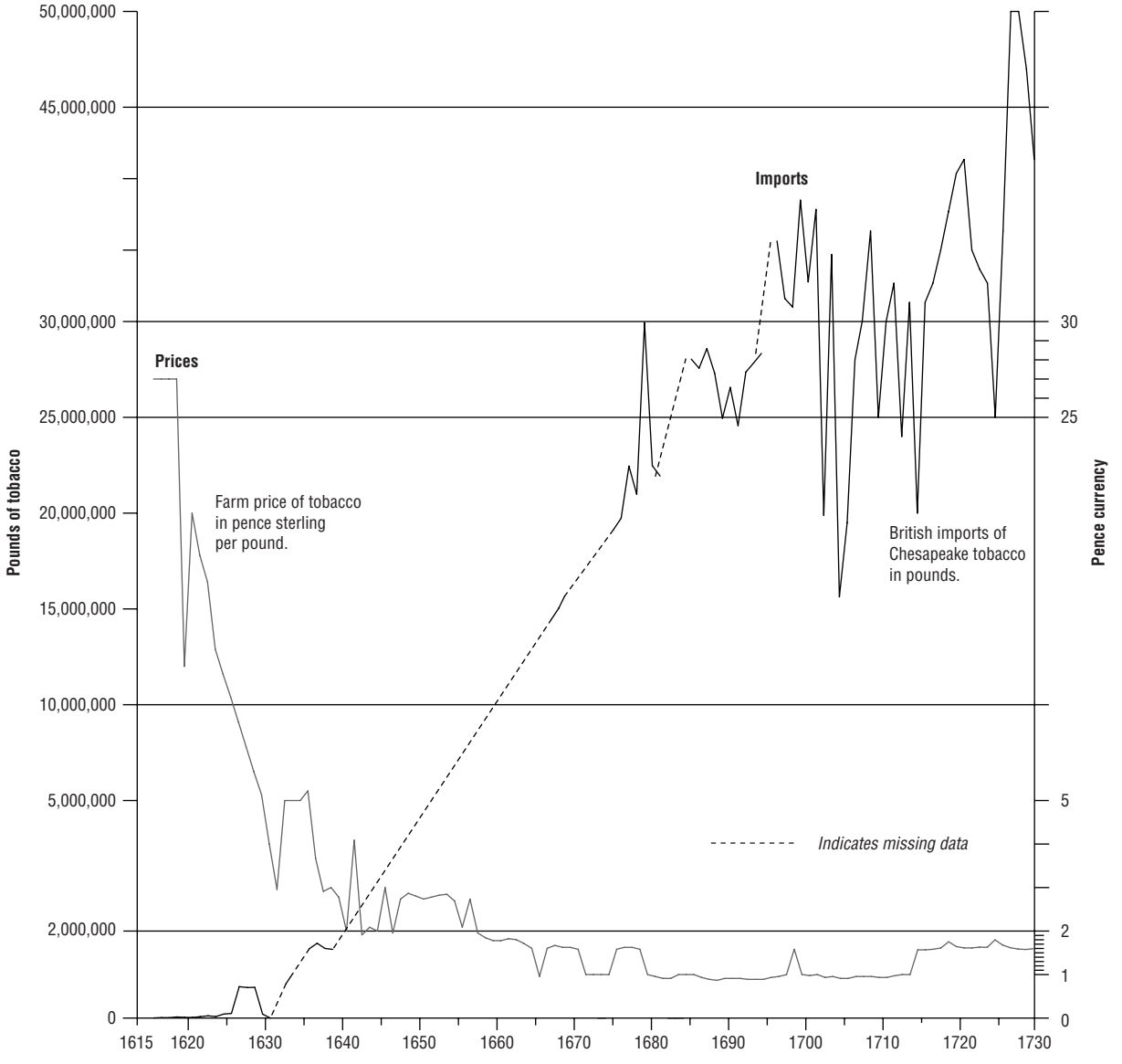
Taxes and Smuggling

Planters insisted that the restrictions of the navigation system and the high taxes that system placed on tobacco brought hard times to producers. Because tobacco paid a basic customs levy that boosted its price several times over its price at the farm in Virginia, one might think the planters had a case. Total British customs on Chesapeake tobacco fell from 12 pence per pound in 1619 to 2 pence in 1657. There they remained until 1685, when they increased sharply. In 1685, Parliament raised the nominal duties on tobacco from 2 pence to 5 pence per pound. Subsequent increases raised the charges to 6 pence in 1697, 6.3 pence in 1703, and 7.3 pence in 1748 (the effective rates were slightly lower, depending on the method of payment). Duties on re-exported tobacco declined at about the same rate. After 1723, all customs on re-exported tobacco were rebated, so the tobacco of English colonial producers would be competitive in the markets of Europe. Since farm prices for Chesapeake tobacco in this period hovered between 2 and 3 pence per pound and occasionally fell below a penny, one can understand why planters often complained that customs charges were too high. However, tobacco from other parts of the Americas paid a much higher tax, while farmers in England were not allowed to raise tobacco. These policies gave English colonial producers a near monopoly of the large English home market. Further, customs charges fell over the seventeenth century, so they can hardly be said to have forced the price down.

Such high customs charges, often more than 10 times the price of the crop at the farm, raise the question of smuggling. Certainly such high taxes created an incentive to violate the navigation laws, for if one could avoid the tax and sell tobacco at market prices, one's profits would be substantial. Unfortunately, it is impossible to measure the extent of smuggling with any certainty; successful smuggling does not leave extensive tracks in the records. Despite the potential profits, smuggling does not seem to have been a major problem in the colonial tobacco trade, although there may have been a flurry of illegal activity just after the customs charges were raised in 1685. If caught, smugglers would lose not only their cargo but also their ship and face a substantial fine. Most merchants apparently concluded that the risks were too high and worked within the law. Smuggling, then, seems not to have been a major problem in the tobacco trade once metropolitan officials put an effective enforcement structure in place, something that had happened by the end of the seventeenth century. Smugglers apparently preferred low-volume, high-value commodities such as tea and brandy.

TABLE 1

Farm prices and British imports of Chesapeake tobacco, 1616–1730



SOURCE: Menard, Russel R. "The Tobacco Industry in the Chesapeake Colonies, 1617–1730: An Interpretation." *Research in Economic History* 5 (1980): 157–161.

Planters and Merchants

As the data in Table 1 make clear, this seventeenth-century expansion of the tobacco industry took place within a context of rapidly falling prices. Falling prices for tobacco did not mean declining revenues for the state. Indeed, the revenues earned by the government from the tobacco trade climbed fairly steadily across the colonial period. As a consequence, the influence of the tobacco merchants over state policy remained substantial. A case in point is the Colonial Debts Act of 1732. Planters, to buy more land and slaves to expand operations, borrowed heavily from English merchants. When the loans came due, the planters

often resisted repayment. Colonial legislatures, usually dominated by planters heavily in debt, often aided the foot draggers in finding ways to frustrate the efforts of merchants to collect what was owed them. So difficult did collecting become that in 1744, Micajah Perry III, perhaps the leading tobacco merchant of his day, gave up his assets to his creditors in large part because of his inability to collect from planters.

Before his bankruptcy, however, Perry led a successful effort to have Parliament pass the Colonial Debts Act of 1732, despite the planters' fierce opposition. The act outlawed many of the obstacles colonial legislature had thrown up to make collection difficult. According to the act, all of a planter's property, including land and slaves, could be seized for debt, and a creditor could simply swear an oath before a British magistrate to prove his claim in court, which permitted creditors to bypass colonial judges and juries. This procedure could be counted on to protect local interests (the indebted planter) against grasping foreign creditors. Such demonstrations of their weakness within the empire and their inability to defend their interests against the merchants played no small part in the decision of many Chesapeake tobacco planters to join the revolutionary movement.

Productivity and Prices

While the planters were perhaps partially correct in blaming falling prices on overproduction and the restrictions of the navigation system, their complaints obscure a more complex and more interesting process. In a classic new-industry pattern, tobacco prices fell because planters and merchants discovered better and more efficient methods of raising and marketing the crop. These improvements in productivity permitted planters to lower prices. Lower prices meant that more people could afford their product. More customers required more tobacco. The argument that prices fell because planters produced more tobacco is backward. Falling prices expanded the market for colonial tobacco, which prompted increased production. It is not clear exactly how planters effected this change, but it is undeniable that productivity (output per each worker) increased. In seventeenth-century Maryland, the mean output crop per hand rose from about 900 pounds in the 1640s to over 1,500 pounds in the 1660s and to nearly 1,900 in the 1690s.

One major boost in productivity came from the late seventeenth-century shift from a work force dominated by British indentured servants to one dominated by African slaves. Since tobacco was widely cultivated in West Africa, slaves often possessed skills that servants did not have. Further, this transition in the labor force permitted planters to drive their workers harder and to ignore the conventions that protected English servants from overwork and other forms of abuse. In the Chesapeake colonies, these conventions included a rest period in the heat of the day, many traditional holidays, Saturday afternoons free of work, and conventions that governed the gender division of labor and the work. As long as English indentured servants dominated the work force, planters seem to have been reluctant to assign women to field work. With the shift to African slaves, that reluctance disappeared. Slaves could be made to work more hours per day and more days per year than could servants. Further, through liberal use of the whip they could be forced to work faster and harder. Productivity increase also reflected the cumulative impact of many small changes in technique as planters gradually discovered more efficient ways of growing tobacco.

The completion of the farm-building process also played a key role in productivity increases. Once planters had working farms in operation, they could ignore such tasks as land clearing, fence and barn making, and orchard planting and concentrate all their labor on making tobacco. The tobacco industry also benefited from innovations in commerce, which lowered interest rates and the commission fees that merchants charged for handling the business of planters in England. In addition, improvements in shipping lowered freight charges.

As a result of these improvements in productivity, prices fell. In 1618, Chesapeake tobacco brought 8 and 9 shillings per pound in London; by the 1620s it sold for as little as 2 shillings and by the 1630s for less than one shilling per pound. Prices continued to decline in the middle decades of the century, although at a slower rate than before: In the 1660s prices of 6 to 8 shillings per pound were common. By the 1680s, York River sweet-scented tobacco, generally regarded as the best made in the Chesapeake colonies, brought as little as 4 pence per pound. Prices at Amsterdam, the major European market for Chesapeake tobacco, also declined sharply: in the mid-1630s, Chesapeake tobacco sold for 2 shillings a pound in the Dutch port; by the early 1680s, it brought less than four pence.

As a result of falling prices, tobacco was made affordable to an increasing number of Englishmen. The market for tobacco widened, spreading from the major port cities to the countryside. Once a luxury used chiefly by the rich, it was becoming a product that a growing number of the working poor regarded as a necessity. The results of this expanding market are clear in figures on percapita consumption. In the 1620s, annual per-capita consumption of tobacco in England and Wales was only one-tenth of a pound; by the turn of the century, that figure had grown to 2.3 pounds. Tobacco, if not quite yet an article of mass consumption, had become a daily presence in the life of thousands of English men. One can also trace the increased consumption of tobacco in the growth of linked industries. The number of pipe makers in England rose from 7 in the 1630s to 66 by the 1690s.

It would be difficult to overstate the importance of this process for the impressive growth of the English Empire in the Atlantic during the seventeenth century. By 1700, when the population of the English colonies of America was roughly 400,000, about a quarter of whom lived in the Chesapeake region, England's Atlantic empire had become a colossus, in part because of the successes of tobacco. Had tobacco planters not found ways to lower prices by increasing their efficiency, tobacco would have remained a high-priced luxury item with a limited market; the impressive expansion of the English American Empire over the seventeenth century would not have occurred, for much of that empire rested on a foundation of smoke.

The great seventeenth-century expansion of the colonial tobacco industry led by productivity gains tended to slow as the century progressed. By the 1680s, it finally ground to a halt, and the industry began a thirty-year period of stagnation. By the 1680s, planters and merchants had exhausted the possibilities of improved efficiencies, and they faced rising prices for land and labor. Growth began again during the 1720s as the industry entered a second long expansion that lasted until the American Revolution. In contrast to the first period of growth, this eighteenth-century expansion was driven by increased demand as

population growth and rising incomes in Europe slowly pushed prices up and persuaded planters to make more tobacco to satisfy the rising demand.

RUSSELL R. MENARD

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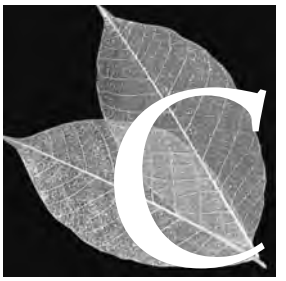
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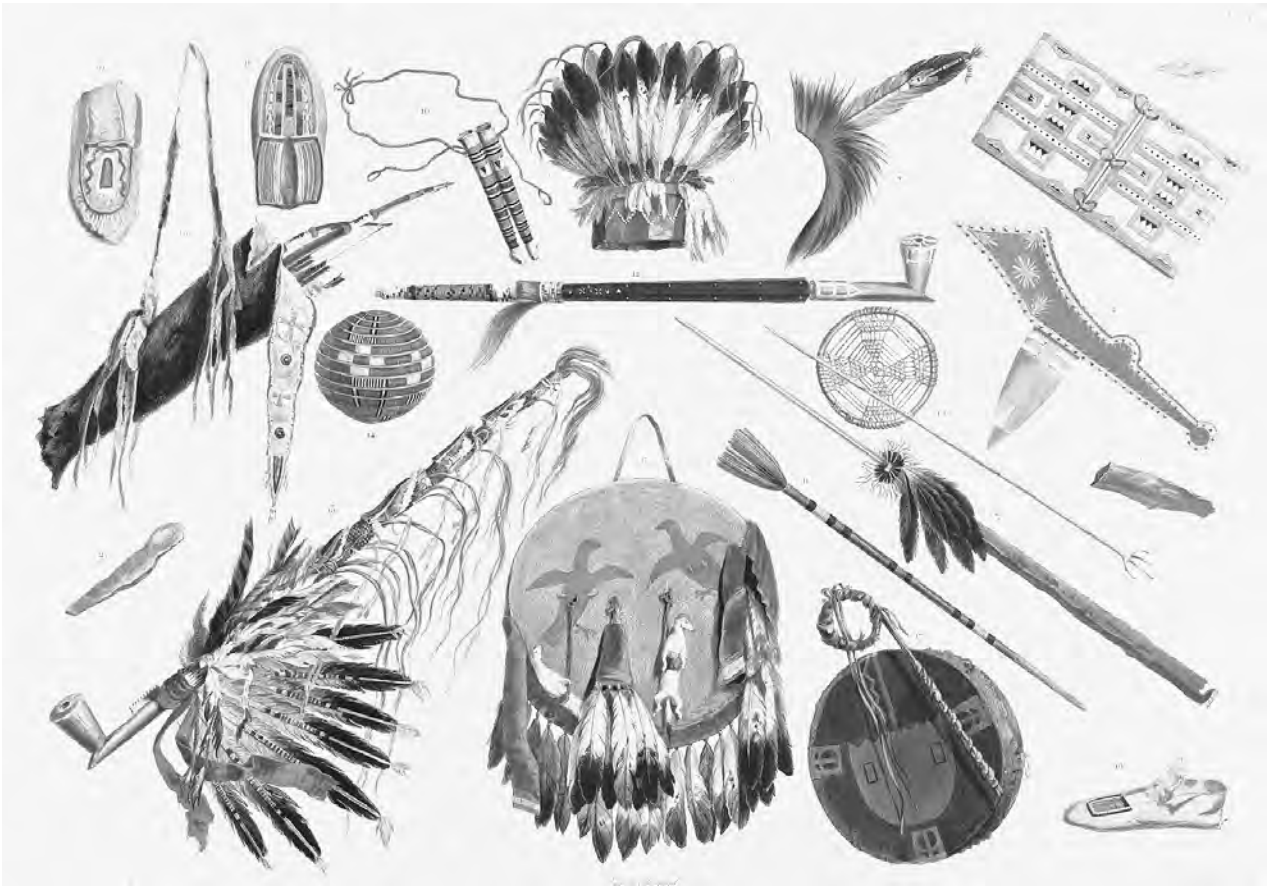


Calumets

The famous peace pipes of the Plains Indians are often referred to as calumets. The term is derived from *chalemel*, an Old French word for "reed." French adventurers of the seventeenth century were some of the first Europeans to see and record calumets in use. Indeed, the early historical literature of the Great Lakes and Mississippi Valley is packed with descriptions of highly ornamented wands that were used by the Indians in their ceremonial dances. Because these wands sometimes doubled as stems for pipes, it was not always clear to the French whether the calumet was the stem or the bowl of the pipe, or perhaps both. Among Plains Indian tribes, however, the term *calumet* usually did signify the highly decorated stem, so it is probable that this also was the case in the Midwest.

In 1673 the French missionary and explorer Father Jacques Marquette noted two types of calumets. One was used for peace and the other for war. He described the stems for these calumets as being made out of hollow cane about two feet in length and decorated with long, colored feathers and the heads or necks of various birds. Le Page du Pratz, a French adventurer of the early eighteenth century, reported that Indians of the Lower Mississippi Valley often used eagle feathers and duck skin for their peace calumets. For the war variety, however, they adorned their calumets with flamingo feathers and buzzard skins. As Father Jacques Marquette wrote in his journal:

> *Every one, at the outset, takes the Calumet in a respectful manner, and, supporting it with both hands, causes it to dance in cadence, keeping good time with the air of the songs. He makes it execute many differing figures; sometimes he shows it to the whole assembly, turning himself from one side to the other. After that, he who is to begin the Dance appears in the middle of the assembly, and at once continues this. Sometimes he offers it to the sun, as if he wished the latter to smoke it; sometimes he inclines it toward the earth; again, he makes it spread its wings, as if about to fly; at*



Indian Utensils and Arms by Karl Bodmer, c. 1830s. This illustration includes two examples of pipes of the Plains Indians, center and lower left. © GEOFFREY CLEMENTS/CORBIS

argillite a smooth, black sedimentary rock. American Indians sometimes carved tobacco pipes from argillite.

other times, he puts it near the mouths of those present, that they may smoke. The whole is done in cadence; and this is, as it were, the first Scene of the Ballet.

Calumets often had pipe bowls made out of a red stone. These are generally referred to as catlinite, named after the nineteenth-century artist and adventurer George Catlin. There is a famous pipestone quarry in southwest Minnesota, which was a primary source for many of these red stone pipes, but it should be stressed that this quarry was not the only source for pipe bowls used in calumet rituals. Pipestone is actually a form of **argillite.** It is fine-grained, dense, and carves easily. Prior to the introduction of iron implements, American Indians used flint or other hard minerals to cut and shape pipe bowls. They drilled holes by applying sand to the surface as an abrasive agent and then rotating hollow reeds between their hands.

Tobacco was the principal substance smoked in calumets. The only type of tobacco known to have been used in the Eastern Woodlands prior to European contact was *Nicotiana rustica L.* Interestingly enough, its prehistoric distribution in the eastern half of North America approximates the distribution of sacred pipes. This particular species of tobacco reaches a height of between 1.0 and 1.5 meters and has large fleshy leaves with small, pale yellow blossoms. Although tobacco can be chewed or snuffed, Native Americans in North America most commonly smoked it. Even today smoke is considered an offering to the spirits. As tobacco is an extremely potent species, particularly in terms

of nicotine content, in both prehistoric and historic times combining it with other plant products prior to smoking toned it down. The resulting substance is called *kinnikinnick*, after the Eastern Algonquian word meaning "mixture."

The short-stemmed **calumet pipe** bowl form appeared in the eastern Plains after about 1200 C.E., but the anthropologist Robert Hall believes that the calumet pipe evolved over a period of 4,000 years, which is basically equivalent to when pipes first appeared on North American sites. He has argued that the calumet ceremony may have originated as an adoption ceremony that was closely associated with a mourning ritual. That may be true, but by historic times the chief purpose for presenting and smoking calumets in the Plains and Midwest seems to have been to preserve peace for periods of interaction. Under the umbrella of the calumet, groups that normally were mortal enemies were assured that they could complete their negotiations safely. Trade was often conducted at such times. One of the reasons why the famous Lewis and Clark Expedition of 1804–1806 was so free of hostilities is that these men wisely carried calumets with them and made great use of them whenever encountering new tribes. Admittedly, the calumet has always been more than just a peace pipe, but the Europeans who explored the territories between the Appalachians and the Rockies quickly learned that the smoking of such a pipe was a powerful tool of diplomacy and declining such an invitation was most unwise.

calumet pipe a highly ornamented ceremonial pipe used by American Indians.

See Also Native Americans; Pipes; Religion; Shamanism.

IAN W. BROWN

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Camel

Late in 1913, the R.J. Reynolds Tobacco Company (RJRT) launched its new Camel Cigarettes. It was the first **American blend cigarette,** made largely from Burley and Bright tobaccos, and heavily sweetened, with just a smattering of **Turkish tobacco.** Reflecting the popularity of Turkish tobacco cigarettes, the Camel pack proclaimed that it contained "Turkish & Domestic Blend Cigarettes." Listing Turkish first gave the cigarettes an exotic air of far greater importance than its actual presence justified. The Middle Eastern–sounding name, chosen in part because it

American blend cigarette cigarette made from blend of various American tobaccos, for example, Bright (also called Virginia) and Burley. Can also refer to cigarette containing American tobaccos blended with similar Asian or African tobaccos.

Turkish tobacco a variety of mild, aromatic tobacco. Ironically, Turkish tobacco is not native to Turkey but was imported from North America. Turkish tobacco leaves are smaller and more delicate than American varieties. It is usually blended with Bright Leaf (Virginia) and Burley in cigarettes.



This early advertisement for Camel cigarettes reads: "Camel's exquisite mellow mildness and refreshing flavor have never been equalled by any cigarette in the world at any price. Their satisfying excellence is really a revelation to the most fastidious smoker. Appreciation of very unusual and very superior tobacco quality becomes keen after the enjoyment of smoking Camels and it will prove particularly gratifying to realize that Camels leave no unpleasant cigaretty odor." The traditional camel image later gave way to Joe Camel, R.J. Reynolds's modern cigarette advertising mascot who gained notoriety in the 1990s.
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would be easy to recall, and packaging displaying pyramids and palm trees further strengthened the cigarettes' appeal.

The marketing campaign for Camel was as innovative as the product. RJRT purchased large teaser newspaper advertisements over a four-week period. The first showed only the word Camel and the image of a camel. The second announced "The Camels are coming," and the third stated, "tomorrow there'll be more Camels in this town than in all Asia and Africa combined." Only in the fourth week did the ads identify Camel as a new cigarette brand.

Contrary to the then-contemporary practices of regional marketing, Camel was marketed nationally. Additionally, Camel was designed to make a profit at 10 cents a pack, while many other brands sold for 15 cents. To counteract any impression of tawdriness, RJRT placed notices, which still appear on Camel packs sold today, stating "Don't look for premiums or coupons, as the cost of the tobaccos blended in Camel Cigarettes prohibits the use of them."

Camels were an instant hit with the American public, aided by their popularity with soldiers during World War I as a quick, convenient smoke and by the fact that they appeared at about the time when more women were learning to smoke; sales were also assisted by the disruption of Turkish tobacco supplies. In the first year, 400 million Camels were manufactured. Two billion were produced in 1915 and 10 billion in 1916, as Camel became America's first truly national cigarette brand. By 1921, RJRT produced 18 billion Camels a year, capturing almost half of the American market. In 1921 cigarettes became the best-selling tobacco product for the first time in the United States, and, in that same year, one of the most famous advertising slogans of all-time was born: "I'd walk a mile for a Camel."

This cigarette was aimed at a mass market and it became a cigarette for the common people. As a result, the camel image became almost a cliché. During the 1920s and 1930s, graphics reminiscent of the Camel pack appeared on smokers' accessories, and table lighters were made in the shape of a camel.

From the mid-1940s through the end of the 1950s, Camel was the best-selling American cigarette. RJRT resisted making changes to its premier brand; indeed, public outcry over a minor packaging revision in 1958 caused RJRT to withdraw it. Despite the addition of Camel Filters in 1966 and Camel Lights somewhat later, the brand's **market share** steadily declined into the 1980s. Then the "Joe Camel" advertising campaign, introduced in 1987, rejuvenated the brand, giving it a more youthful image.✦ By 1997, when RJRT discontinued the campaign amid pressure from antismoking groups, Camel's market share, especially among the youngest smokers, had increased dramatically. Since then, Camel marketing has sought to project a youthful image, particularly with the recent "Kamel" and "Camel Exotic" brand extensions.

market share the fraction, usually expressed as a percentage, of total commerce for a given product controlled by a single brand; the consumer patronage for a given brand or style of product.

See Also Gitanes/Gauloises; Lucky Strike; Marlboro; Virginia Slims.

JOSEPH PARKER

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✦ *See "Youth Marketing" for a photograph of a Joe Camel billboard.*

Caribbean

Tobacco was the first American product to conquer Europe. Its rapid acceptance throughout the world made it a profitable commodity in a very short time. Before European contact, indigenous populations' consumption of tobacco had been restricted to the plant's magical and

religious purposes, and so it lacked a large market. Thus it was its European commercialization that brought about the expansion of tobacco into new production areas. From those early days until the twentieth century, at least, the Caribbean has been one of the preferred zones of tobacco production.

Small farmers, often of Spanish origin, turned to growing tobacco before the end of the sixteenth century in colonies such as Cuba, Santo Domingo, Puerto Rico, Caracas, and Veracruz, among others. The English, French, and Dutch soon imitated them, as they too began winning territories in America.

At the beginning of the seventeenth century, several European powers took possession of the Caribbean islands which not been effectively settled by Spain. All experimented with tobacco cultivation in their new territories, because it was a product with growing European demand and high value in the international market of the time. Tobacco production provided rival European powers a way to increase their participation in the Atlantic trade.

The Non-Hispanic Caribbean

At the end of the sixteenth century, the Spanish possessions in the region—especially Cuba, Santo Domingo, Puerto Rico, and Caracas—had built up important tobacco growing regions. Encouraged by tobacco's economic potential, the first settlers of the British and French colonies in the Caribbean also began cultivating it on small parcels of land. Thus, the new Caribbean colonies and also those in North America (especially Virginia) began to grow tobacco in significant quantities. As a result an overproduction crisis ensued in 1638, precipitating a drop in prices that undermined the enthusiasm and commercial potential for tobacco in the non-Hispanic Caribbean colonies. These last were most affected by the crisis because they had encountered problems with the quality of their products, which never reached a level acceptable to European consumers. Their tobacco suffered from problems related to the preparation, wrapping and packing of the leaves; it was said that the merchandise arrived at its destination without any aroma, dry, worm eaten, and sandy.

The decline in tobacco prices, together with the low quality that failed to satisfy the tastes of increasingly demanding European consumers, led to the abandonment of tobacco growing on the non-Spanish islands of the Caribbean. By the mid-seventeenth century, tobacco farms were displaced by large sugar cane **plantations** in these areas, with the exception of Haiti where this crop change took place a bit later. From then on, it was the Spanish Caribbean colonies that competed with Virginia for the benefits to be gained from exporting tobacco to Europe.

plantation historically, a large agricultural estate dedicated to producing a cash crop worked by laborers living on the property. Before 1865, plantations in the American South were usually worked by slaves.

By this time, the Dutch, followed by the English and French, had demonstrated that the trade in tropical products, most notably sugar, could bring spectacular profits, and the weakness of the Spanish economy in this sector was evident. To counteract that tendency and become competitive in Atlantic commerce, Spain bet on Caribbean tobacco—especially the Cuban product—viewed as the world's best and sold for the highest prices as a result.

Spanish and Cuban Tobacco

The only significant rival to Cuban tobacco was that grown in Virginia. But Virginia tobacco did not measure up to the Cuban tobacco, which was characterized by rich flavor and aroma, as well as excellent burning qualities. Its fame spread rapidly, and consumers were willing to pay its higher price, even though at times it was triple that of tobacco from other areas. Because Cuban tobacco had the cachet of a connoisseur item, it was relatively invulnerable to foreign competition. Cuban tobacco enjoyed steady demand that guaranteed good prices.

In sum, the non-Spanish islands of the Caribbean mounted an early effort in the tobacco trade, but their product did not achieve a level of quality acceptable to the European market. Spain, on the other hand, had Cuban tobacco, which enjoyed prestige and acceptance among consumers.

Spain sought to benefit from the exclusive cachet of Cuban tobacco. Accordingly, it adopted measures to stimulate Cuban production and preserve tobacco's privileged state in the market. During the eighteenth century, the Cuban tobacco trade received innumerable official stimuli and became the pride and joy of the Spanish monarchy, which elevated it at the expense of tobacco production and commerce in other regions of the empire.

From the beginning of the eighteenth century, the Crown sent Cuba annually large sums of Mexican silver with which to purchase tobacco for shipment to Spain. To protect Cuban production from competition from other Spanish colonies and the effects of contraband, the government restricted the tobacco trade in the rest of its possessions. Such policies benefited the Cuban tobacco business but were prejudicial to other colonies, especially Caribbean ones, which from the beginning of the conquest had invested significantly in this crop.

The Case of Santo Domingo

Santo Domingo, for example, on more than one occasion requested privileges comparable to those granted Cuba. The island colony saw an opportunity in 1762, when the English invaded Cuba. The English maintained control of Havana for a year, halting Cuban tobacco shipments destined for the metropolis. Dominican authorities responded by immediately sending a shipment of Hispaniola tobacco to demonstrate its quality that, they claimed, did not in any way lag behind the Cuban product. Although not to the extent they hoped, the Dominicans did receive a response that fed their hopes. Several royal officials were dispatched to Santo Domingo with the charge of buying all the tobacco harvested in the city and its environs, and of stimulating more planting. The viceroy of New Spain received orders to send money to Santo Domingo to finance that mission. Nonetheless, this effort dissolved when the situation in Havana was normalized.

In Santo Domingo, tobacco planting had achieved some importance since at least 1680, but the bulk of the harvest was illegally sold to the French in the neighboring colony of Saint Domingue (now Haiti). In response, the government in 1770 established a *Factoría* (tobacco agency) in its colony of Hispaniola, based in the city of Santiago. The purpose of this establishment was to buy the tobacco produced in the



contraband trade traffic in a banned or outlawed commodity. Smuggling.

region and ship it to the peninsula. As in Cuba, the purchases were financed with silver from New Spain. The Dominican *Factoría* lasted for twenty-six years, but its function as a provider of tobacco for the metropolis never compared with that of Cuba. Still, the *Factoría* guaranteed Dominican growers a secure market. This was a strategy to combat the **contraband trade** with the neighboring French by offering the growers a sure and attractive buyer. At the same time, it provided work and income for the population of this first Spanish colony, which had become one of the poorest.

During the nineteenth century, Santo Domingo went through long periods of political instability that affected and inhibited its economy, in particular tobacco production. As a result, it was not until the beginning of the twentieth century that the Dominicans managed to develop a more solid tobacco industry, characterized by the preeminence of peasant-based production.

The Cases of Caracas and Puerto Rico

Caracas and Puerto Rico were two other colonies that began to export tobacco in the seventeenth century and suffered from Spanish policies that favored the Cuban product. The tobacco of the Venezuelan region of Barinas, especially, had in early times enjoyed a level of prestige comparable to that of Cuba. In both colonies, smuggling of all types of goods—including tobacco—was intense and intolerable to the Spanish government. Good-quality tobacco arriving in Europe by way of illegal commerce threatened the competitiveness of the Cuban product and damaged the Spanish export trade.

In the case of Caracas, the Spanish government established a monopoly in 1779 in spite of opposition from colonial society. Under the monopoly, the state became not only the sole authorized buyer of tobacco produced in the colony, but also the exclusive seller, whether for internal or external consumption. The most distinctive feature of the Caracas monopoly was its Dutch export trade. Prior to the monopoly, the merchants of the Guipuzcoana Company controlled this trade, but with the implementation of the monopoly, several officials were dispatched to Amsterdam, Holland, to take charge of the trade in the name of the king. The Dutch government supported this arrangement and halved the duties charged on importation of Caracas tobacco if it arrived in Amsterdam through the offices of the Spanish government.

The Spanish representatives then received instructions to seek such privileges for Puerto Rican tobacco as well. From 1765 on, as part of the reform efforts that followed the invasion of Havana, the Spanish government tried to stimulate the Puerto Rican economy. It was generally accepted that one of the island's most serious problems was smuggling. The Spanish representatives in Holland reported that, according to Amsterdam merchants, around 1.5 million pounds of Puerto Rican tobacco had entered that port since 1775, suggesting that almost the entire Puerto Rican crop ended up in Holland. This helps explain why the Spanish monarchy authorized direct trade in tobacco between its Caracas and Puerto Rican colonies and Holland, channeling a longstanding practice into legal and official form. To carry out the purchases in Puerto Rico, the monarchy set up a *Factoría* that began functioning in 1784 and was active until the king suspended sales to Holland in 1792.

The Crisis of the Late Eighteenth Century

The end of tobacco exports to Holland coincided with a general crisis that afflicted the Spanish Empire's tobacco trade. Factors leading to this crisis include the outbreak of war with France in 1792 and the stimulus that sugar production in the Antilles received as a result of the Haitian Revolution. Tempted by the promising panorama of sugar, large planters sought to acquire as much land as possible to devote to that crop, displacing the tobacco growers onto marginal lands. Moreover, in these years the Cuban tobacco industry was in decline, despite the fact that Cuba had distinguished itself as the greatest and most prestigious tobacco producer. If that was the case in Cuba, the outlook in the other Spanish colonies was worse still.

The wars of independence of the early nineteenth century damaged the economies of the newborn nations, such as Venezuela and Santo Domingo, and they were slow to recover and to reinsert themselves into the flows of international commerce. Puerto Rico and Cuba did witness an improvement in tobacco production beginning with the 1840s, but it was always overshadowed by sugar.

The first decades of the twentieth century saw the unfolding of a new history for tobacco in the Hispanic Caribbean, under different political conditions and with different markets. The characteristics and problems of these industries have changed with the times, but the fame and prestige of their products continue to be recognized worldwide.

See Also British Empire; Cuba; Dutch Empire; French Empire; Spanish Empire.

LAURA NÁTER

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Celebrities *See* Film; Visual Arts.



Chemistry of Tobacco and Tobacco Smoke

The chemistry of tobacco products and product delivery is extremely complex. To begin with, tobacco in its natural form is made up of more than 3,000 compounds. Cultivation, processing, and manufacture of



Dr. Edwin Wood of the American Heart Association stands near a clear plastic box over smoldering cigarettes, displaying the dangerous chemical contents of cigarettes, at antismoking demonstration, 9 March 1987, Harrisburg, Pennsylvania.
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bidis thin, hand-rolled cigarettes produced in India. Bidis are often flavored with strawberry or other fruits and are popular with teenagers.

kretek a clove cigarette, originally of Indonesian origin.

tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

the tobacco may result in significant chemical variation. A wide variety of tobacco products have been developed, including cigarettes, cigars, **bidis, kreteks,** dry and moist snuffs, and chewing tobaccos. In addition to differences in their physical composition, these products differ in the form and route of delivery of tobacco constituents (orally or through inhalation), subsequent absorption into the body, and health and other effects.

In the case of smoked products, the burning of the tobacco produces further changes. Cigarette smoke consists of a dynamic mixture of more than 5,000 known chemical compounds. These include both highly volatile gaseous and vapor components (called the gas phase) and larger smoke particles (the particulate phase, often referred to as **tar.** Some of these compounds have cancer-causing, cardiovascular, respiratory, or other negative health effects. Others may increase the addictive properties of smoking, alter behavioral patterns, or produce additional effects in the brain and central nervous system. Efforts to control both product delivery and composition have resulted in important product changes with significant implications for health and smoking behaviors. However, the function, interaction, and effects of many tobacco-delivered components are still not well understood.

Tobacco Cultivation, Processing, and Product Manufacture

Tobacco is generally distinguished by the curing method used or by the geographic region in which it is grown, each of which may result in important differences in composition, including sugar, nicotine, and nitrogen content. In **flue-cured** tobaccos, high heat is used to speed the curing process, during which plant starches are converted to sugars and the concentration of acids is increased. The resulting tobacco has high sugar and medium nicotine content and produces smoke that is acidic (low pH) with a light aroma. **Air-cured** tobaccos include both Burley and Maryland tobaccos. These tobaccos have low sugar content and produce a fuller smoke (higher pH) with more nicotine. Maryland tobacco also continues to burn for a longer period when lit, so that it is less likely to self-extinguish. Sun-cured tobaccos (sometimes called Oriental tobacco) are generally produced in a Mediterranean climate and yield mild, aromatic smoke with low nicotine. Processed tobaccos, including reconstituted tobacco sheet (combined from stems, leaves, and other scraps, along with nontobacco additives) and expanded or puffed tobacco (in which the cellular structure of the leaf is artificially expanded), are also used in cigarette construction and may significantly alter smoke yields of tar and specific smoke components.



flue-cured tobacco also called Bright Leaf, a variety of leaf tobacco dried (or cured) in air-tight barns using artificial heat. Heat is distributed through a network of pipes, or flues, near the barn floor.

air-cured tobacco leaf tobacco that has been dried naturally without artificial heat.

Typically, in manufacture of cigarettes and other tobacco products, different tobaccos are blended and used in combination with additives and other design components to determine product characteristics including nicotine content, taste, sensory effects, burn rate, and tobacco or smoke composition. For example, one important aspect of product chemistry is the pH (acidity or basic nature) of the tobacco or smoke. The pH strongly influences the percent of nicotine that is available in the freebase (that is, the more highly volatile, or "unbound") form. Freebase nicotine has a greater impact on sensory nerves in the mouth and throat and facilitates more rapid absorption into the bloodstream in the case of smokeless products, such as oral **snuff.** It may also increase the speed of absorption from the lungs of cigarette smokers, although this has not been demonstrated experimentally in smokers. The site and rate of absorption are critical determinants of a drug's potential for addiction. Sugars, acids, and other components in the tobacco blend play a critical role in controlling the pH. Likewise, the addition of ammonia or other additives may be used to alter freebase nicotine levels.



snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

Other aspects of product chemistry influence delivery and absorption of constituents. The size of smoke particles may determine how deeply smoke constituents may be carried into the lung. Altering the temperature at which a cigarette burns influences the types of chemical changes that occur in the burning tobacco. Product design features such as paper porosity, ventilation, filtration, and use of additives must be adjusted to control these factors. Products can also undergo chemical changes over time as they sit in storage or on store shelves. A 2001 study of smokeless tobacco demonstrated that simply by sitting on a shelf unrefrigerated for six months, products generated significantly higher levels of tobacco-specific nitrosamines (TSNAs), potent cancer-causing agents (Brunnemann , Qi, and Hoffmann). In cigarettes, more volatile components such as **menthol** migrate between tobacco, paper, and filter over time, potentially affecting transfer to smoke. Finally, some chemicals can directly influence how other compounds behave in



menthol a form of alcohol imparting a mint flavor to some cigarettes.

the human body. For example, analysis of menthol use in cigarettes suggests that it may affect the body's absorption of other constituents, alter perception of harshness in the mouth and throat, and increase the smoker's capacity to hold smoke for longer periods within the lungs. A 1991 internal R.J. Reynolds study of smoke irritants found a significant relationship between the addition of a single compound (ethanol) to smoke and consequent smoker perception and behaviors, including reported perception of resistance as well as puff volume and other inhalation measures (Hayes et al. 1991).

Role of Chemical Analysis in Product Design

The complexity of tobacco product composition has led to the development of sophisticated mechanisms to monitor and assess product changes. The only common public measures of product chemistry used by government regulatory agencies are nicotine, tar, and carbon monoxide (a significant gas phase component of smoke). However, manufacturers routinely monitor physical product characteristics such as product weight, length, circumference, density, air ventilation, filtration efficiency, and draft, as well as chemical composition (in both tobacco and smoke) of **alkaloids,** sugars, ammonia, common additives, and many known toxic and carcinogenic compounds. One role of these analyses is simply to assure that key characteristics of a particular brand are maintained despite variations in growing conditions, agricultural practices, or other factors affecting the finished product. Nicotine content, moisture levels, smoke pH, and other critical blend components are all carefully controlled. This in turn enables manufacturers to minimize product variations over time, as well as across manufacturing and production plants located throughout the world.

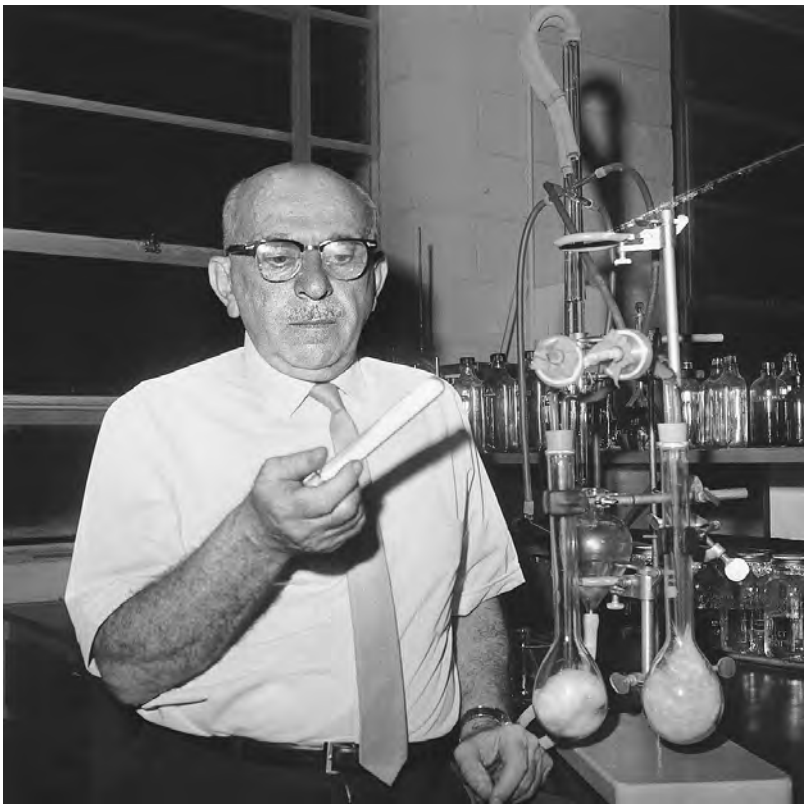
alkaloid an organic compound made out of carbon, hydrogen, nitrogen, and sometimes oxygen. Alkaloids have potent effects on the human body. The primary alkaloid in tobacco is nicotine.

Chemical analysis is also used internally to assess competitor products and direct product changes. For example, in the 1980s Brown & Williamson Tobacco Company undertook a series of projects to reverse-engineer the Philip Morris Marlboro brand in an attempt to characterize the factors driving its worldwide success (Wells 1995). They concluded that **ammoniation** of reconstituted tobacco used in Marlboro resulted in increased smoke pH and free nicotine delivery and produced unique compounds that improved smoke mildness and provided the characteristic Marlboro flavor. This analysis led Brown & Williamson to adopt ammoniation in its own cigarettes.

ammoniation a process of adding gaseous ammonia during cigarette manufacture to improve smoking and flavor characteristics.

Chemical analysis has been instrumental in the development of product changes intended to reduce the health consequences of tobacco use. For example, cigarette filters were introduced in the 1950s to reduce harmful constituents in tobacco smoke. However, measures were necessary to determine whether these and other changes were effective in reducing the most harmful chemical compounds. In the 1960s and 1970s, the scientists Dietrich Hoffmann, Ernst Wynder, and others evaluated the smoke produced by cigarettes under different filtered conditions, measuring specific compounds commonly associated with greater health risks, such as **ciliatoxic** (hydrogen cyanide, acrolein) and cancer-causing agents (nitrosamines, aldehydes, PAHs). In 1989 Hoffmann produced a list of the most harmful known compounds in tobacco smoke, and this list is commonly referred to in discussions of overall product toxicity. Further efforts have been undertaken, both internally by manufacturers

ciliatoxic being harmful to the cilia of the lungs. Cilia are tiny hairlike, structures on the inner surfaces of the lung.



In this 1967 photo, Robert L. Strickman holds some of the white crystalline substance that makes up a filter he has invented which, he claims, is in general 70 percent more effective than conventional filters. The device briefly received national attention in 1967 when Columbia University purchased the rights to it, but test results were disappointing and the filter was never widely marketed. The device was one of many that appeared in the wake of increased publicity around the health hazards of smoking.
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as well as independently, to identify means for selective filtration of these components, although with mixed success.

The role of chemical analysis has become even more important as cigarette manufacturers have sought ways to reduce tar and nicotine content while retaining flavor, impact, and other product characteristics. One of the primary areas explored by industry researchers is sensory analysis. The properties of the smoke aerosol, as well as individual smoke components, determine both the body or mouthful of the smoke, as well as the strength or impact on receptors in the mouth and throat, which are critical to consumer perception. In order to provide greater sensory character to lower tar and nicotine delivery cigarettes, industry researchers analyzed dynamics of the smoke aerosol, including the swirl of the smoke produced by different filter and ventilation configurations, and how these affect transfer of smoke particles and consumer sensory perception. Other sensory changes have included increased smoke pH, manipulation of tar/nicotine ratios, and use of additives to increase strength as well as flavor characteristics. Industry research has demonstrated that sensory characteristics may affect consumer satisfaction, inhalation patterns and smoking behaviors, and appeal among specific populations such as youth.

Health and Other Effects of Product Changes

Chemical changes to tobacco and smoke have far-reaching implications for product effects, including health, addiction, and smoking behaviors. A 1995 study of U.S. Tobacco, a smokeless tobacco manufacturer, demonstrated an intentional strategy of graduated product marketing,

in which starter products with low nicotine delivery were targeted to new users. The users were then gradually encouraged through advertising and free samples toward products with increasing nicotine delivery until they had adopted Copenhagen, the most addictive product available (Connolly 1995). In a 2002 study of the youth-targeted brand Camel, internal documents revealed the importance of smoothness and mildness as factors in the adoption of cigarette smoking among youth (Wayne and Connolly 2002). Internal documents have also shown that cigarette smoke pH—and consequently free nicotine delivery—were critical factors in the success of cigarette brands such as Marlboro and Kool. Presumably, this was due to the increased sensory character and addictive effects of these products (Hurt and Robertson 1998).

Design changes made to cigarettes in the past decades have resulted in products with reduced delivery of tar and nicotine, as measured by smoking machines. Public perception of these changes is that these products offer reduced health risks. However, research has found that changes in consumer smoking behaviors as a response to the reduction in tar deliveries appear to have undermined the intended benefits of reduced smoke yields. For example, lung cancers have appeared deeper in the lung as smokers have altered behaviors by inhaling more deeply, as well as more frequently. As a result, measures of health outcomes (such as rates of lung cancer) are not reduced as would be expected in relation to product changes. In addition, chemical analysis has demonstrated that some cancer-causing agents in tobacco products have increased even as others have been reduced. For example, design changes over the last 30 years have resulted in a significant reduction in measures of benzo(a)pyrene, but correspond to an increase in the tobacco-specific nitrosamine NNK, another significant cancer-causing agent. Thus, the complexity of the product chemistry has made it much more difficult to accurately assess and control health risks.

See Also Genetic Modification; Toxins.

GEOFFREY FERRIS WAYNE

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Cheroots and Bidis *See* South Asia; South East Asia.



Chesapeake Region

The Chesapeake region, encompassing the colonies of Virginia and Maryland, was neither the first nor the only area of Anglo-America where settlers cultivated tobacco. English immigrants established commercial tobacco **plantations** in the Amazon region and Guiana in 1609, four years earlier than Bermudans and Virginians, and several Caribbean island colonies were founded on the economic base of tobacco cultivation. Yet, after the fall of England's South American colonies and Providence Island to Spain and Portugal, and once Caribbean planters switched to the even more profitable staple of sugar from the 1640s, the Chesapeake became the New World's leading tobacco-producing region, and tobacco became a fundamental force in Chesapeake life, defining to a great extent its settlement patterns, society, and politics, as well as its economy.



plantation historically, a large agricultural estate dedicated to producing a cash crop worked by laborers living on the property. Before 1865, plantations in the American South were usually worked by slaves.

The Settling of Virginia

ORIGINAL PLANS. The first English colonists arrived in Chesapeake Bay aboard the *Susan Constant*, *Godspeed*, and *Discovery* in April 1607, settling Jamestown the following month. (The town was named after the English king and the colony in honor of the virginity of Elizabeth I.) The first migrants included thirty-five gentlemen, forty soldiers, a doctor, an Anglican minister, and a number of artisans and laborers. As there were no farmers or women, the group did not intend to form a self-sufficient agricultural community. The Virginia Company, the



A man dressed as a colonist sorts and grades tobacco leaves at a tobacco barn during a historical reenactment at Colonial Williamsburg, October 1997.© RICHARD T. NOWITZ/CORBIS

panegyric a speech or writing of high praise for a person or event.

organization that sponsored the settlement, did not originally intend to plant tobacco or indeed any crop in Virginia. Instead, its early settlers, like the Spanish conquistadors, were to conquer local peoples and collect gold, silver, and sassafras (believed to be a medicinal **panegyric**). When they failed to find these resources, they attempted to turn the colony into a trading post and only when this failed did settlers finally turn to tobacco agriculture.

EARLY DISASTERS, 1607–1624. Partly as a result of this misguided planning, the early years of English settlement in the Chesapeake were disastrous, though tobacco eventually proved crucial in rescuing the venture. Another problem was that Jamestown was located on a tidewater marsh, so settlers suffered from malaria, saline poisoning, and cholera ("the bloody flux") as their sewage washed back and forth in the tide. Half the settlers died within three months and only thirty-five survived the first winter. Also, without agriculture, the colony depended for food and new settlers on resupply ships from England. When a resupply fleet was scattered by a storm off Bermuda in October 1609, there followed a bad winter when, again, half the settlers died. Nor could settlers rely entirely on Amerindians supplying food. The local Powhatan

people fed the English until 1609, when, realizing they intended to stay permanently, they cut off their food supply and began attacking crops and livestock in a war that lasted until 1614. On 22 March 1622, after the emperor Powhatan died and was succeeded by his brother, Opechancanough, and following the murder of a werowance (chief), local Indians rose up and killed 350 colonists, one-third of the settlers, and it would have been worse if an Amerindian Christian convert had not given advance warning. In all, the Virginia Company shipped 7,500 people to the colony, but Virginia's population was only 1,200 in 1624. That year the Virginia Company was dissolved and in the following year Virginia became a royal colony.

Foundations of Successful Colonization

POLITICAL INSTITUTIONS. Though it was not clear in 1624 that the colony would last, the foundations of its survival had in fact been laid. One foundation was a stable political system that commanded settlers' respect. Rivalries among the original twelve councilors and weak leadership by president Edward Wingfield led to ineffectual government until Captain John Smith forced settlers to relocate and to grow food. Smith departed in 1609 following a gunpowder accident, although some historians suspect attempted assassination. Governors Thomas Gates (1611–1613) and Thomas Dale (1614–1616) enforced the **authoritarian** *Lawes Divine, Morall and Martiall* (1611) that may have helped the colony survive but were deeply resented. By 1618 Governor George Yeardley and the Virginia Company treasurer Edwin Sandys restored English laws and established political representation (at least for wealthier property holders) with the first meeting of the Virginia Assembly on 30 July 1619.

authoritarian demanding unconditional obedience; dictatorial

PRIVATE PROPERTY (HEADRIGHTS). Another foundation for colonial survival and prosperity was private property. Initially the Virginia Company owned the colony's land, but shareholders soon found it necessary to offer land to attract settlers. These plans culminated with the headright system wherein the Virginia Company granted fifty acres to all migrants who paid their own passage across the Atlantic, plus another fifty acres for every family member and servant they brought with them. By granting headrights the Virginia Company helped bring about its own bankruptcy, but it nevertheless helped created a viable society.

TOBACCO. Equally important, successful colonization required a profitable staple commodity, and Virginians found this in tobacco. The Chesapeake's native tobacco was *nicotiana rustica*, which was too bitter and unpalatable for commercial success. During the 1609 Bermuda shipwreck, though, John Rolfe had encountered the sweeter West Indian *nicotiana tabaccum* and in 1612 introduced a Trinidadian strand of it to Virginia. After some experimentation, Virginia exported its first four **hogsheads** containing 2,600 pounds of tobacco in 1614. Exports rose rapidly to 50,000 pounds in 1618 and 200,000 pounds in 1622. In these early years, tobacco cultivation threatened the colony's survival. With prices peaking at three shillings per pound, planters neglected food production in favor of tobacco cultivation and ruthlessly overworked their servants. As Virginian supply caught up with English demand,

hogshead a large wooden barrel formerly used to store and transport cured leaf tobacco. A hogshead typically held approximately 800 to 1000 pounds (350 to 450 kg) of tobacco.



Drawing of John Rolfe, Jamestown, Virginia, minding tobacco crop. Rolfe introduced tobacco cultivation in Virginia.
© CORBIS-BETTMANN

however, prices fell to three pence per pound by the mid-1630s, and the tobacco boom settled into steady growth in which the crop took its central place in the formation of Chesapeake economy and society.

The Settling of Maryland

THE CALVERT FAMILY'S PROPRIETORSHIP. The next stage in establishing Chesapeake tobacco society came with the founding of Maryland in 1634. Unlike Virginia, Maryland was neither a company nor a royal colony but a proprietorship (technically a **palatinate**) in the hands of the Calvert family. George Calvert, from a Yorkshire landowning family, was a courtier of James I who withdrew from public life because his Catholicism rendered him unable to take the Oath of Supremacy in 1625. James I nevertheless rewarded Calvert's service with the title

palatinate the territory of a feudal lord having sovereign power within his domain.

Baron Baltimore, and King Charles I granted his son, Cecilius Calvert, a charter for Maryland (named after Queen Henrietta Maria) in April 1632, two months after George died. One hundred forty migrants aboard the *Ark* and *Dove* reached Maryland in May 1634.

EARLY SUCCESSES. Maryland's founders benefited from the existence and experience of Virginians. They collected food supplies in Jamestown before settling at St. Mary's City, and the proprietor ordered that settlers grow food crops before cash crops. It helped too that the Piscataway Indians had been suppressed following the 1622 massacre, and the Yaocomico saw the colonists as possible allies against the Susquehanna. While colonial Maryland suffered many political convulsions, first with Virginia settlers already in the territory and afterward between Catholics and Protestants (despite Calvert religious toleration), Marylanders avoided the catastrophes that plagued early Virginia and soon established prosperity based on tobacco planting.

Tobacco Cultivation

PRODUCTION AND MARKETING. Within four years of settlement Marylanders exported 100,000 pounds of tobacco, and in 1640 the two Chesapeake colonies exported one million pounds. By 1690 the figure reached 25 million pounds and then dipped during the Nine Years War (1689–1697) and the War of the Spanish Succession (1702–1713), but by 1728 Chesapeake exports reached 50 million pounds and by the time of American Independence in 1776, 100 million pounds. Mass consumption (with 25 percent of adults smoking a pipe per day) appeared in England by the 1670s and throughout Europe by 1750. Demand was greatest among the French, and by the 1770s four-fifths of Chesapeake tobacco was re-exported from Britain to France. The **Navigation Acts** (1660, 1696) required Chesapeake tobacco to be exported directly to England or, after the Act of Union of 1707 that created Great Britain, to Scotland. Thereafter Glasgow became a major tobacco center, and Scottish factors established themselves in the Chesapeake (planters had previously traded directly to London merchants).



Navigation Acts laws passed by the British Parliament that subjected the American colonies to sell only to Britain, buy only from Britain, and ship only in British vessels. The Navigation Acts were one of the background causes of the American Revolution.

After Independence, European wars disrupted markets and drove production down until the 1810s. After that, U.S. production rose to 300 million pounds by 1859, although by then Maryland and Virginia produced only 37 percent of that total while production had shifted to North Carolina, Georgia, Tennessee, and especially Kentucky, where newer land was more productive and lighter soil more suited to the milder and increasingly popular Bright tobacco.

DIVERSIFICATION. In colonial times overproduction drove down prices, and overdependence on one product made planters vulnerable to price fluctuations and wartime disruption of trade. The Virginia Company and later Governor William Berkeley of Virginia attempted to encourage the cultivation of cotton, silkworm, flax, hemp, naval stores, sugar, rice, rapeseed, and various fruits and spices. Yet Chesapeake planters stuck tenaciously to tobacco as their staple, although the region was self-sufficient in food and indeed an exporter of grain and livestock products to the West Indies once planters there began neglecting food

John Rolfe

John Rolfe (6 May 1585–22 March 1622) played a fascinating role in early Chesapeake history. Besides being in the Bermuda shipwreck that inspired William Shakespeare's play *The Tempest* (1611) and bringing tobacco cultivation to Virginia, he also observed and recorded the arrival of the first slaves in Jamestown among other major events. Most famously, in 1613 he met and in 1614 he married Pocahontas, daughter of Chief Powhatan of the large Native American confederacy of tribes south of the Potomac River, and thereby helped bring an end to the first Anglo-Amerindian war in North America (1611–1614). On a subsequent trip to London, King James I snubbed Rolfe, affronted by the commoner marrying into Amerindian royalty (Powhatan was crowned a king by the English, though he owned fealty to James I). Sadly, Pocahontas died at the beginning of the return voyage to Virginia and was buried at Gravesend, Kent. Poignantly, given his role in improving Anglo-Amerindian relations, Rolfe died in Opechancanough's uprising in 1622.

production in favor of sugar cultivation. Only in the early to mid-eighteenth century did significant numbers of planters and farmers in western and northern Virginia and northern and eastern Maryland switch to wheat cultivation, giving the Chesapeake a much more diverse economy.

REGULATION. Tobacco production nevertheless required regulation, and planters attempted unsuccessful voluntary production limits to stem a fall in prices in the 1630s and from the 1680s. In the early eighteenth century concerns about the quality of Chesapeake tobacco inspired lawmakers in Virginia in 1730 and Maryland in 1747 to pass tobacco inspections acts wherein county inspectors burned poor-quality produce. Up to a third of produce was thereby destroyed. This policy hurt smaller yeoman farmers and tenants most especially, and they retaliated by cutting and burning gentlemen's plants in the fields. After the Revolution, states amended these laws so that while poorer farmers could still not export poor tobacco they could sell it locally instead.

Tobacco Society

POPULATION. The creation of a viable society in the Chesapeake, made possible by political stability and a tobacco commodity combined with widespread landownership, meant that the population rose steadily after the demographic disasters of the early years. From just 1,200 souls in 1624, the population rose to 35,446 in 1660, 190,000 in 1760, and 2.3 million in 1860. For much of the seventeenth century the populations of Maryland and Virginia remained predominantly immigrant. By the 1690s, however, after the equalization of sex ratios and after birth rates overtook death rates, the Chesapeake had a predominantly Creole (American-born) population that developed an increasingly powerful and distinct local identity and culture that were profoundly shaped by tobacco. In *The Present State of Virginia* (1724) Reverend Hugh Jones provided a sense of how central tobacco was to Chesapeake life when he wrote that the crop is "our meat, drinke, cloathing and monies." (Indeed, tobacco was used as currency in the Chesapeake throughout the colonial period and continued to represent money afterward.)

SETTLEMENT PATTERNS. Tobacco cultivation largely determined settlement patterns. Settlement began on the banks of the deep and wide rivers leading off the bay, so that planters could load their crops directly on to oceangoing vessels. Only after the riverbanks were full did settlement move inland. Even then, the land-intensive nature of the crop closely shaped the human geography of the Chesapeake. To avoid soil exhaustion (manure was thought to taint tobacco, although planters experimented with various forms of fertilizer), tobacco cultivation usually required at least forty acres of land per worker: three acres planted in tobacco, the rest in food crops or fallow. Even the smallest tobacco farms, therefore, had to be a minimum of forty acres in size, while the largest plantations ran to tens of thousands of acres.

The soil-exhausting potential of tobacco therefore required that settlement spread rapidly throughout the region. Virginia tobacco

planters had already settled in northern North Carolina before the Carolinas officially became colonies in 1660. By the early eighteenth century, settlement reached the backcountry, or piedmont region, near the Allegheny Mountains. After the Revolution, Chesapeake planters established tobacco as the principal crop in Kentucky and Tennessee. But the land-intensive quality of tobacco also led to a thinly spread population and an absence of towns. Courts, churches, taverns, and markets tended to be located at crossroads near the center of counties, not in villages. To counter the consequent image of rusticity Governor Francis Nicholson of Virginia ordered the building of capital cities at Williamsburg, Virginia, and Annapolis, Maryland, in the 1690s.

INDENTURED SERVITUDE. In addition to being land-intensive, tobacco was labor-intensive, and it thus powerfully shaped the nature of Chesapeake social relationships. Early colonial planters relied mainly on indentured servants as laborers, men and women who received free passage across the Atlantic in return for typically four to seven years of service to the planter who paid their fare. Some 100,000 servants migrated to the Chesapeake in the seventeenth century, predominantly from the southwest of England (although later servant migrants came from all over the British Isles), constituting over 80 percent of all migrants. In the peak period of the 1630s to 1650s up to 1,900 servants migrated there annually.

Servants were housed, fed, and given so-called freedom dues by masters at the end of their terms (usually a set of clothes, tools, and a small amount of food and money, depending on local custom). Though servants had certain rights, their status was lower than that of agricultural servants in England who were employed annually and were members of local communities and often neighbors of their masters. In the newer and looser communities and more intensive economy of the Chesapeake, servants were often treated more as commodities and with less humanity.

FROM SERVITUDE TO SLAVERY. The commodification of labor grew worse, though, for from the 1660s slavery began to displace servitude as the primary workforce on Chesapeake tobacco farms and plantations. The first twenty slaves arrived in Jamestown in 1619 aboard a Dutch privateer that had been raiding the Spanish West Indies. With a ready supply of cheap servants from England, though, slavery remained a minor institution for some forty years.

From the 1650s, however, the English economy improved and new colonies opened up in New York, New Jersey, the Carolinas, and later Pennsylvania and Delaware, so the supply of servants to the Chesapeake declined while their prices increased. By that time, Chesapeake planters had acquired the capital necessary to purchase significant numbers of slaves, who were costly to transport, whose service was lifelong, and who were therefore expensive. By 1720, slaves had overtaken servants as the region's primary source of labor, and indentured servitude gradually disappeared by 1830. Meanwhile, the slave population of the Chesapeake rose from only 950 in 1660, to 8,000 in 1710, 49,000 in 1760, and 578,000 in 1860. From the early eighteenth century, slaves represented around a third of the region's inhabitants.

chattel personal property, other than real estate, that may be bought, sold, or pledged against a debt.

paternalistic fatherly; acting as a parent. Although paternalism presumes an obligation for the stronger to provide for the weaker, it implies superiority and dominance over them as well. For example, slave masters often had paternalistic feelings for their slaves, whom they considered child-like.

SLAVERY. As long as slave numbers remained small, slavery remained a relatively moderate institution. Some early Chesapeake slaves mixed socially with and were treated similarly to white servants, even being freed after a number of years of service, although the historical evidence is inconclusive regarding how extensive this was. In any case, once servant numbers declined and planters became more reliant on slave labor, conditions deteriorated. Virginia and Maryland enacted the first slave codes, defining slaves as **chattels** for life and closely regulating their lives, in the 1660s, and these laws were codified in 1705.

The history of tobacco affected slave life in other ways besides creating such great demand for their labor. Because English settlers learned to cultivate tobacco from Amerindians, planters were able to impose the harsh sunup to sundown gang labor regime on Chesapeake slaves. In the colonial Carolinas, by contrast, planters depended on African expertise in rice production, so slaves created a task system that left them more free time. Also, rice being more lucrative that tobacco, Carolina plantations tended to be larger and their owners more often absentees, taking little interest in their slaves' lives, while the normally resident owners of smaller Chesapeake plantations tended to be more **paternalistic** as slaveholders. Carolina slaves therefore tended to be more culturally autonomous and to retain more of their African traditions than did slaves in the Chesapeake. Even so, slaves in the Chesapeake had some measure of autonomy and, once a large Creole community appeared by the 1740s, they laid the foundations of a new and profoundly vital African American culture.

The Civil War and the End of Slavery

Slavery survived in the Chesapeake until the Civil War (1861–1865), although the history of Maryland and Virginia diverged drastically during this conflict. Most Maryland farmers had switched to wheat production long before the Civil War, and dependence on slavery was relatively weak in this so-called border state, allowing President Abraham Lincoln to keep Maryland in the Union (although many Marylanders fought for Southern regiments). Virginia (and other tobacco states) seceded from the Union following the Battle of Fort Sumter in April 1861. Richmond became the Confederate capital and from the first Battle of Bull Run in July 1861 to General Robert E. Lee's surrender at Appomattox in April 1865 much of the war was fought on Virginian soil. Even there, though, there were Union loyalists, especially in the mainly wheat-growing west where several counties seceded from the Old Dominion to form the state of West Virginia in 1864.

See Also British Empire; Native Americans; Plantations; Slavery and Slave Trade; United States Agriculture.

STEVEN SARSON

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Chewing Tobacco

Chewing tobacco was probably the earliest form of tobacco used in the Americas. In its simplest form, it requires no special preparation, although some Native Americans did mix lime with the tobacco to increase its effect. Tobacco chewing was especially prevalent in the vicinity of the Andes Mountains where coca leaf was also chewed.

When Europeans arrived in America, they learned the use of tobacco from Native Americans and took the habit back to Europe. As the tobacco habit spread throughout the world, few people practiced tobacco chewing, but one major exception was, for example, sailors who could not safely smoke onboard ship. It is difficult to ascertain exactly how much tobacco was consumed by chewing because prior to the 1800s most tobacco was manufactured in the same form, regardless of how it was consumed.



Baseball players Don Zimmer of the Brooklyn Dodgers (l.) and Nellie Fox of the Chicago White Sox (r.) chewing tobacco, 1955 © BETTMANN/CORBIS

In most countries, excluding Scandinavia and the United States, tobacco chewers represented a small minority of the population. In particular, tobacco chewing was the preferred method of tobacco consumption in Sweden well into the twentieth century. Not until the 1920s did oral consumption of tobacco begin to decline. Moreover, not until 1951 did cigarettes constitute 50 percent of tobacco's consumption in Sweden, ten years after this occurred in the United States.

During the nineteenth century, tobacco chewing was particularly prevalent in the United States. Exactly why this happened is not certain, but it became widespread and, in 1880, 55 percent of tobacco produced in the country was **plug** tobacco, a form of chewing tobacco. While plug tobacco's percentage of total production fell after 1880, gross production continued to rise until 1917, when it reached its all-time peak of 206 million pounds.

plug a small, compressed cake of flavored tobacco usually cut into pieces for chewing.

Throughout most of the twentieth century, chewing tobacco usage declined in the United States. Formerly, the population had been largely rural and spent much time outdoors. As the country became more urban and spent more time indoors, tobacco chewing and the accompanying expectoration came to be looked upon as unsanitary and unseemly. Only in the 1980s was this trend halted, as increasing restrictions on smoking in public caused some smokers to turn to various forms of chew when unable to smoke.

Chewing tobacco in the United States was for a long time associated with baseball players. During ballgames, the player with the huge chaw in his mouth and a package of chew in his back pocket was an image frequently seen in photographs and on television. By the 1990s, pressure from health advocates resulted in the banning of this practice.

Plug and Twist

In its earliest form, chewing tobacco was just a leaf torn from the plant. The need to preserve, flavor, and then transport the tobacco led to different forms of processing. One of the earliest ways that tobacco was prepared was in the form of a twist, by which leaves were twisted together to form a rope of tobacco that could be cut into smaller lengths for ease of transporting. The user would cut off as much as he needed for chewing, smoking, or grinding into **snuff.** The manufacture of twist tobacco was simple and was mechanized prior to 1667, when an illustration of the process was published.

Plug tobacco was said to originate with early settlers in Kentucky or Missouri who placed cut tobacco, sweetened with honey, in holes drilled in green maple or hickory logs. Wooden plugs driven into the holes compressed the tobacco, and the drying wood absorbed the excess moisture from the tobacco. The log was then split, and the plugs of tobacco could then be consumed.

By the early 1800s, the process of producing plug tobacco had been somewhat mechanized. Small hand- or animal-powered screw presses were used to create the plug until around 1860 when steam-powered **hydraulic** presses came into use. These presses worked faster and were more efficient at equalizing the moisture level within the plugs; consequently, the plugs did not spoil as readily.

As plug tobacco became increasingly popular, two basic types evolved. Navy plug, so called because it was originally produced for sale to the U.S. Navy, was made with heavily sweetened Burley tobacco with a Bright tobacco wrapper leaf. The second variety, flat plug, was produced entirely with Bright tobacco, which did not absorb as much sweetening as the Burley tobacco used in navy plug.

Much of the country, especially the northern states, preferred very sweet chew. This put producers using Burley tobacco at an advantage because of its greater ability to absorb flavoring. The R.J. Reynolds Company, a major producer of flat plug, looking for a way to compete with navy plug producers, pioneered the use of saccharine as a sweetener in chewing tobacco. Sweeter than sugar and, at the same time, cheaper per unit of sweetness, the additive enabled R.J. Reynolds to compete and, at the same time, decrease production costs.

Scrap Tobacco

Toward the end of the nineteenth century, as cigars increased in popularity in the United States, enterprising tobacconists developed a new form of chewing tobacco. At the time cigar scraps and clippings frequently were being bagged and sold as cheap smoking tobacco. Some of this tobacco was probably chew, but the tobacco was not widely used for chewing until someone thought to soak the scraps in sweetening. The Bloch Brothers Company of Wheeling, West Virginia, with its Mail Pouch brand, was among the earliest producers of this type of tobacco.

The twentieth century saw the development of cigar-making machines, which did not yield the residue used for scrap tobacco. While some cigars continued to be made by hand, their number steadily decreased. At the same time, scrap tobacco increased in popularity.



snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

hydraulic operated through the force of liquid, typically water or oil. For centuries, mill machinery was powered by hydraulic (water-operated) wheels.

Plug Wars

In the mid-1890s James Duke, the president and founder of American Tobacco Company, expanded into the chewing tobacco market by acquiring plug and smoking tobacco firms such as the National Tobacco Works and the J.G. Butler Company. Most of the remaining large firms, including R.J. Reynolds Tobacco and Liggett & Myers, were soon acquired as well. Duke then purposely sold plug at prices below cost to wear down his competitors.

The cost of competing in the "Plug Wars" drove many of Duke's major competitors, including Peter Lorillard & Company, to join the Tobacco Trust. In 1911 American Tobacco Company was dissolved by the federal government for violation of the Sherman Antitrust Act of 1890.



Today's U.S. brands of smokeless tobacco include chewing tobacco and snuff, as exemplified in this 2001 photograph. During the 1990s, the production of chewing tobacco in the United States decreased while snuff production grew. AP/WIDE WORLD PHOTOS

Price had been the original selling point, but increasingly, this form of tobacco came to be preferred. Therefore, producers began using fewer scraps and buying more leaf, to the extent that, eventually, scraps were no longer used. Today, this variety of chewing tobacco is known as loose-leaf chewing tobacco.

Fine-Cut and Long-Cut Tobaccos

Fine-cut and long-cut tobaccos, when used for chewing, are considered oral snuff. These same tobaccos are used for smoking, although tobacco used for chew is generally sweeter. In the United States their use has remained small but steady. The growth in chewing tobacco use in the 1980s in America was primarily in this category, and in Sweden fine-cut and long-cut tobaccos have long been the preferred types of chewing tobacco. Today, more than any other country, Sweden has a higher percentage of users who prefer this form of tobacco.

Chewing tobacco has existed for as long as people have used tobacco. As the restrictions on smoking in public places continue to be adopted, along with incessant warnings of the dangers of primary and secondhand smoke, perhaps reflecting on chewing tobacco's longevity will give smokers "something to chew on."

See Also Additives; Industrialization and Technology; Snuff.

JOSEPH PARKER

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China

Tobacco for smoking was introduced by European traders during the late sixteenth and early seventeenth centuries, probably on Spanish or Portuguese vessels from Manila and through the ports in Fujian. It was referred to as *danbagu* or *danrouguo*, transliterations of tobacco, although the substance also became commonly known as *yancao* ("grass for smoking"), *jinsiyan* ("golden silk smoke"), or *jinsicao* ("golden silk grass"). While rulers of the Qing dynasty (1644–1911) repeatedly tried to ban smoking in the seventeenth century, the tobacco plant rapidly became a popular crop, particularly in the tropical south.

Yao Lü (d. 1622) was an early observer of the smoking habit: "You light one end and put the other in your mouth. The smoke goes down the throat through the pipe. It can make one tipsy, but it also protect against malaria." Tan Qian (1593–1657), a historian of the late Ming dynasty, reported that tobacco was grown extensively in Guizhou province by 1622. Along the coast tobacco conquered the local population in the first decades of the seventeenth century, as "even boys of three feet tall" acquired the habit of smoking. By 1658, as the scholar Shen Chiran observed, tobacco had become so popular that men, women, and children held pipes in their hands and carried pouches of tobacco around their waists.

A passage in the *Siku quanshu*, dated 1701, noted that many smoked tobacco, regardless of social class, while farmers planted the crop everywhere and made enormous profits. The rage for tobacco smoking was noted by Lord Macartney in 1793. The British ambassador observed that almost all the locals he encountered smoked tobacco, while **snuff** was also taken in small quantities. While scholars know little about the changing patterns of tobacco cultivation in late imperial

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.



Map of China showing all provinces. XNR PRODUCTIONS, INC. BERKSHIRE PUBLISHING GROUP

China, by the nineteenth century it was widespread in most regions. In Yunnan province, fo0r example, every farmer reportedly reserved a corner of his field for its cultivation. The leaves would be dried for several weeks, with equal exposure to shade and sun. Leaves were rich in **alkaloids,** explaining the high nicotine content of local tobacco, surpassing the strongest European products.

alkaloid an organic compound made of carbon, hydrogen, nitrogen, and sometimes oxygen. Alkaloids have potent effects on the human body. The primary alkaloid in tobacco is nicotine.

Medical Use of Tobacco

Scholars praised the alleged medical benefits of tobacco, despite early imperial edicts against its use. Zhang Jiebin (1563–1640), one of the first medical writers to comment on tobacco, concluded that soldiers who smoked in Yunnan were protected from malaria, while its juice was a potent antidote against lice on the scalp; its fine quality earned it the name "golden silk smoke" (*jinsiyan*). He recommended occasional smoking, but cautioned that excessive use could cause the smoker to faint.

Fang Yizhi (d. 1667), another medical authority, prescribed it against rheumatism and the common cold, but warned that too much smoke could lead to "dried-up lungs" and premature death.

Qing author Wang Ang (b. 1615) remarked that smoke "circulates throughout the whole body," invigorating the smoker and suppressing hunger. Boiling the tobacco and applying the hot paste to the affected body parts could enhance its medical properties. In the beginning of the eighteenth century, the celebrated medical writer Quan Zuwang (1705–1755) even lauded tobacco as a medical panacea in his *Danbagu fu* (An essay on tobacco), noting that neither alcohol nor tea could be compared to tobacco, which could cheer the spirit when depressed and guide the *qi* ("vapors," or "energy") up spiritual passages. A "plant of immortality" and a "necessity for daily life," Quan believed tobacco was as an effective gastric remedy and a reliable hunger suppressant.

The perceived medical benefits of tobacco and the rapid inculturation of smoking as a new mode of delivery probably thrived on the positive meanings traditionally associated with smoke. Incense sacrifice originated in Buddhist India and was incorporated into the ancestral rites during the Song, aided by Buddhist scholars such as Channing (919–1001). Healers used the fumes of burning herbal drugs to exorcise demons and release evil *qi*. Moxibustion, in which a herbal substance was burnt on the skin as a counterirritant, drew on the healing powers attributed to smoke. As a consequence of these positive connotations, tobacco was widely cultivated in China, although little research so far has attempted to evaluate its social and economic importance.

Pipes and Snuff

Ordinary pipes were small in comparison to contemporary European pipes, often consisting of a simple brass bowl and a brass or stone mouthpiece, connected by a reed or bamboo stem. On the other hand, the pipes used by the wealthy could be expensive objects of conspicuous display, made of gold, silver, copper, or cast iron, often embellished with black wood or ivory at both ends. **Water pipes** were also used in many parts of the country, having probably appeared in China via South East Asia and Inner Asia a few centuries before. By the Qianlong period (1736–1796), according to one observer, water pipes were made in Gansu province. As Shu Wei (1765–1816), a noted poet and keen smoker, remarked, water pipes were offered to entertain guests, while large sums of money were spent on pipes made of bronze. Clean water was poured into the pipe, which was held with one hand, the bubbling sound also being enjoyed by smokers, some of whom would rather miss a meal than give up a smoke. The gradual spread of the water pipe led to the introduction of a new smoking terminology, as by the 1820s the term *hanyan* ("dry smoking") came to be used in contrast to water pipe smoking, known as *shuiyan* ("water smoking").



water pipe also called a hookah, a tobacco pipe in which the smoke is filtered through a bowl of water. The smoker inhales through a mouthpiece connected to the pipe by a flexible tube. Water pipes are traditional in the Orient.

Tobacco was also taken as snuff in China from the end of the sixteenth century onward, although its use initially remained confined to imperial elites in the north of the country. During the late seventeenth century, an imperial factory began to produce snuff, which often



opium an addictive narcotic drug produced from poppies. Derivatives include heroin, morphine, and codeine.

contained expensive additives such as musk. Tobacco connoisseurs prized finely crafted snuff bottles, as they did expensive **opium** pipes, which would appear on the market in the following two centuries. Snuff was also used as a means of self-medication, for instance in order to alleviate the symptoms of colds and for clearing the nostrils. Wang Shizhen (1641–1711) thus noted that that snuff (*biyan*) was used to focus one's vision and to cure a variety of illnesses. By the early eighteenth century, snuff had crossed the social divides and appealed to a wider public, as Shen Yu expressed his alarm at the fact that even "peddlers and shepherds" regularly resorted to the substance.

The Ascendance of the Cigarette

Cigarettes were imported into China for the first time in the 1890s. Traveling on foot just before the downfall of the Qing dynasty, Edwin Dingle witnessed how the foreign cigarette was sold at wayside stalls by vendors of monkey nuts and marrow seeds. According to his observations, no trade prospered so much in Yunnan as that in foreign cigarettes, as garish posters advertising them appeared on the walls of temples, private houses, and official residences. With the spread of the anti-opium movement, all social classes and demographics—high and low, rich and poor, women and children—smoked cigarettes. It was offered at small celebrations, while a packet of cigarettes instead of a whiff of opium was offered when people called upon high officials in Kunming.



ubiquitous being everywhere; commonplace; widespread.

The cigarette became a **ubiquitous** feature in the 1910s, even in the remote interior, as hand-painted advertisements adorned pagodas, street corners, and city walls. Although the number of people who substituted cigarettes for opium is impossible to calculate, one observer was struck in 1915 by the "astonishingly rapid" spread of cigarette smoking among men and women "of all classes and ages, from ten years up." Tobacco use thus spread with opium prohibition. As much as the nineteenth century was dominated by opium, the cigarette defined the twentieth century in China. Within several decades the ready-made cigarette superseded not only opiates but also other forms of tobacco smoking, including the water pipe and hand-rolled native produce. Cigarettes were light and palatable, easy to store and handy to use, capable of delivering nicotine straight to the lungs as the smoke could be inhaled deeply in a short span of time perfectly attuned to the faster pace of industrial life. The vast majority of workers surveyed by the Shanghai Bureau of Social Affairs in the 1930s, for example, smoked cigarettes, and only 3 percent resorted to native tobacco.

The number of cigarettes legally imported into China multiplied nearly tenfold between 1915 and 1924 to some 7 billion. In 1915 the Life Extension Institute in New York, a supporter of medical missions, claimed that the Anglo-American Tobacco Company was distributing tens of millions of cigarettes free for the avowed purpose of planting the habit in the wake of the opium habit. British American Tobacco's greatest success was indeed in China, where an integrated system of mass distribution and production was created between 1905 and 1922, including modern factories and camel trains fanning out across the hinterland. Native slogans and bright placards appeared in advertising campaigns throughout the country; a huge clock sign touting Ruby Queen



Hatamen Cigarettes poster, c. 1932. Cigarette smoking spread in China in the early twentieth century as opium use was increasingly prohibited. © SWIM INK/CORBIS

Cigarettes was built in Shanghai with 10-foot-square neon characters. The company prided itself on combining business with humanity by weaning local people from opium and teaching them to smoke North Carolina cigarettes. Delivered in tin-lined wooden cases, cigarette imports grew to almost half a billion a month in a number of provinces in the north by the 1930s.

The American government was a shrill opponent of opium and other **psychoactive** substances, although it had few reservations about the growing cigarette industry from which it stood to gain fiscally. The cigarette, unlike opium, had few enemies in China. If opium was decried as poison, cigarettes were promoted as a healthy and modern consumable. Even renowned medical publications denied any health hazards, and opposition to cigarette smoking stemmed mainly from a minority of foreign temperance activists.

One exception was Herbert Lamson's *Social Pathology in China*, published in Shanghai in 1935. This work referred to opium in one sentence but condemned nicotine as the real poison, since it tended to raise blood pressure, decrease powers of prolonged exertion, and increase the

psychoactive having an effect on the mind of the user.

habit of spitting. Consumers, on the other hand, thought that foreign cigarettes were elegant to smoke, convenient to carry, and fashionable to display. They also enjoyed their refreshing taste. With the huge population movements in the republican period, cigarettes were marketed as "the best companions of modern travelers." The ready-made cigarette, in a context of increased geographical and social mobility, made the habits of sociability fostered by opium smoking even more popular: As a sign of conviviality, friendship and gratitude, it was shared in a ritual of exchange that transcended the practical as well as the social constraints of opium smoking. As opium pipes were increasingly depicted as vehicles of diseases in an age marked by new regimes of moral and medical hygiene, accused of spreading syphilis, tuberculosis, or pyorrhea, the cigarette was seen as "hygienic" (*weisheng*).

The match further facilitated the spread of the cigarette. Before its advent, fire was obtained by striking a steel blade on flint. The first match appeared in China in 1865, between 2,000 and 3,000 boxes being imported in the following years to reach 100,000 boxes in 1891 as the country rapidly became the world's biggest market for matches. By 1928 almost 200 different brands were competing for consumer attention. Lighters also spread in the republican period, some producers even including one with each pack of cigarettes as a marketing tactic. The cigarette, the match, and the lighter thus emerged as the new technologies of smoking culture and the symbols of a desirable modernity.

With the advent of the Chinese Communist Party (CCP) in 1949, the cigarette became the official intoxicant, as committee meetings of party delegates were held amid clouds of smoke, the floor covered in cigarette butts. Smoking came to symbolize the relentless sequence of struggle sessions, deliberations, and resolutions, while in the war films of the early 1950s decisive action by political leaders was often expressed by the energetic throwing of burning cigarettes on the ground. Tobacco cultivation and cigarette production were thus vigorously promoted by the CCP, as the cigarette was allowed to take over the everyday rituals and social roles of opium within a thriving smoking culture which appeared impervious to the deleterious effects of nicotine. Cigarettes evoked power and prestige and were promoted by the Communist Party's top leadership: Deng Xiaoping expressed his gratitude to the cigarette as the reason for his political longevity.

By the end of the twentieth century China had emerged as the largest market for cigarettes and the world's leading tobacco producer. China, for example, produced more than 2 billion kilograms of leaf tobacco in 2000, representing more than one-third of the world's production. However, the country is also a substantial market for foreign leaf tobacco, as more than 320 million people are smokers, about one-quarter of all smokers around the world. The China National Tobacco Corporation, a government-owned monopoly, has an annual production of 1.7 trillion per year, while those who can afford it prefer to smoke imported cigarettes.

Contrary to the late imperial period, gender lines are very marked when it comes to tobacco consumption. The vast majority of smokers are male adults; only 4 to 7 percent are women. The tobacco industry contributes about 10 percent of the country's revenue, and has been the



A shopkeeper measures out a quantity of tobacco © HULTON-DEUTSCH COLLECTION/CORBIS

country's top revenue generator since the 1990s. There are few signs that smoking is on the decline.

See Also Japan; Origin and Diffusion; Philippines.

FRANK DIKÖTTER

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Christianity

When Jesus was born, there was no tobacco in Palestine or anyplace else in the "Old World." Thus, neither the Hebrew Bible nor the Christian gospels have anything to say about tobacco. Nevertheless,

from 1492 onward, the history of tobacco and Christianity intersect in many places. Tobacco was an argument for and hindrance to the evangelization of Native Americans, a cause for theological conundrums, and an inducement to immorality. Despite the generally negative view of tobacco held by religious authorities of diverse Christian denominations, clerics contributed to the spread of tobacco, and ecclesiastical institutions benefited from taxes on its sale. Today, basing their opposition on scientific research showing tobacco's harmful health effects, many church groups actively oppose the global tobacco industry, and some denominations forbid their members from consuming tobacco.

Tobacco and Diabolical Idolatry

Because Ferdinand and Isabella, known as the "Catholic Kings," sponsored Christopher Columbus's inadvertent voyage to the Americas, the first European power to colonize in that hemisphere was Spain. The rulers of Spain quickly sought a papal bull to legitimize their territorial claims: In May 1493 Pope Alexander VI ceded the papal bull known as the *Inter caetera divinae*, which gave the Spanish Crown full and perpetual dominion in America in return for bringing people into the Christian faith. Accordingly, from the beginning of the colonial project, it was important to establish that the indigenous peoples of America lay well outside the community of Christians and to identify them as **heathen** and, oftentimes, as idolatrous.

heathen any person or group not worshiping the God of the Old Testament, that is, anyone not a Jew, Christian, or Muslim. May also be applied to any profane, crude, or irreligious person regardless of ethnicity.

This partly explains why, for the first eighty or so years of the European presence in the Americas, tobacco was identified as a manifestation of Indian barbarism, idolatry, and even diabolical intervention. In 1535, the first published reference to tobacco appeared in *Historia General de las Indias* (General History of the Indies), authored by Gonzalo Fernández de Oviedo, a conquistador-turned-chronicler. The first mention of tobacco appeared in a section entitled the "crimes and abominable customs and rites" of the indigenous people of Hispaniola (Taíno). Oviedo introduced the section on tobacco with the statement, "The Indians of this island have among other vices one that is very bad, which is taking smokable things which they call *tabaco* in order to leave their senses." Thus, he began by singling out tobacco use as a particularly vile example of Indian vices. Later, when describing the Caquetío Indians (northern Venezuela), he identified tobacco as a substance that allowed Indian shamans to summon and communicate with the Devil. Oviedo's works influenced subsequent European chroniclers' and historians' views of tobacco and initiated a long-lasting legacy of stigmatizing tobacco as an accessory to pagan rites and a diabolical influence.

Oviedo was motivated to demonize Indian religion—and so expose tobacco as a manifestation of barbarism—to justify the claims and depredations of the conquistadors. Others were committed to the evangelical project and sought to find the best way to convert Native Americans into Christians. At first tobacco was of little concern as missionaries focused on practices more obviously at odds with Christian beliefs, such as human sacrifice in the former Aztec domains of Mexico and what they took to be "idol worship" throughout the Americas. By the second half of the sixteenth century and the seventeenth century, however, some clerics, recognizing the integral place of tobacco in many indigenous religions, viewed native tobacco practices as a hindrance to

genuine Christian conversion. Accordingly, in 1556, the synod of Santa Fé in Colombia prohibited Indians from growing or using tobacco. In the early seventeenth century, a cleric in Mexico discovered that "idolatry"—or traditional Mesoamerican beliefs and practices—was rife among his parishioners in central Mexico. His report, entitled "Treatise on the Heathen Superstitions and Customs That Today Live Among the Indians Native to New Spain," documented the pagan vestiges in the rites used by midwives to deliver babies, doctors to cure illness, farmers to rid growing fields of anthills, theft victims to recover stolen goods, fishermen and hunters to catch fish and birds, woodcutters to fell trees, travelers to protect themselves on long journeys, and householders to ward off misfortune from newly constructed houses. In all of these he detected the malign influence of tobacco lurking. He found that even the medicinal uses of tobacco were intertwined with beliefs about tobacco's divinity; healers would pray and summon deified tobacco as they applied it to wounds. By that time, however, tobacco was used as much, perhaps even more, by the colonial elite and residents in Spain, so there was no discussion of outlawing tobacco.

Catholic Orthodoxy

Even as tobacco became folded into a discourse of Indian idolatry, some observers, including Oviedo himself, recognized that increasing numbers of Christians, as well as pagans, ranked among tobacco devotees. Many such users cited tobacco's purportedly salubrious effects, but clerics such as Bartolomé de las Casas condemned it as a vice. He lamented that even when reprimanded, these smokers insisted that "it was not within their power to quit." By the second half of the sixteenth century, it was clear that the tobacco habit was well rooted in the New World among Europeans and Africans, along with the Indians. There soon appeared a flurry of Catholic Church edicts concerning tobacco use that targeted **Creoles** (European inhabitants in the Americas) and Europeans.



Creole originally, a person of European descent born in the Spanish colonies. Later, the term was applied to persons of mixed European and African descent. As an adjective, it can describe admixtures of European and African cultural components such as language, cookery, and religion.

Given tobacco's diabolical and pagan associations, it is striking that there was no serious effort to ban tobacco. Rather, Church edicts and theological guidelines sought to define orthodox usage and prevent tobacco from contaminating sacred spaces and activities. The earliest directives targeting European tobacco consumers related to worries that tobacco consumption might interfere with transubstantiation during mass (the Roman Catholic belief that the bread and wine in the Eucharist become the body and blood of Christ). A provincial synod that met in Lima, Peru, in 1583 ruled that priests could not consume tobacco before administering communion:

> *It is forbidden under the penalty of eternal damnation for priests to take tobacco before administering mass whether taking tobacco or* sayre *(the Peruvian term) in smoke or* ***snuff,*** *by way of the mouth, or the nostrils, even under the guise of medicine.*



snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

Likewise, in 1585, a provincial meeting in Mexico ruled that "because of the reverence which should be shown in the taking of communion," no priest should take tobacco before administering mass, nor should its use taint anyone receiving communion. The overt concern was that by ingesting tobacco, priests would break the condition of a total fast required for the wafer to become the body of Christ.

By the early seventeenth century, tobacco had become well entrenched in the daily habits of increasing numbers of people living in Europe. Theological regulation followed close behind. Treatises in Catholic Europe echoed the Latin American synods, insisting that priests should abstain from tobacco before administering communion on the grounds that it interfered with transubstantiation. However, other authorities disagreed. In the mid-seventeenth century, the Italian theologian Antonio Diana stated, in his treatise on canon law, "I respond negatively to the question posed, namely whether the consumption of tobacco in leaf, powder or smoke impedes communion, for tobacco in leaf and powder is consumed through the nose and therefore does not break the natural fast because it is not consumed by an eating action which is done only with the mouth." But there was no clear consensus, and local synods appeared to decide the matter themselves; in 1685, the Council of Tarragona threatened excommunication to those who smoked or chewed tobacco before (or an hour after) saying mass or receiving communion.

More generally, some Church authorities viewed tobacco as filthy (and thus unsuitable for Church or other sacred spaces), generative of other vices (such as drunkenness), and generally suspect because of its pagan origins. In 1642 Pope Urban VIII issued a bull that forbade the smoking or taking of tobacco in churches or in their environs in the archbishopric of Seville, under penalty of excommunication. The bull called attention to the fact that tobacco abuse had reached the point that tobacco stained the floor and its odor pervaded church. Similarly, in 1650, Pope Innocent X threatened excommunication for those who committed sacrilege by using tobacco in St. Peter's. In 1642, the vicar general of Seville also forbade ecclesiastics, "be they regulars or seculars, and men or women, and of whatever estate, trade, condition, or dignity," in the archbishopric from using tobacco "in public." The edict called attention to the scandal caused by the uncontrolled use of tobacco by the clergy "at all hours, in all places, with publicity." In addition, discomfort about tobacco's pagan origins lingered. A pamphlet published by one of the proponents of the 1642 papal bull argued that the "idolatrous priests of the Indies invented and introduced it . . . so that the Devil, by the properties of tobacco, could affect their imagination."

The repetition of such edicts makes it clear that clergy were a conspicuous subset of tobacco devotees. In the case of the Italian priest Joseph of Cupertino (d. 1663)— revered for his mystical visions, asceticism, and levitations—his snuff habit jeopardized efforts to make him a saint. Opponents of his canonization charged that Joseph's frequent recourse to snuff made him unfit for sainthood. However, his advocates argued that he took snuff for its health benefits, and, more importantly, because of his humility. They insisted that with the smell of tobacco, he disguised the great odor of sanctity that he emitted and that suffused his cell, thereby proving that he did not seek to exalt himself over his brothers and that he was free of the sin of pride. In fact, Joseph's canonization did not succeed until after Pope Benedict XIII rescinded the prohibitions against the use of tobacco by the clergy in sacred places.

The church with the least tolerant policies toward tobacco was the Russian Orthodox Church. In 1634 the patriarch of Russia categorized tobacco use (smoke and snuff) as a deadly sin, leading the czar to prohibit its use. First-time offenders received whippings and nose slitting, whereas repeat offenders faced the death penalty. The prohibitions

remained in effect until the end of the seventeenth century, when Peter the Great gave **concessions** to an English joint stock company to import tobacco in return for an ample sum.



concession a grant of land, usually by a government, to produce and market certain commodities or perform certain services for profit. Agricultural concessions were sometimes offered by European governments to encourage immigration.

Protestant Responses

In Protestant Europe, the approach to tobacco resembled that of Catholic regions. Although many clerical authorities reviled tobacco, few serious efforts were made to ban it outright. The most famous early critic of tobacco on religious and health grounds was James I. As the king of England, James I was also head of the Anglican Church. In *A Counterblaste to Tobacco* (1604), he fulminated, "[T]here cannot be a more base, and yet hurtful, corruption in a Country, then is the vile use (or other abuse) of taking Tobacco in this Kingdom." He vilified tobacco and its users by calling attention to its Indian origins:

> *What honor or policy can move us to imitate the barbarous and beastly manners of the wild, godless, and slavish Indians, especially in so vile and stinking a custom? . . . Shall we, I say, without blushing, abase our selves so far, as to imitate these beastly* Indians, *slaves to the Spaniards, refuse to the world, and as yet aliens from the holy Covenant of God? Why doe we not as well imitate them in walking naked as they do? in preferring glasses, feathers, and such toys, to gold and precious stones, as they do? yea why do we not deny God and adore the Devil, as they do?*

More particularly, he charged that those who abused tobacco "sinned against God," for they were guilty of lust and drunkenness. "Are you not guilty of sinful and shameful lust . . . that although you be troubled with no disease, but in perfect health, yet can you [not] be merry . . . if you lack *Tobacco* to provoke your appetite to any of those sorts of recreation, lusting after it as the children of Israel did in the wildernesse after Quailes?"

King James I also compared tobacco addicts to alcoholics. He described the trajectory of an alcoholic—"no man likes strong headie drinke the first day but by custome is piece and piece allured, while in the ende, a drunkard will have as great a thirst to bee drunke, as a sober man to quench his thirst with a draught when hee hath need of it"—to that of the tobacco user who needs more and more of it to achieve the same ends. Yet despite his diatribe, there is no evidence that James actually succeeded in banning tobacco. Instead, he, like so many other heads of state facing depleted treasuries, used tobacco's suspect status as justification to levy successive taxes on the weed, beginning in 1604, the year of the publication of the *Counterblaste.* The poet-theologian Joseph Beaumont (1616–1699) wrote in his sermonic verse, *Tobacco*, that "Wee/ Mistook thy power, whose cheife & mightiest part/ Doth on y^{e} Soule not on y^{e} Body prey/ And can heal this, whilst it doth destroy," and charged that smokers "rather than part with thee," were willing to "look like Hell." Moralists in Catholic and Protestant countries alike often linked tobacco smoke to the infernal fumes of hell.

As in Catholic Europe, moralists thought it particularly unseemly for clergymen to indulge in tobacco. This was part of the reason that authorities prohibited students— many of whom were clerical candidates— from smoking at Oxford and Cambridge Universities in the early

seventeenth century. However, in practice many men of cloth also belonged to the community of tobacco users.

Some Protestant sects did go so far as to forbid laity and clergy from using tobacco. In New England, the Puritan Massachusetts Bay Colony in 1629 prohibited the sale or use of tobacco within the colony unless "upon urgent occasion for the benefit of health and taken privately." The ordinances were repealed but before long promulgated again, their authors having found that "since the repealing of the former Laws against Tobacco, the same is more abused then before." In 1638 and again in 1647 the assembly ruled as follows:

> *Nor shall any take tobacco in any Inne or common Victualing-house, except in a private room there, so as neither the Master of the said house nor any other Guests there shall take offence therat, which if any doe, then such person shall forthwith forbear, upon pain of two shillings sixpence for everie such offence. And for all Fines incurred by this Law, one half part shall be to the Informer the other to the poor of the town where the offence is done.*

Similar measures were decreed in other North American religious settlements. In Connecticut, Puritan regulations dating from 1647 ruled that youths under the age of twenty-one could not smoke, and that those over twenty-one wishing to consume tobacco required a physician's certificate stating that it was medically necessary, accompanied by court license.

In the eighteenth century, some Methodist congregations strongly discouraged tobacco use on the grounds that it was "needless self-indulgence . . . unless prescribed by a physician." Preachers were ordered to enforce "vigorously, but calmly the rules concerning needless ornaments, drams, snuff, and tobacco," and for preachers to receive approval by the governing body, they had to respond affirmatively to the question, "Do you take no snuff, tobacco, drams?" By 1792, leaders of the congregations repealed the tobacco rules.

Benjamin Rush, a famous physician, signer of the Declaration of Independence, and devout Presbyterian, opposed tobacco on moral as well as medical grounds. He charged that "the use of Tobacco, more especially in smoking, disposes to idleness, and idleness has been considered as the root of all evil." He also posed the rhetorical question and its answer:

> *What reception may we suppose would the apostles have met with, had they carried into the cities and houses to which they were sent, snuff-boxes, pipes, segars, and bundles of cut, or rolls of hog, or pigtail Tobacco? Such a costly and offensive apparatus for gratifying their appetites, would have furnished solid objections to their persons and doctrines, and would have been a just cause for the clamours and contempt which were excited against them.*

Religious authorities continued to inveigh against tobacco use in the nineteenth century, but increasingly on grounds of its deleterious effects on health and its association with liquor. The nineteenth century was a period of religious reawakening in the United States, and many religious groups sought stricter adherence to moral codes. Though not as despised as alcohol, tobacco became the target of moral reformers in

the Temperance Movement. In fact, one of tobacco's primary faults, in the view of the crusaders, was its association with alcohol. As Rev. Orin Fowler stated in 1833, "Rum-drinking will not cease, till tobacco-chewing and tobacco smoking and snuff -taking shall cease." Lucy Gaston was one of the most formidable leaders in the antitobacco movement, which focused increasingly on cigarettes. Applying the tactics learned in the Women's Christian Temperance Union, she turned her attention to tobacco in the 1890s, urged children to wear antitobacco pins, and rallied groups of children to sing songs against smoking to shame their addicted elders. Such efforts led to temporary successes: between 1895 and 1921, fourteen states banned the sale of cigarettes, though all these laws were eventually repealed.

The Mormon denomination of the Latter-day Saints also emerged in the nineteenth century and came to forbid their members from taking tobacco. In 1833 the Church's founder, Joseph Smith, received a divine revelation known as the "Word of Wisdom," which declared that tobacco was "not for the body, neither for the belly, and is not good for man," except as a poultice for bruises and treating "all sick cattle." The origin of the revelation is often connected to an incident in which Smith's wife, Emma, complained to him about cleaning up the tobacco mess left behind by his disciples, prompting him to ask God for guidance about tobacco use. The basis for the prohibition rested in tobacco's hazardous effects on health. The strength of the Mormon Church in Utah contributed to efforts of the state to enact prohibitions against tobacco between 1896 and 1923.

Benefits

It might so far seem that Christian denominations worked to obstruct the use of tobacco throughout the world. But, in fact, different churches—or some of their members—benefited from tobacco, and, in turn, tobacco taxes and profits supported various ecclesiastical institutions. Because of the pan-European and, after 1492, global character of the Catholic Church, clerics were themselves often agents for the diffusion of tobacco. Spanish missionaries—not all of them so zealous as Ruiz de Alarcón—who lived and worked among Indians learned of tobacco's medicinal and recreational uses and brought back samples and know-how to their orders in Europe. A nuncio (papal representative) named Prospero di Santa Croce is credited with having introduced tobacco to Italy in 1585 after his sojourn in Lisbon, an early byway for American goods and knowledge. (His botanist protégé celebrated his achievement by comparing it to those of his Crusader ancestors: "Prospero di Santa Croce when he was sent as nuncio of the Holy See to Portugal brought this [plant] hither for the advantage of the Roman people. As his ancestors brought the wood of the holy cross, in which all Christianity rejoices, so the family of Santa Croce is called distinguished and zealous for our bodies and our souls.") Likewise, Spanish missionaries—some coming directly from the Americas—likely brought tobacco to Asia at the end of the sixteenth century.

Ecclesiastical institutions, like secular states, also came to rely upon tobacco taxes as an important source of revenue. The papal states—those territories in Rome where the papacy exerted temporal as well as spiritual power—implemented a tobacco monopoly in 1655. Following



plantation historically, a large agricultural estate dedicated to producing a cash crop worked by laborers living on the property. Before 1865, plantations in the American South were usually worked by slaves.

the loss of lands and revenue after the Protestant Reformation, the papacy came to rely increasingly on revenue from Italy itself; the increasing consumption of tobacco and the model of other monopolies made a tobacco monopoly an appealing expedient. Like so many other European states in the seventeenth century, the papal states established a state monopoly in which the exclusive right to manufacture and sell tobacco was granted to a private entity in return for annual payments. Catholic institutions also directly engaged in tobacco cultivation. Most notably, in colonial Paraguay members of the Jesuit Order organized tobacco **plantations,** relying on the labor of Guaraní Indians until the Jesuit expulsion in 1767.

Protestant churches in the tobacco regions of colonial North America relied on tobacco to support their clergy. In the seventeenth and eighteenth centuries, ministers of the Anglican Church in colonial Virginia received their salaries in tobacco (which served as currency more generally). For instance, in 1696, Virginia ministers received 16,000 pounds of tobacco annually. Consequently, during years of high demand, they prospered, but when demand fell, so did their purchasing power. The considerable fluctuations in the price of tobacco also contributed to the instability in their earning power. In Maryland, the Anglican General Assembly levied a poll tax of forty pounds of tobacco. The Quaker minority, unhappy with the Anglicans' efforts to establish themselves as the state church, refused to submit to the tobacco tax and petitioned the king, as well as the assembly, for its repeal. The king agreed to repeal the law, but the assembly passed a revised version in 1696; two more rounds of repeal and revision ensued. Finally, the assembly succeeded in passing the tax, which ultimately became void with the American Revolution.

Contemporary Christianity

Today, nearly all Christian denominations view tobacco as a scourge to physical and sometimes moral health. Within this general consensus, however, there is a wide range of approaches, encompassing pastoral counseling, mandates of abstinence, education campaigns, and political and corporate lobbying. In general, the contemporary theological basis for the negative attitude evinced toward tobacco by various Christian denominations comes from Paul's admonition in Corinthians 6:19: "What? Know ye not that your body is the temple of the Holy Ghost which is in you, which ye have of God, and ye are not your own?" In other words, the basis for tobacco opposition is firmly grounded in its deleterious health effects, long suspected but given recent confirmation by the scientific studies in the late twentieth century.

Despite this common theological ground, various denominations and even members of the same church approach antitobacco efforts in very different ways. For many, the issue begins by discouraging or even prohibiting individual use. Seventh-Day Adventists and Mormons are required to abstain from tobacco use. Other denominations urge church members to resist or to give up tobacco habits, often focusing their efforts on youth.

Some Christian religious groups and churches go further and use their moral authority to combat what they see as immoral corporate and governmental practices. In 1991, the American Baptist Churches

passed an antitobacco resolution that, among other actions, condemned tobacco corporations' practices of targeting products to particular social groups and securing land in developing counties to raise tobacco ("thus taking land out of food production and increasing tobacco consumption within those nations"), and it called for Congress and the U.S. Department of Agriculture to end tobacco subsidies to growers. In 1994, a coalition of antismoking religious groups that included Catholic Charities USA, the Seventh-Day Adventist church, and the United States Methodist Church lobbied Congress for a two-dollar-a-pack tax increase in the federal tax on cigarettes (over the 24 cents-a-pack federal tax in place at the time), asserting that it was "not only wise policy, but a moral obligation." A denomination particularly engaged in efforts to stem worldwide tobacco use is the Seventh-Day Adventist Church. Its humanitarian arm (Adventist Development and Relief Agency) has education and/or smoking cessation programs in Mongolia, Morocco, and Cambodia, among other places. A coalition of churches in England and Ireland called Christian Aid has focused on poor labor practices used in tobacco-growing regions in southern Brazil, blaming Souza Cruz, a **subsidiary** of BAT, for growers' health problems caused by pesticide use and for forcing growers to sell their crops for too little money.

subsidiary in commerce, a branch or affiliate of a larger unit that provides components or support services.

Another tactic employed by religious groups is to mobilize their power as institutional investors to challenge corporate policies. The Interfaith Center on Corporate Responsibility, a coalition of 300 Protestant, Catholic, and Jewish institutional investors, began in 1980 to urge tobacco companies to limit **tar** and nicotine levels and add health warnings on cigarettes sold in developing countries. In more recent years, the coalition has aimed its efforts at discouraging nontobacco companies from benefiting the tobacco industry. It counts as successes McDonald's 1994 ban on smoking in corporate-owned restaurants and 3M's 1996 announcement of a global phase-out of tobacco advertisements for its billboards.

tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

Finally, many use spiritual teachings of Christianity and other religious traditions to help them in their efforts to quit smoking. Some find prayer indispensable in their quest to give up tobacco. The notion of appealing to a higher power is also important in the more outwardly secular, twelve-step recovery programs. In the Nicotine Anonymous movement, smokers "ask God to help us accept the craving . . . and to give us the courage not to take care of this craving—as we have always done—by smoking one more cigarette."

MARCY NORTON

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Cigarettes

epidemiology a branch of medicine that investigates the causes and contributing factors of disease.

From the beginning of their mass production in the 1880s, few consumer products have had such a far-reaching impact as cigarettes. The cigarette was central in turning points in production technology, business methods, development of the modern tobacco industry, the development of **epidemiology,** the role of consumption in society, and, in no small way, the health of millions of people.

Origins

The cigarette's ancestry spans back to pre-Colonial South and Central America where among the Maya smoking tobacco was commonly wrapped in banana skin, bark, and maize leaves. The Spanish brought these *papalettes* back to Europe and replaced the maize-wrappers with fine paper. From at least the 1830s, *papalettes* crossed into France where the name "cigarette" was adopted by the French tobacco monopoly in 1845. In addition to changing the name, the French monopoly also changed the type of tobacco used in cigarettes after smokers were found to prefer American to French tobacco, which was seen as too bitter. The French introduced cigarettes in Germany and Russia where American tobacco was blended with Turkish or Balkan tobacco. After becoming popular among its soldiers during the Crimean War (1853–1856), English firms began manufacturing cigarettes and U.S. production began after the Civil War (1861–1865). These hand-rolled cigarettes found only limited popularity and were considered luxury or novelty items. In the West, demand for hand-rolled Turkish, or "Oriental," cigarettes was



Advertisement for Helmar Turkish cigarettes, c. 1910. Beginning in the late nineteenth century, as machine-made cigarette manufacturers looked to increase their markets, they relied heavily on branding. Their cigarettes became known by unique symbols or names, which became ubiquitous in newspapers and on walls of buildings. © BETTMANN/CORBIS

attached to images of forbidden desire and supposed Oriental permissiveness. Other hand-rolled cigarettes, rolled by their smokers, were far less elegant and often fell apart while being smoked. Tobacco in the nineteenth century was overwhelmingly either chewed, snuffed, or smoked in cigar or pipe form.

Mass Production and Mass Consumption

The popularization of the cigarette began in the 1880s with the onset of the second industrial revolution. During the second industrial revolution skilled workers were replaced with technologically advanced machines that increased the speed of production and reduced unit costs. In 1881 James A. Bonsack patented the Bonsack Cigarette Machine, and by the

late 1880s, when the most skilled cigarette rollers could make 3,000 cigarettes per day, one Bonsack Cigarette Machine could produce 120,000 cigarettes in the same amount of time. But the power and importance of the machine were not immediately recognized by tobacco companies. Adopting the machine was a significant risk because many believed that when a smoker chose a smoking product, part of his or her decision was based on the skill it took to roll or mix the tobacco. Indeed, several tobacco companies showed no interest in Bonsack's machine. Finally, in 1883 it was licensed to the French tobacco monopoly, in England to W.D. & H.O. Wills and later in 1885 to the American firm W. Duke, Sons & Co. headed by James B. Duke. Those tobacco companies that licensed Bonsack's machine went on to dominate their national markets and expand abroad.

In order to profit to the fullest from this technology, markets for machinemade cigarettes had to be created. In Britain and the United States, Duke and Wills promoted cigarettes through mass advertising. While advertising was not new, there is little question that more money was invested to advertise cigarettes than any previous product. Cigarette were "branded" products: They were known by unique symbols or names. These brand names in cigarette advertising appeared everywhere in newspapers and on walls of buildings, and, as technology developed, cigarettes were eventually advertised using electric signs and on the sides of trucks. Cigarette companies encouraged smokers to buy more cigarettes by giving away coupons in cigarette packages that were redeemable for prizes and by including collectable cards that showed images of historical moments, sports stars, and, most notably, scantily clad actresses. Tobacco companies dropped their prices, sold their products at a loss, and gave cigarettes away in the hopes of gaining new markets. In addition to the fact that an unprecedented amount of money was spent to promote cigarettes, this advertising was also notable because it targeted the popular classes as consumers rather than just the middle classes. These advertisements, combined with low prices, made the mass-produced cigarette part of the vanguard of the transition from bourgeois to mass consumption.

Globalization

The search for new markets meant that these firms spread the cigarette around the world. Beginning in the 1890s, Duke in particular proved himself adept at inserting the cigarette into new cultures. While the company was creating a **market share** in the United States, Duke's American Tobacco Company (ATC) sought international markets. It did so by exporting cigarettes that were made in the United States and, where high **tariffs** made their cigarettes uncompetitive, by directly investing in foreign businesses and building cigarette factories abroad. In the 1890s, ATC established divisions in Australia, Canada, Japan, South Africa, and German using the same kinds of managerial hierarchies and business methods Duke had pioneered with great success in the United States.

In 1901, Duke looked to conquer the British market as well, creating Imperial tobacco though an alliance with Ogden's, an important competitor of Wills'. In retaliation Wills entered the American market and a massive round of price cutting and advertising ensued on both

market share the fraction, usually expressed as a percentage, of total commerce for a given product controlled by a single brand; the consumer patronage for a given brand or style of product.

tariff a tax on imported goods imposed by the importing country to protect native industry from foreign competition, protect jobs and profits, and raise revenue. Tariffs typically raise consumer prices of effected products.



A cigarette authority smokes prodigiously as he makes the final and severest test of a cigarette—the smoking.
© BETTMANN/CORBIS

sides of the Atlantic until a truce was declared in 1902. According to the agreement, both companies were left to their national markets and the international markets were left to a jointly owned, newly created British American Tobacco Company (BAT). For ten years BAT was largely controlled by its American partners but in 1911 the British took an upper hand when the U.S. Supreme Court dissolved the ATC into competing companies after being found in violation of U.S. antimonopoly laws. Companies formed as a result of the ATC dissolution remain the dominant players within the international cigarette industry outside of countries such as France, Italy, Spain, Russia, China, and Japan, where state monopolies control their national markets.

Opposing the Cigarette

In many Western countries, the rise in popularity of the cigarette in the late nineteenth and early twentieth centuries drew organized opposition. Motives for attacks on the cigarette were strikingly similar: questions of moral and physical decline that easily fit into religious and **nationalist** frameworks. In European countries like England, France, and Germany fringes of the medical community put forward concerns over national degeneration due to cigarette smoking. These were marginal movements that only saw tangible results when coupled with other causes. In England, for example, anticigarette movements, coupled with panics

nationalism the belief that the narrow, selfish interests of one's country should supersede international standards of behavior.

over the health of soldiers during the Boer War and juvenile delinquency, prompted the government to pass an age restriction law in 1908. In the United States, Australia, and Canada, antismoking organizations were dominated and led by Evangelical Protestant women who sought to reform society. In the United States, these movements had some success. Between 1890 and 1930 fifteen states adopted laws that banned the sale, manufacturing, possession, and/or use of cigarettes and many other state legislatures debated the issue.

During World War I, these movements were undermined when cigarettes became linked to patriotism. In Allied countries during the war newspapers set up tobacco funds that allowed civilians to send cigarettes or tobacco to soldiers. These tobacco funds undermined antismoking movements in places like the United States and Canada when people who had previously opposed smoking changed their position and supported these funds. Similarly, anticigarette groups like the Red Cross and the Young Men's Christian Association distributed cigarettes to the troops.

The connection between patriotism and the cigarette also legitimized cigarettes among smokers, who were, at this point, almost exclusively male. At the turn of the twentieth century the cigarette was not seen as an entirely masculine smoke. According to etiquette, respectable men preferred the pipe or the cigar, allowing for a longer, more contemplative smoke. The cigarette was seen as diminutive and feminine. Increasingly, however, the speed and convenience of smoking a cigarette was regarded as more convenient for industrial societies. Though pipes in particular remained popular after World War I, it was the war that had the greatest impact on making cigarette smoking respectable for men. While all forms of tobacco were sent to soldiers, for a number of reasons cigarettes were particularly popular among soldiers: they required little attention after lit, unlike the cigar or pipe; they fit easily into a uniform pocket; and no special equipment was necessary to smoke them. In sum, cigarettes proved to be practical for army life and quickly became symbols of patriotic masculinity.

Women and the Cigarette

In the West, for the cigarette to become a truly mass consumption product they had to break through the highly gendered etiquette of smoking. During the rise of the cigarette in the late nineteenth century only men could respectably smoke. Women who smoked risked being labeled as barbarous or as prostitutes. Yet, at the same time, a group of largely middle-class women sought to challenge gender inequalities such as limitations on property rights, the right to vote, and access to liberal professions. One of the symbols used in their fight was the cigarette. Many of these "new women" asserted the right to smoke cigarettes in the same way as they asserted these other rights. By the 1920s the cigarette was linked to the image of the "flapper" and a broader association with a modern femininity. Cigarette manufacturers followed and promoted this image of the respectable female smoker. From the early twentieth century cigarette manufacturers advertised in women's magazines, but it would not be until the late 1920s, when smoking became more respectable for women, that manufacturers would openly advertise

in mass circulating dailies. By this time, women in movies had already begun smoking cigarettes, likely adding greatly to the popularity of the cigarette among women.

The addition of women as cigarette smokers pushed the cigarette past other forms of tobacco to become the most popular way to consume tobacco. Indeed, despite the power of multinational cigarette companies in countries like Britain, the United States, and Canada, it took a change in etiquette in the 1920s and 1930s and the advent of respectable women smokers for the cigarette to be the tobacco of choice for a majority of smokers. During the 1920s cigarettes exceeded 50 percent of the tobacco consumed in Turkey, Japan, China, and Greece while elsewhere this did not occur until after World War II. In some countries the cigarette remains less popular than local tobacco products. In Norway cut tobacco continues to be popular, and in India, a cross between a small cigar and a cigarette, called **bidis,** are produced with dark, domestic tobacco, and continue to outpace cigarette consumption by a margin of 7 to 1. Globally, however, in the course of the twentieth century, the cigarette has become the dominant way in which tobacco is consumed and the tobacco industry is primarily a cigarette industry.

bidis thin, hand-rolled cigarettes produced in India. Bidis are often flavored with strawberry or other fruits and are popular with teenagers.

The Cigarette and Health

Part of the reason that the cigarette was easily accepted by both men and women alike was because its tobacco was milder than the tobacco used in pipes or to make cigars. Modern cigarettes used Bright leaf tobacco, originally cultivated in Virginia and North Carolina. Traditionally after harvesting, tobacco was either hung out to dry in barns (the **air-curing** method) or dried over wood fires (the fire-curing method). In contrast, Bright leaf was cured using extreme heat that was channeled through pipes into curing barns in a process known as flue-curing. This process results in a milder-tasting tobacco that was far easier to inhale than other tobaccos. This change altered the way in which nicotine entered the smoker's bloodstream and thus the speed of the **physiological** effect of smoking. With tobacco and pipes nicotine entered the bloodstream, for the most part, indirectly through the saliva whereas with cigarettes nicotine entered much more directly though the lungs.

air-curing he process of drying leaf tobacco without artificial heat. Harvested plants are hung in well-ventilated barns allowing the free circulation of air throughout the leaves. Air-curing can take several weeks. Burley tobacco is air-cured.

physiology the study of the functions and processes of the body.

In response to health concerns in the 1950s and 1960s, cigarette companies increasingly promoted filtered cigarettes like Kents and Viceroys and introduced similar new filtered brands like Winston and Salem. In Western countries during the 1970s and 1980s they also marketed low-**tar** and low-nicotine brands as less harmful alternatives to stronger brands. By the turn of the twenty-first century, the percentage of smokers in most developed countries has begun to decline. However, while in the developed world the cultural meaning of the cigarette has significantly changed, reducing the number of smokers in these countries, in the developing world, and in the world more generally, cigarette sales continue to rise worldwide.

tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

See Also Additives; Camel; "Light" and Filtered Cigarettes; Lucky Strike; Marlboro; Menthol Cigarettes; Product Design; Virginia Slims.

JARRETT RUDY

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Cigars

There is much dispute about the origin of the word *cigar*. Some historians believe it comes from *sik'ar*, the Mayan Indian word for smoking, while others maintain that it derives from the Spanish word *cigarrar*, which means "to roll." One of the most popular forms of cigars, made in Seville from Cuban leaf toward the end of the seventeenth century, was the *cigale*, which in Spanish means "locust," so named because of its similarity in color and shape to that of a large locust.

Spanish and Cuban Origins

The first cigars (or Havanas), as discovered by Christopher Columbus in 1492, were smoked by the native inhabitants of what is now Cuba and were made from raw, twisted leaves of cured tobacco. Dried corn husks were used as wrappers. The first cigars made in similar fashion to those of today were produced by the Spanish company Tabacalera, in Seville, in the early eighteenth century. It was then that the idea of constructing a cigar with a filler, binder, and wrapper was invented. At this time, because of the cost of tobacco, cigars were only smoked by the wealthy. The practice was exported to Cuba in 1740, when the Real Compãnia de Comercio de la Habana (Royal Trading Company of Havana) was created by royal decree. Hence Cuba's cigar industry was, largely, created by the Spanish. Spanish regulation was interrupted during English occupation of the island but was restored in 1764.

By the end of the seventeenth century, the demand in Spain for cigars from Cuba, then a Spanish colony, exceeded the demand for *sevillas*, as the Spanish version was called. Therefore, in 1821 a royal decree allowed for the unfettered growth and sale of tobacco in Cuba. This decree

gave a boost to the industry, which previously had been controlled by the Spanish government, and new producers emerged throughout the island. Since that time, the Spanish Crown has obtained its entire supply of cigars from Cuba, and Spain remains the largest importer of Havana cigars.

Great Britain

In the middle of the eighteenth century cigars were exported to Holland and, soon after, to Russia, which became one of the first countries to impose a tax on tobacco products. By the end of that century cigar production had spread from Spain into France and Germany, but it was not until the first quarter of the nineteenth century that the manufacture of "segars," as they were then called, started in Britain, and in 1821 an Act of Parliament began governing such production. Manufacture in Britain had become necessary because Lord Wellington's troops, returning in 1812 from Portugal, had become used to segars in the Iberian Peninsula and were increasingly turning to that form of smoking in preference to the pipe—a trend that spread rapidly to the general public.

By the middle of the nineteenth century, smoking in Britain and abroad had become so universal as to require the establishment of smoking rooms in hotels and clubs and smoking compartments on trains. Skullcaps in bright colors and smoking jackets were introduced to obviate the aroma of cigars clinging to normal wear. The dinner jacket, or tuxedo, is called *le smoking* in French-speaking countries to this very day.

Cigar usage in Britain was affected by the active disapproval of Queen Victoria, and it was only after the accession of King Edward VII in 1901 that the after-dinner pronouncement: "Gentlemen, you may smoke," became de rigueur. It was around this time that new shapes evolved, which were inspired, to some extent, by such prominent British smokers as the London financier Leopold de Rothschild and the Earl of Lonsdale.

Cigar Production in the United States

In the late eighteenth century cigar factories were established in Connecticut, New York, and Pennsylvania. It was at one of the Pennsylvania factories in Conestoga that a long cigar, called a stogie, was first produced. (Later this name was applied to any workingman's cigar.) American production of tobacco, from Cuban seed, began around 1825, although American cigar factories continued to import Cuban tobacco, which they used to manufacture expensive cigars called Havanas, the same term applied to cigars produced in Cuba. The name Havana has since become a generic term for these exclusive cigars.

In the nineteenth century the cigar became a status symbol of sorts in the United States, in part, because of its use by such well-respected figures as President Ulysses S. Grant and the writer Mark Twain. Twain expressed his love of tobacco and cigars often in speeches and in his nonfiction. In his *Following the Equator* (1897), the author writes "I pledged myself to smoke but one cigar a day. I kept the cigar waiting until bedtime, then I had a luxurious time with it. But desire persecuted me every day and all day long; so, within the week I found myself hunting for larger cigars than I had been used to smoke; then larger ones still, and still larger ones." The famous Henry Clay cigar, named after the American



Cuban cigar factory, 1964. Fidel Castro's image is displayed at this cigar factory in Havana, Cuba. In 1961, after the disastrous Bay of Pigs invasion, U.S. president John F. Kennedy declared an embargo on the importation of all goods from Cuba, which is still in force today. © BETTMANN/CORBIS

homogenize to make more uniform in appearance, texture, or quality by mixing and blending; to make alike.

senator, was launched toward the end of the nineteenth century as a premium cigar product. By the end of the nineteenth century there were more than 7,000 cigar factories in the United States, with some 500 located in the state of Florida. Cigar consumption peaked in 1907, after which its popularity waned due, in some measure, to the advent of cigarettes.

Because of their expense, cigars were regarded as a luxury until relatively recently. In 1919 Thomas Riley Marshall, a Democrat and Woodrow Wilson's vice president, grew tired of listening to a Republican senator ramble at length about the country's needs and uttered the now famous line: "What this country needs, is a really good five cent cigar." Nearly forty years later, **homogenized** tobacco was developed by pulverizing the leaf and then forming the matter into thin sheets, reducing waste. This process, together with machine rolling, invented in the 1920s, resulted in lower prices. Machine-made cigars represented 98 percent of total production in the United States by the end of the 1950s.

Cigar Consumption Today

For nearly thirty years, due largely to the antismoking movement, cigar consumption in the United States has declined from a peak of over 9 billion of all types of cigars in 1964, to a little over 2 billion in 1992. Total consumption in 2002 was close to 4.45 billion, of which about 200 million were premium cigars.

Except in the sanctuary of their own homes, tobacco shops, or in a declining number of cigar-friendly restaurants and bars, it is becoming increasingly difficult for cigar smokers worldwide to enjoy their

cigars unhindered. Just as in Victorian England, cigar smoking is again frowned upon in public.

See Also Antismoking Movement From 1950; Cuba; Smoking Clubs and Rooms; Smoking Restrictions.

THEO RUDMAN



Class

In one sense, smoking is a habit that overrides all distinctions of class. Since the seventeenth century it has been an item of mass consumption across Europe and America and in the twenty-first century cigarettes are smoked across all sections of society all over the world. However, significant class differences have always existed in tobacco consumption patterns. In the eighteenth century, **snuff** was associated with Europe's aristocratic elites, resulting in such fascinating historical quirks as the pockets of Frederick the Great of Prussia, specially enlarged to accommodate his prolific consumption. In southern Europe, the great state-owned tobacco factories of Cadiz and Seville ensured the popular appeal of the cigar, though one result of the Peninsular Wars (1808–1814) was to lead to its spread among the officer classes of England.



snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

Although the virtues of smoking have been praised in prose and verse ever since its introduction into Europe, the late nineteenth century witnessed a particularly bourgeois celebration of the pipe and the cigar, promoting a culture based on liberal **individualism.** The periodical press brought the "art" of the connoisseur to a rapidly expanding pipe and cigar-smoking middle class. Numerous hack journalists of the kind parodied in English novelist George Gissing's *New Grub Street* (1891) churned out countless and highly derivative pieces which, importantly, enabled male consumers to escape the passive and feminine associations of consumption and the marketplace. Instead, their everyday, private, and self-indulgent purchasing acts were transformed into an activity in accord with the perceived male role in life. Men were taught how to appreciate a cigar, how to choose a pipe, how to develop their personal tastes and settle on their own personal tobacco mixture, all to ensure that they became the masters, not the victims, of commerce; not mere consumers, but "ardent votaries," worshippers, disciples, aficionados, and true friends of "the divine lady nicotine."



individualism an independence of spirit; the belief that self-interest is (or should be) the goal of all human actions.

Historians and scholars know less about working-class smoking attitudes and practices. Undoubtedly, distinctions existed across states, regions, towns, and occupations. Visitors to Virginia in the seventeenth and eighteenth centuries frequently commented on the sight of entire communities smoking, their habits following those of their northern European counterparts as the majority used pipes, the great exception being the popularity of chewing tobacco. This required no special preparation since users merely bit off the hard manufactured tobaccos of twist and **plug** that were sold both for pipes and for grating into snuff. But the differences are too many to recount. In nineteenth-century



plug a small, compressed cake of flavored tobacco usually cut into pieces for chewing.



"The Sophomore." Smoking a cigar in his room at Harvard University. From the series of sketches of college life by J. N. Mead.
© BETTMANN/CORBIS

Britain, for instance, Welsh miners were known to prefer strong shag tobaccos (coarsely cut leaf) and rolls (tied tightly into a type of rope), dock laborers were associated with thick twists, cabmen for Irish roll, while the better paid and London workers preferred the lighter and more finely cut Virginian flake tobaccos that were ready to smoke.

These differences were to some extent overshadowed by the rise of the cheap cigarette, an item much more of mass—as opposed to class—consumption. Popularized in wartime and on the cinema screen, and promoted by enormous tobacco combines and monopolies, some of the first global brands emerged in the cigarette market. Class differences have persisted, especially with regard to the prices of types of cigarettes, and advertisers have sought to appeal to people's sense of individuality; however, by the mid-twentieth century smoking was almost a classless pleasure.

However, since the smoking and health controversy of the 1950s, public health campaigns have had much greater impact upon affluent, professional males, making smoking today a health problem increasingly associated with poverty. The issue is also overlaid with questions of gender and ethnicity, as smoking rates among women have not decreased to the same extent and tobacco companies have been further criticized for targeting poor ethnic minorities in the United States. Outside the affluent West, tobacco companies have also entered new less-regulated markets in Africa and the East, raising the potential for new

distinctions of class as educated elites show far greater awareness of the dangers of smoking.

MATTHEW HILTON

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Coffee

See Alcohol, Tobacco, and Other Drugs.

Colonialism and Imperialism

See British Empire; Caribbean; Chesapeake Region; Cuba; Dutch Empire; French Empire; Globalization; Portuguese Empire; Spanish Empire; Trade.



Connoisseurship

Connoisseurship may be defined as expert knowledge and keen discriminating taste in a field of fine arts. "Taste" refers to the aesthetics attributed to the artful devices and requisites manufactured for the purpose of smoking, chewing, or ingesting tobacco in all its various forms. In his *Smokerama: Classic Tobacco Accoutrements* (1992) Philip Collins, a cigar smoker and collector of some intriguing tobacco-related accessories, referring to classic tobacco accoutrements, suggests, "It is doubtful that any other industry has spawned as many allied consumer products. Dashes of elegance and bursts of frivolity are interwoven in the design of the products."

Indeed, if it were not for the discovery and eventual near-worldwide acceptance and use of tobacco, none of the artifacts described here would have been needed or, more accurately, manufactured. Each had a singular purpose specific to a direct or indirect use of tobacco. For example, without tobacco and the human desire to smoke it, the tobacco pipe in its many designs never would have been introduced.

Although smoking had become popular in most areas of the world by the nineteenth century, it was the lengthy, fashionable period of smoking, the Victorian era, that was the richest in special-purpose accessories for the smoker (pipes, cigars, and cigarettes) and the taker of **snuff.**



snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

Today a wealth of opportunities exists to collect tobacco-related items that now are in disuse, have become passé, or no longer have a practical purpose. Hence, one might logically ask whether these accoutrements and utensils are *objets dé art*, worthy of the appellation antique, and thus befitting the realm of connoisseurship. Or are these

Pipes of High Art

In October 2000, at an auction in Heidelberg, Germany, two early-nineteenth-century Meissen polychrome porcelain pipes crossed the auction block at, respectively, $18,200 and $21,300.

In May 2002, a small, mid-nineteenth-century, high-relief-carved meerschaum cigar holder depicting a Saxon couple sold at auction in England for approximately $5,600.

In April 2003, the gallery Espace Tajan in Paris, France, auctioned an ornate ivory pipe bowl representing a figural bust of a female. It was crafted in Dieppe, France, the center of ivory-carving in the late seventeenth and early eighteenth centuries; although it was missing its stem and mouthpiece, the price paid for this rarity was nearly $13,000.

In September 2003, a one-of-a-kind, ornately carved mixed medium pipe—made of coral, amber, and gold—depicting a cherub encircled in garlands and attributed to Emperor Franz Josef of Austria–Hungary, was purchased from a Massachusetts auction house at $5,300.

accessories merely interesting collectibles to be traded at flea markets and swap meets?

Whether tobacco items are aesthetically worthy of collecting, either as collectibles or as fine art, depends on individual taste. Yet there is general agreement among connoisseurs of tobacciana (the realm of tobacco-related paraphernalia, art, and **ephemera**) regarding which items are collectibles and which are fine art. Tobacciana classified as collectibles include the following:

- tobacco signage and other advertising mediums;
- tobacco tins, bins, and pails;
- tin tags;
- ashtrays and spittoons;
- match holders, matchbooks, and matchboxes;
- cardboard and cedar cigar boxes;
- ephemera such as trade and **cigarette cards,** company billheads and letterheads, posters, caddy labels, cigar box labels and bands, cigarette packs, and cigarette rolling papers;
- tools such as tobacco cutters, pipe tongs, braziers, and cigarette rolling machines; and
- promotional materials produced by the tobacco industry as giveaways.

ephemeral temporary, short-lived, subject to change.

cigarette cards paper trading cards sometimes featuring sports personalities or movie stars packaged with cigarettes and offered as an incentive for purchase.

ubiquitous being everywhere; commonplace; widespread.

In contrast to these fairly **ubiquitous** collectibles, the items described in the following pages are the accoutrements prized by tobacciana connoisseurs. According to the collective wisdom of antique experts and personal property appraisers, these items are considered fine art. They are highly sought after, have a universal following, and usually command top dollar (see sidebar).

The Pipe and Its Accessories

Although not every pipe is art, some examples of high art are pipes. Passionate collectors are enamored of just about every category or style of pipe, whether antique or contemporary. Collectors seek not only the

pipes made in Europe—clays, meerschaums, porcelains, and early woods—but also the ethnographic pipes of Asia, Africa, the Americas, and the Near East. A pipe at auction can command a premium price, be it an ornate meerschaum masterpiece, a polychrome Meissen porcelain, an early European carved wood pipe, a convoluted Staffordshire puzzle pipe, or an infrequent ethnographic rarity such as a Queen Charlotte Islands **argillite** pipe, an Inuit ivory pipe, or a Native American pipestone ceremonial peace pipe. This is just as true for those who collect new, limited-edition, handmade **briar** pipes from a handful of renowned American, Danish, English, Italian, and Japanese craftsmen. The pipes from many of these artisans can command as much as $5,000 to $15,000, and these prices reflect an appreciation of the aesthetics, artistry, and caliber of workmanship invested in these smoker's trinkets.

argillite A smooth, black sedimentary rock. American Indians sometimes carved tobacco pipes from argillite.

briar a hardwood tree native to southern Europe. The bowls of fine pipes are carved from the burl, or roots, of briar trees.

TAMPERS. A pipe smoker requires at least one critical device, a short bar with a flat round piece at one end to tamp down the lit tobacco; it is known as a tamper in the United States, a stopper in England, and it is believed to have been invented in the mid-seventeenth century. The earliest tampers were rudimentary, amateur devices made of hardwoods, bone, ivory, or any other natural material suitable for carving. As skills and industry later allowed, metals (predominantly brass, but also bronze, copper, iron, pewter, silver, steel, and, less often, gold), assorted hard-paste ceramics, glass, lava, mother-of-pearl, shell, and other exotic mediums were employed.

Name a motif, and at least one tamper was made in just about every medium to celebrate it. The opportunities were endless, and those who made them had infinite imagination and inventiveness. As examples, a typical collection might include a bear's tooth tipped with silver; a brass boot or a horse's hind leg; a Bisque figural of Punch; a greyhound's head and neck executed in ivory; a plum wood bust of Lord Nelson, the Duke of Wellington, or Napoleon Bonaparte. It is not unusual to encounter an antique hardwood tamper bearing the face of some eighteenth-century English king with an asking price of $1,000. Sadly, contemporary utilitarian tampers have replaced these ornate pocket fobs of previous centuries. Instead of exotic materials such as lava or mother-of-pearl, today's tampers are typically made of readily available materials such as acrylic, wood, or brass.



Tobacco artifacts often are works of art, as evidenced by this Chokwe tobacco container from Angola. Rarities such as this are typically found in museums of natural history and ethnography and are as much prized by collectors as the abundant and much more sophisticated items produced in Europe. © NORTH CAROLINA MUSEUM OF ART/CORBIS

TOBACCO JARS. The ubiquitous leather, oilskin, or cloth tobacco pouch (or roll) was carried on the person. But another style of storage container, the tobacco jar, was found at home or at the office and remains an eye-catching conversation piece. The earliest European tobacco storage containers, called boxes, were of cast lead and were produced in England in the early eighteenth century. Next came jars of faience, that exquisite earthenware covered with a tin-enameled (stanniferous) glaze from French manufactories such as Mennecy and Sèvres. These were followed by, in approximate chronological order:

- various simple to highly decorative wood jars from Germany that were made in the early to mid-nineteenth century;
- molded figural jars in soft and hard paste from Bohemia made in the late nineteenth and early twentieth centuries that depicted animals, children, and humans; and





Nineteenth-century molded figural tobacco jars commonly depicted men, women, children, animals, and mythical creatures. Two illustrated here are a jar made from majolica (left), a type of glazed earthenware, and one from porcelain (right), a type of ceramic ware.
BOTH PHOTOS © JOE HOROWITZ

- hollow cast bronze figural motifs produced, most probably, in France, and representing the last, the rarest, and the fewest produced in the past century.

Most tobacco jars were not vacuum-sealed, so they did not keep tobacco fresh and moist. However, the jars are now collected for other reasons—namely, their beauty and astounding variety. The recently founded Figural Tobacco Jar Society, comprised of an international membership, has successfully elevated the stature and importance of the jar and has stimulated renewed interest in the pursuit of the more vibrantly polychrome-colored, whimsical ceramic jars from Bohemia and Germany.

PIPE CASES. The pipe case is paraphernalia solely associated with the clay pipe. It was designed to encase the fragile, inexpensive clay when not in use or for ease of transport. Two countries stand out as the premier crafters. Holland was the principal center for boxwood, walnut, and pear wood cases, typically bearing ornate brass decor. England was noted for producing custom-fitted sterling pipe cases for the upper class.

Pipe cases of this caliber are not made today, because few smoke the clay pipe. The quantity of cases that circulate in antiquarian circles exceeds the number of collectors seeking to acquire them, because these cases customarily appeal only to those who are serious about clay pipes. In the early twentieth century, a few beer companies in England and the



This cigarette case, made by Cartier c. 1963, is decorated with lapis lazuli and gold chain. The gold lighter, also made by Cartier c. 1921, is decorated with a sunray motif. © MASSIMO LISTRI/CORBIS

United States gave away tin and pot-metal pipe cases advertising their products, but these have never been very collectible.

Cigar Accessories

Customized accessories were designed and produced for the cigar smoker just as they were for the pipe smoker. These accessories included:

- slide and clasp cases made of either molded leather, silver plating, or sterling;
- decorative tabletop and hand-held cigar cutters, or clippers, in various configurations, the most common of which were cast metal guillotines, ships' wheels, and assorted figurals;
- a wide array of cigar holders in such different materials as amber, gold, ivory, meerschaum, sterling, and wood;
- cigar lighters (also known as cigar lamps);
- the companion set; and
- the cigar dispenser.

CIGAR LIGHTERS. Collector attention has always been drawn to countertop cigar lighters, also called cigar lamps, once strategically placed near the cash register at the local tobacconist, always at the ready to light a newly purchased cigar. These lighters were sparked by denatured alcohol or gas.

To advertise and promote their brand or trademark, some cigar producers freely furnished rather majestic-looking figural lighters to their retail outlets. The largest producer of a broad assortment of lighter lamps for the home was Edward Miller & Company in Meriden, Connecticut, a late-nineteenth-century foundry whose product line included thirty-six different "bronzed, decorated, and real bronze" cigar lighters in various finishes that are in demand today, along with other styles,

such as mechanical and coin-operated lighters. These countertop lighters also appeal to crossover collectors interested in early American three-dimensional advertising objects and country store collectibles.

CIGAR COMPANION SET AND CIGAR DISPENSER. The cigar companion set was a tabletop storage device that was functional yet decorative. It was called a companion set because it had two containers, one for open storage of cigars and one for wood matches. The companion set was most often made in cast metal, ceramic, or wood.

The cigar dispenser, like the companion set, was a tabletop storage device. Yet unlike the companion set, which provided open storage, the dispenser stored cigars out of plain view. Some dispensers had an embedded music box that automatically played when the lid was lifted or the drawer was opened. Dispensers almost always were highly decorated treenware, a product of the wood turner. Both the companion set and the dispenser are quite collectible because their popularity all but ended with the advent of the hermetically sealed and humidified cigar humidor. The cigar humidor, considered furniture, is mentioned later.

Cigarette Accessories

The two most obvious accessories for the cigarette were the holder and the case, both of which are largely passé in today's society. With so much controversy about smoking nowadays, interest in collecting cigarette holders and cases may be either on the rise or ebbing, depending on one's expectations about the future of what many have deridingly called "the little white slaver."

Holders were produced in a variety of materials, from Bakelite to precious material, in assorted lengths, and with varying degrees of ornamentation. The cigarette case, similar to a lady's compact yet distinctively made for each gender, was an ornate affair that defied generalization. The case might be of silver-plate or gold-plate, enameled metal, Russian niello, tortoise shell, mother-of-pearl, tooled leather, something very elaborate from the artistic hand of Carl Faberge, and anything in between. Variety and assortment in the case were never wanting, particularly when the cigarette was in its heyday during the early to mid-twentieth century.

The cigarette dispenser, like its cigar counterpart, was a tabletop storage container. Some were novelties, designed to dispense a cigarette at the push of a button, while others were nothing more than display boxes containing cigarettes that guests were welcome to take. These, too, are sought after by a number of collectors who otherwise have no interest in tobacco.

Snuff Accessories

Snuff is produced in two varieties: nasal (or dry) and moist (or wet). Moist snuff is dipped—taken in the mouth directly from the container—so it requires no special accoutrements. Nasal snuff, in contrast, requires accessories for preparation, storage, and partaking. Accessories associated with nasal snuff include boxes, bottles, rasps, graters, mulls, and handkerchiefs.

When considered as a group, nasal snuff and its accessories are somewhat parallel to the pipe in that the paraphernalia associated with





These two snuff containers contrast the elegant simplicity of Native American art with the lavish stylings of the Europeans. On the left is a Canadian Eskimo snuffbox from the Inuit depicting a sea mammal (perhaps a sea lion) and her calf. © PETER HARBOLDT/CORBIS
On the right is an ornately decorated European snuffbox of the eighteenth century. © CORBIS

both were produced and used in the west and the east. In European-based societies, snuff was not universally accepted, as were pipes and cigars. Yet snuff taking, in its day, had been elevated to a fashionable and elegant social custom, and fashion dictated some special-purpose paraphernalia for its use.

SNUFFBOX. The snuffbox is considered by many collectors to be "the crown jewel of tobacciana." The snuffbox was the singular tobacco-related paraphernalia that had the broadest range and breadth of choices, from coquilla nut and common wood, to papier mâché, porcelain, Japanese lacquer, and the most luxurious of boxes in gold with surmounted precious jewels. While the crude, yet functional, hardwood or gourd snuffboxes of Africa appeal to collectors of ethnographic African art, and snuffboxes made in North America of animal hide, bone, or ivory appeal to collectors of Native American art, the most exquisite and lavish snuffboxes prized by collectors of European tobacciana were produced on the European continent and in England almost continuously during the eighteenth and nineteenth centuries. Today, prices reach astronomical numbers at the auction block, often in the tens of thousands of dollars.

SNUFF GRATER. The snuff grater, a pierced metal device, was a fascinatingly simple tool for the person who made his own finely ground snuff from leaf tobacco. However, when encased in ornately carved ivory, porcelain, or wood, it became a rasp, as a caterpillar metamorphoses into a moth. Craftsmen in Dieppe, France, the premier center of European ivory carving, produced some of the most exquisite snuff rasps known today, while artisans in Germany and Holland crafted similarly handsome rasps in decorated wood. This trinket is in great demand not only by the tobacciana collector and the fancier of anything ivory, but also by anyone interested in the most resplendent treenware.

SNUFF BOTTLE. The snuff bottle, considered by some as a uniquely Chinese expression, is also a commonplace utensil in Germany, a country of considerable snuffers. The Chinese variant is exceptionally ornate and meticulously crafted, made from myriad materials including jade, amber,



This example of a stylish velvet smoking jacket is modeled by the American actor Maurice Barrymore (born Herbert Blythe, 1847–1905), who appears to be posturing like a Victorian dandy.
© BETTMANN/CORBIS

cloisonné coral, glass, nephrite, porcelain, quartz, and turquoise, and such exotic mediums as hornbill, fossiliferrous limestone, and pudding stone. The German variant, usually made of vibrantly colored glass or salt-glaze pottery, is not in the same league as the Chinese snuff bottle because it is not as alluring or sumptuous. From a standpoint of beauty and workmanship, the Chinese variant has always been a prized antique, whereas the German variant, still produced today, is categorized as a collectible.

SNUFF MULL. The snuff mull, or sneeshing mull, used for the storage of ground tobacco, is distinctively Scottish, and forever associated with the ram, goat, or ox. For one's use, the small, personal snuff mull was formed from the hollowed-out curled end of an animal's horn. The open end was covered with a hinged lid of either horn or some other material. A second, more gregarious, less-often-found version is the table mull, comprised of a ram's head and horns, hollowed out to make space for a snuffbox; this larger version was found in homes and at gentlemen's clubs and the then-popular smoking societies. As with snuffboxes, the most loyal collectors of mulls reside in Europe where sneeshing is still a relatively popular custom.

SNUFF HANDKERCHIEF. The snuff handkerchief was an affectation attributed to dandies. Although a component of the rite and ritual of snuffing, too few handkerchiefs have survived the test of time to form a collection.

Miscellaneous Accessories

Miscellaneous accessories include those items that are ubiquitous with pipes, cigars, or both, and a devoted following exists for each.



Art Deco the most fashionable style of design in the 1920s and 1930s. Art Deco is usually characterized by geometric lines and shapes. Smoking tobacco tins and cigarette packages of this period were often rendered in the Art Deco style.

FURNITURE. The two- and three-dimensional, figural, **Art Deco** smoking and ash stand, a free-standing utensil familiarly known as the silent butler, was nothing more than a glorified ashtray, a silent servant to all who smoked, but in its time, it was a colorful conversation piece added to a hotel lobby, restaurant, and home.

Another substantial piece of furniture was the cigar humidor, customarily found at the tobacconist, but the truly passionate cigar aficionado, then, as now, procured a humidified storage container to keep a supply of cigars fresh and moist. Many a pipe smoker invested in a custom-made, wall- or floor-mounted cabinet or chest to exhibit his prized possessions.

The last of the accessories, classified as furniture, was the *fumeuse* (a French term for "female smoker"), an upholstered, high-back smoking chair specially made for the pipe smoker, but just as convenient for the cigar smoker. Its distinguishing feature was a crest rail incorporating a hidden compartment to store pipes, tobacco, and tools. Smoking chairs were used primarily in England and the Netherlands, where they were popular a century ago, and a few circulate today in venues other than the auction house.

CLOTHING. No discussion of tobacciana would be complete without mentioning two affectations of the smoker: the jacket and hat. The proper nineteenth-century American, English, or Continental gentleman customarily withdrew to his smoking room at home where he donned the requisite attire, sat in his *fumeuse*, and lit up. The jacket and the hat were manufactured in a variety of materials—cotton, felt, silk, velvet, and wool—but the hat was almost always the more ornate contrivance, exhibiting colorful embroidered patterns, fringe, and tassels. Nowadays, smoking jackets and hats reappear at private, formal engagements and lend an air of class at pipe-smoking contests, as frenetic pipe smokers from around the world assemble annually and compete to keep a pipe lit for an extended period of time.

CIGAR-STORE FIGURES. In general, tobacco advertising is considered a collectible, but one item is distinguishable from all the rest, floor-mounted and countertop cigar-store figures, because their rightful characterization is advertising art. In the seventeenth century the English tobacconist hung a sign at the entrance to his shop to symbolize and identify his trade, particularly at a time when few could read. Much later, as a uniquely American expression, it became custom to place a large, three-dimensional, polychrome-painted, wood, zinc, or



Shown here is a late-nineteenth-century carved and polychrome-painted pine cigar-store figure of a Native American. A hundred years ago, these figures could be found outside tobacco shops in fair and foul weather alike. Today they occupy space in environmentally controlled museums and homes. © CHRISTIE'S IMAGES/CORBIS

gesso show figure—such as a Native American, Punch, or some other recognizable character—at the shop entrance. This American expression was later adapted in English tobacco shops as a smaller, but just as desirable, countertop figure depicting a more continental symbol, such as a Scottish highlander or a blackamoor. Cigar-store figures have all but disappeared into museums, the corporate headquarters of tobacco companies, and private homes. At auctions, however, these colorful statues command not only respect, but also a great deal of money. For instance, on 18 January 2004, as part of a Sotheby's Americana auction in New York, a five-foot cigar-store figure of a Native American attributed to the sculptor Julius Theodore Melchers (1829–1909) of Detroit, Michigan, more than tripled the catalog's high estimate, selling for $153,600.

MATCH SAFES. In its simplest form, the match safe (vesta case in England) was a pocket-sized container with a hinged lid and roughened surface designed to keep friction matches dry. It was used from about 1860 to 1910 before the matchbook and the pocket lighter were invented. Although the first match safes were plain and simple devices made of common metal, they eventually were produced in a surprising number of other materials, from precious metals, vulcanite, and **gutta-percha**, to lacquer and enamel. Match safes exhibited a diverse range of designs, patterns, styles, techniques, and historical curiosities, including sports and pastimes, advertisements, and figural compositions of everything imaginable, including Tiffany-designed masterpieces.

Many thousands of match safes were in circulation during that era when a dry match was needed to light not just a pipe, a cigar, or a cigarette, but also the kitchen stove. The Cooper-Hewitt National Design Museum in New York owns an extraordinary collection of more than 4,000 match safes. Aiding the efforts of match safe collectors is the International Match Safe Association, founded in 1997, which meets annually to exhibit, swap, and exchange information on this fascinating, ornamental conversation piece.

LIGHTERS. At present, the most active, enthusiastic, and collaborative worldwide network revolves around the pocket and table lighter. This accessory includes an infinite variety of lighting devices, from early strikers and alcohol-based lighters, to today's butanes and piezoelectrics, and from fourteen-carat-gold Cartiers, Dunhills, and Duponts to the universally known Zippo, and every format and construct in between. Lighter clubs in several countries sponsor expositions, particularly On the Lighter Side, one of the largest international societies in the United States; more than twenty recently published illustrated books (in America alone) about their history and valuation have helped make the antique lighter the hottest tobacciana collectible. It is expected that membership and interest will continue to grow exponentially, as lesser-known, rarer, and more exotic lighters come to the fore.

gutta-percha a form of hard rubber made from the sap of a Malaysian tree. Widely used in the nineteenth century, plastics largely replaced gutta-percha in the twentieth century.

Historical Significance

Tobacco's impact and influence in the eighteenth and nineteenth centuries is analogous to the automobile's impact in the twentieth century. In the early 1900s the automobile spurred and stimulated many



The lid of this eighteenth-century Russian ivory tobacco box is etched in scrimshaw and depicts the Old Testament (Genesis 39) story of Joseph fleeing from the grasp of the courtesan, the wife of Potiphar.
© MASSIMO LISTRI/CORBIS

other businesses: the steel, rubber, and glass industries; construction companies, which boomed as highways and garages were built; and companies that sold kerosene, which made up their losses due to the spread of electricity with increased gasoline sales. A century earlier a similar phenomenon occurred with the spread of tobacco. Beyond the field where tobacco was grown, far from the factory where it was processed, outside the retail shop where tobacco products were sold, there was another world, a world of artisans and handicraft people who, perhaps, never came near a hand of tobacco, a cigarette, a cigar, or a tin of pipe tobacco, nor indulged in the social custom of smoking. As can be readily seen, cottage crafts and, later, industries flowered everywhere soon after the introduction of tobacco. The examples are numerous:

- chromolithographers who designed and produced cigar-box labels and bands for the cigar industry, caddy labels to identify tobacco bales, and paper labels and silk screen images for tobacco tins and cigarette packs;
- silver- and goldsmiths who plied their skills making snuffboxes, match safes, cigar and cigarette cases;
- horn turners who also made snuff and tobacco boxes;
- porcelain workers who produced not only pipes but also figural tobacco jars;
- wood turners and treeners who crafted pipes and pipe cases, pipe humidors, pipe stands, and other pipe furniture;

- those who worked with leather goods, tooling and shaping tobacco pouches, and those who worked with various base and alloy metals who molded pipe tampers; and
- stonecutters, gemologists, enamelists, etchers, and engravers who worked in amber, ivory, and other materials to accent all these objects.

The universal acceptance of tobacco was the impetus and the inspiration for the creative and imaginative arts and crafts expressions that rightfully deserve the title of connoisseurship.

As views of history change, the public's understanding of the past matures, and new ideas emerge about what is worth saving. Stories and artifacts once considered unimportant might be treasured by later generations, just as the value of once-precious things may fade with time. Without tobacco, none of the paraphernalia discussed here would have ever seen the light of day. Tobacco spawned a host of items that were once de rigueur not only in the smoking room but also in public.

Today people still smoke pipes and cigars, and snuff is still relatively popular in some continental quarters, but what have changed are the tobacco accoutrements. Those made long ago met a standard of form and function. In contrast, fewer accessories exist today, and most of these meet only the standard of form. Because of this marked change in the paraphernalia for the smoker, tobacciana collectors thrive, having ample opportunity to find those remarkable accoutrements of yesteryear that can rightfully be classed as objects of connoisseurship. As noted by Collins, "These objects echo a vast industry—and way of life—forever changed by scientific inquiry into the effects of smoking upon our health. Nonetheless smoking was a seemingly natural adjunct to glamorous living, and the possession of these accessories is another example of sophistication and good taste."

See Also Advertising; Arents Collection; Cigarettes; Cigars; Pipes; Smoking Clubs and Rooms; Snuff.

BEN RAPAPORT

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Consumption (Demographics)

In 1753, Carl Linnaeus, a Swedish botanist, officially named a well-known plant *Nicotiana tabacum*. The name honored Jean Nicot de Villemain, France's ambassador to Portugal in 1560, who wrote of the new herb's wonderful medicinal properties and sent some ground-up leaves to Catherine de Medici, the Queen of France, to cure her son's migraine headaches. Catherine and her court became enamored of the product. However, the herb had already been used widely in Europe and elsewhere before this event. The word "Tobago" or "tobacco" appears to be the Native American name for the pipe or cylinder used by many to inhale smoke from the burning leaves of this plant—leaves that contain nicotine, a **psychoactive** and addictive drug.

psychoactive having an effect on the mind of the user.

Ways of Consuming Tobacco

The main ways of consuming tobacco have involved inhalation of smoke from burning tobacco leaves or the use of smokeless tobacco products (**snuff** and chewing tobacco), where nicotine from ground tobacco leaves is absorbed through membranes in the mouth or nose.

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

PIPES. In earliest times, tobacco smoke was inhaled through a long tube or pipe. American Indians used communal smoking of long, decorated clay pipes as a ceremony indicating good will. Long clay pipes were also used in Europe. British author Alfred Lord Tennyson liked to smoke clay pipes and kept handy a basket filled with them. He could only smoke one pipe for a few minutes because it soon became too hot and he would have to throw it away. Lord Tennyson would sit in this way all day: filling, smoking, breaking-up, and discarding pipes. Shorter wooden pipes such as **briar** pipes date mainly from the nineteenth century but there is some mention of earlier wooden pipes that closely resembled the long clay pipes.

briar a hardwood tree native to southern Europe. The bowls of fine pipes are carved from the burl, or roots, of briar trees.

In India and Arabia, smokers preferred **water pipes** (also known as *hookahs*, *gozas*, *narghiles,* and *sheeshas*), where the smoke cooled by passing through water before inhalation. These water-cooled pipes were typically used for social gatherings where the mouthpiece, at the end of the long, flexible snake-like pipe, was passed around. The lips would not touch the mouthpiece, but the smoke would be captured in cupped hands. Many British people in India engaged in this type of smoking, and it was given the nickname "hubble-bubble."

water pipe also called a hookah, a tobacco pipe in which the smoke is filtered through a bowl of water. The smoker inhales through a mouthpiece connected to the pipe by a flexible tube. Water pipes are traditional in the Orient.

CIGARS. The Mayan term for smoking was *sik'ar*, which is probably the derivation of the word "cigar." Early cigars were a long thick bundle of twisted tobacco leaves wrapped in a dried palm or maize leaf. Cigars were produced in *tabacerias* in Spain in the seventeenth century and became the predominant form of tobacco use in Europe during the nineteenth century. Twenty-first-century cigars consists of filler, binder, and wrapper, all of which are made of **air-cured** and fermented tobacco. The modern cigar has a characteristic aroma and flavor that comes mainly

air-cured tobacco leaf tobacco that has been dried naturally without artificial heat.

from the fermentation process. However, the word "cigar" refers to a wide range of products that are wrapped in tobacco leaf, reconstituted tobacco, or paper treated with tobacco extract. A small cigar made of heavy-bodied tobacco is called a *cheroot* in many parts of the world and a *chutta* in parts of Asia, especially India.

SMOKELESS TOBACCO. Prior to the invention of the phosphorous match in the mid-nineteenth century, two forms of smokeless tobacco were popular: snuff and chewing tobacco. Snuff became the preferred nicotine delivery system for the upper class in Europe in the seventeenth and eighteenth centuries, becoming popular in England after 1660 when the court of Charles II introduced it upon returning to London from exile in Paris. The tobacco leaf was ground up with a rasp into a fine powder that could be inhaled through the nose. An instruction manual from this **Rococo** period (c. 1750) laid out fourteen steps for the genteel use of snuff, including the manner for extracting snuff from the box and bringing it to the nose. Two of the final steps included "Take in the snuff evenly with both nostrils without making a grimace" and "Sneeze, cough, expectorate" (Schivelbusch, p. 13). Elegant habitués prided themselves on being able to stuff their noses with snuff without sneezing. An indication of snuff's popularity can be seen from Marie Antoinette's wedding presents; there were more than fifty gold snuff boxes, making them an even more popular gift than gold watches.

rococo an artistic and architectural style of the eighteenth century (1700s) characterized by elaborate ornamentation.

The preferred forms of smokeless tobacco among Americans of European decent were chewing tobacco and snuff used as a moist dip. To use snuff, a small instrument was needed to deposit moist dip on the gums or to place a pinch inside the cheek. Chewing tobacco needed no instrument and was a favorite of sailors and men who worked outdoors for use while working. Early on, chewing tobacco was sold in loose bulky bags. Later, sweeteners were added, and it was molded into lumps to fit into a pocket. Chewing, in particular, led to the mouth becoming filled with tobacco juice that could either be swallowed (often causing stomach problems) or, preferably, spat out. When the Catholic pope banned smoking in church in 1642, some prelates sought to maintain their nicotine habit by changing to chewing tobacco. British writer Sir Compton Mackenzie noted with amazement that he had encountered one particular prelate in Seville who would chew tobacco during his sermon and then "spit over the heads of pious women seated on the floor under his pulpit and each time hit the same flagstone with his tobacco juice" (Kiernan 1991).

CIGARETTES. Cigarettes are made from fine-cut tobacco and are wrapped in paper or some type of organic leaf. They typically measure between 60 and 120 millimeters in length and between 20 and 30 millimeters in circumference and have a weight that ranges from 500 to 1,200 milligrams. Cigarettes originated as *cigaritos* in Spain and Portugal in the seventeenth century and were made from the leftovers from cigar manufacturing. Significant improvements in cigarette paper were introduced in Barcelona around the end of the eighteenth century.

Cigarettes had advantages over other types of tobacco in that they could be consumed within a relatively short period of time. The lack of accompanying instruments or paraphernalia meant that they could be



White Cloud, Iroquois chief, with a calumet. American Indians used these long, decorated clay pipes in ceremonies to indicate good will among the participants. © BETTMANN/CORBIS

smoked easily even while working, and they were less likely to soil clothes. Cigarettes became popular in France during the French revolution, and the French government began licensing cigarette manufacturing about 1840. Cigarettes started to be popular in England after the Crimean War (1854–1856). Mass production of cigarettes, however, was limited before the invention of the first successful cigarette manufacturing machine in 1884.

Despite the availability of manufactured cigarettes, hand-rolled cigarettes are popular in some parts of the world. For example, Indian **bidis** are slim, unfiltered cigarettes wrapped in tendu leaves instead of paper, the leaves being less permeable to air and requiring the smoker to inhale more deeply. Cheap labor in India has enabled these handmade cigarettes to be sold at a competitive price as a prerolled cigarette. However, in other places, some smokers appear to prefer the time-consuming ritual of rolling their own cigarettes from bulk tobacco that is sometimes perceived to have less additives.

bidis thin, hand-rolled cigarettes produced in India. Bidis are often flavored with strawberry or other fruits and are popular with teenagers.

Origins of Tobacco Consumption

Archeological studies of clay pipes and pottery indicate that there was widespread tobacco use in the Americas before explorer Christopher Columbus arrived. Clay pipes and Mayan pottery depicting smoking have been dated before the eleventh century. In 1492, Columbus mentions in his journal seeing a man carrying "dried leaves which are in high value among them for a quantity of it was brought to me at San Salvador" (Borio). When Hernan Cortez conquered the Aztec capitol in 1519, he found Mexican natives smoking tobacco stuffed inside perfumed reeds. A few years later in 1536, Jacques Cartier wrote of the Iroquois who lived near the St Lawrence River:

> *They have a plant of which a large supply is collected in summer for the winter's consumption. They hold it in high esteem, though the men alone make use of it in the following manner. After drying it in the sun, they carry it around their necks in a small skin pouch in lieu of a bag, together with a hollow bit of stone or wood. Then at frequent intervals, they crumble this plant into powder which they place into one of the openings of the hollow instrument, and laying a live coal on top, suck at the other end to such an extent that they fill their body so full of smoke that it streams out of their mouths and nostrils as from a chimney. (von Gernet, p.)*

Similar behaviors were reported among Native-American tribes from differing parts of the Americas in the early years of European settlement.

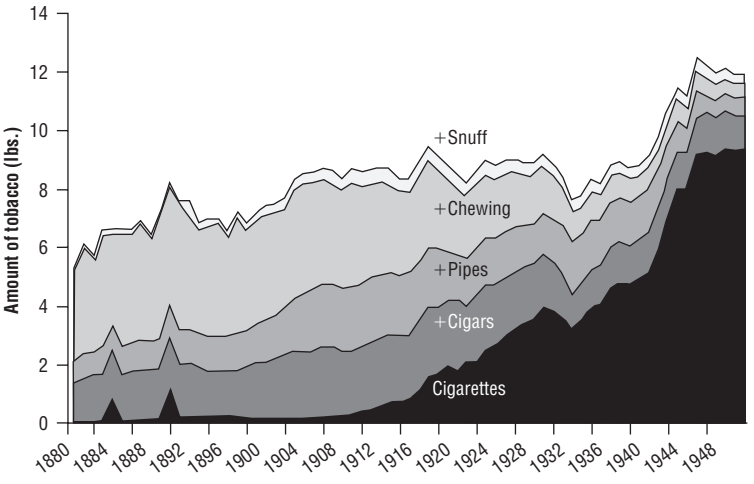
Worldwide Spread of Tobacco Consumption

It is clear from the writings of the time as well as from archaeological excavations that Europe did not consume tobacco prior to Columbus's voyage to the Americas. In the early years after the explorers and sailors introduced tobacco along trading routes and to home countries, most tobacco was smoked with a clay pipe. While there is much evidence that such pipes and other instruments related to smoking (for example, tongs used for obtaining embers from a fire to light a pipe) were found in Europe after Columbus's voyage, there are no such artifacts dated before the voyage. The rapid and widespread diffusion of tobacco consumption around the world has been attributed particularly to Portuguese sailors:

> *Before the end of the sixteenth century the [Portuguese] had developed these small farms to a point where they could be assured of enough tobacco to meet their personal needs, for gifts, and for barter (Brooks).*

The Spanish from Mexico introduced tobacco to the Philippines, where it was cultivated before 1600. Around 1600, Asia and the Ottomans had begun to smoke. The Portuguese brought it to Japan before 1590, and by 1643 it was grown widely in both China and Japan. The Portuguese also introduced tobacco to West Africa by the early seventeenth century. Several Englishmen have been credited with introducing it to England, including explorers James Hawkins, Sir Francis Drake, and Sir Walter Raleigh, but historians agree that Raleigh was the first to make tobacco use fashionable in England, after he smoked at the execution of the Earl of Essex in 1601. In the 1790s, the Scottish explorer Mungo Park, during his attempts to find the source of the Niger River, found tobacco in demand wherever he went in Africa.

FIGURE 1



SOURCE: Haenszel W., M. B. Shimkin, and H. P. Miller. *Tobacco Smoking Patterns in the United States*. Public Health Monograph No. 45, PHS Service Pub. No. 463, 1956.

The rapidity with which tobacco consumption diffused across the world was fueled by the rapid expansion of its cultivation on large tracts of previously wild lands in the Americas. In 1614, the Spanish king acted to ensure an adequate supply of tobacco by mandating that all tobacco grown in the Spanish-controlled New World be shipped to Seville in Spain. Tobacco **plantations** in the English colonies of Virginia and Maryland, manned by a flourishing slave trade, were able to expand their tobacco exports sixfold to meet growing demand between 1663 and 1699. This success led to further expansion of tobacco growing into the new territories as the new nation expanded following the American Revolution.

plantation historically, a large agricultural estate dedicated to producing a cash crop worked by laborers living on the property. Before 1865, plantations in the American South were usually worked by slaves.

Advertising Helps Cigarettes Become Dominant Mode of Consumption

In the United States and elsewhere, the Industrial Revolution created a wide range of economical mass-produced products, signaling the start of the consumer age. In the mid-1880s, James Duke assisted in perfecting the Bonsack machine for manufacturing cigarettes and negotiated a 25 percent lower price than any other cigarette manufacturer. He used the cost savings to start a marketing war (involving product packaging, advertising, promotional activities, and price), to build consumer demand and to consolidate the entire U.S. tobacco industry into a monopoly. However, it was not until the tobacco monopoly was dissolved through antitrust court action in 1911 that cigarette advertising started in earnest. In that year, U.S. annual per capita consumption (the average number of cigarettes smoked per member of the population above a specified age) was still less than 0.5 cigarettes per person (fourteen years of age and older), and cigarettes made up only 5 percent of the tobacco consumption market.

The changes in tobacco consumption over the first fifty years of the twentieth century are presented in Figure 1. R.J. Reynolds, founder of the R.J. Reynolds Tobacco Company, understood the possibilities of cigarettes and introduced a new cigarette (Camel) made from a sweeter tobacco leaf, which he promoted with an innovative and well-funded advertising campaign aimed at men. Reynolds' advertising campaigns and business prowess were so effective that the company has been credited with the rapid increase in per capita consumption—more existing consumers switched to cigarettes and new consumers preferred them. Between 1911 and the start of World War I, cigarette consumption increased by a factor of 2.3, while total tobacco consumption declined.

This conversion to cigarettes increased during the war when nicotine was seen as helpful for handling stress and maintaining attentiveness, and because manufactured cigarettes were easy to carry and were the quickest way to get a nicotine effect. The nation responded when General "Black Jack" Pershing (then commander of the American Expeditionary Forces) indicated that in his view, to win the war, fighting men needed to be supplied with cigarettes as well as bullets. Organizations such as the Red Cross and the Young Men's Christian Association started a drive to provide free cigarettes to the troops. By 1920 cigarettes represented 23 percent of the total tobacco market, though the total market for tobacco products had increased by only 4 percent since before the war.

market share the fraction, usually expressed as a percentage, of total commerce for a given product controlled by a single brand; the consumer patronage for a given brand or style of product.

In the mid-1920s, the American Tobacco Company, with the lowest **market share** of the three major companies (ATC, R.J. Reynolds, and Liggett and Myers), was the first to successfully target women with its innovative Lucky Strikes advertising campaign. The slogan "Reach for a Lucky instead of a sweet" was associated with a major increase in the number of young women starting to smoke. Because the market leader, Camel cigarettes, was slow to follow this lead, by 1930 Lucky Strikes had become the leading cigarette brand in the United States. The large increase in smoking among women was associated with a doubling of per capita cigarette consumption between 1920 and 1930. By then cigarettes had captured 43 percent of the total tobacco consumption market. However, the weight of all tobacco sold in the United States grew by only 2 percent over this period, suggesting that the manufactured cigarette led to a lot less wastage than other methods of consumption.

Huge advertising campaigns for cigarettes continued throughout the 1930s, and the decade ended with little change in the overall weight of tobacco sold but with cigarettes sales at 56 percent of the total tobacco market. This situation changed with World War II when the provision of free cigarettes to the armed forces led to a marked 40 percent increase in the overall weight of tobacco consumed. By the end of the war, cigarettes accounted for almost 75 percent of the weight of all tobacco consumed.

As presented in Figure 1, the amount of tobacco sold per capita grew by 61 percent in this fifty-year period. However, the most important change was the emergence of cigarettes as the dominant form of tobacco consumption. At the start of the century only 2 percent of U.S. tobacco sales by weight were for cigarettes; at the half-century mark, this proportion had risen to nearly 80 percent. However, not all countries had the same advertising-driven rise in consumption of manufactured cigarettes. India is perhaps the best

example, where even as late as the 1990s an estimated 40 percent of tobacco consumption came from chewing tobacco, another 40 percent from hand-rolled bidi cigarettes, and less than 20 percent from manufactured cigarettes.

In the second half of the twentieth century advertising campaigns were also demonstrated to influence consumption behavior, although during this period overall per capita consumption was declining because of the public health campaign against smoking. Three important examples illustrate the effect of advertising on consumption. In the late 1960s, the tobacco industry introduced a group of cigarettes that were made for and advertised specifically to women, Virginia Slims being the most popular. The introduction of these brands was associated with a major increase in smoking initiation by adolescent girls, particularly those who were not college bound. There was no increase in initiation by young adult women or by adolescent or young adult males.

In the late 1970s, the tobacco industry launched a major promotional campaign for smokeless tobacco that was specifically targeted at young baseball players. Between 1978 and 1985, sales of moist snuff increased dramatically. By 1985, 40 percent of male college baseball players were using smokeless tobacco regularly compared to only 3 percent who were smoking cigarettes, in marked contrast to the consumption pattern in the 1950s and 1960s.

The third example is the "Joe Camel" character campaign of the R.J. Reynolds tobacco company introduced in 1987. Reynolds' internal documents demonstrate the company was worried about declining market share and therefore was increasingly excited about the effect of this campaign on adolescents. That effect was a general surge in U.S. adolescent smoking from the start of this campaign until it was halted as part of a legal settlement between states attorneys general and tobacco companies in 1998. During the campaign, adolescent receptivity to tobacco marketing was a major predictor of who started smoking.

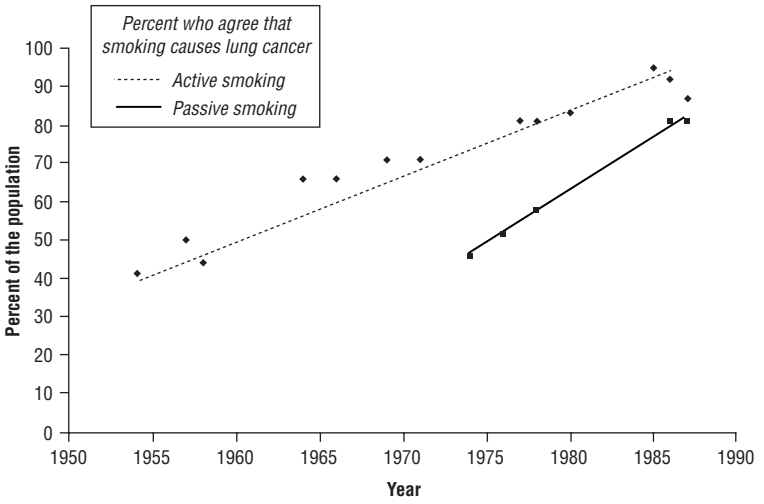
Tobacco and Health

Throughout history, the willingness of people to experiment with tobacco and to continue to consume at high levels has been influenced by beliefs about its medicinal properties and adverse health consequences. From the beginning, tobacco was seen as more than just a recreational drug. For example, the Peruvian natives limited tobacco use to medicinal purposes, generally in the form of snuff, and European medicine at the time readily adopted the idea that inhaling smoke could exert a positive influence. Before 1600 there were several treatises by physicians in different parts of Europe attesting to the widespread prescription of tobacco for numerous maladies. One treatise listed it as a cure for toothache, falling fingernails, worms, halitosis, lockjaw, and cancer; another listed it as a cure for colic, nephritis, hysteria, hernia, and dysentery. The first book written solely about tobacco appeared in 1587 in Antwerp, Belgium, and was titled *De Herbe Panacea*.

While the medical literature occasionally suggested that tobacco use was associated with harmful consequences, it was not until five key research papers were published in 1950 that medical researchers started to become convinced that the sudden rise in lung cancer deaths, beginning

FIGURE 2

Trends in public knowledge about active and passive smoking and lung cancer



SOURCE: United States Department of Health and Human Services. *Reducing the Health Consequences of Smoking: 25 Years of Progress. A Report of the Surgeon General: 1989 Executive Summary*. Center for Chronic Disease Prevention and Health Promotion. Office on Smoking and Health: Washington, D.C., 1989.

in 1920, was caused by the increase in cigarette smoking. Throughout the 1950s, the scientific evidence continued to mount, particularly in the United Kingdom and the United States.

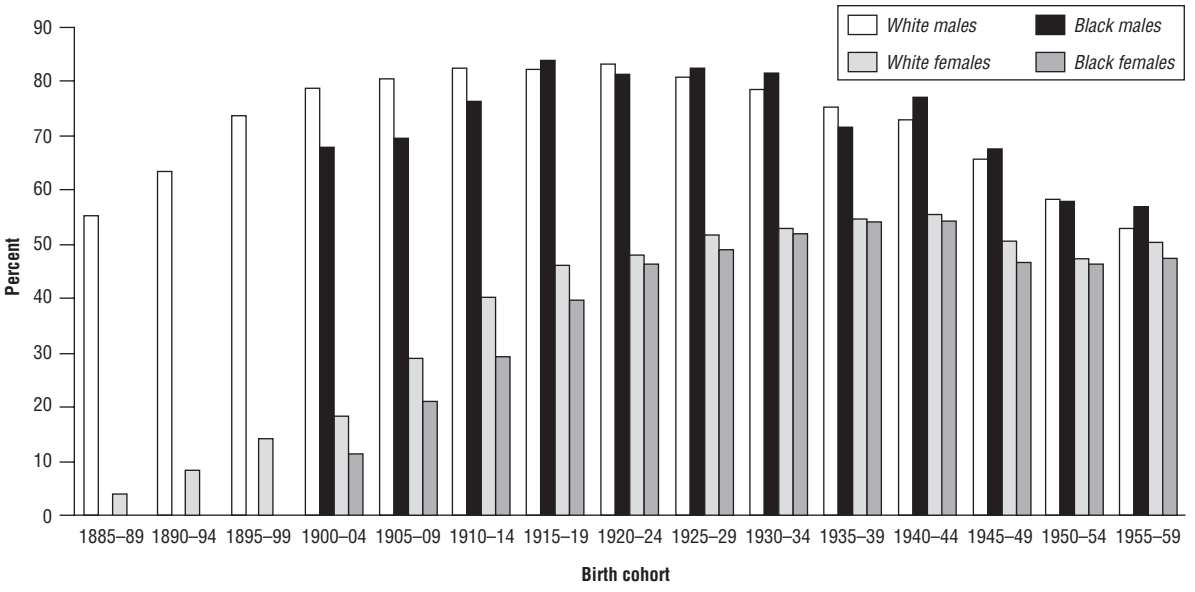
New findings linking smoking to lung cancer received substantial attention in the newspapers of the day and appeared to cause a small but short-lived surge in successful quitting. In response to this threat to cigarette consumption, the tobacco industry introduced filtered cigarettes with advertisements implying that they were less harmful. In addition, beginning in 1953 the industry used its own Tobacco Industry Research Committee (TIRC) to produce and promote scientific critiques of each new piece of evidence.

Public recognition of the dangers of smoking—and its consequent impact on consumption—has been a very gradual process. Even after the release of the 1964 Surgeon General's report, only 66 percent of the population agreed with the statement that cigarette smoking caused lung cancer. In 1978, the tobacco industry introduced "low **tar** and nicotine" products with the promotional message that they would reduce the harmful effects of cigarette smoking. However, scientists have concluded that neither cigarette filters nor "low tar and nicotine" cigarettes result in any identifiable harm reduction for smokers. The power of this strategy was shown by the slow rise in the general acceptance of the link between cigarette smoking and lung cancer (see Figure 2). It was not until the mid-1980s that over 85 percent of the population agreed that smoking caused lung cancer, nearly twenty-five years after the public health community issued one of the most thorough presentations of evidence ever to indict a product.

tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

FIGURE 3

Percentages of demographic groups who have ever smoked in the United States, by birth cohort, gender, and race*



*Cohort data on smoking and race were not available until 1900.

SOURCE: National Institutes of Health. "Changes in Cigarette-Related Disease Risks and Their Implications for Prevention and Control." *Smoking and Tobacco Control*. Monograph 8: Bethesda, Md., 1997.

U.S. Patterns in Starting and Quitting Cigarette Smoking

The two behavioral processes that influence smoking prevalence are smoking initiation and smoking cessation. Considerable evidence reveals an age window during which people are at much greater risk of starting to smoke. Influences on who starts to smoke are environmental. While the environment also influences desire to quit, successful quitting requires the smoker to overcome considerable **physiological,** psychological, and behavioral dependencies that are characteristic of smoking behavior. Thus environmental influences are expected to have a much stronger influence on initiation rates than on cessation rates.

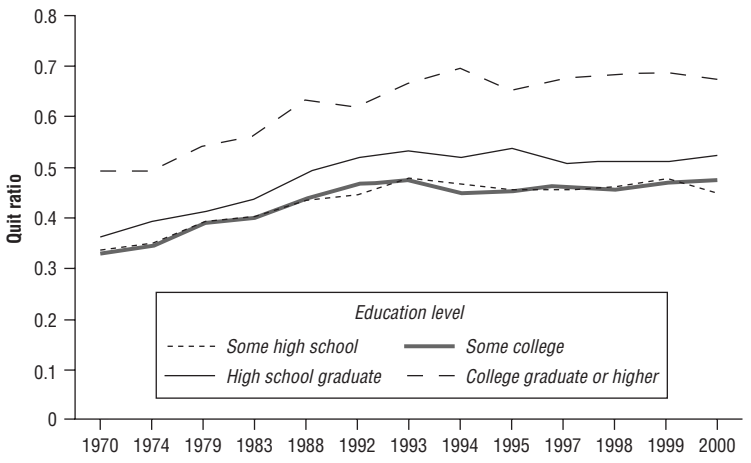
physiology the study of the functions and processes of the body.

MALE AND FEMALE DIFFERENCES IN THE UPTAKE OF CIGARETTE SMOKING. Although cigarette smoking was not very prevalent at the start of the twentieth century and was virtually nonexistent among women, this changed rapidly as the century progressed. The percentage of each U.S. birth cohort (those born during a defined time period, for example 1900–1904) who reported that they had currently or had previously been a smoker (referred to as "ever" smokers and defined as the consumption of at least 100 cigarettes in one's lifetime) is presented in Figure 3.

Among men the highest percentage of ever smokers in a birth cohort was 80 percent. White men born between 1905 and 1929 and African-American men born between 1915 and 1929 reached this peak level.

FIGURE 4

Trends in quitting (quit ratio) among smokers in the United States by education level



SOURCE: Centers for Disease Control and Prevention. Available at <http://www.ced.gov>. Accessed 1 December 2003.

The percentage of ever smokers in a birth cohort started to decline with men in the 1930–1934 birth cohort, that is, those who were under 21 years when the first definitive evidence of smoking and cancer was disseminated. The decline continued with each birth cohort so that among men born between 1955 and 1959 (aged 21 in the late 1970s), just over half (53%) reported ever smoking, one-third less than their parents' generation (1925–1929). Importantly, this decline resulted from a major decrease in the uptake of smoking among adults over the age of 20 years and not from a decrease in uptake among teenagers. Thus, by the year 2000, the vast majority of people who started smoking had had their first cigarette before they were 18 years of age.

Less than 15 percent of women born before the turn of the twentieth century (those turning 21 before 1920) reported ever smoking. This percentage increased dramatically for women born in the first twenty years of the century to around 46 percent for the 1915–1919 birth cohort, coinciding with adolescent exposure to the advertising campaigns that targeted women. African-American women did not catch up to white women until the 1920–1924 birth cohort, after which the patterns were indistinguishable. The proportion of people who reported having smoked at least 100 cigarettes in their lives ("ever" smokers) peaked among women at approximately 55 percent in the 1940–1944 birth cohort and declined slightly to around 50 percent by the 1955–1959 birth cohort. Thus, the large male-female difference in the percentage of people who ever started smoking may have disappeared in cohorts born after 1960.

DEMOGRAPHIC DIFFERENCES IN QUITTING SMOKING. By 1965, of ever smokers, 27 percent of males and 19 percent of females in the United States were former smokers. The lower rate among women

Table 1: Countries by Percentage (Rate) of Males Smoking in 2000

Rate	Country
50% or greater	Belarus, China, Fiji, Indonesia, Kenya, Hungary, Mexico, Peru, Philippines, Republic of Korea, Romania, Russian Federation, Syria, Tunisia, Turkey, Uganda, Ukraine, Uruguay, Vietnam
40–49.9%	Bangladesh, Chile, Cote d'Ivoire, Egypt, Greece, Japan, Malaysia, Moldova, Myanmar, Nepal, Poland, Slovakia, South Africa, Trinidad and Tobago, Zimbabwe
35–39.9%	Brazil, Bulgaria, Czech Republic, Germany, Morocco, Pakistan, Spain, Thailand, Venezuela
30–34.9%	Argentina, Azerbaijan, Denmark, France, Ireland, Italy, Netherlands, Norway, Portugal
25–29.9%	Belgium, Columbia, Finland, Hong Kong Iceland, India, New Zealand, Slovenia, Sri Lanka, Switzerland, United Kingdom, United States (overall)
20–24.9%	Australia, Canada, Dominican Republic, Iran, Singapore
10–19.9%	California (U.S.), Haiti, Nigeria, Saudi Arabia, Sweden

possibly reflects an initial perception that the lung cancer epidemic was peculiar to men and not women, due to the fact that all the early studies on smoking and cancer were completed on men. By 2000, quitting had increased markedly in both genders to 50 percent for men and 47 percent for women.

Differences in quitting are most pronounced between educational groups (see Figure 4). By 1970, almost half of college-graduated U.S. smokers had quit compared to one-third of all other smokers. By 1993, quitting had increased by 13 percent among those who had not attended any college (to 47%) and in 1994, by 21 percent (to 70%) among those who had graduated college. These figures suggest that the higher educated are either more motivated to quit or are more skilled at quitting. However, there were no further increases in quitting in any U.S. group (gender, race, educational) between 1993 and 2000. This halting of the increased trend for successful quitting is a major public health concern and is currently the subject of ongoing research.

WORLDWIDE SMOKING PATTERNS. At the turn of the twenty-first century, lung cancer had become the most common cancer in the world. There are estimated to be 1.2 million new cases each year, about half of which are in the developed countries. The pattern of lung cancer incidence and death follows the pattern of cigarette consumption that occurred about twenty years earlier. Thus, worldwide, lung cancer is three times more common in men than women, because cigarette smoking has historically been much more common in men.

Table 2: Countries by Percentage (Rate) of Females Smoking in 2000

Rate	Country
30% or greater	Argentina, Chile, Germany, Hungary, Ireland, Kenya, Norway, Uruguay
25–29.9%	Brazil, Denmark, Greece, Netherlands, New Zealand, Romania, Spain, United Kingdom
20–24.9%	Bangladesh, Belgium, Czech Republic, Fiji, Finland, France, Iceland, Italy, Myanmar, Nepal, Poland, Slovenia, Sweden, Switzerland, Venezuela, United States (overall)
15–19.9%	Australia, Bulgaria, California (U.S.), Canada, Dominican Republic, Egypt, Mexico, Moldova, Peru, Slovakia, Uganda
10–14.9%	Columbia, Japan, South Africa, Syria, Turkey, Ukraine, Zimbabwe
5–9.9%	Belarus, Haiti, Korea Republic, Pakistan, Philippines, Portugal, Russian Federation, Saudi Arabia, Trinidad and Tobago, Tunisia
Less than 5%	Azerbaijan, China, Cote d'Ivoire, Hong Kong, India, Indonesia, Iran, Malaysia, Morocco, Nigeria, Singapore, Sri Lanka, Thailand, Vietnam

The developed countries with the highest lung cancer incidence are the countries of Eastern Europe, North America, Australia/New Zealand, and South America. In developing countries, the highest rates are seen for countries in the Middle East, China, the Caribbean, and South Africa. For women, the highest incidence rates are in North America and certain European countries such as the United Kingdom, Iceland, and Denmark, with moderate incidence rates found in Australia and New Zealand.

MALE-FEMALE SMOKING RATES AT THE BEGINNING OF THE TWENTY-FIRST CENTURY. In 2000, according to World Health Organization (WHO) data, of the 72 countries selected for review in this chapter, there were 19 in which over 50 percent of men were current smokers (see Table 1). However, many of these countries include those with low annual per capita cigarette consumption levels (see Table 4), suggesting that consumption may be nondaily and even sporadic for many smokers, and the increase in lung cancer may not have been sufficient to galvanize the public health movement against smoking. A further 15 countries had male smoking rates between 40 percent and 50 percent, including South Africa, where there has been a steep decline in annual per capita consumption since the end of apartheid and the change of government to majority rule in 1994. There were only four countries and the U.S. state of California (considered as an autonomous unit since its consumption differs markedly from the rest of the United States) in which male participation was below 20 percent. One of these is Sweden, where there appears to have been a widespread substitution

Table 3: Countries by Year of Peak Cigarette Consumption, 1970–2000

Year	Countries
1970	Bangladesh, Columbia
1971	Fiji
1972	Jamaica, Mexico, Switzerland
1973	Morocco, Trinidad and Tobago, Uganda, United Kingdom, United States
1974	Argentina, Belarus, Congo-dem, Finland, Ireland, United Arab Emirates
1975	New Zealand, Zimbabwe
1976	Denmark, Dominican Republic, Germany, Sweden
1977	Canada, Japan, Honduras, Netherlands
1978	Belize, Ivory Coast, Guinea-Bissau, Liberia, Sri Lanka
1979	Austria, Malaysia, Spain
1980	Australia, Chile, Haiti, Hungary, Sierra Leone, Tajikistan
1981	Mozambique, Peru
1982	Algeria, Belgium, India, Pakistan, Philippines
1983	Azerbaijan, Iceland, Syria
1984	Albania
1990	China, South Africa
1991	Macedonia, Portugal
1992	Nepal
1993	Republic of Korea
1995	Greece, Solomon Island, Vietnam
1996	Cyprus, Thailand
1997	Kazakhstan
1999	Slovakia, Uzbekistan
2000	Bulgaria, Indonesia, Moldova, Russian Fed, Tunisia

of smokeless tobacco for cigarettes. California had a well-funded comprehensive tobacco control program throughout the 1990s.

While 52 countries had male smoking rates of 30 percent or greater in 2000 (see Table 2), only 8 countries (mainly in South America or Europe) had comparable female rates. Eight more countries had female smoking rates between 25 percent and 29.9 percent, including the United Kingdom and New Zealand, two countries that, while having

Table 4: Peak Per Capita Consumption by Country (Persons 15 Years and Older)

Annual Per Capita Consumption	Selected Countries (Cigarette Sticks)
Over 3,000	Slovenia (5,862), Armenia (5,133), Georgia (4,789), Greece (4,252), Iceland (3,931), Switzerland (3,858), United States (without California) (3,672), Poland (3,684), Canada (3,670) Ireland (3,624), Japan (3,564), Bulgaria (3,407), Hungary (3,398), California (U.S.) (3,287), Australia (3,279), United Kingdom (3,187), Republic of Korea (3,103), Albania (3,102), Netherlands (3,058)
2,501–3,000	Spain (2,998), New Zealand (2,994), Russian Fed (2,919), Belgium (2,887), Belarus (2,680), Austria (2,676), France (2,556), Italy (2,551), Slovakia (2,550)
2,001–2,500	Germany (2,500), Philippines (2,425), Belize (2,365), Syria (2,360), Azerbaijan (2,260), Denmark (2,258), Portugal (2,203), Finland (2,194), Kazakhstan (2,145), Argentina (2,108), Malaysia (2,097), Tajikistan (2,095), Ukraine (2,055), Mauritius (2,055) Sweden (2,018), Trinidad and Tobago (2,012)
1,501–2,000	China (1,963), Brazil (1,923), Tunisia (1,855), South Africa (1,834), Columbia (1,699), Algeria (1,656), Egypt (1,615), Uruguay (1,615), Fiji (1,599), Mexico (1,564), Chile (1,554), Jamaica (1,504)
1,001–1,500	Vietnam (1,466), Indonesia (1,434), Morocco (1,401), Honduras (1,356), Sierra Leone (1,280), Thailand (1,168), Dominican Republic (1,146)
501–1000	Norway (976), Ivory Coast (898), Solomon Islands (845), Zimbabwe (819), Pakistan (737), Nepal (703), Uzbekistan (641), Sri Lanka (614), Congo-Dem (556), Mauritania (508)
Less than 500	Bangladesh (492), Liberia (459), Guinea-Bissau (452), Peru (382), Uganda (370), Haiti (351), India (207), Mozambique (192), Myanmar (155), Ethiopia (126)

made progress in reducing smoking prevalence, still had rather high rates. While none of the countries on the WHO list had male prevalence rates below 10 percent, in 25 countries the prevalence among women was, in fact, below this level.

In almost all the countries represented, male smoking rates at the turn of the twenty-first century were dramatically higher than female rates. The countries with the closest male-to-female rates consist of those considered closest to equality in other social areas as well (for example,

Table 5: Countries by Per Capita Consumption in 2000 (Persons 15 Years and Older)

Annual Per Capita Consumption	Selected Countries (Cigarette Sticks)
Over 3,000	Moldova (3,721), Bulgaria (3,407), Japan (3,023)
2,501–3,000	Greece (2,977), Netherlands (2,951), Russian Federation (2,919), Spain (2,909), Switzerland (2,809), Republic of Korea (2,686), Slovenia (2,658), Hungary (2,653)
2001–2500	Poland (2,395), Macedonia (2,310), Ireland (2,304), United States Overall (2,082), Italy (2,039)
1,501–2,000	Belarus (2,000), Portugal (1,997), Iceland (1,958), Kazakstan (1,881), Denmark (1,856), Tunisia (1,855), Germany (1,843), Belgium (1,837), China (1,779), Canada (1,777), France (1,594), Australia (1,568), Slovakia (1,529), Philippines (1,529), Austria (1,516)
1,001–1,500	Indonesia (1,434), Argentina (1,418), United Kingdom (1,374), Mauritius (1,373), Uruguay (1,298), Malaysia (1,274), Chile (1,268), Ukraine (1,242), Egypt (1,615), Armenia (1,207), Syria (1,205), Finland (1,123), Sweden (1,107), Albania (1,056), California (U.S.) (1,051), Honduras (1,044), Vietnam (1,025)
501–1,000	New Zealand (997), South Africa (933), Algeria (859), Brazil (858), Thailand (802), Belize (800), Fiji (745), Dominican Republic (743), Norway (721), Mexico (712), Morocco (708), Trinidad and Tobago (589), Azerbaijan (573), Pakistan (571), Columbia (567), Jamaica (565), Solomon Is (544), Nepal (520)
Less than 500	Zimbabwe (468), Uzbekistan (361), Sri Lanka (338), Mauritania (312), Ivory Coast (277), Bangladesh (234), Tajikistan (181), Peru (160), Uganda (147), Mozambique (138), Guinea-Bissau (133), Liberia (120), India (107), Congo-Dem (105), Myanmar (80)

job opportunity, status within the family), including Switzerland, Denmark, United Kingdom, Ireland, New Zealand, and Norway. There were 22 countries in which the male smoking rate was more than 5 times that of females, including a number with high annual per capita cigarette consumption rates (see Table 4 below) such as Indonesia, Russia, South Korea, and China.

TRENDS IN CONSUMPTION, 1970–2000. Since 1970, WHO has compiled comparable estimates of tobacco consumption from national trade statistics with consumption estimated as locally produced product plus

imports minus exports. Yearly census data are then used to estimate per capita cigarette consumption. However, these data can give a biased picture if there are significant population subgroups in which consumption trends are different (such as women). Another factor that can distort estimates is significant cigarette smuggling into or out of the country not reflected in the trade statistics.

PEAK CONSUMPTION. Between 1970 and 2000, annual per capita cigarette consumption in most countries peaked and started to decline. Table 3 presents the year of the highest recorded consumption in 84 countries. Approximately 20 percent of these countries peaked in each five-year period from 1970 through 1985. However, 15 percent of countries with such data available had not peaked before 1995. The United States and the United Kingdom, the countries first credited with identifying the health consequences of cigarette smoking, were among the first to show a decline in consumption.

The magnitude of peak consumption will be affected by whether there are any significant population subgroups that are not consumers (for example, women and some religious groups). However, it can also reflect a different pattern of consumption in a population (for example, nondaily smoking). Thus, differences between countries or a change within a country in per capita cigarette consumption may not correlate strongly with the incidence of disease. While there is very little data on the variation in blood nicotine concentrations in smokers of different countries, there is considerable evidence that different people extract different amounts of nicotine, carbon monoxide, and tar from the same number of cigarettes smoked because of differences in the way they smoke (for example, how many puffs they take or how deeply they inhale). With these caveats, the peak levels of consumption for different countries are presented in Table 4.

There are huge differences in the peak level of annual per capita cigarette consumption reached in differing countries. A total of 18 countries peaked at more than 3,000 cigarettes per capita—an average of approximately 8 to 9 cigarettes per day for every adult resident in the country, defined by the WHO as those aged 15 years and older. These countries include the predominantly English-speaking developed countries (United States, United Kingdom, Canada, and Australia), only a few Western European countries (Greece, Netherlands, Switzerland), and two Asian countries (Japan and South Korea). Most European countries (26) had a peak per capita consumption between 2,000 and 3,000. Of the 27 countries peaking at less than 1,500 cigarettes per capita, most are from the developing world with the exception of Norway, alone among Western European countries in having a very low peak per capita cigarette consumption.

PER CAPITA CONSUMPTION IN THE YEAR 2000. At the turn of the twenty-first century, only 17 countries had an annual per capita cigarette consumption over 2,000 cigarettes (see Table 5). Seven of these were from Eastern Europe (including Bulgaria, the Russian Federation, Poland, and Hungary) with 6 more from Western Europe (Greece, Netherlands, Spain, Switzerland, Ireland, and Italy). Two Asian countries (Japan and South Korea) and the United States (without California) were at the low end of these high-consuming countries. Sixteen countries and California had per capita consumptions between 1,000 and

Table 6: Change in Per Capita Consumption, 1990–2000

Percentage Change	Country
100% or greater increase	Cyprus, Guinea-Bissau, Mauritania, Myanmar, Russian Fed, Solomon Is, United Arab Emirates
11–99.9% increase	Bangladesh, Bulgaria, Chile, Indonesia, Kazakstan, Leone, Moldova, Netherlands, Pakistan, Sierra Liberia, Spain, Syria, Tunisia, Uruguay, Vietnam, Zimbabwe
0–10.9% increase	Egypt, Honduras, India, Italy, Mauritius, Mozambique, Uganda, Uzbekistan
0.1–10% decrease	Argentina, Belarus, China, Columbia, Denmark, Ireland, Ivory Coast, Japan, Portugal, Switzerland
10.1–20% decline	Canada, Germany, Hungary, Korea-Rep, Nepal, Norway, Philippines, Peru
20.1–30% decline	Belgium, Dominican Republic, France, Greece, Iceland, Malaysia, Morocco, Poland, Sri Lanka, Slovenia, Thailand, Ukraine, United States (overall)
30.1–40% decline	Algeria, Austria, Belize, Ethiopia, Fiji, Jamaica, Mexico, Slovakia, Sweden, Trinidad and Tobago, United Kingdom
40.1–50% decline	Australia, Brazil, California (in the U.S.), Congo (Dem), Finland, New Zealand, South Africa
50% or greater decline	Albania, Armenia, Azerbaijan, Georgia, Haiti, Macedonia, Tajikistan

1,500 cigarettes, including most of those that had declined the most since their peak (United Kingdom, Finland, Sweden, and California). There were 33 countries with per capita consumption below 1,000. These include Norway, the only developed country to have always had low consumption, and 2 countries with major reductions in consumption, New Zealand and South Africa.

CHANGES IN PER CAPITA CIGARETTE CONSUMPTION, 1990–2000. Between 1990 and 2000, a total of 31 countries showed an increase in per capita consumption, while 56 countries had a decrease (see Table 6). However, the tobacco business appears to have been very stable. Annual global cigarette consumption increased by less than 1 percent between 1990 and 2000 to a total of 5,572 billion cigarettes (when considering those countries in the WHO Countries Study with data for approximately both time points). However, over this period, the population over the age of 15 years in these countries increased by 17 percent. Thus, the worldwide per capita cigarette consumption decreased from 1,492 sticks per year in 1990 to 1,283 per year in 2000, a 14 percent decline. Thus, while this appears to be a substantial success for tobacco control, the total number of smokers may not have changed.

Table 7: Estimated Minutes of Labor Required to Cover Cost of Pack of Cigarettes in 2000

Minutes of Labor	Country
Less than 20 minutes	Canada-Quebec, Netherlands, United States (19), Bahrain, Germany (18), Greece, South Korea (17), Switzerland (12),Taiwan (11), Japan (9)
20–29 minutes	Finland, Venezuela (29), Australia (28), Hong Kong, Korea (27), Portugal, Italy (26), Colombia (25), Greece (24), Denmark (23), Malaysia, Spain (21), Austria, Belgium, Turkey (22), Argentina, Canada-Toronto (21), France, South Africa, United Arab Emirates (20)
30–49 minutes	Russian Federation, Singapore (43), Mexico, United Kingdom (40), Chile, Norway (38), New Zealand (35), Ireland (31)
More than 50 minutes	Kenya (92), India (77), China (10), Indonesia (62), Poland (56), Hungary (54)

There were seven countries in which per capita cigarette consumption doubled between 1990 and 2000: Mauritania, Cyprus, Solomon Is, Guinea-Bissau, Russian Fed, United Arab Emirates (UAE), and Myanmar. The per capita consumption rates in Cyprus and the UAE are extremely high (more than 7000 per capita), strongly suggesting that these countries are a source of lower cost smuggled cigarettes for other countries. Three Western European countries, Italy, the Netherlands, and Spain, showed an increase, but only the latter two increased by more than 10 percent. Among the countries that decreased consumption over the decade, 14 experienced a major reduction (less than 40%). These include Finland, Australia, New Zealand, and South Africa, as well as California, all with active tobacco control programs. There were also large drops in per capita cigarette consumption in the United Kingdom and Sweden (less than 30%), with at least part of the Swedish decline attributed to the substitution of snuff for cigarettes among men.

Many of these large reductions in tobacco consumption can be linked to the presence of strong, ongoing tobacco control programs. One of the most successful programs has been conducted in California using numerous strategies to reduce demand for cigarettes, including increasing the price of cigarettes, mass media programs aimed at changing norms on smoking, and restrictions on where people can smoke. The price of cigarettes is comparatively easy to obtain and is one indicator of tobacco control activity. One group of investigators has compared prices between countries by estimating the minutes of labor required to purchase a pack of cigarettes (see Table 7). Cigarettes by this measure were cheapest in a number of the countries with the highest levels of per capita consumption, including Japan, South Korea, Switzerland, the Netherlands, and Greece, underscoring the fact that price is an important tobacco control tool.

See Also Age; Class; Sailors; Soldiers; Women; Youth Marketing; Youth Tobacco Use.

JOHN PIERCE

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Cuba

Beginning about 1580, the port of Havana was a major center of the Spanish tobacco trade. Tobacco arrived into Havana from its outskirts and shipments also came from Jamaica, Nicaragua, the Yucatán, and elsewhere by sea. Within a short time, Cuban tobacco distinguished itself above all others and became the island's major export. Thus the early years of the colony saw the rise of an elite group of growers and merchants whose power was founded, to a large extent, on their participation in the tobacco industry. Until the end of the seventeenth century, this elite had few restrictions in its conduct of trade. The growers, who raised tobacco on small farms, depended on the merchants for the exportation of their harvests, and on the large landowners or the church for land to rent.

In the seventeenth century Cuban tobacco had already gained worldwide renown, based on its reputation for high quality and exquisite taste. As a consequence, it commanded international market prices two or three times greater than those of its competitors. The combined incentives of high prices, growing European demand, and a consolidated structure of production on the island made the metropolis determined to take advantage of this promising trade for its own commercial and legal benefit. From then on, at least until the early nineteenth century, the Spanish Crown's attempts at control left a marked imprint on the history of tobacco in Cuba.

Spanish Policies Toward Cuban Production

By the end of the seventeenth century, tobacco production within Cuba had spread significantly. The main market was Spain. The preferred method of consumption in Europe at this time was "polvo" (powder) or **snuff,** and its manufacture was the most important activity of the Tobacco Factory of Seville, a public enterprise owned by the monarchy. The factory's products required a large supply of tobacco leaves, especially the Cuban ones most favored by consumers. In 1698, to guarantee that the supply serving the Seville factory did not falter, direct royal tobacco purchases in Cuba began. From the beginning, silver from New Spain (Mexico) financed these purchases.

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

In 1717, royal regulations were strengthened to make the treasury the sole buyer of Cuban production. In other words, a buyer's monopoly was formed. In contrast to the liberties tobacco planters had enjoyed up until then, from this moment on they could sell their product only to the king, at prices fixed by the government. Even more affected, however, were the local merchants, who found themselves excluded from this profitable trade. Protests were not long in coming. The farmers staged an uprising, destroying and burning their own crops. The richest citizens of Havana, with capital in the tobacco business, instigated these revolts. Church officials, as beneficiaries of **tithes** and other taxes on land dedicated to tobacco, also agitated against the monopoly, even in their sermons.

tithe a one-tenth portion of produce or income given to the church. Historically, tithes were sometimes levied without the consent of the population.

Still, the royal representatives managed to buy some quantities of tobacco and send them to Spain. For several years, tobacco growing was caught between the competing interests of the Crown and local groups, and the island witnessed three rebellions against the monopoly. After the last of these, in 1723, the king abolished the monopoly, although he did not end the tobacco purchases made by the royal treasury (which had not, in any case, provoked opposition).

Nonetheless, the Spanish government continued to worry about supplies for the factory in Seville, as well as to fear the harm **contraband trade** could do to the official commerce. For the next several decades, various alternatives were developed to satisfy royal interests in this field, but none offered the expected results.

contraband trade traffic in a banned or outlawed commodity. Smuggling.

The Tobacco Monopoly

The definitive solution came in 1760 with the establishment of a new monopoly and of the *Real Factoría de Tabacos* (Royal Tobacco Agency) of Havana. The fundamental objective of the monopoly was still to supply raw material to the royal factory in Seville. The *Factoría* in Havana had the responsibility of guaranteeing this supply by controlling and regulating the products of Cuban planters.

The earlier experience had shown that if the growers were not satisfied, there could ensue uprisings that would obstruct the efficient establishment of the monopoly. For this reason, royal instructions were careful to send the message that the new regulations' goal was to aid planters and stimulate production. The officials in charge of the *Factoría* were urged to be prudent and gentle with the population and especially with the growers. In the event of conflicts, they were to attempt persuasion, so that the islanders would be convinced that this institution was to their benefit.



Men in tobacco field in Pinar del Rio, Cuba. Tobacco from Cuba is renowned for its flavor and quality. © ROBERT VAN DER HILST/CORBIS

The growers were instructed to hold regional meetings to determine the best method of planting and caring for tobacco, and to agree on the price they hoped to receive. These meetings discussed everything relevant to the reciprocal interests and obligations of the royal treasury and planters surrounding the purchase of tobacco. The instructions did not skimp on details about how production should be managed: They specified the time and manner in which the seedbeds should be prepared; the method of transplanting the seedlings; directions for the harvest and curing of the leaves, and their preparation into sheaves or bundles, and even procedures for the tobacco's delivery to the royal warehouse. To avoid the discontent of the farmers, the treasury offered prices higher than those paid by private merchants. It was also thought that *Factoría*'s stringent demands as to methods of planting, care, and delivery of the tobacco justified a higher price as well.

On the other hand, the regulations establishing the *Factoría* also included mechanisms of supervision and legal control related to all aspects of the monopoly. Though cultivation of the plants and harvesting and drying of the leaves were in the hands of the growers, the *Factoría* bought the entire crop, of which it sent a part directly to Seville in leaf, and milled the other part on the island, which was later shipped as partially processed snuff. The latter required investments in technology and slaves. Though most of the ground tobacco was sent to the factory in Seville for still further refinement, small portions were also sold to other colonies within the Spanish Empire.

In Cuba, cultivation of a tobacco plant began with the preparation of a seedbed in uncut forest land. When the germinated seeds reached a length of one-quarter *vara* (about 20 centimeters) they were transplanted to tobacco fields near rivers, preferably subject to flooding. The growers were instructed to then care for the plants until they had matured, at which point they should carry out the harvest leaf by leaf, selecting those that were useful and of good quality. The harvested leaves were to be hung two by two from stout poles, tying them by their heads with the veins toward the top, with one finger's worth of space between every two leaves, and not more than 150 hung from any one pole, so that the tobacco should not be crushed and lose its quality. The poles, known as *cuges*, were to be mounted within barns (*estancias*), protected from both sun and air. After forty days, the time it would take the leaves to dry, they were to be wrapped in hides, pressed, and delivered to the *Factoría*.

Cuban growers had previously been accustomed to transporting tobacco during the night for protection from the sun. Under the administration of the *Factoría*, however, they were required to do so by day. In case for some reason this could not be done, the tobacco would not be accepted until 10:00 A.M. These restrictions were owing to the fact that the nighttime dew dampened the loads being transported, increasing their weight and therefore their price.

The *Factoría de Tabacos de La Habana* formally opened on 1 March 1761. A little more than a year later—in August 1762—its operation was interrupted by the English invasion. When Spain recovered the colony, the *Factoría* resumed its duties and continued to function until 1817. Between 1766 and 1773, the Cuban tobacco monopoly experienced its best years, a period of growth and **consolidation,** as evidenced by the high volumes of leaves received at the *Factoría* and sent to Spain.



consolidation combining smaller units into a larger one. In agriculture, consolidating small farms into one large farm usually makes operations more efficient and profitable.

Land Conflicts

As might be expected, however, not all was harmonious. In general terms, the agrarian structure of the island from the sixteenth century on was characterized on by the creation of large cattle ranches on the one hand and small agricultural plots on the other. With the intensification of the tobacco business in the seventeenth century, the practice of making room for small agricultural units within the cattle haciendas became preponderant. The ideal sites traditionally devoted to tobacco growing were the *vegas*, small riverside parcels of land. As tobacco production grew, the *vegas* became population centers, acquiring great demographic importance. The basic geographical element of natural *vegas* determined that their spread would follow the routes of the rivers. But because they were almost always located within large haciendas, these centers confronted obstacles that limited their growth.

As long as the tobacco *vegas* did not constitute the basis of a growing export trade, the hacienda owners permitted them. But in the mid-seventeenth century, the surge in tobacco exports made the *vegas* an expansive force that threatened the interests of the ranchers. This led to a plethora of disputes between hacienda owners and tobacco planters that lasted into the nineteenth century.

The conflict between these two groups also affected the woodlands within the jurisdiction of the haciendas. These woodlands, it will be recalled, were the sites of the seedbeds for the tobacco later transplanted to the *vegas*. The representatives of the tobacco growers argued that the use of woodlands for this purpose lasted no more than seven months, and that a given parcel was not used again for fifteen or twenty years, the recommended fallow period. Thus, they considered the hacienda owners' intransigence unjustified. But the latter persisted in prohibiting access to the woodlands. With the creation of the *Factoría*, royal officials tried to guarantee the growers' access to both *vegas* and woodlands, sometime through stringent legislation.

Tobacco Finance

From the time Spain's royal treasury first began buying tobacco in Cuba, such payments were financed with silver from New Spain. The establishment of the *Factoría*, through which the state bought the entire Cuban harvest, reaffirmed this practice. The purchases were paid for with fixed contributions sent from New Spain, called *situados de tabaco*, which totaled 400,000 pesos annually until 1767 and 500,000 thereafter.

For the Seville factory to be well supplied with raw material, the purchases in Cuba had to be assured. For this in turn to be accomplished, silver from New Spain was key. Thus, the whole mechanism depended to a great degree on the *situados*. Yet that revenue source was the greatest weakness of the monopoly because it meant the monopoly relied almost exclusively on the *situados* without being able to count on any other mechanisms of revenue or capitalization.

When war broke out, which was frequently in the last third of the eighteenth century, the shipments were interrupted. They were also interrupted whenever New Spain faced any financial problems. Thus, from 1779 on, the *situados* began to fail more and more often, so that the structure of the *Factoría* began to collapse. When Mexico launched its war of independence, the *situados* disappeared forever. The *Factoría* likewise ceased to function, and it was officially abolished in 1817.

By then, the sugar industry had already replaced tobacco as Cuba's principal economic activity. Tobacco production went through some crisis years in which its yield was insignificant. In the 1840s, however, it once again became apparent that Cuban tobacco had maintained its incomparable international prestige, which it still enjoys in the twenty-first century.

See Also British Empire; Caribbean; Dutch Empire; French Empire; Spanish Empire.

LAURA NÁTER

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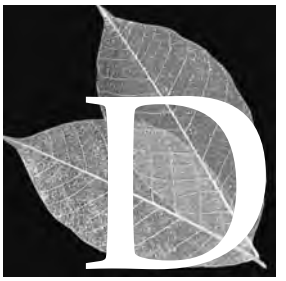
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Developing Countries

The global distribution of tobacco consumption is increasingly inequitable, meaning that the diverse social, economic, and health impacts are increasingly borne by developing countries. A marked shift in smoking patterns is occurring. As the percentage of people who smoke has been decreasing in most high-income countries over recent decades, it has been increasing substantially among low- and middle-income countries (LMICs). These countries already account for 82 percent of the world's smokers (Gajalakshmi et al. 2000). This change in smoking patterns is being followed by a change in patterns of tobacco-related disease and death. Around 4.9 million deaths were attributable to tobacco use worldwide in 2000, an increase of 45 percent since 1990, with the most rapid increase seen in developing countries which now account for 50 percent of these deaths (World Health Organization 2002). It is predicted that by 2030 the global total of annual tobacco related deaths will reach 10 million, or around one in six adult deaths; 70 percent of these deaths will occur in developing countries (Gajalakshmi et al. 2000).

Broader social and economic changes associated with globalization have facilitated this shift in smoking patterns, as have international agreements designed to free or liberalize trade. The opening of cigarette markets in LMICs to Western-based transnational tobacco companies is emerging as critical to the development of the global industry and has provided a foundation for the spread of the tobacco epidemic. The transnational tobacco companies, led by Philip Morris and British American Tobacco, targeted markets in Latin America in the 1970s and Asia in the 1980s. More recently countries in the former Communist bloc have been targeted including those in Central Asia, plus Africa, and the world's largest market, China. The impact of expansion into these markets is illustrated by research into the opening of the markets of Japan, South Korea, Taiwan, and Thailand following the threat of trade sanctions by the United States. It is estimated that the opening of these markets increased per capita cigarette consumption by an average of 10 percent by 1991 (Chaloupka and Laixuthai 1996).



Motorcycles are a common distribution method in low-income countries. This Marlboro cycle is delivering Philip Morris tobacco products to small shops like the one visible in the background. PHOTO BY ANNA WHITE

Whether viewed from a health or a development perspective, it is important to note that while trade liberalization has led to increased consumption of tobacco overall, the distribution of this rise has been uneven. There has been no substantive effect on consumption in high-income countries, but trade liberalization has had a large and significant impact on smoking in low-income countries and a significant, if smaller, impact on middle-income countries (Taylor et al. 2000). Such differential impacts seem likely to have further implications for health equity, with developing countries again assuming a disproportionate burden.

Consumption Patterns

Despite these core trends in the global tobacco epidemic, consumption patterns among developing countries remain diverse, differentiated for example by region, gender, and product. Consumption is estimated to be highest

in the Western Pacific, driven by the high rates in the Chinese market, and lowest in Africa, particularly sub-Saharan Africa (Gajalakshmi et al. 2000). The few reliable data do, however, indicate that smoking in Africa is rising significantly, particularly among the young (Shafey et al. 2003).

In contrast with the broad convergence of male and female smoking prevalence across much of Europe and North America, huge disparities in tobacco use by gender remain in many developing countries. Whereas the World Bank estimated smoking prevalence among men and women in high-income countries at 38 percent and 21 percent respectively, in LMICs these figures were 49 percent among men and 9 percent among women (Gajalakshmi et al. 2000). A particularly stark example is provided by China, where adult male smoking prevalence of 53 percent contrasts with only 4 percent among women.

The magnitude of difference in male and female consumption among developing countries does, however, need to be qualified. In many countries cultural barriers have traditionally served to prohibit smoking by women. Current figures are likely to underestimate actual tobacco use among women, due to under-reporting. More significantly, the primary emphasis on cigarette smoking ignores traditional widely practiced noncommercial forms of tobacco use. In India, for example, female cigarette use in urban centers is confined to between 2 percent and 5 percent, whereas up to 67 percent of rural women use chewing tobacco (Samet and Yoon, eds. 2001). It is also anticipated, especially in Asia, that increasingly targeted marketing by transnational tobacco companies, in combination with broader socioeconomic changes, are likely to lead to significant increases in smoking prevalence. Such increases among women have been reported in Cambodia, Malaysia, and Bangladesh (Shafey et al. 2003).

Varieties of Tobacco Consumed

In contrast to the almost exclusive use of manufactured white-stick cigarettes in the West, tobacco consumption in a variety of forms continues in developing countries. **Bidis,** which are typically hand-wrapped in **temburni leaf** and tied with string, deliver high levels of **tar** and carbon monoxide. This form of tobacco is commonly used in much of South East Asia, and in India seven are sold for every one cigarette. In Indonesia, consumption is predominantly of **kreteks,** a form of cigarette that blends tobacco with cloves. The latter ingredient gives off **eugenol,** which has an anesthetizing effect leading to deeper inhalation and high tar yields. The use of smokeless tobacco, predominantly chewing tobacco, is also widespread across much of South, Southeast, and Central Asia, North Africa, and the Eastern Mediterranean where tobacco is chewed in combination with a wide range of sweet flavorings. Additional regionally significant forms of tobacco use include the water pipe (*shisha*, *hookah*, or *hubbly bubbly*), which is common in many countries of North Africa, the Mediterranean, and parts of Asia; and the clay pipe (*chillum* or *hookli*) in South East Asia (Mackay and Eriksen 2002).



bidis thin, hand-rolled cigarettes produced in India. Bidis are often flavored with strawberry or other fruits and are popular with teenagers.

temburni leaf a leaf used to wrap bidis cigarettes.

tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

kretek a clove cigarette, originally of Indonesian origin.

eugenol an aromatic chemical derived from cloves. It is the active ingredient found in clove cigarettes.

Health Impacts of Tobacco Use

Because of the cost and complexity of organizing **epidemiological** research, most of the evidence on the health impacts of tobacco use comes from high-income countries. Recent studies from China and India, however, suggest that although the overall risks of smoking are



epidemiological pertaining to epidemiology, that is, to seeking the causes of disease.



A street vendor selling cigarettes in Manila, Philippines, 2001. The percentage of people who smoke has been increasing substantially among individuals in low- and middle-income countries. © AFP/CORBIS

about as great as in high-income countries and the diseases caused by smoking are similar, the specific pattern of smoking-related diseases may differ (Chen et al. 1997; Gupta and Mehta 2000; Gajalakshmi et al. 2000). This occurs for a number of reasons including the type of tobacco used (with oral cancers more common in populations using smokeless tobacco), its tar and nicotine yields, the age of first smoking, the presence and prevalence of other **etiological** and infective agents with which smoking may interact (Stewart 2003), the stage of the tobacco epidemic, and variations in underlying causes of illness.

etiological concerned with the origins of disease.

The effects of smoking can kill by making diseases that are already common more so. In most developing countries, the epidemic is in a relatively early stage and the full impacts of tobacco on population health have yet to be realized. A key issue for countries yet to complete the epidemiological transition from external to internal causes of death is the additional burden of disease that tobacco will cause at a time when infectious and other causes of death have yet to decline.

Tobacco Cultivation

Cultivation of tobacco leaf is increasingly dominated by LMICs, with China, India, Brazil, Turkey, Zimbabwe, Indonesia, and Malawi all among the world's top ten producing nations in 2001. Tobacco is grown in over 125 countries, though substantial economic dependence on the crop is far less common; it accounts for over 1 percent of total export earnings in only 18 countries and for over 5 percent in just 4, namely

Kyrgyzstan, Macedonia, Zimbabwe, and Malawi (at 8%, 16%, 32%, and 58% respectively) (Campaign for Tobacco Free Kids 2001).

The prominence of LMICs among tobacco producers has, however, been used by the tobacco industry to present tobacco control initiatives as antithetical to development. An examination conducted for the World Health Organization of industry documents made available via litigation revealed the scale of efforts to portray such activities as a "First World" agenda carried out at the expense of developing countries. Documents have identified the explicit use of the International Tobacco Growers Association as a front group for industry lobbying. This organization has made concerted efforts to stop developing countries from becoming committed to tobacco control, to divide the World Health Organization from other United Nations agencies and restrict its funding, and to create an international consortium to mobilize officials from developing countries to advance pro-tobacco positions (Zeltner et al. 2000).

Impact of Tobacco Controls

Increasing evidence illustrates the potential contribution of tobacco control to development. Research in Bangladesh has demonstrated how expenditure of household income on tobacco can worsen poverty and diminish living standards among the poor. In Bangladesh, the poorest households are twice as likely to smoke as the wealthiest, and close to 10.5 million people currently suffering from malnutrition could have an adequate diet if such expenditure were spent on food instead (Efroymson et al. 2001).

As a result of research led by the World Bank, it is increasingly clear that, for the vast majority of developing countries, increased taxation of tobacco products would not cause long-term job losses. Tobacco control actually presents policy makers with a virtuous circle, combining substantial benefits for public health through reduced consumption with an expansion in revenues via increased taxation. It is also worth noting that improved tobacco control is not going to result in a sudden collapse in demand for these products. Indeed the number of people using tobacco products is expected to increase by more than 500 million during the first quarter of this century (World Bank 1999).

Tobacco Control Policies

The later onset of the tobacco epidemic among developing countries, the complex and competing health priorities, and the continuing influence of the tobacco industry are reflected in generally weaker health regulation. This general pattern is, however, punctuated by a number of states with comprehensive legislation including Thailand, Singapore, and South Africa.

The recent completion of negotiations for the World Health Organization's first public health treaty, the Framework Convention for Tobacco Control (FCTC), raises the opportunity for a broader expansion of regulation across developing countries. A distinguishing feature of the negotiations was the prominent role played by the African and South East Asian regions, their impact heightened by adopting regionally coordinated positions. These combined a powerful commitment to tobacco control, including calls for the FCTC to take priority over trade



A Dani child smokes a cigarette as a fire burns between the village's thatch-roofed huts, in the Baliem Valley, Indonesia, 1994. © CHRIS RAINIER/CORBIS

agreements, with demands for financial resources to assist **diversification** for countries dependent on tobacco production (Shafey et al. 2003). Nevertheless, there remains an urgent need for implementation and enforcement of effective tobacco control policies in most developing countries.

diversification in agriculture, avoidance of overdependence upon one crop by producing several different crops.

JEFF COLLIN
ANNA B. GILMORE

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Disease and Mortality

Tobacco was used in the pre-Columbus Americas for medicinal and religious purposes. Following the first voyage of Columbus, within several centuries of the arrival of tobacco in Europe, as use of tobacco products became prevalent, tobacco was suspected as a cause of disease and mortality. In the 1900s, cigarette smoking became a common and widespread practice among men, probably because of the efficacy of cigarette smoking in delivering nicotine, now known to be addicting, and the powerful marketing of very large corporations. The first indications of the coming epidemic were apparent in the early 1900s as lung cancer death rates began to increase and doctors began to see increasing numbers of cases of this fatal disease.

Lung cancer, now the most common cause of cancer death in the United States, was a relatively rare disease prior to the widespread use of tobacco in developed countries in the first half of the twentieth century. One hypothesis attributed the epidemic increase in lung cancer to worsening environmental pollution from the fumes of motorcars, from industrial plants, from the surface of tarred roads, and from gas works (Doll and Hill 1950). Richard Doll, one of the foremost researchers to link smoking with cancer, later commented, "I was fascinated by the enormous increase in mortality from lung cancer. At first I thought it was more likely to have something to do with motorcars. But I used to go around the wards checking the notes after discharge to see whether the diagnosis [of lung cancer] was confirmed or not and what immediately struck me was that if a person was a nonsmoker the diagnosis was practically never confirmed, but if he or she was a smoker then it was



An antitobacco advertisement showing Joe Camel as "Joe Chemo" in a hospital bed. AP/WIDE WORLD

epidemiology a branch of medicine that investigates the causes and contributing factors of disease.

almost always lung cancer" (Bower 1997). Lung cancer was not the only disease to increase during this period; rises were noted for other cancers, and for chronic heart and lung diseases.

These increases were investigated using **epidemiology.** Epidemiologic studies are designed to uncover the factors that lead one person to develop a disease while some others do not. Epidemiology, defined as the study of the occurrence and causes of disease and death in populations, has been central in tracking the epidemics of diseases related to both active and passive smoking and making the causal linkages to smoking. Typically, an epidemiologic study evaluates the risk for a disease in the exposed persons (smokers) and nonexposed persons (nonsmokers). The "relative risk" refers to the ratio of these two risks. The relative risk can be estimated through two different types of epidemiologic study. A cohort study involves following smokers and nonsmokers over time and comparing disease rates in the two groups. A case-control study involves comparing the smoking habits of people with the disease being studied, for example lung cancer, with smoking habits of similar people without the disease. Epidemiologists gauge the strength of a factor in causing a disease by the size of the relative risk; for lung cancer, they would also examine whether the relative risk is higher for those who have smoked more or longer.

By the early 1950s, landmark epidemiologic investigations provided irrefutable scientific evidence on smoking as a cause of lung cancer, and evidence for causation of other diseases also began to accumulate. To date, numerous scientific publications and summary reports have implicated cigarette smoking as a cause or contributing factor to an ever-lengthening list of diseases: stroke, heart attack, emphysema, chronic bronchitis, pregnancy complications, many types of cancers, and even cataract. Smoking harms nearly every organ of the body, causing not only many specific diseases, but also poorer health in general and a shortened lifespan for smokers as compared to nonsmokers. The scientific research on the many adverse effects of smoking is the largest and best-documented literature linking any behavior and environmental agent to disease in humans. Richard Doll writes, "That so

Calculating Risk of Lung Cancer from Smoking

In a cohort study, Richard Doll and Richard Peto tracked British doctors for 20 years. In the study population, death rates from lung cancer in smokers and nonsmokers were 140 and 10 per 100,000 respectively.

To calculate the *relative risk* of lung cancer:

$$\frac{\text{risk of exposed (smokers)}}{\text{risk of unexposed (nonsmokers)}} = \frac{140}{10} = 14$$

A relative risk of 14 means that smokers are 14 times more likely to die from lung cancer than nonsmokers.

To calculate the *attributable risk,* or the total risk of lung cancer in smokers that is attributable to smoking, we would subtract the risk in the unexposed group (nonsmokers) from the risk in the exposed group (smokers).

Attributable risk = Risk of exposed – risk of nonexposed:
140 – 10 = 130 per 100,000

An attributable risk of 130 means that of the 140 lung cancer deaths in smokers, 130 are due to smoking.

To calculate the percent attributable risk, or the percent of lung cancer attributable to smoking, we would divide the attributable risk by the risk in smokers.

$$\text{Percent Attributable risk} = \frac{(140 - 10)}{140} = 92.9\%$$

A 92.9 percent attributable risk means that of the lung cancer deaths in smokers, 92.9 percent is caused by smoking.

FROM DOLL, RICHARD, AND RICHARD PETO. "MORTALITY IN RELATION TO SMOKING: TWENTY YEAR'S OBSERVATION ON MALE BRITISH DOCTORS." *BRITISH MEDICAL JOURNAL* 2 (1976): 1525–1536.

many diseases—major and minor—should be related to smoking is one of the most astonishing findings in medical research in this century; less astonishing perhaps than the fact that so many people have ignored it" (Doll 1999).

Health Effects from Active Smoking: A View from Across the Centuries

The extent to which active smoking damages health and causes disease is remarkable. Active smoking results in most of the leading causes of death worldwide: cancers, cardiovascular diseases, chronic respiratory diseases, and respiratory infections. The risks for most of these diseases increase with the number of cigarettes smoked and the length of smoking, and decrease after quitting. Filters on cigarettes do not greatly reduce the risk of smoking, nor are the cigarettes labeled "light" or "mild" any safer than regular cigarettes (NIH 2001). Since 1964 the U.S. Surgeon General has published periodic reviews of the health effects of smoking. The following table lists the diseases that have been linked to smoking and provides the U.S. Surgeon General's highest-level conclusion concerning the causation of the disease by smoking:

Disease	Highest-Level Conclusions from Previous SGR Reports (Year)
Atherosclerosis/ Aortic Aneurysm	"Cigarette smoking is the most powerful risk factor predisposing to atherosclerotic peripheral vascular disease." (1983)

Bladder Cancer	"The decline in risk of bladder cancer with cessation further supports the conclusion that cigarette smoking causes bladder cancer." (1990)
Breast Cancer	"Neither smoking nor smoking cessation is associated with the risk of cancer of the breast." (1990)
Cerebrovascular Disease	"Cigarette smoking is a major cause of cerebrovascular disease (stroke), the third leading cause of death in the United States." (1989)
Cervical Cancer	"Smoking has been consistently associated with an increased risk for cervical cancer." (2001)
Chronic Obstructive Pulmonary Disease (COPD)	"Cigarette smoking is the most important of the causes of chronic bronchitis in the United States, and increases the risk of dying from chronic bronchitis." (1964)
Coronary Heart Disease	"In summary, for the purposes of preventive medicine, it can be concluded that smoking is causally related to coronary heart disease for both men and women in the United States." (1979)
Endometrial Cancer	"[C]urrent smokers are at lower risk of endometrial cancer than never smokers, but it is not clear whether this protective effect of smoking on endometrial cancer risk might be reversed soon after cessation of cigarette smoking." (1990)
Esophageal Cancer	"Cigarette smoking is a major cause of esophageal cancer in the United States." (1982)
Kidney Cancer	"Cigarette smoking is a contributory factor in the development of kidney cancer in the United States. The term 'contributory factor' by no means excludes the possibility of a causal role for smoking in cancers of this site." (1982)
Laryngeal Cancer	"Cigarette smoking is causally associated with cancer of the lung, larynx, oral cavity, and esophagus in women as well as in men. . . . " (1980)
Leukemia	"Leukemia has recently been implicated as a smoking-related disease . . . but this observation has not been consistent." (1990)
Liver Cancer	"Women who smoked may have increased risks for liver cancer. . . . " (2001)

Lung Cancer	"Additional **epidemiological,** pathological, and experimental data not only confirm the conclusion of the Surgeon General's 1964 Report regarding lung cancer in men but strengthen the causal relationship of smoking to lung cancer in women." (1967)
Oral Cancer	"Cigarette smoking is a major cause of cancers of the oral cavity in the United States." (1982)
Ovarian Cancer	"[T]here is little evidence that smoking is associated with cancer of the ovary." (1990)
Pancreatic Cancer	"Smoking cessation reduces the risk of pancreatic cancer, compared with continued smoking, although this reduction in risk may only be measurable after ten years of abstinence." (1990)
Peptic Ulcer Disease	"The relationship between cigarette smoking and death rates from peptic ulcer, especially gastric ulcer, is confirmed. In addition, morbidity data suggest a similar relationship exists with the prevalence of reported disease from this cause." (1967)
Stomach Cancer	"Data on smoking and cancer of the stomach . . . are unclear." (2001)
Diminished Health Status/Morbidity	"Relationships between smoking and cough or phlegm are strong and consistent; they have been amply documented and are judged to be causal. . . . Consideration of evidence from many different studies has led to the conclusion that cigarette smoking is the overwhelmingly most important cause of cough, sputum, chronic bronchitis, and mucus hypersecretion." (1984)

epidemiological pertaining to epidemiology, that is, to seeking the causes of disease.



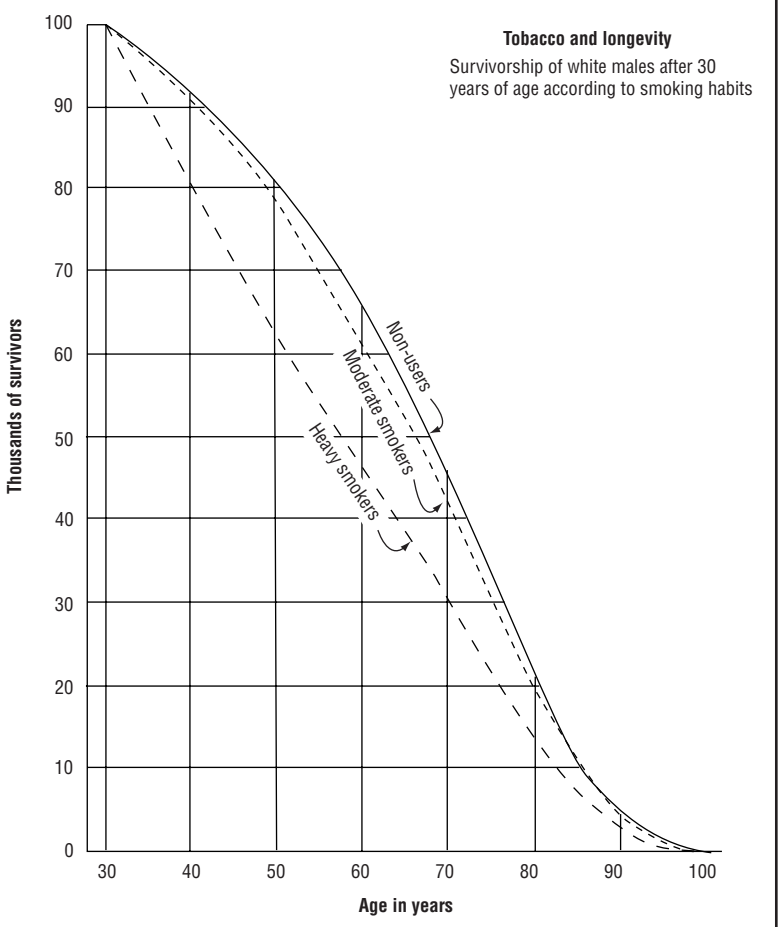
This man, photographed in 1997 at age sixty-four, suffers from emphysema and throat cancer. Today, it is well accepted that cigarette smoking causes cancer, but the dangers of smoking were not well known before the 1950s. © ED KASHI/CORBIS

Reduced Life Span—Mortality from All Causes

Not surprisingly, smokers have a substantially reduced life span in comparison with people who have never smoked. One of the first studies on the health effects of tobacco was conducted in 1938 by Dr. Raymond Pearl, a biostatistician at the St. Johns Hopkins School of Public Health. Dr. Pearl collected medical histories, complete with smoking habits, of 6,813 men living in Baltimore. He found a sharp decrease in the number of survivors after the age of thirty-five years in male heavy users compared to nontobacco users. Figure 1 shows survival curves for nonsmokers, moderate smokers, and heavy smokers. At the 50 percent point (median) there is an eight-year difference between nonsmokers and heavy smokers. For the time, Pearl offered the controversial conclusion

FIGURE 1

Raymond Pearl's survival curve: tobacco and longevity



SOURCE: Pearl, Raymond. "Tobacco Smoking and Longevity." *Science* 87 (1938): 216–217.

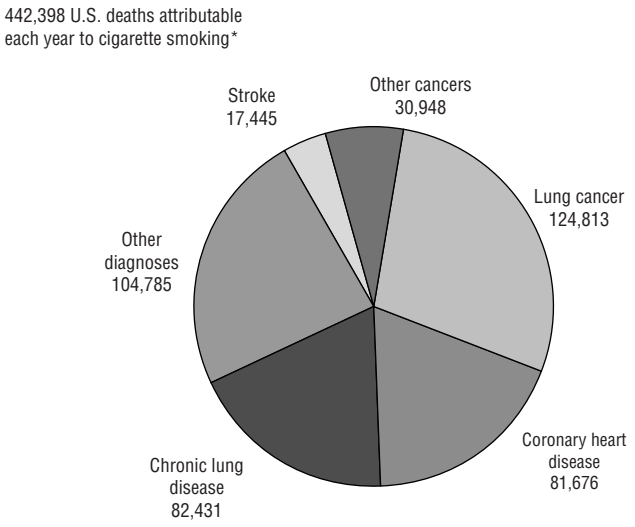
that smoking "is associated with a definite impairment of longevity" (Kluger 1997).

Numerous other studies have also documented reduced life span in smokers compared to nonsmokers. In a study of 34,000 male British physicians tracked for forty years from 1951–1991, the median life expectancy after age thirty-five years was seven and one-half years shorter for smokers compared to nonsmokers (Doll, Peto, and Wheatley 1994). The decrease in survival was inversely related to the length and intensity of smoking: those who smoked more cigarettes per day and over a greater period of years had shorter life spans. Calculations in the 1990 U.S. Surgeon General's Report indicate that for those who quit smoking before the age of fifty, it is possible to avert nearly fifteen years of life lost compared to those who continue to smoke (DHHS 1990). The World Health Organization (WHO) estimates that smoking will prematurely kill half of all lifetime smokers. (WHO 2002).

Today, smoking ranks as the largest cause of avoidable premature death in the developed world. In the United States, smoking deaths that

FIGURE 2

Deaths attributable each year to cigarette smoking



*Average annual number of deaths, 1995–1999.

SOURCE: "Annual Smoking–Attributable Mortality, Years of Potential Life Lost, and Economic Costs—United States, 1995–1999." *Morbidity and Mortality Weekly Report* 51, no. 14 (2002): 300–303.

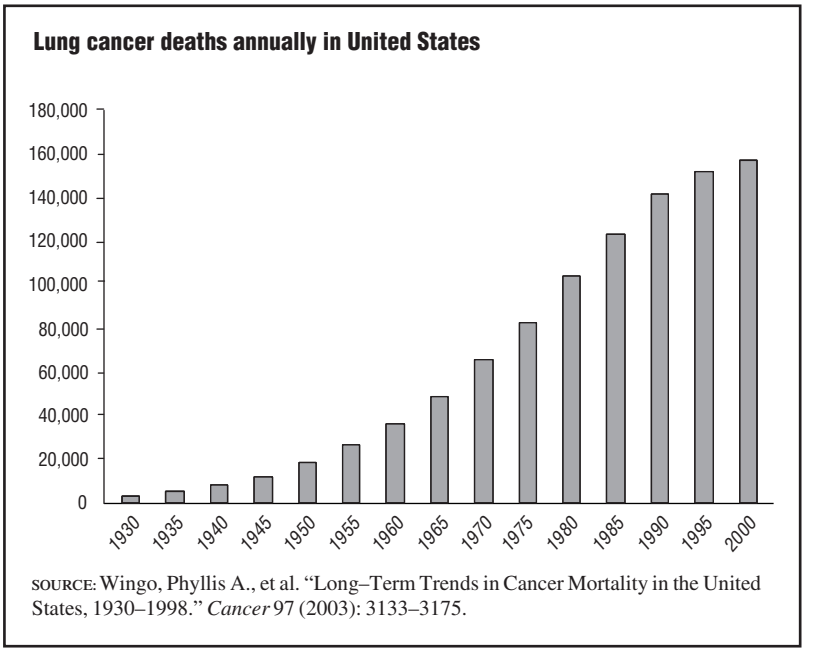
are attributable to tobacco have increased dramatically in both men and women, from 70,000 in 1950 to 440,000 in 2000 (MRC). Each year, smoking contributes to deaths from lung cancer, coronary heart disease, chronic lung disease, stroke, and other cancers (see Figure 2). Even in developing countries, smoking is a major contributor to mortality. Studies in India and China have confirmed findings from earlier studies in the United States and the United Kingdom that overall death rates among tobacco users are about twice those of nonusers (Liu, et al. 1998; Niu, et al. 1998; WHO 2001). In India alone, smoking caused an estimated 700,000 deaths in the year 2000 (Gajalakshmi et al. 2003).

Cancer

In the United States, death rates from lung cancer began increasing rapidly around the mid-twentieth century (see Figure 3). At the time, the causes of many cancers were still unknown and lack of sophisticated treatment options meant that many cancers were fatal. An epidemiological approach—a novel method at the time—was used to look for the underlying causes. Some German studies conducted in the 1930s and 1940s pointed towards tobacco as a factor but the first definitive studies are generally considered to have been published in 1950—five case-control studies.

In one of these studies, Morton Levin at Roswell Park, a cancer hospital, asked his hospital staff to begin collecting data on the smoking habits of every entering patient. Levin compared cancer patients who had smoked to cancer patients who had not smoked. The lung cancer rate in long-term smokers (twenty-five years or more) was 20.7 percent compared to 8.6 percent among nonsmokers (Levin 1950). Using a

FIGURE 3



SOURCE: Wingo, Phyllis A., et al. "Long–Term Trends in Cancer Mortality in the United States, 1930–1998." *Cancer* 97 (2003): 3133–3175.

similar case-control study design, Ernst Wynder, a medical student, and Evarts Graham, a thoracic surgeon, interviewed patients with lung cancer and patients without lung cancer. Smoking histories for all study participants were ranked into 5 categories, ranging from nonsmokers to chain smokers. Wynder recalls, "After twenty or so interviews I knew I had something" (Kluger 1997). The results incriminated smoking as a strong causal factor: 96.5 percent of the 605 lung cancer patients were moderate to heavy chain smokers for several years compared with 73.7 percent of the nonsmoking controls (Wynder and Graham 1950). Also in 1950, Austin Bradford Hill and Richard Doll published results from a smoking study comparing cancer patients in 20 hospitals with noncancer patients. They reported that heavy smokers were 50 times more likely than nonsmokers to contract lung cancer and cautiously concluded "that cigarette smoking is a factor, and an important factor, in the production of carcinoma in the lung." Several animal studies conducted in the 1950s also supported the epidemiologic evidence: cigarette **tar** applied regularly to the skin of mice over time caused tumors (Wynder et al. 1953).

tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

Together, the combination of the human and animal evidence provided a powerful indication of causation. These studies launched a great variety of follow-up research examining the link between tobacco and disease and sparked substantial media reporting. The tobacco industry was so threatened by the emerging scientific evidence and the resulting drop in cigarette sales that they responded by establishing the Tobacco Industry Research Committee (TIRC), composed of 14 leading tobacco manufacturers and allied groups. The stated objective of the TIRC was to fund independent scientific research about the health effects of smoking. However, tobacco industry documents brought forward from recent litigation show that the TIRC was originally created for the purpose of public relations. The TIRC took out a full page announcement in January 1954 in over 400 newspapers headlined, "A Frank Statement to Cigarette Smokers" aiming to calm consumer fears over the emerging

Two Revolutionary Articles

Five epidemiologic studies were published in 1950 directly associating cigarette smoking with lung cancer. But two studies in particular, from opposite sides of the ocean, caught the attention of the medical research world. Young German-born medical student Ernst L. Wynder and the esteemed surgeon and medical educator, Evarts Graham, reported finding that, of the 605 male patients in their study with bronchogenic carcinoma (lung cancer), 96.5 percent had been heavy smokers (at least 25 cigarettes a day for 20 years), while among male hospital patients without cancer only 73.7 were heavy smokers (at the time, cigarette smoking was much more common among the U.S. population). Their paper, published in the *Journal of the American Medical Association,* also suggested that men with lung cancer smoked more heavily and for more years than male patients without cancer. In that same year in England, medical professor Richard Doll and famed epidemiologist and statistician Austin Bradford Hill concluded that heavy smokers had a fifty times greater chance of getting lung cancer than nonsmokers. Their influential paper, which appeared in the *British Medical Journal,* described in detail how they collected information from patients about their smoking history in a way that was reliable and unbiased. Although cigarettes were previous suspects as a link to cancer, the diligence and level of expertise connected with these two studies, in addition to the convincing findings, resonated volumes within the medical community.

▮ DONALD LOWE

evidence that cigarette smoking is linked to lung cancer. The announcement by the TIRC said that the recent evidence produced was merely statistical and "could be applied with equal force to any one of many aspects of modern life . . . We believe the products we make are not injurious to health" (<http://www.tobacco.org> 1998). Despite industry efforts, by the mid-1960s, research on smoking and disease led to major pronouncements on the health hazards of smoking from authorities on both sides of the Atlantic.

Today, it is well accepted that cigarette smoking is without question the most important preventable cause of cancer. Many ingredients in tobacco and tobacco smoke have been found to be carcinogens (cancer-causing substances), some added by tobacco manufacturers to enhance flavor and addictiveness (WHO 2001). The 1982 U.S. Surgeon General's Report states, "Cigarette smoking is the major single cause of cancer mortality in the United States." This statement is still true today, not only for the United States, but for many other developed countries. As the above table shows, cigarette smoking has been found to be associated with cancer at many sites. For lung cancer, the risk is particularly great with smokers experiencing an approximately twenty-fold increased risk for lung cancer when compared to lifelong nonsmokers (Doll et al. 1994). Cancers of the larynx, mouth, pharynx, and esophagus are also much more common in smokers than in nonsmokers.

Cardiovascular Disease

Reports on the links between smoking and cardiovascular disease date back to the beginning of the twentieth century. Today, the epidemiologic evidence on smoking and cardiovascular diseases is massive. Cardiovascular disease encompasses heart diseases such as coronary heart disease, "heart attack," stroke, arteriosclerosis, and diseases of the blood vessels. The burden of cardiovascular disease is enormous: Together heart disease and stroke account for approximately 40 percent of all deaths annually in the United States (CDC 2004).

A Nation's Emerging Awareness of Tobacco Dangers

The public's attention on the dangers of smoking was captured in the 1950s through the media. In 1952, *Reader's Digest,* one of the most popular magazines in the United States and the United Kingdom, published an article titled "Cancer by the Carton."The article described the dangers of smoking, detailing the risks of lung cancer and heart disease. The article also accused the tobacco industry of covering up the perils of smoking through its advertising claims of "mildness" and references to reduced health risks. The publication of "Cancer by the Carton" instigated a serious of similar attacks of the tobacco industry in other magazines. Media attention and exposure of the tobacco industry significantly began a shift in society's attitude towards tobacco.

In 1964, the Surgeon General of the United States Public Health Service released a landmark report titled, "Smoking and Health." Although there were earlier statements that had been released in 1957 and 1959, the report was an exhaustive literature review of over 7,000 articles, including 3,000 research reports. Conducted by an independent body of scientists, it was the United States' first widely publicized official recognition that smoking causes cancer and other diseases. After much study, the report committee concluded that smoking caused lung and laryngeal cancer in men, probably caused cancer in women, and was the major cause of chronic bronchitis. The report also highlighted that smokers were much more likely than nonsmokers to contract coronary heart disease. Renowned for its clarity and unassailable review of scientific evidence, the 1964 report of the Surgeon General defined the clear beginning of a national tobacco control agenda in the United States. From the time the report was published to the early 2000s, forty years later, the smoking rate in the United States decreased from 46 percent to 23 percent of adults, a reduction of 50 percent.

Framingham, Massachusetts, has been called the town that changed America's heart. In 1948, 5,000 study participants from Framingham were enrolled in a large-scale cohort study to investigate why cardiovascular disease, in particular coronary heart disease and stroke, had become the nation's number one killer. By tracking disease progression over time in study participants, the Framingham Heart Study uncovered some of the biological and environmental determinants of heart disease and gave public health experts leads for establishing prevention guidelines. The Framingham study examined some key lifestyle behaviors that were possibly contributing to heart disease including diet, physical activity, and smoking. Results soon demonstrated that smokers were at increased risk of having myocardial infarction (sudden death) and coronary heart disease, and the risk was found to be related to the number of cigarettes smoked each day (DHHS 1990). The study showed that modifying lifestyle habits, such as smoking, physical inactivity, and diet could significantly alter disease progression and reduce disease severity: smoking cessation was found to promptly halve the risk compared to those who continued to smoke.

Another well-known study, the Nurses' Health Study, which began in 1976 (Stampfer et al. 2000), gave similar and powerful results for women. In the Nurses' Health Study the rate of fatal coronary heart disease among participants who never smoked was 5 per 100,000 person-years (a measurement combining persons and time as the denominator in the rate). This rate increased to 8, 19, and 27 deaths per 100,000 person-years for current smokers who smoked 1–14, 15–24, and >25 cigarettes per day, respectively. For women who smoked >25 cigarettes per day, it was reported that 81 percent of the coronary heart disease deaths among these heavy smokers were attributable to cigarette smoking Willett et al. 1997).

Despite the scientific advances in cardiovascular disease research, heart disease and stroke remain the first and third leading causes of death in the United States, with cancer the second leading killer of Americans. Cigarette smoking has been found to be causally associated and an important risk factor for heart disease, cancer, and stroke—the nation's top three leading killers.

Adverse Effects on Reproduction

The adverse effects of smoking begin even before birth. Maternal smoking reduces fertility and adversely affects pregnancy outcomes. Smoking during pregnancy reduces birth weight by approximately 200 grams on average (DHHS 1990). The degree of birth weight reduction is related to the amount smoked. If a mother who smokes gives up this behavior by the third trimester, much of the weight reduction can be avoided. Smoking also increases rates of other adverse effects on reproduction including spontaneous abortion, and smoking during pregnancy is now considered to be a cause of Sudden Infant Death Syndrome (SIDS). There is more limited evidence suggesting that smoking by the mother may increase risk for congenital defects, especially cleft lip and palate (Scientific Committee on Tobacco and Health, et al. 1998).

Health Effects of Secondhand Smoke

Because a third of the world's population are smokers, the remaining two-thirds, nonsmokers, often inhale secondhand smoke (SHS) involuntarily or passively. SHS is the combination of smoke emitted from the burning tip of a cigarette and smoke components in the air exhaled by smokers. Research on SHS began to accumulate in the 1970s, and today there is consensus in the scientific community that no level of exposure to SHS is safe. The Environmental Protection Agency has classified secondhand smoke as a **carcinogen,** meaning that it causes cancer in humans. Despite the strength of the evidence, the tobacco industry has devised many strategies for discrediting the science to convince the public that there remains a "controversy" as to whether SHS is dangerous.



carcinogen a substance or activity that can cause cancer. Cigarette smoking has been proven to be carcinogenic, that is, cancer causing.

The adverse effects of passive smoking begin before birth and extend across the lifespan. Historically, epidemiologic studies first found adverse effects in infants and children in families with smoking parents. In infants and preschool children, most studies have found a significant association between exposure to SHS (especially when the child's mother smokes) and respiratory symptoms (wheezing, coughing, phlegm, and shortness of breath) in children. These associations are consistent throughout different geographic areas, including Japan, Korea, the People's Republic of China, Europe, and North America. A 1999 World Health Organization publication evaluated the findings on passive smoking and the health of children. Exposure to SHS was found to be a cause for slightly reduced birth weight, lower respiratory disease, chronic respiratory symptoms, middle ear infection, and reduced lung function (WHO 2001). There is more limited evidence suggesting that SHS exposure of the mother adversely affects child development and behavior (Eskenazi and Castorina 1999). The following table lists the health effects causally linked with SHS for children and adults:

In Infants and Children	Low birth weight or small for gestational age; Sudden Infant Death Syndrome (SIDS); acute lower respiratory tract infections; asthma induction and exacerbation; chronic respiratory symptoms; middle ear infection
In Adults	Eye and nasal irritation in adults; lung cancer; nasal sinus cancer; heart disease; mortality; acute and chronic heart disease morbidity

In adults, lung cancer was the first fatal disease shown to be causally associated to SHS. Subsequent studies have linked SHS to heart disease and other adverse health effects. Published in 1981, Takeshi Hirayama's cohort study in Japan was a landmark in SHS research. Hirayama tracked deaths in over 90,000 nonsmokers and compared mortality in those married to smokers and those married to nonsmokers. He found increased risk for lung cancer in women who had never smoked and were married to smokers compared with women who had never smoked and were married to nonsmokers. The tobacco industries responded by arranging for many scientists to criticize and attempt to discredit the study. However, Hirayama's results have been confirmed by many additional studies, and major international consensus reports have concluded that passive smoking causes lung cancer. To date, the association of SHS with lung cancer has now been evaluated in over 50 epidemiological studies. All told, the increased risk for a nonsmoker married to a smoker is on the order of 20 percent for women and 30 percent for men. (IARC 2002).

Epidemiological data first raised concern that passive smoking may cause coronary heart disease with a study in California conducted in 1985 (Garland et al.1985). Over 20 studies have now been reported on the association between SHS and cardiovascular disease risk. These studies cover a wide range of populations, both geographically and racially. While many of the studies were conducted within the United States, some were also conducted in Europe, Asia, South America, and the South Pacific. Most studies measured the effect of secondhand smoke exposure due to smoking by the spouse; however, some studies also assessed exposures from smoking by other household members, or occurring at work, or in transit. Since the 1985 report, as the evidence has subsequently mounted it has been systematically reviewed by the American Heart Association (1992) and the California Environmental Protection Agency (NCI 1999). These expert groups and others have concluded that heart disease is causally associated with SHS exposure. Evidence also links SHS to other adverse effects, including exacerbation of asthma, reduced lung function, and respiratory symptoms, but SHS has not yet been judged to be a cause of these effects (NCI 1999).

The Global Tobacco Epidemic: A View into the Future

Cigarette addiction has been widespread in many developed countries for over a century and mortality statistics from these countries chart the resulting epidemics of heart disease, lung disease, and cancer. Dr. Gro Harlem Brundtland, the Director-General of WHO, writes, "it is rare, if



Health Canada tobacco product packaging warning. Regulations allowing images in warning labels became law in June 2000. Health officials hope that the images will reinforce awareness the dangers of smoking. GETTY IMAGES

not impossible, to find examples in history that match tobacco's programmed trail of death and disease" (WHO 2001). Most alarming is that the epidemic is growing. If smoking trends continue along the estimated trajectory, in 2020 tobacco use will be responsible for 10 percent of all disease globally (WHO 2001).

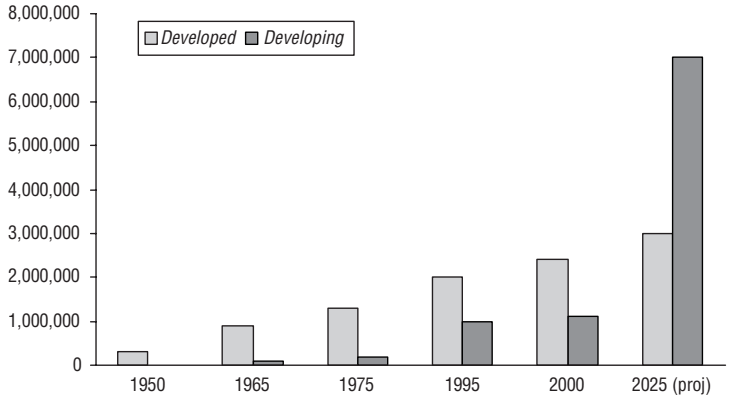
While smoking rates have decreased in the United States, the United Kingdom, and other affluent Western countries since the mid-twentieth century, globally, smoking rates are on the rise along with tobacco related deaths. Today there are an estimated 1.1 billion smokers (World Bank 1999). By 2025 it is estimated that there will be 1.6 billion smokers. Not only are more people smoking, but they are smoking more cigarettes per day than previously (World Bank 1999).

Aggressive marketing tactics by the tobacco industry have extended the tobacco epidemic from the developed to the developing regions of the world. The mortality rates have been projected and they are enormous, especially for developing countries. By 2025, there will be an estimated 10 million tobacco deaths globally, of which 70 percent will be in current developing countries (see Figure 4). This is in contrast to the 1 million tobacco deaths globally in 1965, of which only 100,000 were in developing countries (Bollinger and Fagerstroüm 1997). Half of those who die will be middle–aged, losing 20–25 years of life (Peto and Lopez 2000).

If current smoking patterns persist, developing countries will face enormous epidemics of premature death. The tobacco epidemic in China is a case in point. China has the highest cigarette consumption per capita in the world. One out of every three cigarettes smoked in the world today is smoked in China by its 300 million smokers. In 2000, annual smoking deaths in China were estimated at 1 million. In 2050, China is anticipated to face 3 million tobacco deaths per year. Not surprisingly, many other countries that have high smoking rates, such as India and Russia, face a similar epidemic if preventive action is not taken. Future tobacco deaths can be avoided through two means: increasing the rate of smoking cessation (quitting) and decreasing smoking uptake (starting) by young adults (Peto and Lopez 2000).

FIGURE 4

Tobacco-related mortality, developed versus developing countries, 1950–2025



SOURCE: Bollinger, Christoph T., and Karl-Olov Fagerström, eds. *The Tobacco Epidemic: Progress in Respiratory Research*. Vol. 28. Basel: Karger, 1997.

Tobacco deaths are preventable and can be averted through public health action. The challenge remains for governments to accelerate public health action to protect the health of their populations. If appropriate policy and program responses are not implemented today, the prediction of 10 million deaths a year by 2030 will become a tragic reality.

See Also Doctors; Insurance; Toxins.

MAI-ANH HOANG
JONATHAN M. SAMET

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Doctors

From the first introduction of tobacco into European societies in the sixteenth century, physicians made public assertions about the effects of tobacco use. Some condemned it on moral and social grounds as a support to idleness and wasting money; others condemned using tobacco on general hygienic grounds. By the early nineteenth century, physicians were reporting cases in which very young children died from tobacco emulsions administered as a medical treatment. Some physicians claimed that tobacco use caused or at least exacerbated specific diseases, particularly respiratory afflictions and dental conditions.

At the same time, for centuries physicians tended to use tobacco themselves in the same ways and in the same proportions as the rest of the adult population—a fact that undercut their authority when they advised patients or the public not to smoke or chew.

physiology the study of the functions and processes of the body.

Hygienic enthusiasts, including the famous Seventh-Day Adventist physician John Harvey Kellogg, gained ground in the opening years of the twentieth century. On the basis of **physiological** tests (conducted mostly on college students), they could show that smoking affected heart and lung and possibly nervous system performance on a temporary basis. In addition, as disease entities became more exact in medical thinking, physicians used clinical impressions to assert that specific



A U.S. doctor checks a Navy recruit's heart during World War II. While doctors in Nazi Germany were prohibiting tobacco use, physicians elsewhere in the world tended to encourage recreational smoking by soldiers as a source of comfort.
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circulatory and eye disorders as well as oral lesions could be blamed on smoking. However, because hygienists' injunctions against tobacco use tended to appear in a moralistic framework, most physicians did not take them seriously.

By the 1930s, a small international circle of physician antitobacco enthusiasts, including Angel H. Roffo of Buenos Aires, were in communication with each other. Some of them, such as Fritz Lickint and Franz H. Müller, gained enough influence in Nazi Germany to affect public policy significantly. But elsewhere in the world physicians tended to endorse recreational smoking—for example as a comfort to soldiers, especially wounded soldiers, during both world wars.

The final phase of physician involvement with tobacco came in the 1950s, when **epidemiological** studies revealed a statistical association between cigarette smoking and lung cancer. In 1954, a British study of doctors, led by Richard Doll and A. Bradford Hill, showed that smokers had dramatically higher rates of lung cancer deaths than did nonsmoking physicians. A decade before the general public showed much reaction, physicians in substantial numbers started to cut back on cigarettes and, ultimately, tobacco use. Evidence about tobacco's harmful effects was gained through novel statistical research methods, rather

epidemiological pertaining to epidemiology, that is, to seeking the causes of disease.

than traditional laboratory animal studies. Despite the validity of these research methods, many doctors did not accept the connection between smoking and lung cancer.

The Royal College of Physicians in 1962 and the Advisory Committee to the U.S. Surgeon General in 1964 produced reports connecting tobacco use with specific diseases. Despite the appearance of these reports, some parts of the medical profession in many countries resisted those conclusions; others were afraid of alienating their patients by confronting smokers with the possible consequences of their actions. In the United States, leaders of organized medicine for decades traded their silence for political support from important politicians from tobacco areas who voted against health proposals. Rather, official medical condemnation of smoking came from specialist groups. From the mid-twentieth century on, the majority of physicians everywhere gradually converted to a more or less active antitobacco stance.

See Also Lung Cancer; Medical Evidence (Cause and Effect).

JOHN BURNHAM

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Documents

In 1994 CEOs of the seven largest tobacco companies testified under oath before Congress that they believed that the evidence that cigarette smoking caused diseases such as cancer and heart disease was inconclusive, that cigarettes were not addictive, and that they did not market to children. Less than one month after this testimony, a box containing several thousand pages of confidential documents from the Brown & Williamson Tobacco Corporation was delivered to the University of California at San Francisco (UCSF). The box contained reports of internal industry studies that had been copied by a paralegal who had worked for a law firm representing Brown & Williamson.

Despite Brown & Williamson's demand through the courts for the return of these documents, the UCSF Library posted them on the Internet, and public health scientists disclosed the contents of the documents in a series of published articles and a book titled *The Cigarette Papers* (1996). These secret documents revealed that for at least forty years, leading executives in the tobacco industry considered tobacco addictive and harmful and had conducted and directed marketing efforts to beginning smokers.



In 1994 heads of seven major U.S. tobacco companies testified before Congress. Among other testimony, each man stated his belief that nicotine was not addictive. Being sworn in before a hearing of the House Energy and Commerce Committee Subcommittee on Health and the Environment are (left to right) Robert S. Sprinkle, Executive Vice President for Research and Quality Assurance, American Tobacco Company; Donald S. Johnston, President and CEO, American Tobacco Company; Thomas E. Sandefur, Brown & Williamson Tobacco Corporation; Edward A. Horrigan, Chairman and CEO, Liggett Group; Andrew H. Tisch, Chairman and CEO, Lorillard Tobacco Company; Joseph Taddeo, President, U.S. Tobacco Company; James W. Johnston, Chairman and CEO, R.J. Reynolds; and William Campbell, President and CEO, Philip Morris, USA.AP/WIDE WORLD PHOTOS

These previously secret documents provided the first glimpse into the inner workings of the tobacco industry. Disclosure even attracted the attention of President William J. Clinton, who commented in 1996 that it affected his decision to ask the Food and Drug Administration (FDA) to regulate nicotine as an addictive drug and to define cigarettes and smokeless tobacco as drug delivery devices.

Courtroom Evidence

Industry documents started appearing as evidence in lawsuits filed against tobacco manufacturers beginning in the early 1990s. However, up until that time, industry lawyers had blocked disclosure of most of their documents under the claim of attorney–client privilege, a legal principle that holds that communication between a client and his or her lawyer should be confidential.

This situation changed when Judge H. Lee Sarokin of the U.S. District Court, New Jersey, ordered the release of a small set of internal documents as part of a case filed on behalf a lung cancer victim. The documents pertained to the tobacco industry's Council for Tobacco Research (CTR) program, which cigarette makers had represented as an independent research program set up to support scientific research into questions related to smoking and health. However, the documents told a different story, indicating that the CTR was established as an industry shield primarily for public relations purposes. Budget documents reveal that money earmarked for independent research instead was directed to researchers who were hand picked by industry lawyers to provide

Tobacco Document Websites

Several websites feature accessible collections of tobacco documents. Three notable sites follow.

Centers for Disease Control and Prevention
<http://www.cdc.gov/tobacco/industrydocs/docsites.htm>

Tobacco Documents Online
<http://tobaccodocuments.org>

Legacy Tobacco Documents Library at UCSF
<http://legacy.library.ucsf.edu/>

findings that would be helpful to defend the industry in court. In his ruling the judge commented that facts disclosed in the newly released documents showed that "the tobacco industry may be the king of concealment and disinformation." The release of these documents provided a roadmap for future discovery of industry documents.

At about the same time, industry whistleblowers began to come forward to tell their stories. Among them was Dr. Jeffrey Wigand, the vice president for research and development at Brown & Williamson Tobacco Corporation from December 1988 to March 1993, who came forward to tell how the cigarette industry had lied to the American public.

The result of these disclosures was a first-ever jury verdict against a cigarette company in 1996, when Brown & Williamson was required to pay $750,000 to the family of a lung cancer victim. Dozens of additional lawsuits were subsequently filed, including several suits by states seeking recovery of public monies spent on treating tobacco-caused illnesses. In 1996 the Liggett Group, the smallest of the major U.S. tobacco companies, settled lawsuits with the states of West Virginia, Florida, Mississippi, Massachusetts, and Louisiana. Through this settlement, the Liggett Group agreed to make cash payments to the states, accept limitations on cigarette advertising, and to drop its opposition to the FDA regulation of tobacco.

The Liggett settlement encouraged other states to enter into lawsuits, which eventually resulted in the 1998 Master Settlement Agreement (MSA) between the nation's major tobacco companies and the attorneys general of forty-six states. A key provision of the MSA includes the requirement for the tobacco industry to post approximately 33 million pages of tobacco documents on the Internet.

A separate but related lawsuit filed by New York State resulted in a 1998 agreement to release all files of two industry organizations: the Tobacco Institute and the Council for Tobacco Research. Another 8 million pages of documents from the British-American Tobacco Company (BATCo) are held at the Guildford Document Depository in Guildford, England. These documents provide insights into international marketing by BATCo (<http://www.library.ucsf.edu/tobacco/batco>).

Documents Online

Industry-sponsored websites present a variety of research challenges. Each company is permitted to sponsor its own website, which means that subject-related searches (such as cancer or nicotine) have to be done separately for each company. The company websites also differ in how documents are organized, further complicating efforts to search for information.

Fortunately, several groups created virtual libraries of the various document collections, easing research (see sidebar). Public health officials are using the documents to understand how cigarettes are designed and marketed. For example, the documents reveal how companies designed their cigarettes and marketing campaigns to deceive smokers into thinking that "light" cigarette brands were safer than others. As a result of this disclosure, on 30 September 2003 the European Union banned the use of advertising labels such as "light" and "mild." In Australia, an inquiry issued a report in May 2002 concerning possible policies to eliminate such terms. That inquiry is also considering removing **tar** and nicotine yields from packs, the basis on which claims of reduced delivery are based.

tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

The documents also reveal how the tobacco industry used its vast resources to manipulate the political process to avoid regulation and oversight. For example, the Tobacco Institute hired scientific consultants to defeat ETS regulations and routinely gave out large contributions and donations to politicians and organizations that would oppose tobacco control measures. In 1984, Philip Morris threatened to withdraw business from Dow Chemical because they were involved in marketing nicotine gum as a stop-smoking aid. Ongoing national efforts to regulate lobbying and donations to political campaigns were stimulated in part by revelations about tobacco industry influence over government officials.

The tobacco documents provide a simple lesson—the industry will always put its profits ahead of public health. The tobacco documents are a great resource for students to learn first hand what the tobacco industry is all about so that the mistakes of the past do not have to be repeated in the future.

See Also Antismoking Movement From 1950; "Light" and Filtered Cigarettes; Litigation; Lobbying; Public Relations.

K. MICHAEL CUMMINGS
ANTHONY BROWN
CRAIG STEGER

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Dutch Empire

Introduced into the United Provinces (the Dutch Republic) in the late sixteenth century, tobacco conquered Dutch markets in the seventeenth century as imports grew and prices dropped. By the early eighteenth century, all social classes smoked. While tobacco cultivation employed many families in the central and eastern parts of the country, processing



Tobacco—seen in leaf form, held by the man, and rolled onto spindles for export—was a boon to colonial business throughout the colonies, as is seen in this seventeenth-century depiction from the island of Manhattan. I. N. PHELPS STOKES COLLECTION, MIRIAM AND IRA D. WALLACH DIVISION OF ART, PRINTS, AND PHOTOGRAPHS, THE NEW YORK PUBLIC LIBRARY, ASTOR, LENOX, AND TILDEN FOUNDATIONS

and finishing domestic and foreign tobacco became an important industry in several Holland towns. As Dutch merchants carved out a niche for themselves in international trade as middlemen for varieties from Virginia and Spanish America, tobacco became a significant source of tax revenue.

Tobacco and Colonialism

Tobacco was inextricably linked to Dutch colonialism. The first Dutch forays into South America took place in Guiana and on the Amazon River, where the Dutch witnessed Indian tobacco production firsthand around 1600. Along with the English, the Irish, and the French, the Dutch founded small colonies in the area between Venezuela and Brazil for the purpose of producing tobacco themselves, but they had no chance of success due to disease, attacks by the Portuguese, and the lack of immigrants. Tobacco was also one of the rationales behind starting settlements on the Caribbean islands. During a short period around 1630, the Dutch successfully planted the crop on Tobago, and the leader of the expedition that settled St. Eustatius in 1636 wrote in his first letter to his superiors in the mother country that he intended "to plant good tobacco and make substantial profits" (Attema 1976). Small-scale tobacco cultivation was also taken up in New Netherland in the 1630s,

where twenty-seven **plantations** were counted by the end of the decade. Likewise, employees of the VOC (the Dutch East India Company) introduced tobacco cultivation in Ceylon in the 1620s and at the Cape colony in South Africa in 1656.

However, in no Dutch colony did tobacco become an important settlers crop. In most parts of their far-flung empire, the Dutch were traders rather than producers of crops and commodities, and tobacco was no exception. As a trade item, the crop contributed to the growth of the Dutch Caribbean colonies of Curaçao and St. Eustatius, whose primary function was commerce. Curaçao handled the varieties from Spanish America, including the exquisite leaf from Barinas, Venezuela, while St. Eustatius absorbed large quantities of Chesapeake tobacco in times of war, especially during the Revolutionary War. Dutch merchants also sold tobacco to African customers in Elmina, the Dutch regional headquarters in West Africa, in return for slaves. Brazilian traders supplied this tobacco, a third-grade variety from Bahia.

plantation historically, a large agricultural estate dedicated to producing a cash crop worked by laborers living on the property. Before 1865, plantations in the American South were usually worked by slaves.

Tobacco Trade and Industry

Caribbean tobacco had the largest **market share** in the United Provinces until the Chesapeake emerged as a producer in the 1630s. Varieties from Virginia and Maryland would dominate the market throughout the early modern period, making Amsterdam Europe's premier tobacco market until the first half of the eighteenth century. While the Merchant Adventurers from England handled early Dutch tobacco imports from Virginia, native Dutchmen soon arranged shipments themselves. During the English civil war (1642–1647), they formed ties with middlemen and planters in the Chesapeake, but they lost direct control after the implementation of the **Navigation Acts** in the late 1600s. Henceforth, a large part of Chesapeake tobacco went to the United Provinces via England and Scotland.

market share the fraction, usually expressed as a percentage, of total commerce for a given product controlled by a single brand; the consumer patronage for a given brand or style of product.

Navigation Acts laws passed by the British Parliament that subjected the American colonies to sell only to Britain, buy only from Britain, and ship only in British vessels. The Navigation Acts were one of the background causes of the American Revolution.

Spain's American colonies provided other varieties for sale in Amsterdam. Due to relatively high transport costs, Dutch merchants decided to specialize in the import of high-grade and more expensive New World varieties, cultivated in Cuba, Puerto Rico, and Venezuela. At the same time, the high prices garnered by American tobacco stimulated Jewish and gentile entrepreneurs to organize domestic tobacco cultivation, in particular in the Amersfoort area, starting around 1615. From the outset, Amsterdam merchants assumed the marketing of this leaf.

Native as well as foreign tobacco was finished, which involved spinning and blending, in Amsterdam. Before it was re-exported, most American tobacco was blended with cheap homegrown leaves, thus creating an affordable quality product. In the late seventeenth and early eighteenth centuries, Amsterdam had 30 to 40 spinning mills, 40 rolling mills, and 10 cutting workshops, together employing 3,000 men. After 1750, 3,500 workers made a living in Rotterdam spinning and blending tobacco, as the city replaced Amsterdam as the center of the Dutch tobacco industry. Other industries in the United Provinces benefiting from tobacco imports were the **snuff** manufacturers in the Zaan region north of Amsterdam, which ground Cuban tobacco leaves to powder and blended the leaves with domestic ones, thus producing "Cuban snuff," and the pipe-making industry of Gouda, in which 7,000 people were directly involved around 1750.

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.



duty a tax, usually a tax on certain products by type or origin; a tariff.

Taxation

In 1621 the Estates of Holland introduced a 6 stuivers (30 cents) import **duty** on every half kilogram of tobacco, irrespective of quality or provenance. It was the first such duty levied on tobacco in the United Provinces. After the duty was halved three years later, customs duties were made dependent on the imported varieties in 1644, when the Estates substantially reduced the tax on all leaves except Barinas. Although Holland's policies were usually in the interest of Amsterdam's mercantile sector and at times the town's spinning mills, the Estates hardly ever sided with domestic tobacco planters. A proportional consumer tax was introduced in 1678, charging wholesale tobacconists, shopkeepers, innkeepers, and spinners. Because this tax was farmed out, data on revenues is scarce. However, historians project that income from tobacco taxes must have been significant, given the impressive cargoes that were daily disembarked in Dutch ports. According to one estimate, Amsterdam alone imported 57 million pounds around 1670, including 7 million pounds of very fine tobacco from South America and the Caribbean.

Decline

Increased competition from German countries and the start of domestic spinning in Sweden, Denmark, Prussia, and Russia, coupled with a ban in those countries on the import of processed tobacco, led to the decline of Amsterdam's tobacco industry. An additional problem was the price decline of American tobacco dropped, obviating the need to blend New World and native Dutch tobacco. Dutch dominance in the international tobacco trade thus gradually eroded in the eighteenth century. While the trade in tobacco had once contributed to Amsterdam's rise as Europe's foremost staple market, the loss of foreign markets hastened its demise.

See Also British Empire; Caribbean; French Empire; Spanish Empire.

WIM KLOOSTER

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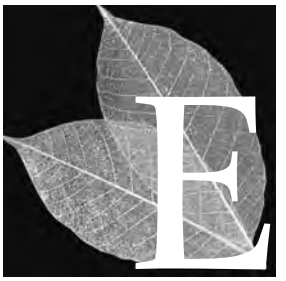
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English Renaissance Literature

When tobacco took England by storm in the late sixteenth century, it quickly permeated all arenas of cultural activity, and literature was no exception. References to both medical and recreational uses of tobacco soon began to appear throughout a wide range of literary forms, with a particular concentration in comic genres such as satire, epigram, and city comedy. Just as broader responses to tobacco ranged from euphoric acclaim to cynical derision, poets and playwrights similarly portrayed the plant as medicinal, magical, even divine, but also as comically absurd, wasteful, and dangerous.

Although the boundaries between medical and recreational use were unstable, and frequently blurred, literary depictions of tobacco from the English Renaissance tend to focus primarily on either one or the other. For the most part, references to tobacco in earlier literary works tend to be positive and to emphasize its role in improving health. As the drug's popularity grew, however, and its role in English culture became more recreational than medical, writers began to portray it more as a social pastime, and accordingly depicted its use in increasingly irreverent and sardonic ways.

Tobacco as Medicine

Tobacco first entered England as a medicine, a "panacea" that could heal all ills. The first English writings devoted to it, such as the translation of Nicholas Monardes's treatise on New World medicines, titled in English *Joyfull Newes Out of the New Founde Worlde* (1577), discussed its curative properties. Appropriately, its earliest literary appearances also emphasized its miraculous potential to improve health. In Edmund Spenser's *Faerie Queene* (1590), Belphoebe turns to "divine tobacco" as a medicinal herb to treat the wounded squire Timias. Notions of tobacco's medical value run through literary writings from many genres, both seriously and as parody. A song in Barten Holiday's play *Technogamia or The Marriage of the Arts* (1618) describes tobacco as "a Physician, /

"Epigram 82. Of Tobacco"

Tobacco is a Weed of so
great powre,
That it (like Earth) doth what
it feedes deuoure.

JOHN DAVIES (*THE SCOURGE OF FOLLY,* 1611)

Good both for sound and sickly/. . . . [it] expells cold rheume, / And makes it flow downe quickly."

Early reports on Native American uses of tobacco emphasized not only its medical use but also its association with religious ritual, and these two traits merged in depictions of the "miracle drug" as magical, supernatural, or even divine. Spenser's description of tobacco as "divine" became a popular epithet, and other writers explored variations on this idea. Thomas Nashe, in *Nashe's Lenten Stuffe* (1599), describes tobacco as a heavenly panacea and claims that this "divine drug proclaimeth miracles. "Sir John Beaumont, in his *Metamorphosis of Tobacco* (1602), refers to "this herbes celestiall qualitie," and calls it "the fountaine whence all pleasure springs,/ A potion for imperiall crowned Kings. "Michael East, similarly, praises "Metaphysical Tobacco" in *The Second Set of Madrigales* (1606). Tobacco even acquires its own mythological genealogy in Richard Brathwaite's *The Smoaking Age* (1617), a prose romance that portrays the drug as the bastard son of the Roman goddess Proserpine. Tobacco's association with divinity earned it some controversy—its detractors identified it with paganism, Catholicism, and idolatry—but it reflected the awe and wonder associated with the drug.

Tobacco as Recreation

As tobacco became more popular and smoking became more widely perceived as a social pleasure akin to drinking, literary representations of tobacco took a less reverent turn. In particular, smoking tobacco seems to have had an irresistible comic appeal for early modern dramatists; a seemingly artificial and alien habit, it was associated with young gallants, who were already stock comic characters, and the extravagant claims made for tobacco could easily be turned to parody. Tobacco was on sale in theaters, and a number of writers refer to gallants smoking at plays, and, at the indoor theaters, on the stage itself. In Edward Guilpin's *Skialetheia* (1598), Cornelius, "that braue **gallant** youth," "sits o're the stage, / With the Tobacco-pipe now at his mouth," while the prodigal in Joseph Martin's *New Epigrams, and a Satyre* (1621) "desires a Page, / To light Tobacco for him on the Stage."

gallant a well-dressed, well-spoken gentleman, attentive to the needs and concerns of ladies, but in a proper way. Rhett Butler is a gallant.

Within the plays, dramatic smokers, who are nearly always young men, tend to fall into two groups. Firstly, there are the prodigals, central characters for whom taking tobacco marks their downward spiral into debt and depravity. Polymetes in John Day's *Law Tricks* (c. 1604) at first spurns smoking, but a sign of his later prodigality is his newfound love for "the Indian punck Tobacco." The other, larger group of smokers are comic stereotypes, foolish gallants for whom smoking is the most absurd of a collection of outlandish habits. The most fully developed of these include Bobadill in Ben Jonson's *Every Man in his Humour* (1598); Fastidious Brisk in Jonson's *Every Man Out of his Humour* (1599), who takes tobacco "as a parenthesis"; Asinius in Thomas Dekker's *Satiromastix* (1601–1602); the title character in George Chapman's *Monsieur D'Olive* (1605); Petoune in Edward Sharpham's *The Fleer* (1606), named after a variety of tobacco; and Laxton in Thomas Middleton and Thomas Dekker's The Roaring Girl (c. 1610). In the satiric playlet *Wine, Beer, Ale and Tobacco* (1616), Tobacco is personified as "a swaggering Gentleman" who swears and brags in the manner of his adherents.

Nondramatic comic genres, such as satire and epigram, tended to follow city comedy in their treatment of tobacco. Poets such as John Davies of Hereford, Sir John Davies, John Harington, Joseph Hall, Henry Parrott, Samuel Rowlands, and John Taylor littered their work with references to tobacco. Their poems have titles such as "Siegnor Tobacco that brave Cavalier" (Jo. Cooke, Epigrames [1604]), "Of a Drunken Tobacconist" (Harington, *The Most Elegant and Witty Epigrams of Sir J. H.* [1618]), "Tobacco Carted to Tyburne" (Rowlands, *More Knaves Yet?* [1613]) and "Of a Tobacco-taking Horse" (John Davies of Hereford, *The Scourge of Folly* [1611]). As in drama, tobacco was usually a comic prop for the gallant, signifying the extent of his urbane depravity. Parrot's "Usus Natura" is typical: its feckless subject takes tobacco "in's bed till noone," eats, gets drunk, plays at dice, sees a play, goes to a bawdy house, has his pocket picked, and finally "Drinks more Tobacco, spues, and goes to bed" (*Cures for the Itch* [1626]). Many poems mock the inflated claims made for tobacco: Sir John Davies's "Of Tobacco," for example, lists all the ailments which tobacco is supposed to cure, revealing in its conclusion the real reason why young men cultivate the habit: "it the pox wil cure: / This were inough, without discoursing more, / All our brave gallants in the towne t'alure" (*Epigrammes and Elegies* [1599]).

Tobacco and Gender

Because of tobacco's association with the hot and dry humors linked with men, it was widely identified with masculinity, and its promoters claimed that it could increase manly vigor. Although conflicting accounts suggested that the intoxication it induced could effeminate, enervate, and even bring about impotence, the association of smoking with taverns, drinking, and other arenas of malebonding underlined its status as a firmly masculine activity. Literary representations of tobacco, accordingly, generally attributed it to men and portrayed female smokers as aberrant or excessive. Notable examples include Moll Cutpurse in *The Roaring Girl*, who is pictured smoking a pipe on the title-page of the play (the anonymous author of Moll's 1662 "autobiography," *The Life and Death of Mrs. Mary Frith, Commonly Called Mal Cutpurse*, claims that she was the first Englishwoman to enjoy tobacco) and Ursula the pig-woman in Jonson's *Bartholomew Fair* (1614). The title character in John Davies of Hereford's epigram "Of Doll's Taking Tobacco" is sexually incontinent, whereas the "blown-up Fatling" Ebbrezza in Thomas Bancroft's *The Heroical Lover* (1658) sits "Smoking and quaffing still alternately; / That so being moist and dry by turnes, she might / Tast her Delights with greater appetite." Despite indications that tobacco was smoked by men and women in the period, tobacco is often portrayed as being disdained by "normal" women. Rosaline in John Marston's *Antonio and Mellida* (c. 1600), for instance, declares that she will marry "when men abandon jealousy, forsake taking of tobacco, and cease to wear their beards so rudely long" (5. 2. 43–5).

As these examples demonstrate, tobacco played a visible and colorful role in the literature of the time. It appeared throughout contemporary writings as an object of admiration, awe, concern, skepticism, annoyance, and especially irreverent humor. The prominence, ubiquity,

from "On Tobacco"

Pernicious Weed (should not
my Muse offend,
To say Heav'n made ought
for a cruel end)
I should proclaim that thou
created wer't,
To ruin Man's high, and
immortal part.
Thy Stygyan damp obscures
our Reason's Eye,
Debauches Wit, and makes
Invention dry;
Destroys the Memory, confounds our Care;
We know not what we do,
or what we are:
Renders our Faculties, and
Members lame
To ev'ry office of our
Country's claim.
Our Life's a drunken Dream
devoy'd of Sense,
And the best Actions of our
time offence.

Our Health, Diseases,
Lethargies, and Rhume,
Our Friendship's Fire, and all
our Vows are Fume.
Of late there's no such things
as Wit, or Sense,
Councel, Instruction, or
Intelligence:
Discourse that should distinguish Man from Beast,
Is by the vapour of this Weed
suppress;
For what we talk is interrupted stuff,
The one half English, and the
other Puff:
Freedom, and Truth are things
we do not know,
We know not what we say,
nor what we do:
We want in all, the
Understanding's light,
We talk in Clouds, and walk
in endless Night.

▮ CHARLES COTTON (*POEMS ON SEVERAL OCCASIONS,* 1689)

"Tobacco"

Tobacco, Tobacco
Sing sweetly for Tobacco,
Tobacco is like love,
O love it
For you see I will prove it

Love maketh leane the fatte
mens tumor,
So doth Tobacco,
Love still dries uppe the
wanton humor
So doth Tobacco,
Love makes me sayle fro[m]
shore to shore
So doth Tobacco
Tis fond love often makes
men poor
to doth Tobacco,
Love makes men scorne a
Coward feare,
To doth Tobacco
Love often sets men by the
eares
So doth Tobacco

Tobaccoe, Tobaccoe
Sing sweetely for Tobaccoe,
Tobaccoe is like Love,
O love it,
For you see I haue provde it.

▮ TOBIAS HUME (*THE FIRST PART OF AYRES,* 1605)

and variety of its forms in the literature of the time offer a fitting reflection of its complex status in English Renaissance culture.

▮ LUCY MUNRO
▮ TANYA POLLARD

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Eroticism *See* Film; Visual Arts.



Ethnicity

Ethnicity is generally defined as a learned behavior that is transmitted through cultural and social patterns such as norms, values, traditions, social networks, and adaptation to environmental conditions. Although the term "ethnicity" is often used synonymously with the word "race," a major distinction is that ethnicity emphasizes culture rather than genetic or biological factors to explain disease risks or health outcomes. An **epidemiological** overview of tobacco use among ethnic and minority groups in the United States shows the role of the tobacco industry in promoting consumption among targeted groups.



epidemiological pertaining to epidemiology, that is, to seeking the causes of disease.

African Americans

According to the Centers for Disease Control and Prevention, the smoking prevalence among African Americans is approximately 22 percent, and these smokers consume on average twelve cigarettes per day. Smoking prevalence among African Americans is comparable to smoking among all U.S. adults (22.8% among the general population). African Americans born in the United States, however, are more likely to smoke than their foreign born counterparts.

Smoking-related health problems, such as cancers, cardiovascular diseases, and respiratory illnesses, have disproportionately affected African Americans compared to other ethnic or racially classified social groups. African American adolescents are more likely to begin smoking

at later ages, and smoking prevalence among African American youth is significantly lower than that of white, Hispanic American, or American Indian adolescents. However, as adults African Americans smoke at rates similar to whites, but are less likely to quit smoking over their lifetime. These, and other factors, contribute to tobacco-related health disparities (unequal health status).

Asian Americans

Seven of the 10 leading causes of death in Asian Americans are related to smoking. Smoking prevalence has generally decreased among Asian Americans since 1980 (including Pacific Islanders) and was 12.4 percent in 2001 (excluding Pacific Islanders). Similar to the general U.S. population, Asian American smoking prevalence tends to be highest in the twenty-five- to forty-four-year age group.

Asian American women consume considerably fewer cigarettes than Asian American men. However, substantial variation in smoking occurs among Asian American subgroups. Studies indicate that Chinese Americans have the lowest (11.7%) and Korean Americans have the highest (23.5%) overall smoking prevalence among Asian Americans.

Hispanic Americans

Hispanic Americans are the largest ethnic minority group in the United States, and their smoking prevalence is approximately 17 percent, which is due primarily to low cigarette use (12%) among Hispanic American women. Hispanic Americans consist of several diverse cultural groups of which Mexican Americans comprise the largest proportion. Cuban Americans and Puerto Ricans are more likely to be smokers than Mexican Americans.

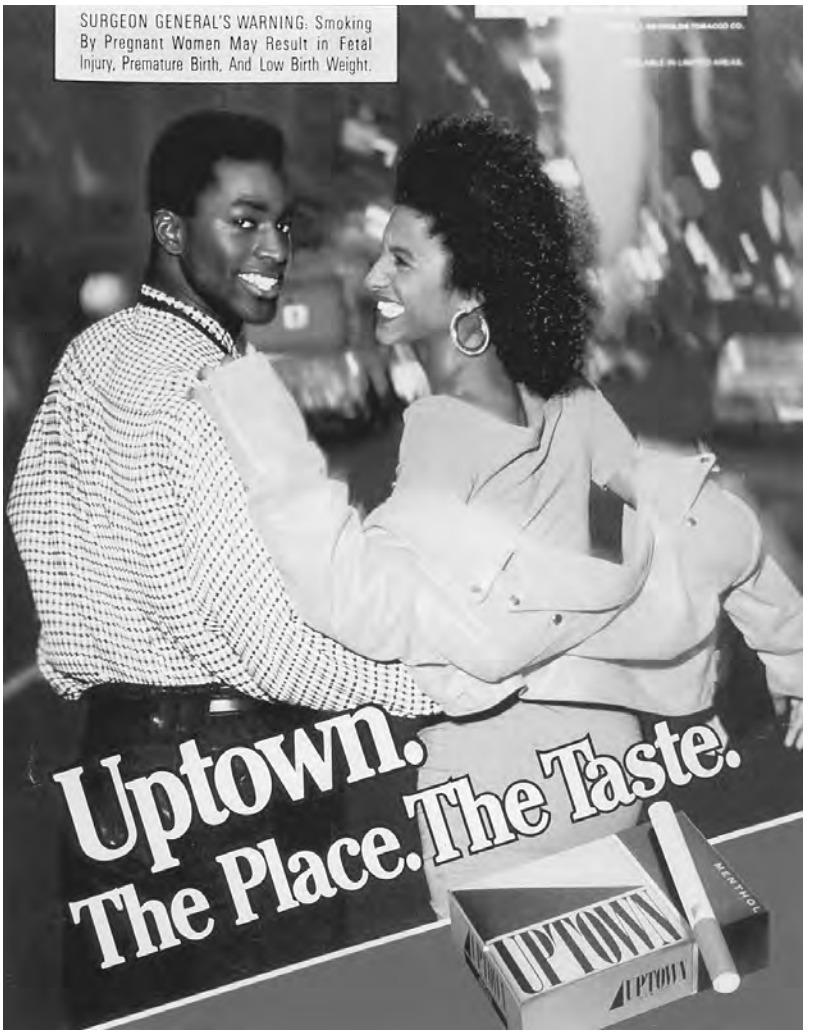
Hispanic men smoke at rates slightly lower than white men (21.6% and 25.4% respectively). Hispanic Americans are more likely to smoke during adolescence (26.6%) compared to African Americans (14.7%) and Asian Americans (12.6%). Studies have found that acculturation (preferred language and ethnic self-identification) is associated with increased smoking among Hispanic women, but not men.

Native Americans

Among the main ethnically or racially classified social groups in the United States, Native Americans (including Alaskan Natives) have the highest prevalence of cigarette smoking (32.7%), and this proportion has been steadily increasing since 1983. Native American populations also show a significantly higher prevalence of smokeless tobacco use than other groups.

Native American adolescents smoke in greater proportions than all other youth (approximately 41.1% of boys and 39.4% of girls by twelfth grade). Less stringent laws governing the sale and promotion of tobacco products on reservations have contributed to greater access by minors to tobacco products and a lower average age of initiation for Native American youth than other populations.

The importance of tobacco in the Native American culture (excluding Alaskan Natives) often presents an enormous challenge in promoting



African-American couple in advertisement for R.J. Reynolds product Uptown menthol cigarettes, a brand made specifically with black smokers in mind. Opposition to the campaign in Philadelphia in 2003 forced Reynolds to cancel plans to test market the cigarettes there. AP/WIDE WORLD PHOTOS

conventional antitobacco messages. In this regard, some studies have suggested that antismoking messages from family members may be most effective in curbing adolescent smoking.

Tobacco Industry Marketing and Ethnic Minority Groups

The tobacco industry has a long history of targeting ethnic and racial minority groups through advertising and funding of community events and organizations. A study of leading African American magazines revealed that tobacco company advertisements appeared more frequently when compared to other types of magazines. Targeted advertising has been employed to promote the use of mentholated (**menthol**) cigarettes by African Americans. Researchers estimate that approximately 75 percent of African American smokers prefer mentholated cigarettes.

menthol a form of alcohol imparting a mint flavor to some cigarettes.

Japan Tobacco Inc. has marketed its top-selling brand to Asian Americans as being the cigarette manufactured "by Asians for Asians." For the Hispanic American community, tobacco companies have created

products with Spanish brand names. According to the Centers for Disease Control and Prevention, the tobacco industry has been highly effective in promoting smoking among Native Americans by funding cultural events such as powwows and rodeos, as well as by using Native American cultural symbols to promote certain tobacco products. By associating their product with positive images of ethnic pride, history, and aspirations, tobacco companies attempt to secure a market niche, increase social acceptability, and expand the use of their products.

Other ethnic populations whose rates of smoking and use of tobacco products are substantial include Pacific Islanders and Alaska Natives. These groups are often classified with either Asian Americans or Native Americans. Additional research that focuses on these smaller populations, as well as social differences within the larger ethnic or racially classified social groups, is needed.

See Also Advertising; Consumption (Demographics); Menthol Cigarettes; Women.

GARY KING
TAMIKA GILREATH
STEPHANIE MOLLER

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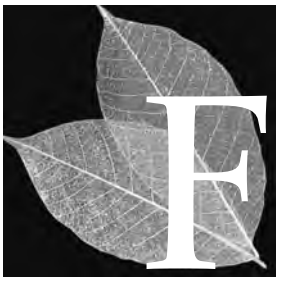
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Europe

See British Empire; Caribbean; Chesapeake Region; Cuba; Dutch Empire; French Empire; Globalization; Portuguese Empire; Spanish Empire; Trade.



Film

Backstage, hair falling flirtatiously into her face, Louise Brooks (as Lula in *Die Büchse der Pandora*, 1929) smokes, poised to expose her current lover. She is a woman who ruins men by sheer force of feminine wiles. Marlon Brando wields a cigarette with equal power in *The Wild One* (1954) as a gang leader who terrorizes a small town, charting anxiety both about the opaque discontent of youths and about masculinity run amok. In countless films throughout cinema history, smoking highlights the **hyperbolic** construction of gender that creates stars and sex symbols. But smoking is not gender specific, signaling femininity, masculinity, and androgyny, the latter most famously encapsulated by Marlene Dietrich. Likewise, smoking—tobacco's most **ubiquitous** and visual form—can represent all kinds of opposing characteristics and social relationships, even within the same film.

hyperbolic exaggerated; overstated.
ubiquitous being everywhere; commonplace; widespread.

In *The Big Heat* (1953), a classic of **film noir** (a genre known for its atmospheric use of smoking), cigarettes are signs of both servitude within the criminal chain of command and domestic happiness and equality. Fat cigars dangle from the mouth of the hands-on hit man, marking his illegitimate power and wealth. And cigarette burns appear on the corpse, signaling the sadistic thrill that accompanied the murder. The cigarette burns on the dead body, the disfiguring coffee burns on the hit man's girl, and the titular "heat" (or attention) focused on the investigation further extends the metaphorical reach of tobacco, emphasizing it as a product that burns. Tobacco is transformed from a material substance to smoke, an abstract signifier of indeterminate meanings.

film noir (literally "black film") refers to the dark looks and themes of many American gangster and detective movies of the 1940s and 1950s. Wreaths of cigarette smoke were a common characteristic of theses films.

One might be tempted to conclude that tobacco is cinema's floating signifier, malleable enough to mean anything. If this were true, one would expect the use of tobacco to be historically determined, having different meanings, for example, when women smoke in the silent era, prior to ratification of the nineteenth amendment in 1920 guaranteeing women universal suffrage, and when they smoke in the blockbusters of the 1990s and 2000s. One would expect tobacco to have one meaning before the dangers of smoking have been exposed, and another meaning after 1950 when a major **epidemiological** study definitively linking smoking to lung cancer was published in the *Journal of the*

epidemiological pertaining to epidemiology, that is, to seeking the causes of disease.



German-born actress Marlene Dietrich smokes a cigarette while wearing top hat and tails. In film, smoking is used to suggest rebelliousness, femininity, masculinity, and even androgeny. Dietrich famously embodied all of these characteristics.
© HULTON-DEUTSCH COLLECTION/CORBIS

American Medical Association. But this does not turn out to be the case. Although tobacco depiction in cinema fell through the 1970s and 1980s, it increased significantly after 1990 despite questionable tobacco industry claims that its campaign to place their products in movies had ended.

One might expect the cinematic uses of smoking to shift with fluctuations in product placement trends, becoming more "positive" to satisfy industry demands. However, treatments of smoking in cinema have changed more in degree than in kind. Big tobacco has been mostly concerned with preventing antismoking groups from positioning smoking as unfashionable, with preventing Hollywood from presenting tobacco as a cause of health-related suffering, and with preventing Hollywood from portraying smoking as an activity practiced among people in the lower socioeconomic sphere. Indeed, films regularly used stars to glamorize smoking. However, films that depict criminals and destructive rebels as smokers can be "positive" (that is, sexy) even when linked to death and destruction. The tobacco industry's involvement in promoting its products in film has not resulted in significant shifts in the meanings it generates, no more than the scientific knowledge about its dangers has altered smokers' perceptions that tobacco was addictive or

compromised health, though the industry's efforts have been linked to increased numbers of smokers.

Therefore, the tobacco industry's influence in determining the meaning of smoking in cinema history remains speculative. Yet, smoking has consistently been one of cinema's most efficiently evocative props, motifs, structuring devices, and emblems because smoking always occupies a range of easily legible meanings that have been surprisingly stable throughout its history. It operates in completely predictable ways, functioning as a cliché, confirming conventional wisdom and received knowledge. From the beginning of cinema history, tobacco flags weakness, power, rebellion, destruction, glamour, and sex. What cautions against concluding that tobacco can mean anything is that all of the meanings on this list share something in common, namely a certain relationship to limits and borders, the special relationship to death that smoking possesses, which has been so elegantly articulated by Richard Klein in *Cigarettes Are Sublime* (1993) as the intimation of mortality.

The Femme Fatale

Tobacco and smoking have played a role in films that span 100 years of history, as many U.S. and foreign films show. Perhaps the most noteworthy cinematic example is the character of the "vamp," a figure whose smoking flags the same set of meanings in films from 1915 through 2003. The term *vamp* was coined to describe the silent film star Theda Bara, in her first appearance in the silent film *A Fool There Was* (1915). The word itself is an abbreviation of the word "vampire," a creature that drains another's vital resources, a creature whose curious ontological status—the undead—challenges the limits of mortality toward which smoking always hints. Although tobacco makes just two appearances in this film, they are significant, especially considering how heavily silent film relies on props.

The "fool" of the title, John Schuyler (Edward José), is one of the film's only smokers. Walking cheerfully arm in arm with the vamp, he is utterly unaware of his fate. The viewer, however, has been forewarned: He is smoking, generating clouds of smoke signaling pleasure. The vampire casts a kind of spell over him (the trance typical of vampire narratives), causing him to forget everything he held dear. While his wife waits and wonders, the vampire drains him financially. She is eventually installed as his official mistress, and not even the sight of his child can rouse him from his stupor. He loses both family and position.

The other smoker in the film is the vampire herself, who smokes with the same kind of casual, indifferent deliberateness (in the face of social indignation) that characterizes her destruction of men. However, she does not smoke throughout the film, but in a particular location, forging a link between smoking and the townhouse in which the fool "keeps" her; smoking belongs to the illicit dwelling for which he has sacrificed life as he has known it. Further, it is an attribute of weak men and the women who destroy them by manipulating their desire both here and in femme fatale films over the entire course of cinema history.

In 1932, in Josef von Sternberg's *Blonde Venus*, the vamp plot was modified, but tobacco still signifies weakness, power, desire, and destruction, differently wielded by different characters, but always configured





Cinema assigns malevolent and benevolent meanings to cigarette smoking, and even to the smoke itself. The villainess Cruella De Vil (voiced by Glenn Close) of Disney's 1996 film *101 Dalmatians* uses the smoke from her cigarette holder to symbolically envelop her canine targets (left). Real-life star Miriam Hopkins (right) also sports a cigarette holder, but represents the desirable glamour of 1950s Hollywood. THE KOBAL COLLECTION

around the exchange of money and sex. The millionaire Nick Townsend (Cary Grant), to whom Helen Faraday (Marlene Dietrich) prostitutes herself to pay for her husband's medical treatment, smokes confidently, with easy, calm self-satisfaction. The husband (Herbert Marshall), on the other hand, has real needs, medical and emotional. He smokes desperately and frantically. Helen, who, in her final stage performance—in her famous androgynous costume of white suit, top hat, and cigarette in long holder—is icy, detached, shut down, and smoking as part of her act. How one smokes and what one smokes is important in determining meanings, but the range of possible meanings remains limited.

By 1979, in Rainer Werner Fassbinder's *Die Ehe der Maria Braun* (The Marriage of Maria Braun), the use of tobacco had been enhanced and extended, but its meanings remained stable. This film uses tobacco to show that the economic and political and even emotional recovery from fascism relied on prostitution. Maria Braun (Hannah Schygulla) has been married to Hermann Braun exactly a half a day and a single night before he is sent to war. His absence enables every sort of sexual intrigue. The role of tobacco as a marker for prostitution, moral and economic, is established early on, as Maria finds herself the object of insulting insinuations by a group of American soldiers. The offense, of course, is the suggestion that Maria is an available sexual object. Confronted by Maria, one soldier makes amends, giving her a pack of cigarettes. But in his attempt to mitigate the offense the soldier repeats it, proving, with the cigarettes, the implicit claim that Maria can in fact be bought. Maria then literally sells herself to the appetites of foreign men first as a dancer in an American nightclub, and afterward as the secretary/mistress of a French businessman.

The weakness of the men, evidenced by their desperate, addictive, compensatory relationship to Maria and tobacco (Hermann diving toward the pack of cigarettes at the very moment that he catches his wife with another man), stands in contrast to Maria's own use of cigarettes, which is deliberate and controlled. Maria tells men that she doesn't smoke, withholds when necessary, and smokes as she likes. As the

postwar German, Maria reverses her nation's xenophobic principle but not its ill effects, getting close enough to foreign men to use them up and dispense with them. Fassbinder punishes her at the end, when, finally reunited with her husband, she explodes as she lights a cigarette from her gas stove.

The Rebel

Smoking mobilizes the same set of meanings to describe the rebel as it does to describe the vamp. In *Rebel Without a Cause* (1955) tobacco is used as sparingly, pointedly, and significantly as in *A Fool There Was.* Jim Star (James Dean), the bravest kid in town, is a milk-drinker, not a chain smoker. *Rebel* depicts a world in which no one gets what he or she needs. The generation gap is insurmountable. Gender roles are in crisis. The social order depends on both repressing sexuality on the one hand and exaggerating its danger on the other. Against the background of the desperation that the 1950s ethos provokes, tobacco appears three times. Once, it appears to characterize Star's heartthrob as a "bad girl." Later, the father's rejected cigars mark the weakness of the paternal position. Finally, tobacco appears as a symbol of reckless abandon in a world where kids risk their lives both as a point of honor and to alleviate boredom. A cigarette dangles casually on Star's lips as he prepares to drag race to the cliff's edge, in a test engaging the absolute border between life and death.

This border is explicitly invoked in the best-known film of the French New Wave. The first and last shot of Jean-Luc Godard's *À bout de souffle* (Breathless, 1960) are of cigarettes. The gangster rebel, Michel Poiccard (Jean-Paul Belmondo), smokes in imitation of his hero, Humphrey Bogart, one of the most famous smokers of all time. In the last scene of this film, he runs from the law, cigarette in mouth. Falling to the ground as he is shot, Michel exhales smoke with his last breath. David Lynch's *Wild at Heart* (1990) chooses the other side of the border, reversing *Breathless.* Chased down by thugs, Sailor Ripley (Nicholas Cage) lights up. Armed with the cowboy brand, Marlboro, he provokes his attackers, has an epiphany, and runs from the fight to deliver his marriage proposal.



Actor James Dean smokes a cigarette in a scene from *Rebel Without a Cause,* 1955. Although Dean actually smokes infrequently in the film, the dangling cigarette of promotional posters helps construct Dean as the unforgettable icon of youthful rebellion. © BETTMANN/CORBIS

The Vamp as Rebel

In *Basic Instinct* (1992) tobacco has a central role in propelling the plot, in defining the characters, and in presenting the overarching themes of the film. The first scene in which Catherine Tramell (Sharon Stone) appears shows her smoking as the police approach her for questioning about a murder. The way she smokes—drawing on the cigarette and flicking it away—immediately establishes her character in terms of taking and extinguishing pleasure, taking and extinguishing a life. As the film progresses, the use of tobacco marks the endpoint of defiance, destruction, and self-abandon pushed to their limits in both homicidal and suicidal gestures. As a writer of murder mysteries whose fictions become enacted, Tramell's authorial power is given a demonic slant. She knows that police detective Nick Curran (Michael Douglas) has smoked before, but her prediction that he will smoke again makes her erotic power, like the addictive power of tobacco, mechanistic and inevitable.

Humphrey Bogart and the Double Masculine Ideal

Actors like Humphrey Bogart helped to glamorize smoking by forging the link between cigarettes and a double masculine ideal, that of the gangster and that of the soldier. On the one hand, Bogart is always partly the gangster of his first breakthrough role in *The Petrified Forest* (1936), above or outside the law, unconstrained by fear. On the other hand, Bogart is the soldier whose actual experience in the Navy left him with a scarred and partly paralyzed upper lip to which his smoking drew attention. In this case, masculinity is aligned with law, nationalism, and the ideal of manly self-control. *Casablanca* (1943), where Bogart's smoking is as relentless as his appeal, contains both versions of masculine glamour. When the film opens, Bogart embodies the amoral, or apolitical, gangster model. At its close, he has adopted the manly ideal of self-restraint, renouncing a woman to struggle against the Nazi occupation. He navigates this range with a cigarette clasped firmly in his fist.

"Killing isn't like smoking; you can quit," says Tramell, whose flippant remark proposes smoking as a basic instinct. But the question is not whether a person can quit (smoking, desiring, or killing) but *who* is smoking, desiring, or killing. Given the importance of identity and identification in this film, the question of tobacco as a marker for homosexual identity is also relevant, especially given the intense criticism leveled against the film by gay and lesbian communities. Smoking flags the danger that comes from defying social rules. That is, Tramell's smoking in the police station where it is expressly forbidden is analogous to her rejection of the heterosexual imperative. That her lesbian and bisexual objects both end up dead casts her crossing of social-sexual borders, marked by smoking, as a matter of life and death.

The "Human"

This is the border to which each use of tobacco refers, here and across the spectrum: in silent film, in classical narrative cinema, in European art film, and in the Hollywood blockbuster. In each allusion to this border, achieved by a puff of smoke, a deep inhalation, or the flick of an ash, a standard set of meanings is flagged. Sex, destruction, and rebellion announce themselves as having independent and self-sufficient meanings. But the limitation of life and death that tobacco addresses can be further specified as the limit of what it means to be human. Von Sternberg's blonde Venus begins with such a specification when, in the first sequence, a young man asks his friends, "Anyone around here human enough to give me a cigarette?"

In one of the most important examples of product placement in film by the tobacco industry, *Superman II* (1980) uses cigarettes to delineate the human. Although the Lois Lane of the comics was never a smoker, she becomes one in this film. Despite her role as Kent/Superman's (Christopher Reeve) love object, Lois's (Margot Kidder) smoking does not propose her as desirable to the viewer. But it makes her desirable to Kent by signifying her absolute otherness as a sophisticated, neurotic, big-city, chain-smoking journalist, while he is shy, awkward, naïve, and wholesome. Lane indulges in risky, unhealthy, delicious behaviors: spying on terrorists and eating hamburgers with all the condiments at 9:00 A.M. But her smoking also marks her difference from Superman by signaling her humanness, the difference of her body's fragility from Superman's invulnerability.

Similarly, in a film permeated by an atmosphere of smoke and mist, *Blade Runner* (1982) blurs the limits between the android and the human. In the most advanced "replicant" model, memories are implanted into Rachael (Sean Young), constructing a history for her that makes her believe that she is human. The fact of her smoking is evidence of her belief in her own humanity, a humanity in which the viewer too becomes convinced, faced with her soulful expression, and her deep inhalation of smoke. Here, as elsewhere, the sexuality, rebellion, and destruction that emerge with each act involving tobacco are an eruption of vulnerability and a refusal of limits against which one establishes one's identity, a refusal that establishes what the limits, for the moment, still are.

If the films of the last decades of the millennium employ tobacco to ask about ultimate limits and borders, between life and death, and

between the human and the non-human, tobacco now has another purpose. Now that smoking is banned from public places in New York City, as well as California, Hollywood produces a movie that uses tobacco to ask if we really know what we think we know. Sophia Coppola's *Lost in Translation* (2003) returns us to the inquiries that were left in abeyance half a century ago. It is a film in which smoking is arguably the main action, a film where nothing really happens except recasting the moral question "What is good for you?" as an existential one. The story is told from the point of view of two Americans, Charlotte (Scarlett Johansson) and Bob Harris (Bill Murray), who cross paths in Japan, where their cultural alienation magnifies their existential alienation. The characters for whom health is cast as a moral question are made to seem simplistic to the point of absurdity. Charlotte's photographer husband John (Giovanni Ribisi) introduces the health question in what seems to be a reasonable, if conventional, way: "Would you please stop smoking? . . . It's just so bad for you . . . ." But the reasonableness of his position is quickly undermined by the ridiculousness of the value of "health" as articulated by an attractive blond starlet whom he has shot. While the starlet explains how good it feels to get rid of toxins by "power cleansing," and how flattering it is to be mistaken for an anorexic, Charlotte, who majored in philosophy, smokes thoughtfully.

Less interested in health than in the philosophical question of what is good for you, *Lost in Translation* also asks whether being good is good for you, and even whether feeling good is good for you. The sympathy in this film is reserved for the smokers, who, without moralizing about "health," take care of each other with great tenderness. Charlotte and Bob use smoking in a conventional way (to mediate a kind of seduction, and eroticism, to indicate the possibility of adultery) in order to emphasize an inquiry that is somewhat less conventional, at least today. Smoking, an activity that marks the passage between exterior and interior, is still a good metaphor for subjectivity. It is both a sign of alienation and a momentary cure for it. *Lost in Translation* exposes "health" as a fantasy about happiness and control that occludes the inwardness, nothingness, longing, and loss that enable unlikely moments of connection. Smoking is the film's vehicle for appreciating a border less dramatic than that of life and death, but no less human: the border between abandon and restraint where intimacy plays out, where little nothings of events, like wisps of smoke, move us, make a claim on us, and change us.

See Also Literature; Visual Arts.

DAWN MARLAN

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Fire Safety

Every year, fires caused by cigarettes result in billions of dollars in property damages, health care costs, lost productivity, and fire and emergency services. These fires burn homes, killing children and families; burn buildings and factories; and devastate city blocks, entire villages, and enormous tracts of forestland and other wilderness. Many cigarette-induced fires occur when a mattress or furniture is ignited while people are asleep or intoxicated. As a result, cigarette fires are disproportionately responsible for fire-related deaths. Cigarettes are the leading cause of fire death among the industrialized western nations. An estimated 30 percent of fire deaths in the United States (approximately 1,000 people a year) and 10 percent of all fire deaths globally are attributable to smoking.

The call to develop a fire-safe cigarette dates back more than a hundred years, as a result of the common association between smoking and fire-related disasters, but was intensified in the 1970s with increasing public awareness and press coverage of the issue. A fire-safe cigarette would be designed either so that it would be less likely to ignite materials with which it remained in contact as it burned or so that it would self-extinguish when left unused for an extended period. Internal industry documents demonstrate that the tobacco industry has pursued fire-safe research for decades and developed dozens of prototype cigarettes. According to internal research made public by the U.S. television program *60 Minutes*, the cigarette manufacturer Philip Morris embarked on a fire-safe program in the 1980s called Project Hamlet (in reference to an internal company joke, "To burn or not to burn"), which ultimately resulted in a consumer acceptable fire-safe cigarette. This product and others developed by tobacco manufacturers internally never reached the commercial market, most likely due to cost and product liability concerns.

A three-year review by a fifteen-member panel convened through U.S. legislation, including representatives of the federal government, public health community, fire safety groups, and the tobacco industry, concluded in 1987 that a fire-safe cigarette was both technically and economically feasible. The report also identified several cigarette design factors important to reducing the likelihood of ignition, including the use of **expanded tobacco,** reduced **citrate** in cigarette paper, low paper permeability, and decreasing cigarette circumference.



expanded tobacco a term used to describe cut tobacco leaf that is treated by an expansion process, usually using dry ice, to increase its bulk.

citrate a derivative of citric acid. Many citrates such as magnesium citrate, potassium citrate, and aluminum citrate are present in cigarettes and cigarette smoke.



Smoked tobacco, especially cigarettes, is a major cause of household fires. New York is one state that has used fire safety as a rationale for enacting product safety standards for cigarettes. © LAYNE KENNEDY/CORBIS

Publicly, the tobacco industry has opposed fire-safe cigarette legislation, claiming that fire-safe cigarettes are unacceptable to consumers, that no testing method can accurately predict whether a cigarette is fire-safe, and that proposed changes would likely increase product toxicity. According to internal documents, the industry successfully neutralized political opposition by making generous grants to fire service organizations and fire departments, supporting fire safety programs, and shifting public discussion to broader fire safety issues. Because much of the information distributed on fire deaths originates from fire department and fire safety organizations, tobacco industry influence on these organizations has had a large effect on the dissemination of information within the general media.

The state of New York passed legislation requiring sale of fire-safe cigarettes starting in July 2003. However, enforcement of the law has since been delayed, with no clear indication of when manufacturer compliance can be expected. In 2000 Philip Morris introduced a fire-safe paper technology to their Merit cigarettes, which caused the cigarette to self-extinguish when left to burn on its own. Although initial market surveys were extremely positive, the company now claims that the product has been a commercial failure, resulting in increased complaints and reduced purchases.

Overall, little progress has been made. New regulations are being considered in Canada, Australia, and the European Union, but these countries face similar challenges to those demonstrated in the United States. In the absence of enforced legislation, it is unlikely that a fire-safe cigarette will ever become standard commercially.

See Also Cigarettes; Product Design.

GEOFFREY FERRIS WAYNE

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Fitness *See* Appetite; Body.



French Empire

The French cleric and colonial traveler André Thevet, returning from Brazil, introduced tobacco seeds into France in 1556. The plant, however, was already being smoked and chewed in the port cities of France, not by wealthy seekers of exotic New World luxuries, but by sailors. Even after spreading beyond the ports, tobacco was at first associated with peasant herbal cures and remedies, particularly for its power to stave off hunger. Tobacco became popular among the French aristocracy when Jean Nicot, the French ambassador to Portugal, prescribed **snuff** for Catherine de Médicis's headaches in 1561. Shortly thereafter, tobacco quickly became a staple of French gardens.



snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

colonial age generally, the period of European colonization in the New World, circa 1490s–1820s. In United States history, c. 1580s–1780s.

The omnipresence of tobacco in the early 1600s allowed the habit of its consumption to take firm root in France at the dawn of the **colonial age.** The French Crown's desire to exploit this market in addition to a growing export market of tobacco products manufactured in France drove French colonial policy for two centuries, often at the expense of prosperity in the colonies themselves.

The First French Tobacco Colonies: 1631–1664

The profits reaped from tobacco among French Caribbean traders convinced France's prime minister under Louis XIII, Cardinal Richelieu, to charter Compagnie Des Isles d'Amérique in 1631 to develop Caribbean bases of tobacco production. The Compagnie Des Isles d'Amérique dues to the Crown were to be paid in kind, specifically in tobacco leaves of the first quality. The first French settlers at Saint Christopher (1628) and Martinique (1635) were tobacco farmers, and French colonists who could not pay for their passage from France were required to reimburse the company upon arrival with two to three years of labor preparing and rolling tobacco leaves. To promote these French colonial settlements, Richelieu instituted a new and heavy tax on tobacco originating from non-French colonies in 1629, but frustration with the **contraband trade** together with the crown's financial needs and the allure of tobacco profits drove Richelieu to promulgate a more comprehensive tobacco tax in 1632, this time imposing taxes and other duties on all tobacco of any origin whatsoever. Nonetheless, producers could often get higher prices by selling illegally to Dutch and English traders rather than to the Crown's company, resulting in a contraband trade that quickly overtook legitimate sales to French vessels, and thus tobacco cultivation grew rapidly on the islands in spite of the heavy taxation.



contraband trade traffic in a banned or outlawed commodity. Smuggling.



Gauloises is an international brand of the French company SEITA. In 1999, SEITA merged with the Spanish national tobacco company Tabacalera to form a new multinational company, Altadis. PHOTO BY ANNA WHITE

By 1638, with French **plantations** in Guadeloupe and English production spreading in Virginia, the European market became satiated, sparking a decline in prices. In an effort to maintain tax revenues, the Crown set a limit on the maximum area planters could cultivate, at one point demanding that planters on Saint Christopher destroy all their tobacco plants. In 1664 various taxes accounted for 50 percent of the retail cost of Antilles tobacco. These limitations to the profitability of tobacco curbed its appeal for colonists, and new crops such as sugar and indigo slowly supplanted tobacco in the French Caribbean, with twice as much cultivated land devoted to sugar as to tobacco in 1671. While French planters in Madagascar, Guinea, and Senegal found that tobacco acclimatized well, the Crown preferred to supply Africa with American tobacco in exchange for slaves.

plantation historically, a large agricultural estate dedicated to producing a cash crop worked by laborers living on the property. Before 1865, plantations in the American South were usually worked by slaves.

The Royal Monopoly: 1664–1718

In 1664 the French minister of finance under Louis XIV, Jean-Baptiste Colbert, as part of his reorganization of France's economic system, created the French West India Company, which held a monopoly on colonial production and trade. In 1674, after the French West India

Company folded, Colbert established a tobacco monopoly, farmed to a private director and carrying the exclusive rights of purchase and the power to set prices, which lasted until 1791. Domestic commercial tobacco production, which had begun in the 1620s and had grown throughout the first half of the seventeenth century, allowing France to actually export tobacco, notably to Holland, by the 1660s, was banned in most of the country, excepting limited production in the newly acquired provinces of Alsace, Franche-Comté, Artois, Flanders, Hainaut, Cambrésis, and Corsica. This funneling of tobacco production to the colonies was aimed at making it easier to control and tax by placing production in the hands of colonists, thought to be more beholden to the Crown than were the entrenched landowning nobility in the French provinces. Because it limited tobacco's legal entry into the kingdom to a small number of ports, the monopoly enraged French growers and locked the colonies into a tobacco trade that was designed and administered not for their well-being but for the profit of the Crown.

Production on the islands was so severely restricted in order to drive up prices that in 1680 Guadeloupe and Martinique, once hubs of European tobacco production, actually had to import tobacco for local consumption. In the same year, the tobacco monopoly was transferred to the *fermes générales* (united farms), the central system of five state-controlled monopolies, and leased to a succession of collectors. The settlers of Saint Domingue, who had escaped earlier royal regulation and thrived on tobacco production, revolted in the first year of the monopoly, and many immigrated to English, Portuguese, and Spanish islands. These conflicts, combined with high shipping costs due to distance and the bulky nature of the tobacco leaves, led to the near complete disappearance of tobacco in the French West Indies by 1700. In France, even a 50 percent **duty** on tobacco imported from English colonies was not enough to stem the tide of tobacco from Virginia and Maryland into the country, both legal and contraband. During Colbert's ministry, smuggling accounted for no less than two-thirds of the tobacco consumed in France.

duty a tax, usually a tax on certain products by type or origin. A tariff.

Tobacco in French North America: 1718–1763

In 1718 the French royal government fixed its colonial ambitions in the Mississippi Valley, and a universal French monopoly on tobacco production was ceded to the Scottish financier John Law for his Louisiana venture, the *Compagnie d'Occident* (becoming the Compagnie des Indes Orientales in 1719). Though potentially the most profitable crop for the new colony, tobacco in Louisiana followed the pattern of the colony as a whole. As the French colonial philosopher Abbé Guillaume Raynal noted in 1770, the private monopoly of Law and his agents led to transient and shortsighted development strategies. The resulting patchwork of fields and settlements were handed out to the hodgepodge of colonial settlers arriving from France, and no system of centralized supply and control was established. Combined with the major losses from spoilage on the long crossing from New Orleans, these problems led to a net loss to the *Compagnie des Indes Orientales* from tobacco trade of between 7 and 8 million livres between 1721 and 1731.

After a failed attempt in 1728 to sow Virginia seed in Louisiana resulted in a disastrous crop, Law's company admitted defeat and ceded the tobacco monopoly back to the united farms. The French Crown continued to promote tobacco cultivation in the colonies until the loss of Canada to

England and Louisiana to Spain in the Seven Years' War (1754–1763), but the essential problems that had driven tobacco out of the French Caribbean continued to hamper these efforts. From 1731 to 1763, Louisiana produced merely one shipload of tobacco per year, in spite of the Crown's increasing reliance on tobacco revenues, now overwhelmingly from taxing Chesapeake tobacco imported by English merchants. This is evident in the following table (Price), which shows percent of total revenues of the French Crown from tobacco during the eighteenth century:

1715	1.2%
1756	5.0%
1763	7.0%
1768–1769	7.3%
1776	6.4%
1788–1789	6.4%

The Revolutions and French Tobacco Policy: 1765–1830

French tobacco interests had for so long been beholden to the English colonial producers that they saw the American Revolution as a unique opportunity to gain control of the American tobacco trade. In 1785, the French Crown granted a monopoly for the American tobacco trade to Robert Morris, financier of the American Revolution and signer of the Declaration of Independence. By 1787 the United States dwarfed all other sources of tobacco in France, as is evident in the following table (Price) showing the origin of French tobacco in 1787 in millions of French pounds:

U.S.A.	Great Britain	Holland	French Colonies
32,043	3,814	3,613	803

Indeed, 80 percent of tobacco sold by the French tobacco monopoly in its last years came from the United States, and tobacco alone amounted to 76.4 percent of French imports from the United States, accounting for 25 percent of American tobacco production.

Americans, led by Thomas Jefferson, negotiated throughout the 1780s to eliminate the tobacco monopoly, which they believed hindered Franco-American trade, but only on 29 January 1791, after a year of debate at the National Assembly, was the tobacco monopoly, hated symbol of the old regime's brutal taxation of the peasantry, eliminated. Napoleon Bonaparte replaced the revolutionary tax with a direct state monopoly called the *régie* in 1810. Napoleon, himself an avid snuffer, saw the tobacco tax as a crucial resource for rebuilding the state and enforced it with an effectiveness never before achieved in France. The spread of Napoleon's empire through Europe created a broader market for French tobacco products, and revenues from tobacco fuelled the expansion.

After 1830: A Colonial Business Comes Home

Beginning in 1816, tobacco cultivation was reauthorized in France, first in selected regions but growing steadily to 105,000 producers in fifty-five departments by 1950. Though tobacco cultivation had ceased to be a motive in French colonial development or a significant import from French colonies, tobacco manufacture and distribution became central to France's

colonial economy throughout the nineteenth century. In 1843 control of every phase of cigarette manufacture was added to the state monopoly, guaranteeing an unobstructed revenue stream as well as products of notoriously poor quality. By 1868 the *Regie* controlled the entire tobacco industry in France and its colonies, producing 400 million cigarettes a year.

After the French defeat in the Franco-Prussian War in 1870, France redoubled its colonial expansion in Africa, building on the colonies of Algeria and Senegal and adding Morocco and Tunisia, as well as numerous West African territories. During this period of expansion, lasting until the 1920s, French African colonies served not primarily as producers but as sources of labor for the manufacture of tobacco products, especially cigarettes. The industrialization of tobacco products encouraged cigar and cigarette consumption over pipe and other forms less amenable to centralized, mass production and distribution.

As cigarette manufacture was gradually mechanized in the 1880s and worldwide consumption skyrocketed, the primary role of the colonies shifted to consumption. In 1926, French Prime Minister Poincaré created SEIT (Société d'Exploitation Industrielle des Tabacs), becoming SIETA (with the addition of *Allumetes*) in 1935, which sought to maximize state profit from growing tobacco consumption throughout France and its colonies by focusing on cigarette distribution and sales. SEITA was privatized in 1995, and merged with the principal Spanish tobacco company, Tabacalera, in 1999 to form Altadis, now the largest tobacco manufacturer and distributor in France and Spain. On 6 June 2003, in a final irony of the postcolonial globalization of tobacco markets, Altadis purchased 80 percent of France's former colony Morocco's own state tobacco monopoly, *Regie des Tabacs*, a primary Moroccan economic engine after decolonization begun in 1956, and now valued at $800 million.

See Also British Empire; Caribbean; Dutch Empire; Portuguese Empire; Spanish Empire.

JORDAN KELLMAN

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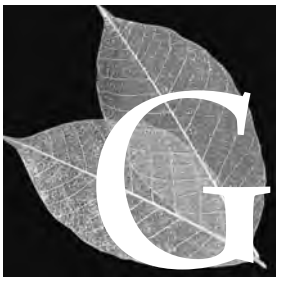
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Genetic Modification

Genetic modification of tobacco began with traditional agricultural breeding and selection practices. The use of modern **biotechnology** to develop tobacco for commercial purposes, which began in the early 1980s, is only the most recent research and development endeavor. A strain of tobacco that is fundamentally altered at the level of its DNA—its genetic makeup—is said to be "genetically modified," "genetically altered," or, more popularly, "genetically engineered," especially when biotechnology is used. A tobacco strain that is created by the transplantation of a gene from another organism, such as bacteria, is referred to as "transgenic tobacco" and falls under the popular term, "genetically modified organism."

biotechnology a scientific process, often genetic in character, to enhance desirable characteristics of plants and animals. Through biotechnology, tobacco has major potential for producing medicines to replace currently expensive drugs for several devastating diseases.

Tobacco is relatively easy to work with for breeding purposes. The plant has a simple flower structure, seeds that are numerous and easily stored, and a ready ability to self-pollinate and cross-pollinate. In addition, it readily incorporates transgenic material to create new reproducible strains of transgenic tobacco. For these reasons, the tobacco plant has been a common organism to use in basic biological research throughout the twentieth century. Moreover, it has been a critical test ground in the general development of transgenic crops. The first transgenic crop, in fact, was a noncommercial variety of tobacco that the biotechnology company Calgene genetically modified to resist the common herbicide glyphosate. The company discovered the resistant bacterial gene in 1983 and first field-tested it in tobacco in 1987. Recent discussions of tobacco genetics highlight the potential of harnessing the plant's biological machinery to organically generate pharmaceutical proteins and industrial enzymes, much the way that bacteria are currently used.

Commercial Efforts

Although productive for research purposes, the commercial importance of tobacco lies in the complex chemical composition of its leaves. Innumerable attempts to improve on tobacco's consumer appeal and profitability for the highly competitive cigarette market have occurred during the last several centuries. Innovations often have come in the form of changes to



New tobacco products are the result of intensive scientific research and development efforts. The most advanced tools of genetic research are used to create tobacco with altered biochemical properties. © ED YOUNG/CORBIS

cultivation methods and manufacturing processes. Genetic modifications of tobacco strains by **hybridization** (cross-breeding) and selection have been less commercially successful. Attempts to improve on its growth and other characteristics have often been at the expense of taste, aroma, and color qualities of importance in the final cured tobacco leaves. Breeding for disease and pest resistance has historically achieved only limited success as well. One major addition to the family of economically important tobacco varieties was the White Burley variety in 1864; and it is believed to have been the product of a naturally occurring mutation.

Recent advances in biotechnology have offered the promise of a more targeted approach to overcoming longstanding agricultural challenges and fulfilling product development interests, but also have raised public concerns about uncertain **ecological** and health safety consequences as well as numerous complex regulatory issues for national and

hybridization the practice of cross-breeding different varieties of plants or animals to produce offspring with desired characteristics.

ecology the interrelationships of a natural environment. For example, the ecology of a forest includes animals, plants, water, atmosphere, weather, and land forms.

international discussion. Europe has been the center of much of the public debate, and the first transgenic organism to be put on the European market, in 1994, was a commercial tobacco that was resistant to the herbicide bromoxynil. A genetically modified tobacco with a viral resistance and a greater yield was reported to have been cultivated on almost one million hectares in China in 1994. Still, commercial development of transgenic tobacco has been smaller compared to other crops because of its lower overall acreage due to lower overall demand for tobacco than for staple agricultural food crops such as corn or wheat.

Controlling of Nicotine Levels

Nicotine content is central to tobacco's identity as a commercial product, and it has been heavily investigated by the tobacco industry. The concentration of nicotine can be highly variable, and it is known to be very susceptible to the agricultural and environmental conditions in which the tobacco is grown. Controlling nicotine levels in tobacco is, thus, a complicated act. Breeding and selection work on high and low nicotine strains dates to the early twentieth century, with two low nicotine strains being isolated in 1907.

In the United States, a strain of tobacco called Y-1, which was genetically modified to be higher in nicotine, became the source of a controversy in 1994 when the Food and Drug Administration publicly revealed Y-1's existence during its attempt to regulate tobacco on the grounds that the tobacco industry manipulated nicotine levels. The FDA found that the Brown & Williamson tobacco company had grown Y-1 in Souza Cruz, Brazil—the export of the seed raising separate legal questions—and used the tobacco, at least temporarily, in several of its brands. Speculation followed on whether the tobacco industry was involved in developing a product to keep smokers addicted. Brown & Williamson maintained that the tobacco was used for blending the product to consumer taste; still, as internal documents reveal, the company was competing with Philip Morris' enormously successful methods for controlling nicotine levels in smoke.

The desire to create a "safe" cigarette has also been a driving force in tobacco genetic research. The Y-1 tobacco had its origin in conventional breeding research conducted during the 1970s by the United States Department of Agriculture in its effort to develop a less hazardous cigarette. The theory was that a cigarette with the same amount of nicotine, but lower in **tar,** would be desirable but less harmful to the smoker. At various times attention has turned to low nicotine tobacco, and in 2003, the American company Vector Tobacco introduced a reduced nicotine cigarette called Quest. It is produced from tobacco genetically modified to block nicotine **synthesis,** and the product is being marketed to assist smokers with smoking cessation. Vector is also the manufacturer of the Omni brand, which claims to use a genetically modified tobacco with reduced levels of carcinogens. Other tobacco companies have been involved in biotechnology research to develop less harmful products; however, they have yet to be formally introduced, and none of these products has been scientifically proven to reduce health risks or treat addiction.



tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

synthesis the blending of several elements into a coherent whole.

See Also Chemistry of Tobacco and Tobacco Smoke; Nicotine.

JOSHUA DUNSBY

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Gitanes/Gauloises

nationalism the belief that the narrow, selfish interests of one's country should supersede international standards of behavior.

Art Deco the most fashionable style of design in the 1920s and 1930s. Art Deco is usually characterized by geometric lines and shapes. Smoking tobacco tins and cigarette packages of this period were often rendered in the Art Deco style.

Gitanes and Gauloises are the two oldest brands of cigarettes still manufactured in France. They were created at the same time, in 1910. The name for the Gauloises brand was given, instead of Hongroisesà la place, in a tense **nationalist** context. In fact, the blue color of the packs is reminiscent of the famous blue line of the Vosges Mountains that separate France from the provinces it lost to Germany. The cigarettes were originally made up of black, ordinary Caporal tobacco, which is grown in France. Conversely, the brand Gitanes, which was fashioned to target a richer clientele, was named such to evoke the exoticism of neighboring Spain. Gitanes are made from a mix of black tobaccos (ordinary Caporal, mild Caporal, and maryland).

These brands became popular during World War I; the men gladly smoked Gauloises, while their officers favored Gitanes. The fact that cigarettes were free for the soldiers only aided their growth in popularity. But it was not until after the war that the two brands truly took off. Their producer, SEITA (for Societe d'Exploitation Industrielle des Tabacs et Allumettes), which was founded in 1811, belonged to the French government until it was privatized in the mid-1990s. After World War I, SEITA helped pay off the government's debts by increasing sales through a considerable publicity campaign. In 1925 the artist Maurice Giot decorated the Gauloises pack with a drawing of a winged helmet. In 1936 Marcel Jacno modernized Giot's work, giving the Gauloises logo the appearance it has kept to this day; Jacno's purer, edgier stripe added more volume and substance to the winged helmet.

Gauloises has remained the less expensive brand, while Gitanes has continued to represent French taste. In 1926 the Gitanes brand was given packaging representative of the period's **Art Deco** style. One of the slogans that appeared on the subway walls of Paris in the 1930s was, "No smoking . . . Not even a Gitanes." The movies helped spread the virile image of the smoking man through such stars as Maurice Chevalier and Jean Gabin, who both smoked Gitanes. The first publicity movie for Gitanes was made in 1929 (sound was added in 1932). It was during this period that the most famous Parisian writers and artists, including the American stage actress Josephine Baker, came together to discuss their love of tobacco at the famous literary cafe Rotonde. The Gitanes blend underwent various changes over the years and at one point



The Disque Bleu variety of Gauloises was launched in 1956. The winged helmet first drawn by Maurice Giot in 1925 is still evident in this 1950s poster by Bernard Villemot. © SWIM INK/CORBIS

included Oriental tobaccos. Consumption of Gitanes climbed from 75 million units in 1926 to 850 million units in 1938.

After World War II, Gauloises and Gitanes, which were made from French black tobacco, found new competition in brands made from the American blond tobacco. In response, SEITA launched in 1956 the Gauloises Disque Bleu brand and gave it unprecedented promotional support. This version, also made from black tobacco, distinguishes itself by its filter tip. The package's design of a famous flamenco dancer dancing through wisps of smoke was drawn by the artist Max Ponty. The artist Hervé Morvan won the Martini publicity prize in 1961 for his Gitanes poster of a male flamenco dancer with a bolero in the shape of cigarettes.

Gitanes sales quadrupled between 1952 and 1957. In 1977, 18.9 billion units were sold, representing 22 percent of all cigarettes smoked in France that year. In 1985, 33 million Gauloises were sold in France, representing 38 percent of the French market. At the end of the twentieth century, however, these two brands suffered from a decline in sales; in



A packet of Gitanes cigarettes in 1996 still depicts the flamenco dancer made famous by artist Max Ponty's original packaging design in 1956. However, Ponty's wisps of smoke are absent from this more contemporary packet of "Blondes."
© VERNIER JEAN BERNARD/CORBIS SYGMA

1993 they represented 40 percent of the market but ten years later they hardly accounted for 20 percent due to their unhealthy reputation—black tobacco is considered more carcinogenic—and to competition from the American blond cigarettes (especially Marlboro). Despite being more expensive, the American brands have won over the tastes and hearts of French consumers. As the twenty-first century begins, ALTADIS, the company that comprises SEITA and the Spanish TABACALERA, is still producing Gitanes and Gauloises in its French factories.

See Also Antismoking Movement in France; Camel; Cigarettes; French Empire; Lucky Strike; Marlboro; Virginia Slims.

DIDIER NOURRISSON

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Glamorization *See* Film; Visual Arts.



Globalization

Globalization has been used to explain the increasing degree of international economic integration that emerged as a feature of many industries during the late twentieth century. In the tobacco industry, however, the origins of globalization can be found unusually early. Indeed, by the closing years of the nineteenth century, tobacco goods were already being manufactured and marketed by firms whose operations spanned a variety of countries. One tobacco product in particular was responsible for this early example of successful international economic integration: the machine-made cigarette. By the year 2000, over 80 percent of all tobacco grown in the world was destined to be consumed in cigarettes, the majority of which were produced by just three leading multinational corporations: Philip Morris, British American Tobacco, and Japan Tobacco.

A Product with Global Potential

Mass-produced hand-rolled cigarettes first began to emerge as a significant form of tobacco consumption in the United States after the American Civil War (1861–1865). Using the **flue-cured** Bright tobacco leaf grown in Virginia, tobacco firms experimented with different blends of leaf that could be smoked in the form of a cigarette. Targeting the more affluent and sophisticated urban consumers, these relatively expensive hand-produced items became an important aspect of the development of branded products that symbolized the beginning of the era of mass-produced consumer goods. What might be considered as the first modern American cigarette was launched by the New York firm of F. S. Kinney in 1872 when it marketed the brand Sweet Caporal using a blend of flue-cured Virginian and Turkish leaf. Following Kinney's lead, other firms, such as the Virginia-based enterprise of Allen & Ginter, developed brands that replaced the costly imported Turkish leaf with flavored Burley tobacco grown in Kentucky to produce an all-American blend. To promote its brands, Allen & Ginter packaged its products with picture cards as an innovative marketing technique.



flue-cured tobacco also called Bright Leaf, a variety of leaf tobacco dried (or cured) in air-tight barns using artificial heat. Heat is distributed through a network of pipes, or flues, near the barn floor.

By 1880 sales of cigarettes in the United States had reached 500 million per year, and both Kinney and Allen & Ginter had begun to seek out export markets for their products. In Britain, where a small trade in the hand-rolled items had been developed by firms such as W. D. & H. O. Wills of Bristol, imported American cigarettes became a fashionable item of consumption, although the Customs authorities frowned on the adulterated products that contained flavored tobacco and, as a result, British consumers developed a taste for pure Virginia leaf cigarettes rather than the American blended version. In many other countries of Europe, the production of tobacco goods was controlled by a state monopoly, and this situation meant that in France, Spain, Italy, and Portugal, for example, consumers were offered little choice of manufacturers' brands.



Billboards advertise coffee and Lucky Strike cigarettes in front of a Buddhist pagoda in Pyin-U-Lwin, Myanmar, 1996. © RICHARD BICKEL/CORBIS

Although hand-rolled cigarettes grew in popularity, the continued expansion of output required the employment and supervision of an increasingly large female workforce and allowed few gains in productivity because the cost of labor accounted for around 90 percent of the total. The globalization of the cigarette industry thus only began in earnest following the mechanization of the production process. Of the various attempts that were made to produce a machine to manufacture cigarettes, the most reliable was developed by an American engineer named James A. Bonsack. His invention was capable of producing 200 cigarettes per minute, equivalent to the combined output of around forty to fifty hand-rollers. In England, Bonsack granted an exclusive license for his machine to the Wills firm, whose Woodbine cigarette brand became a marketing sensation following its launch in 1888. In the United States, meanwhile, Bonsack's invention was exploited most successfully by the North Carolina–based firm of W. Duke & Sons. Led by the astute and ruthless business tycoon James B. Duke, the company used the cost advantages it derived from mechanization to expand its cigarette sales rapidly across the United States. Using a mixture of price-cutting, advertising, and corporate **acquisition,** Duke's firm was strong enough by 1890 to browbeat its four main domestic cigarette manufacturing rivals into a joint venture named the American Tobacco

acquisition the purchase—sometimes called a merger—of a smaller company by a larger one. During the late twentieth century, major tobacco companies diversified their holdings through acquisition of nontobacco products.

Company, which then accounted for over 90 percent of all cigarettes manufactured in the United States.

From Exports to Foreign Investment

Immediately following its formation, Duke's American Tobacco Company used its monopoly power in cigarettes to continue the strategy of market expansion. In domestic terms, this involved further infiltrating and gaining control wherever possible in the markets for other tobacco products. In the cigarette business, Duke's earlier campaign of domestic expansion was now transferred into foreign markets. Initially, this international growth was founded on developing an export trade in cigarettes manufactured in America. Duke sent experienced tobacco men such as Richard H. Wright and James A. Thomas on tours of duty into Europe, Asia, and the Pacific Rim to gather orders for the company's products. During the 1890s, leading cigarette brands of American Tobacco such as Cameo, Old Gold, and Pin Head found new consumers in Britain, Germany, the West Indies, India, South Africa, Australia, and, particularly, Japan and China. Such was the extensiveness of the company's bill poster advertising that, in many parts of China, the characters "Pin" and "Head" were taken to be the generic name for cigarettes.

British firms, such as Wills, John Player & Sons, and Lambert & Butler, followed Duke's example and began to set up branches outside the United Kingdom to promote their products. Wills in particular scored considerable success with brands such as Pirate, Scissors, and Diamond Queen. By the beginning of the twentieth century, one-third of American Tobacco's cigarette output was being produced for export, and around 20 percent of Wills's tobacco products were being shipped abroad. To consolidate this trade, in the face of local competition and rising tobacco **tariffs,** Duke's firm began to make strategic investments in foreign markets. In 1894 American Tobacco formed three **subsidiary** companies in prefederation Australia, in each case operating in conjunction with other manufacturers. The following year the American Tobacco Company of Canada was founded by Duke's firm in order to acquire control of the two leading Montreal-based tobacco businesses. The pattern was now set for a process of international corporate expansion in the tobacco business.



tariff a tax on imported goods imposed by the importing country to protect native industry from foreign competition, protect jobs and profits, and raise revenue. Tariffs typically raise consumer prices of effected products.

subsidiary in commerce, a branch or affiliate of a larger unit that provides components or support services.

An International Cigarette Cartel

Duke's foreign investments were by no means always welcomed by firms or governments in the host country. A campaign of political resistance developed in Japan, for example, following the acquisition by American Tobacco in 1899 of the controlling interest in the Kyoto-based Murai Brothers firm, culminating in the nationalization of the entire tobacco manufacturing industry in 1904. Opposition was frequently also encountered from within the trade. Thus when, in September 1901, Duke's firm purchased control of the Liverpool-based Ogden Tobacco Company, a concerted campaign of commercial warfare was waged by the leading British tobacco companies, spearheaded by Wills, who banded together to form the Imperial Tobacco Company. This federated concern encompassed more than a dozen firms and ultimately negotiated

American Tobacco's withdrawal from the British market in 1902, following a period of desperate competition that spilled into international markets and became known as the Tobacco War.



embryonic in the early stages; undeveloped; nascent.

The terms that were negotiated between Imperial and American Tobacco in 1902 ushered in a new phase of international expansion in the **embryonic** global tobacco industry. An agreement signed in September 1902 gave Imperial and American Tobacco exclusive rights to one another's brands in Britain and the United States respectively. Outside these two markets, this vast portfolio of brands was allocated to a newly formed joint venture called the British-American Tobacco Company (now British American Tobacco), in which Duke's firm was allocated a two-thirds interest. British American was therefore created as a multinational company. As well as owning brand rights in international markets, the new firm inherited all the export trade and foreign assets that its two parent companies had built up in the preceding decade.

A Pioneering Multinational Company

Between its formation in 1902 and the end of World War II, British American was virtually unchallenged as the leading international firm in the global tobacco industry. During this time the company continued to expand the export trade from its factories in Britain and the United States. More significantly for the future shape of the industry, however, the company made significant investments in cigarette factories and distribution systems in other parts of the world. The company's main area of success was in China, where it built a huge production capacity and a distribution system that utilized local tobacco merchants whilst retaining control and accountability to the company's regional head offices. Unmarried young men, mainly American, aged under twenty-five were recruited and posted to China on tours of duty that normally lasted four years. Expatriate employees of this kind formed the vanguard through which western business methods were transferred into other economic and social systems.

Methods of market entry varied from country to country. In India, no domestic cigarette producers existed and hence British American set up its own factories and distribution system into which it gradually assimilated local employees. In Latin America entry more often took the form of corporate acquisition. In 1914 in Brazil, for example, British American bought control of Souza Cruz, a company that had been set up ten years earlier by a Portuguese immigrant and which already operated its own factories in Rio de Janeiro, Bahia, and Santa Cruz. Over time therefore, as it developed local production capacity, the balance of activity undertaken by British American in foreign markets shifted from an export business to local production and distribution. As the company gained control over foreign firms as its subsidiaries, it also acquired and developed many new cigarette brands for these markets that reflected local tastes and cultures. Ruby Queen was a derivative brand of Wills's Diamond Queen that traded outstandingly well in China where red is considered **auspicious** Elephant brand succeeded in India, and the brand Bicycle was aimed at upwardly mobile consumers in West Africa.



auspicious showing promise for success; favorable.

For a period during the 1920s a few other tobacco companies did begin to expand their operations into foreign markets in order to challenge British American's domination. Following the dissolution of the

American Tobacco Company in 1911, some of the successor companies did make foreign investments, and a group of financiers also used the opportunity to set up the Tobacco Products Export Corporation, which briefly offered a threat to British American in China and elsewhere. Competition from the British firm Ardath was ended when British American jointly acquired this firm with Imperial, and thereby gained control of the successful international brand State Express 555. With the onset of the Great Depression after 1929 much of this international rivalry came to a halt, although the Japanese Toa Tobacco monopoly began a concerted and ultimately successful attempt to capture much of the cigarette market in Manchuria and northern China. The surge in **nationalist** sentiments that characterized the 1930s led British American to adopt a lower international profile in many markets, where earlier **boycotts** of their products (notably in China, Germany, and India) had already encouraged the company to downplay its international identity. In 1934 in China, for example, the company adopted the Chinese pseudonym Yee Tsoong to replace British American and tried to encourage more investment from local sources.



nationalism the belief that the narrow, selfish interests of one's country should supersede international standards of behavior.

boycott an economic sanction imposed by an interest group to influence policy. In the 1900s, tobacco growers in Tennessee and Kentucky refused to sell leaf to the American Tobacco Company until prices were raised.

The Spread of Flue-Cured Leaf Tobacco

British American's strategy of developing local production in the majority of its markets was further supported by encouraging local cultivation of Virginian tobacco leaf. To do this the company formed the Export Leaf Tobacco Company, which handled leaf procurement and provided expertise to support local cultivation. Seedlings were developed for the varying climatic and soil conditions, and the company established extension services and leaf-handling facilities at which local cultivators could sell their crop of flue-cured Bright tobacco leaf. Important regions of tobacco growing designed to support cigarette manufacturing were established in China, India, and Brazil. In India, for example, a British American subsidiary—the Indian Leaf Tobacco Development Company—was set up to promote tobacco growing and given further encouragement by the adoption by the British government of favorable tariffs on Empire products under the Imperial Preference scheme. Thus, between the wars a substantial increase occurred in the amount of land devoted to growing tobacco leaf for cigarettes, particularly in the non-industrialized regions.

In the period since World War II the trade in tobacco leaf has become an important aspect of the global tobacco industry. The formation in 1918 of the Universal Leaf Tobacco Company in the United States created a leaf-handling organization that exploited the cultivation of tobacco leaf in China to set up a tobacco-trading subsidiary there in 1925. Since this time, Universal has grown into a major transnational tobacco processing and trading company whose operations make up an aspect of the global commodities trade linking the producers of raw materials with the manufacturers of final products.

A Global Tobacco Oligopoly

The outbreak of World War II had a dramatic impact on the competitive conditions of the global tobacco industry. After 1945 British American found their position under threat in many of the strongest markets.

The communist revolution in China in 1949 was a particularly devastating blow, ending hopes of a revival in their sales there, and significant reversals were also experienced to their position in Egypt, Indonesia, and India. American firms, conscious of the adverse publicity arising from the health consequences of smoking, began to make a more concerted effort to challenge for a share of international markets. Liggett & Myers, R.J. Reynolds, and Philip Morris all began to engage in overseas expansion during the 1950s, particularly into the markets of Latin America, using a combination of direct investment and licensing. The German Reemtsma and the South African–based Rothman's International also made inroads during this period as the competitive structure of the international cigarette industry adopted a strongly **oligopolistic** dimension.



oligopoly control of a commodity or service by a small number of companies. A marketing environment in which a few vendors have control of a product. Oligopolies tend to suppress competition and fix prices.

diversification in agriculture, to avoid overdependence upon one crop by producing several different crops.

After the mid-1960s all the world's leading privately owned tobacco manufacturers were growing concerned about the accumulating evidence linking tobacco smoking to lung cancer and other debilitating conditions. The industry-wide response was to adopt a strategy of growth through **diversification,** and by the end of the 1970s the leading group of international tobacco firms had each developed a nontobacco arm: British American evolved into BAT Industries, R.J. Reynolds became RJR Nabisco, Philip Morris merged with the food manufacturer Kraft, American Tobacco transmuted into American Brands. Diversification had in most cases involved international investments and thus, as a strategy, had created a group of global industrial **conglomerates.**



conglomerate a large business enterprise usually composed of several smaller companies or branches.

The Modern Global Industry

Despite this loss of focus, certain international features of the tobacco industry continued to emerge. Cigarettes and light tobacco became increasingly important across international markets, filter-tipped cigarettes grew in popularity and led to increased emphasis on image over taste in the marketing mix, American blend cigarettes attained increased popularity over the pure Virginia article, and international brands moved back into the ascendancy. Riding on the back of these trends, Philip Morris successfully developed its Marlboro brand as the world's leading cigarette and wrested away from BAT the leading position in the international industry.

Although the tobacco industry had in many senses undergone a process of globalization before World War II—when British American operated plants in over fifty countries—it was only in the 1990s that the industry could be said truly to have adopted a global form. Trade liberalization demanded the dismantling of the system of state monopoly producers, of which Japan Tobacco emerged as a genuine multinational firm when it purchased the R.J. Reynolds brands, while the collapse of communism meant that the huge markets of Eastern Europe and China opened to foreign manufacturers' products. This growth was coupled with **consolidation.** Pressured by corporate raiders, the leading tobacco companies unwound their earlier diversification strategy and used the capital to fund growth via acquisition. Philip Morris and British American Tobacco both successfully expanded into Eastern Europe, and the latter firm acquired Rothman's International in 1998.



consolidation when numerous smaller units are combined into a larger one. In agriculture, consolidating small farms into one large farm usually makes operations more efficient and profitable.

See Also American Tobacco Company; British American Tobacco; Industrialization and Technology; Philip Morris.

HOWARD COX

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Hallucinogens

Hallucinogens may be defined as substances that cause hallucinations. This functional definition covers a variety of compounds, including indole **alkaloids** (organic compounds with basic properties, including at least one nitrogen atom in a heterocyclic ring structure), such as harmine, hamaline, or tryptamine. Tobacco is closely related to hallucinogenic plants, in terms of its **physiological** effect and the context of its use. However, there are similarities in nicotine's physiological effect to hallucinogens, especially in extremely large doses.

Research indicates that nicotine can cause hallucinations by altering neurotransmitter levels. Descriptions of early Native Americans (1500–1650) indicate tobacco smoking caused trances and hallucinations. These reports agree with later descriptions of South American shamans, specialists who intercede with the spirit world through (potentially chemically induced) ecstatic trance. Tobacco smoke, with symbolic connotations of air, breath, and sky, is considered an ideal medium for **shamanistic** practices.

North and South America are home to numerous hallucinogenic plants. In North America there are more than a dozen *Psilocybin* fungi, as well as cacti or legumes. South America and the Caribbean include *Banisteriopsis caapi* and *Anadenanthera peregrine.* Hallucinogens are generally used in rituals. There are cross-cultural examples of hallucinogen use in shamanistic rituals. American hallucinogens include *Solonacea*, such as *Atropa* and *Datura*. *Nicotiana* tobacco belongs to this family. *Solonacea* contain hallucinogens, including atropine, or scopolamine, and are found in prehistoric burials with tobacco pipes. The effects of high nicotine doses, especially the sense of flight, probably resulted in some ritual activities and symbols found in prehistoric Native American contexts.

Tobacco was used along with hallucinogens in many cultures. Shamans use tobacco with *Banisteriopsis* in Peru, Columbia, and Bolivia. Oaxacan shamans used tobacco with *Psilocybin* mushrooms. Modern ethnologists have observed tobacco smoked during peyote (*Lophophora williamsii*) harvesting and cite use among Southwestern Indians. Californian Indians used *Datura* with tobacco. The usage is not a strictly

alkaloid an organic compound made out of carbon, hydrogen, nitrogen, and sometimes oxygen. Alkaloids have potent effects on the human body. The primary alkaloid in tobacco is nicotine.

physiology the study of the functions and processes of the body.

shamanism an ancient religion based on commune with animal spirits and characterized by magic, healing, and out-of-body experiences. Shamanism was widely practiced by American Indians.

American phenomenon, as evidenced by the use of tobacco and hallucinogenic mushrooms in New Guinea.

While ritual hallucinogen use is worldwide, there is often a preference for more controllable substances. Tobacco became a safe alternative to plants like *Datura*, allowing more widespread use of hallucinogens, taking spirituality away from shamans who had previously benefited from specialized knowledge that allows the control of dangerous but spiritually powerful substances. Increased tobacco use is likely another reason behind the pan-continental distribution of tobacco in native North America.

See Also Additives; Native Americans; Shamanism.

SEAN M. RAFFERTY

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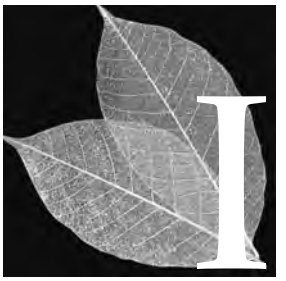
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Humoralism *See* Therapeutic Uses.



Industrialization and Technology

While tobacco has been consumed for thousands of years in numerous forms, from the mid-nineteenth century tobacco production changed radically with the industrialization of production and the advent of new industrial technologies. Industrial production of tobacco brought transformations in the social relations of production, a greater capitalization in tools and factories, and new challenges for tobacco manufacturers, leading to advertising on an unprecedented scale. While the impact of these changes was not uniform in all sectors of the tobacco industry, those entrepreneurs who controlled new technologies made them the foundations of global business empires, the offspring of which are still powerful in the twenty-first century.

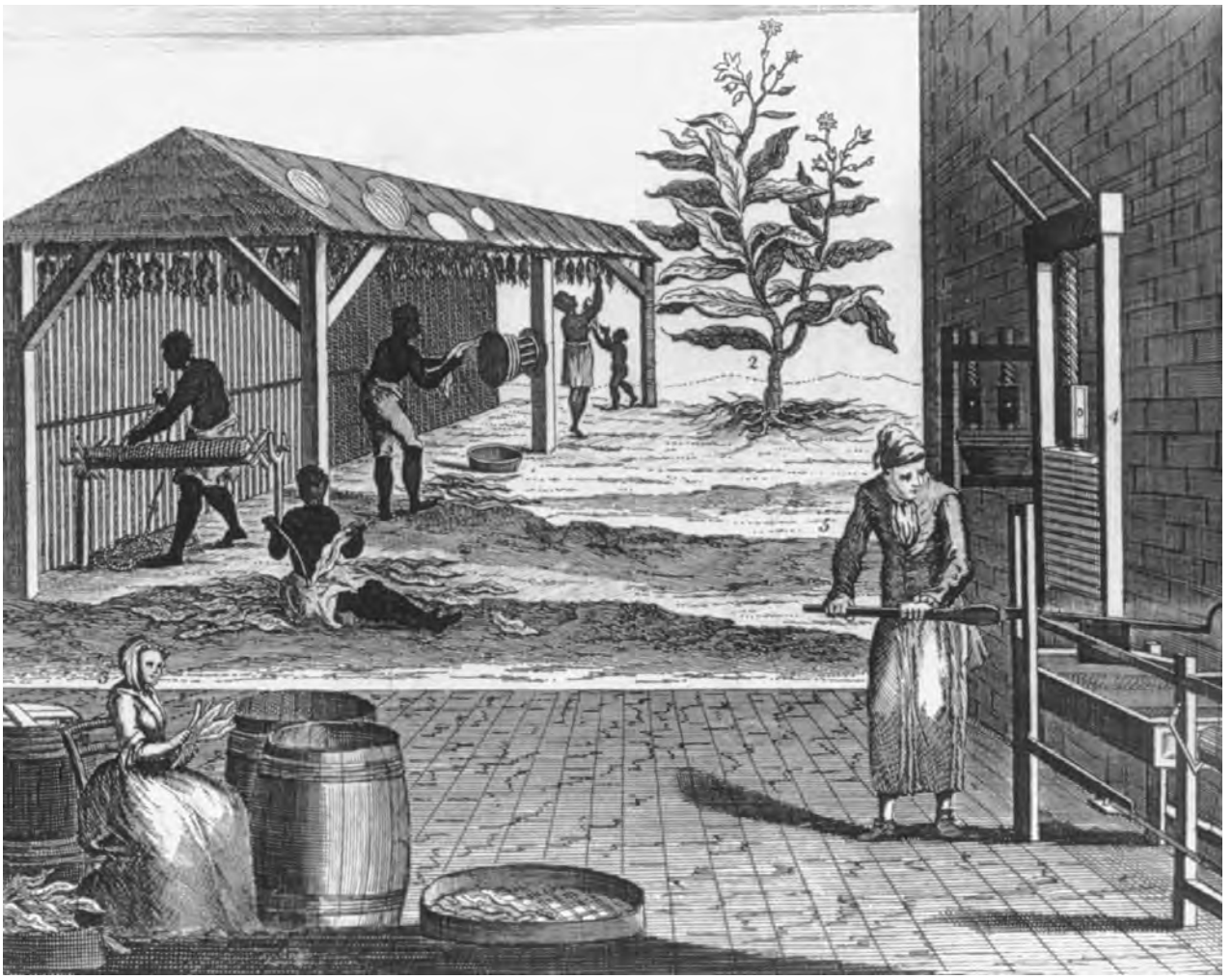
Preindustrial Production

Before the mid-nineteenth century there was little mechanization of the tobacco production process. In much of the world, part of the production process continued to be done by farmers and retailers. Even in the 2000s, in places like Africa, most tobacco is home grown and never enters a factory. Before the mid-nineteenth century, when production facilities were separate from tobacco farms, they were small with little mechanization. Most production in the pre-1850 period was done in Europe and products were exported elsewhere in the world. Shredded smoking tobacco, or "shag," popular in England, required brief fermentation, **stripping** of the stem and midriffs, and little more than knives to chop the tobacco.

Production of other forms of tobacco was slightly more elaborate. Tobacco was spun into twists on a spinning wheel. The twists were then folded into large rolls and small pieces were cut off for consumers to smoke, chew, or **snuff.** Soft twisted rolls were often made with less expensive tobacco and used for smoking and chewing. Higher quality leaf was used to manufacture hard pressed "carottes" for nasal snuff. Tobacco rolls were fermented in sauces for as long as one week and then

stripping in the Burley and fire-cured tobacco cultures, cured leaves must be separated from the dead stalk. This is called "stripping."

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.



Machines facilitated the processing of tobacco, as illustrated in this 1750 print. An enlarged tobacco plant is shown in the background. © CORBIS

for one or two days put into carrot-shaped molds and pressed in iron presses that were operated by as many as many as fifteen men. From the 1720s these carottes were wrapped with string and consumers grated the carottes themselves. Pre-grated snuff, taken nasally in much of the world but orally in Scandinavian countries, was also produced in Europe and eventually in the United States using graters, rasps, and hand-turned wind and water mills. In much of Europe only the soft part of the leaf was used, thus requiring some labor to remove stems and midriffs. In Scotland and Ireland, the entire leaf was ground.

In the United States during the early 1820s and 1830s wooden tobacco presses were used to shape twists into more convenient plugs. Lower quality strips of tobacco were shaped into "lumps" and then wrapped in a higher quality leaf. Beginning in the 1840s the tobacco lump was also soaked in flavoring sauces such as honey or licorice. Thousands of small factories, usually located close to tobacco farmers in Virginia and North Carolina, supplied consumer demand. Not only did European tobacco products differ from those in the United States, factories were also significantly larger than those in America. Tobacco production was much more centralized, particularly in countries like France and Spain where government monopolies controlled tobacco production. In France, the most important tobacco manufacturing country

in the world during the eighteenth century, there were only ten factories, but they averaged 1,000 workers each, making them the largest tobacco processing plants in the world at the time.

As a consequence of the size of these factories, the taste of manufactured tobacco in Europe was far more standardized than in the United States. Yet even in major production centers like Paris, Seville, Amsterdam, and Strasbourg, large factories were little more than groups of artisans and laborers under one roof using the same production processes as found in small shops. The greatest investments made to the tobacco industry in the preindustrial period were the factory building and the fermenting vats. Other than greater standardization of taste, there were few advantages in producing tobacco on larger and larger scales.

Early Industrial Production

From the mid-nineteenth century, new industrial technologies were added to these production processes. In Europe, snuff mills began to be powered by steam engines, though snuff was becoming less popular. From 1866, production of shag tobacco also began to be powered by steam engines, though in England retailers continued to play a significant part in mixing cut tobaccos to the tastes of consumers. In the United States, where **plug** tobacco was particularly popular for chewing, a **hydraulic** press was patented in 1858, replacing horse and manpower formerly used to press tobacco. After the initial expense of purchasing these new presses, manufacturers considerably reduced the cost of producing plugs. This was a result of three factors. First, tobacco plugs could be produced more quickly, cutting labor costs. Second, lessening the amount of heavy labor considerably, tobacco manufacturers replaced male tobacco workers with lower-paid women and children, further reducing labor costs. Third, though these new machines were expensive, their costs could be spread out over massive production runs. The more the machine ran and the more it produced, the greater economy of scale could be achieved. In other words, it was cheaper to manufacture more.



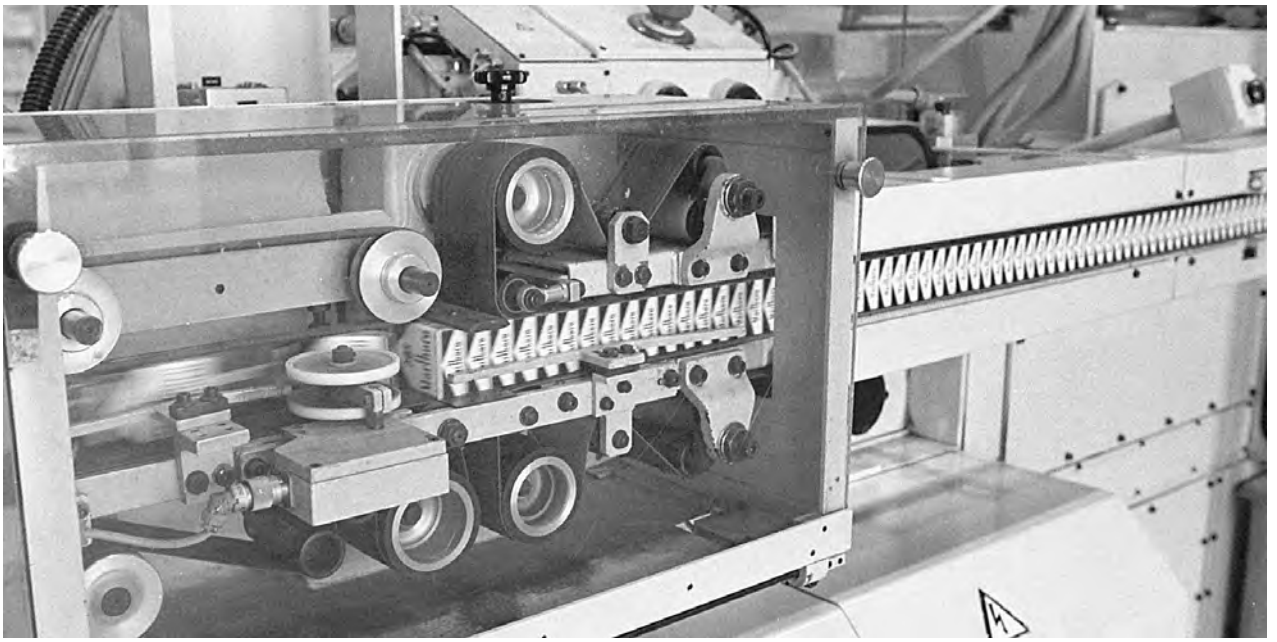
plug a small, compressed cake of flavored tobacco usually cut into pieces for chewing.

hydraulic to operate through the force of liquid, typically water or oil. For centuries, mill machinery was powered by hydraulic (water-operated) wheels.

These new presses were adopted quickly in North American tobacco factories, giving their owners a distinct market advantage. In Canada, for example, the pioneer of the steam-powered tobacco press, William Macdonald, dominated the tobacco industry for the last half of the nineteenth century, though he was increasingly attacked for his reductions in prices and his use of child labor. This new speed through steam power was not without its problems. Packaging technologies did not keep up with production and not until 1885, when these difficulties were solved, could manufacturers take full advantage of the speed of these machines.

The Second Industrial Revolution

While the advent of steam significantly increased the speed of production of numerous tobacco products, changes during the last quarter of the nineteenth century played a more dramatic role. Skilled workers were replaced with technologically advanced production processes, often electrically powered, that increased the speed of production, integrated several manufacturing activities and reduced unit



Marlboro cigarette machine. Mechanization of cigarette rolling and packaging in the late nineteenth century reduced unit costs from 80 cents to 8 cents per thousand cigarettes. AP/WIDE WORLD PHOTOS

costs, creating consumer- rather than producer-oriented products. These new machines were often powered by electricity and integrated numerous processes into a continuous feed. The best example of this type of new mechanization is in cigarette production. Before the 1880s, cigarettes were rolled by skilled rollers, by this point frequently female, or alternatively by smokers themselves. Both methods had their problems. To use rollers meant that labor costs were high and cigarettes were expensive. As a result, they were seen as luxury goods or novelties. When cigarettes were rolled by the smoker they were frequently overly fragile and risked falling apart. In both cases they were viewed as somewhat effeminate with so much work and money being spent on such a short smoke.

The key change in cigarette production came in 1881 when Virginian James A. Bonsack patented the Bonsack Cigarette Machine. By the late 1880s when the most skilled cigarette rollers could make 3,000 cigarettes per day, one Bonsack Cigarette Machine could produce 120,000 cigarettes in the same amount of time. Additional machines were added to package cigarettes in a new, more solid box, and altogether unit costs were reduced from 80 cents to 8 cents per thousand cigarettes, with Bonsack achieving impressive economies of scale. At the same time, Bonsack bought the copyrights to competing machines, giving him great power within the cigarette industry. Tobacco companies that licensed Bonsack's machine ended by dominating their national markets and expanding abroad. Yet in the 1880s the future success of the Bonsack was not clear. Adopting the machine was a significant risk because many believed that when a smoker chose a smoking product, part of his or her decision was based on the skill it took to roll or mix the tobacco. Indeed, several tobacco companies showed no interest in Bonsack's machine. Finally, in 1883 it was licensed to the French tobacco monopoly, in England to W.D. & H.O. Wills and later in 1885 to the American firm W. Duke, Sons, & Co., headed by James B. Duke.

Advertising and Globalization

The adoption of this industrial technology created problems of oversupply. One means used by Duke and Wills to rectify this quandary was to create new markets through mass advertising. Methods included newspaper advertisements, window displays, wall murals, handbills, and collectible **cigarette cards** with such images as scantily clad women and sports stars. Advertising was expensive and Duke in particular spent extravagantly; in 1889, for example, 20 percent of his sales were spent on advertising. Though Wills spent less on advertising than Duke, both companies came to dominate the cigarette markets in their respective countries.



cigarette cards paper trading cards sometimes featuring sports personalities or movie stars packaged with cigarettes and offered as an incentive for purchase.

While Duke had conquered the cigarette market in the United States, cigarettes were still a long way from being the most popular way to consume tobacco. Duke used his profits in the cigarette industry to gain control of much of the tobacco industry. In the last half of the 1890s Duke's American Tobacco Company (ATC) was involved in what historians have called the "Plug War": the ATC sold plug tobacco at a loss to gain a significant market and then arranged to purchase the remaining competition.

Duke in particular sought to go beyond his national borders and construct a global tobacco empire. In some countries he was able to do this by exporting from the United States, thus helping him solve problems of excess production. In other countries tariff barriers made this unprofitable so he built factories or made alliances with local firms. In the 1890s, Duke established divisions in Australia, Canada, Japan, South Africa, and Germany using his control over Bonsack's technology and the same kinds of managerial hierarchies and business methods as he had pioneered with great success in the United States.

In 1901, Duke looked to conquer the British market as well, creating Imperial tobacco through an alliance with Ogden's, an important competitor of Wills. In retaliation Wills entered the American market and a massive round of price cutting and advertising ensued on both sides of the Atlantic until a truce was declare in 1902. According to the agreement, both companies were left to their national markets and international markets were left to a jointly owned, newly created British American Tobacco Company (BAT). For ten years BAT was largely controlled by its American partners but in 1911 the British took an upper hand when the U.S. Supreme Court dissolved the ATC into competing companies after it was found to be in violation of U.S. antimonopoly laws. Companies formed as a result of the ATC dissolution remain the dominant players within the international cigarette industry into the twenty-first century.

Cigar Making

While new industrial technologies significantly transformed production processes in smoking, chewing, and snuff tobacco, as well as in cigarette production, technological changes were not inevitable nor did they affect all domains of the tobacco industry. Cigar manufacturing stands out as only being changed in a limited way by industrial technologies. Until the end of the eighteenth century, cigar making largely took place in Spain and in Spanish possessions in the Caribbean. After that time, cigar makers spread through Europe. English, Dutch, and

especially German immigrants brought the cigar-making trade to North America, competing with imported cigars and tobacco farmers who rolled their own. Small artisanal shops sprung up in the 1830s and 1840s and cigar sales expanded significantly. While larger cigar factories were established from the mid-nineteenth century, these factories were little more than artisans brought together under one roof with their trade remaining largely unchanged.

The skill involved in making a good cigar was supposed to be acquired during a three-year apprenticeship. Apprenticeship agreements in the eighteenth and early nineteenth centuries laid out a set of responsibilities between master and servant. In exchange for the young apprentice's labor, he (in the cigar trade, rollers were almost exclusively male) received little or no pay, but was fed, sheltered, clothed, and taught a craft. A fully trained cigar maker used few tools to roll a cigar from start to finish. He began by choosing, blending, and shaping the filler tobacco into a "bunch," which was then rolled into a binder leaf. He then rolled the wrapper leaf around the bound filler.

By the 1880s, in the move from artisanal shop to industrial factory, this apprenticeship system had already broken down and many cigar makers who had completed their apprenticeships were not able to complete a full cigar. In the 1870s the cigar mold was introduced. Teams of workers, including women and children, performed segments of the rolling process and soon replaced cigar makers. With limited success, these transformations in the craft were vigorously opposed by cigarmaker unions in cigar-making countries. Well into the twentieth century in North America, the Cigar Makers International Union continued to control its own hours of work (to an extent), own its own tools, and have its members paid by the number of cigars they rolled. From the 1870s to World War I this union played a leading role in organized labor in North America.



subsidiary in commerce, a branch or affiliate of a larger unit that provides components or support services.

The major technological change in the cigar-making industry came in the 1920s when a machine was perfected to produce cigars. From 1901, the American Machine and Foundry Company, a **subsidiary** of James B. Duke's ATC, began research on a machine. In 1919, in the midst of a wave of strikes the AMFC introduced its cigar-making machine, which produced 6,000 to 8,000 cigars per day. The consequences of introducing the machine were similar to the introduction of the new technologies in other areas of the tobacco industry: The workforce became dominated by low-paid women, and in some places children, and the price of cigars dropped. These machine workers also differed from cigar makers because they were paid by the hour, not by the per-thousand cigars, and they no longer controlled their hours of work. The introduction of new technologies in the cigar industry differed from other sectors of the tobacco industry because hand-rolled cigars continued to be valued partially for the skilled labor used to roll them. Indeed, while cheap machine-made cigars outsell handmade cigars, to this day those that are hand rolled, especially in Cuba, are viewed as being of higher quality and thus command far higher prices than machine-made cigars.

See Also Labor; State Tobacco Monopolies.

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Insurance

Conceptually, insurance is based on the idea of a pool of shared risk. At regular intervals, all members of an insurance pool pay money known as premiums so that, when one of the members suffers from a known risk, such as illness, injury, or death, money will be available from the insurance company to designated beneficiaries for the expenses that will be incurred. In order for an insurance company to remain financially sound, it must take in at least as much money in premiums as it pays out in benefits.

In state-run social insurance programs, the payment of identical rates is encouraged based on the argument that the risk must be shared throughout society as a whole. In the private, for-profit insurance market, by contrast, the purpose is to take in more money in premiums than one pays out in benefits. Consequently, those individuals at higher risk are required to pay higher premiums because the company will probably have to make payments to its beneficiaries sooner than for its low-risk counterparts. (This is the rationale, for example, of charging "risk-taking" teenagers a higher rate for auto insurance than more mature drivers). Although statisticians and actuaries speculated on the connection between cigarette smoking and life expectancy throughout the twentieth century, the insurance industry only began to offer nonsmokers lower premiums around 1980.

Early Research

Writing for a largely medical audience in *Annals of Surgery* in 1931, Frederick L. Hoffman, a consulting statistician with the Prudential Insurance Company of Newark, New Jersey, president of the American

Frederick L. Hoffman (1865–1946)

Frederick L. Hoffman, who arrived in America as a German immigrant without any specialized education, emerged as an insightful and prophetic authority on American health and welfare throughout the early 1900s. As an insurance actuary working for the Prudential Insurance Company in New Jersey, he was a pioneer in collecting and analyzing statistical data on health and in bringing attention to cancer as a rising public health menace. In 1915, he wrote *The Mortality from Cancer throughout the World,* the first of his papers that reported cancer linked with a variety of causes, one of which was tobacco. An astute observer of history and humanity, Hoffman based his initial theories on the subject by noting that few women of that period used tobacco and that the majority of mouth, throat, and lung cancer patients were men. He later published *Cancer and Smoking Habits,* which also promoted the notion that excessive smoking leads to cancer. Ironically, Hoffman himself was a heavy cigarette smoker. He died in 1946, having suffered from Parkinson's disease for nearly two decades.

▮ DONALD LOWE

Statistical Association, and a founder of what would eventually become the American Lung Association and the American Cancer Society, speculated on the relationship between cancer and smoking habits (see sidebar). Specifically, he wondered whether there was a relationship between the resulting cancer and factors like the kind of tobacco smoked, the daily quantity smoked, the method of smoking (for example, pipes or cigarettes), the date that an individual started smoking, and the regularity or irregularity with which the individual exercised the habit of smoking.

Although Hoffman admitted that it would be difficult to prove conclusively that cigarette smoking contributed to cancer of the lungs, he did note that "those who practice inhaling certainly drive the smoke into the innermost recesses of the lungs. The observed increase in cancer of the lungs during recent years is highly suggestive of its correlation to the immense spread of cigarette-smoking habits." In 1938, a Johns Hopkins University statistician, Raymond Pearl, published a study in which he compared the mortality curves (graphs showing the number of individuals who died at different ages) of smokers and nonsmokers. Pearl demonstrated that individuals who smoked had a shorter life span than nonsmokers. Despite these studies, insurance companies apparently did not, at this time, begin to charge their enrollees different premiums based on their smoking habits.

Late-Twentieth-Century Findings

The decisive event, which caused insurance companies to reconsider their practice, was the landmark 1964 report of the United States Surgeon General suggesting that there might be a link between cigarette smoking and lung cancer. Based on information contained in the report, State Mutual Life began selling policies to nonsmokers at a lower premium than to smokers. However, it was not until fourteen years later, in 1978, that the company reported that the mortality rates between smokers and nonsmokers were sufficiently large to warrant the differing fee structure. Within two years of the company's announcement, most major life insurance companies (which had been reluctant to



Smoking man with hourglass in chest. Message: Smokers, your time is running out. © IMAGES.COM/CORBIS

charge different rates prior to that time) introduced new, less expensive, policies for nonsmokers.

By 2000, the United States Department of Health and Human Services had developed clinical practice guidelines, which recommended that insurers include tobacco cessation treatment as part of their standard package of benefits to their subscribers. The recommended treatments included both counseling and **pharmacotherapy.** One of the reasons health professionals have advocated these practices for tobacco cessation treatment, in particular, is that such approaches have been seen as the "gold standard" of preventive interventions; that is, more cost-effective than the treatment for other chronic conditions related to smoking such as hypertension. For this reason, the inclusion of tobacco cessation treatment as part of standard insurance packages could be seen as one of the most vivid examples of the underlying philosophy behind the emergence of managed care—namely, the introduction of cost-saving preventive measures rather than costly medical interventions after a patient has already become ill.

pharmacotherapy a form of smoking cessation therapy that temporarily substitutes other forms of nicotine for tobacco smoke. Withdrawal symptoms are reduced and patients can more easily overcome their addiction to tobacco. Nicotine can be applied through a transdermal patch, chewing gum, oral inhaler, or nasal spray.

See Also Doctors; Disease and Mortality; Lung Cancer.

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Intellectuals

In a small room crowded with books a man hunches over a typewriter, the black and white camera perfectly capturing the curl of smoke from a nearby ashtray. In another, larger room, a man sits in an overstuffed club chair, pen in hand and pipe in mouth. In a private library, a man in a tweed jacket sits in a leather armchair, perusing a book and holding a cigar.

Dressed in black, the typist might be Jean Paul Sartre; in a jacket of less determinate color, he might be George Orwell. The pipe smoker is perhaps Albert Einstein; if fictional, Sherlock Holmes. And the gentleman with the cigar could be any number of vaunted thinkers, from H. L. Mencken to Thomas Edison, Mark Twain to Sigmund Freud. These men are both particular and generic: they are writers, scholars, thinkers, and above all, intellectuals.

individualism an independence of spirit; the belief that self-interest is (or should be) the goal of all human actions.

The link between smoking and intellectualism undoubtedly owes something to the link between smoking and **individualism.** Even had tobacco not proved a reigning cash crop for centuries, it almost begged for antiauthoritarian status (and popularity) when use of the plant Elizabethans commonly called "divine" was contemporaneously excoriated in King James I's *Counterblaste to Tobacco* and deemed punishable by excommunication by Pope Urban VIII. As tobacco became increasingly accepted, individualism rested less in the choice to partake and more in the particularity implied by one's tobacco preferences. It is almost impossible to imagine Sherlock Holmes without his pipe or Jean Paul Sartre without Gitanes (a French brand of cigarette)—subtle but telling proofs of Mark Twain's assertion in "Concerning Tobacco" that "Each man's own preference is the only standard for him, the only one which he can accept, the only one which can command him."

While factory workers of the nineteenth and twentieth centuries were presumed to smoke to pass the time, intellectuals commonly cited tobacco as productive of creativity or erudition. Sir Arthur Conan Doyle's fictional character, Sherlock Holmes, for example, referred to a particularly difficult case as a "three pipe problem." And though Sigmund Freud is perhaps best remembered for his unsubstantiated insistence that "a cigar is just a cigar," in Freud's case, it was also an oft-noted source of inspiration he deemed essential to his work. The inspiration sought in the bright leaves produced an intellectual smoking



Author Jean Paul Sartre epitomized the tobacco-smoking intellectual, whose inspiration and erudition was culturally linked to tobacco consumption. The link between smoking and individualism also contributed to this phenomenon of popular perception. AP/WIDE WORLD PHOTOS

culture spanning broad ideological, philosophical, and disciplinary gaps, and stretching from the Mississippi River to the Left Bank.

Since most academies in the Western Hemisphere have effectively banned smoking in many common areas, and since intellectuals are not uniquely incapable of understanding risks associated with tobacco use, the culture of smoking among intellectuals has shifted dramatically in the final decades of the twentieth century. Nevertheless, tobacco has remained remarkably consistent in its presumptive humanizing of the intensely cerebral. While the so-called decadence of smoking once safely humanized the intellectual by asserting his or her baser sensuality, this function is now more readily identifiable in a tableau visible on campuses and at institutes across the globe: the huddled professor having a cigarette with a student who shares her distinctly corporeal and increasingly unpopular vice, both in open (if somewhat guilty) defiance of the Romantic poet Charles Lamb's prescient homage, "For thy sake, tobacco, I would do anything but die."

See Also Class; Literature; Psychology and Smoking Behavior.

CARA BAYLUS

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Iranian Tobacco Protest Movement

The Iranian Tobacco Protest of 1890–1892, directed at the monopoly on tobacco declared by the state in 1890, occurred against the background of an insolvent Qajar government, a population suffering from hard economic times and angry at rulers who were largely unresponsive to their plight, and a religious leadership that was deeply distrustful of the growing role Westerners had come to play in the country's economy. The movement, which brought together disparate groups with divergent motives and interests, has been called the first successful alliance between Iran's religious leaders, its modernizing reformers, and its discontented populace—an alliance that was to come to fruition in the Iranian Constitutional Revolution of 1905–1911.

The cultivation and sale of tobacco in Iran was a private affair until the late nineteenth century. The popularity of smoking made tobacco a lucrative business and thus a logical target for state efforts to increase revenue. In the second half of the nineteenth century the Qajar monarch Nasir al-Din Shah began to sell off national resources as **concessions** to foreign firms and nationals. In the 1870s and 1880s the country's telegraph and mail systems, its fisheries, and many of its mines were thus sold to Western, mostly British, interests. In March 1890 the shah granted a monopoly for the sale of Iran's tobacco and control over its production for a period of fifty years to Major Gerald F. Talbot, a British subject, with the understanding that, in return, Iran's Imperial Treasury would receive an annual sum of £15,000 in addition to a quarter of the net profit. Russia, Britain's main competitor in Iran and a force of great influence in the country, protested immediately, arguing that this concession violated the Treaty of Turkomanchay, which the Russians had imposed on Iran in 1828 after defeating its army and which gave Russian merchants the right to engage in trade in Iran. Several government officials, especially the enemies of Amin al-Sultan, the shah's chief minister and main advocate of the concession, also worked hard to oppose the concession in order to discredit him.



concession a grant of land, usually by a government, to produce and market certain commodities or perform certain services for profit. Agricultural concessions were sometimes offered by European governments to encourage immigration.

Russian opposition persisted throughout the episode, and some of the anti-concession agitation was clearly instigated by Russian officials in Iran, but neither this nor the intrigues of Qajar officials was enough to thwart the concession. Much more decisive was the popular reaction against it. The driving force behind this reaction was the opposition by Iranian merchants and shopkeepers who anticipated higher prices and feared being **marginalized** if the tobacco trade would pass into the hands of foreigners. Their resentment was given an ideological voice by the country's clerics, the ulama. Many, though by no means all, ulama supported the resistance, in part out of fear that the growing presence and influence of non-Muslim foreigners, people they considered not just unbelievers but ritually impure, would increase immorality in the form of prostitution and drinking and estrange people from Islam. Some also supported the opposition because tobacco grew on property they owned privately or on land that had been endowed as religious property, so that they stood to lose income from foreign control over its sale and export. Articulated as a struggle in defense of Islam against foreign intrusion,



marginalization the act of shunning or ignoring certain ideas or behavior that results in its being pushed outside the mainstream of the peer group.

the movement quickly became a popular one, involving an estimated 2.5 million smokers out of a total population of perhaps 8 million.

The movement first flared up in Shiraz, the center of Iran's main tobacco-growing region. Faced with the initial protests, the central government reacted by exiling the leading cleric in Shiraz, Ali Akbar Fal-Asiri. This action, however, merely caused a public outcry and further popular opposition, besides allowing the cleric to make contact with prominent Iranian ulama residing in the Shi`i shrine cities of Iraq.

The city of Tabriz, in the northwest, became the next major center of opposition. Russian influence was particularly strong in Tabriz, and the province of Azerbaijan, in which Tabriz is located, was at the time the most politically conscious and sophisticated in the country. Isfahan and Mashhad, too, soon erupted in popular clergy-led agitation.

The protest movement culminated when the ulama declared tobacco itself unclean and smoking religiously impermissible. Isfahan took the lead in this escalation in late 1891, but the move received a stamp of authority when the chief cleric (*mujtahid*) of Isfahan, Hajji Mirza Muhammad Shirazi, who resided in Iraq, issued a religiously binding decree (**fatwa**) that banned smoking. Outside Iran, Jamal al-din al-Afghani, a radical reformer and professional agitator of Iranian background, fanned the flames by calling the concession a grave threat to Islam. Ordinary Iranians, frustrated at the mismanagement and misery prevalent in the country, massively heeded the call. People throughout the country, but especially in the capital, abandoned their **water pipes.** Even the women in the shah's own harem gave up smoking. Not just coffeehouses but the entire bazaar closed in protest, and several ulama issued calls for jihad.

Realizing that his own authority was at stake and that the stability of the country was in danger, Nasir al-Din Shah first tried to persuade the opponents that the boycott was to the detriment of the country's stability and well-being. When that failed and the opposition remained adamant in its demand that foreigners' involvement in Iran's tobacco trade end, the shah in January 1892 rescinded the concession. Smoking resumed shortly thereafter, even though many ulama long continued to agitate against tobacco. Forced to compensate the Tobacco Company for its losses, the Qajar government had to take out a £500,000 loan.

The Tobacco Revolt remains one of the landmark events in Iran's modern history. It is often seen as the first episode in which common people showed an awareness of a collective identity and its success in mobilizing disparate groups around a common cause was to be repeated a number of times in the twentieth century, most recently in the Islamic Revolution of 1978–1979. The precise role of the ulama in the movement remains contested. Some argue that, far from simply acting as the protectors of the people, those ulama who opposed the concession did so in large part from economic self-interest. Historians working in the Islamic Republic, on the other hand, have tended to elevate them to the status of popular heroes fighting tirelessly and selflessly for the sake of the people and the nation.

See Also Islam; Middle East.

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Nasir al-Din Shah, Qajar monarch from 1848–1896, whose grant of a monopoly on the sale and production of Iran's tobacco in March 1890 to Britain set off protests from Russia, Britain's main competitor. Subsequent protests from government opponents of the shah; Iranian merchants and shopkeepers; religious leaders; and landowners led to the nationwide protest and eventually the declaration that tobacco was unclean and smoking was religiously impermissible. In January 1892 the shah rescinded the concession; smoking resumed soon after despite continued objections from some religious leaders.
© HISTORICAL PICTURE ARCHIVE/CORBIS

fatwa a ruling by an Islamic cleric upon a religious issue. Many Islamic clerics have declared cigarette smoking a sin and forbidden Muslims to sell cigarettes.

water pipe also called a hookah, a tobacco pipe in which smoke is filtered through a bowl of water. The smoker inhales through a mouthpiece connected to the pipe by a flexible tube. Water pipes are traditional in Asia.

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Islam



Qalyan bearer, a tobacco servant who provided his master with his pipe and tobacco paraphernalia, from the Qajar period (1796 to 1925)

Though news of tobacco may have reached the Eastern Hemisphere shortly after Spanish explorer Christopher Columbus's first voyage in 1492, it took until the early seventeenth century for smoking—mostly in the form of the water pipe—to become popular among the people of West and South Asia.

Medical Interest

In the Middle East, as in many places around the world, tobacco in the early stage of its introduction aroused medical interest, provoked moral rebuke among clerics, and caused economic anxiety on the part of bureaucrats. Like their counterparts in the West, Muslim physicians discussed the effect of smoking on physical health. Controversy surrounded the alleged effects of smoking on the body. Following the humoral pathology of traditional Galenic medicine, which remained normative in the Islamic world well into the nineteenth century, tobacco was classified as a hot and dry substance, and as such it was believed to be salutary for people with a humid disposition. Some even saw it as a universal medicine against a variety of diseases, while others believed that it weakened the brain. Similar to European beliefs, tobacco smoke was thought to repel pestilence. Overall, however, in Islamic lands tobacco never gained the medicinal reputation it enjoyed in early modern Europe.

Theological Scrutiny

Muslim scholars, on the other hand, were highly preoccupied with the potentially detrimental effects that smoking had on piety and propriety. The moral and religious debate that erupted in the Middle East is similar to the discussion tobacco sparked in the West, but aspects of it are different. Unable to find references to tobacco in the Koran, the Muslim book of sacred writings, some theologians declared it impermissible. Others used analogical reasoning to determine whether smoking was permitted or should be condemned and banned as contrary to religion. Because tobacco did not resemble any of the forbidden substances mentioned in the Koran and the sayings of the prophet Muhammad, proscribing it was not a simple matter. Nor was it easy to "prove" that tobacco in itself was bad, or harmful to one's health. One way of arguing for restriction, therefore, was to equate tobacco with the foul things that the Koran declares forbidden, to associate it with the "avoidance of things evil," or to argue that

the Prophet, who appreciated sweet odors, would certainly have loathed tobacco's offensive smell.

In Shi'ism, the minority variant of Islam that in 1501 became the state religion of Iran, tobacco inspired similar debates. A number of Iranian theologians wrote treatises that discuss the religious status of tobacco smoking, weighing the potential health benefits ascribed to it by some doctors against possible religious objections. Arguments for and against tobacco were often made in the context of the controversy between the representatives of orthodoxy, who rejected tobacco, and members of Sufi orders, who embraced smoking, often mixing tobacco with hashish for the hallucinatory effect. In Iran, most of those who spoke out against the habit seem to have adhered to Akhbarism, a theological school of thought that relied heavily on the Koran, and the sayings of the Prophet and the Shia Imams (prayer leaders).

Bans on Smoking

In the seventeenth century, Muslim authorities issued decrees that outlawed smoking. Following clerical disapproval, they often presented prohibitive measures as a return to the true faith. However, their motives typically went beyond mere piety and involved fears of social unrest. The Mughal shah Jahangir (reigned 1605–1627) banned smoking in 1617, convinced that its consumption created "disturbance in most temperaments" (Sangar). Similar motives are recorded in the Ottoman Empire, where tobacco was first proscribed in the reign of Sultan Ahmad (1604–1617), who issued numerous bans on tobacco and the places where it was smoked. Of his successors, Sultan Murad IV (1623–1640) was most vehement in his opposition to smoking. He used tobacco's status as innovation as an argument against it, but appeared mostly concerned with the presumed undermining of order and discipline by those who frequented tobacco shops, and with political opposition by the Janissaries, who owned many of these establishments. In 1627 a ban was issued on tobacco cultivation in Ottoman territory. Six years later the sultan, possibly persuaded by Istanbul's Friday mosque preacher KaDizadeh Mehmet Efendi, used a large fire that destroyed thousands of houses in Istanbul as a pretext to outlaw smoking and to close all coffee shops. Many who were found smoking were executed.



Tobacco shop, from the Qajar period (1796 to 1925)

In Safavid Iran during the 1500s and 1600s, governmental attempts at curbing tobacco occurred under Shah Abbas I (1587–1629) and Shah Safi I (1629–1642). The former seems to have been motivated by a personal dislike for tobacco as well as concerns about the waste it represented. He outlawed the use of tobacco because his soldiers spent too much of their pay on smoking, punishing offenders by having their noses and lips cropped. The same ruler is also known to have ridiculed his smoking courtiers by offering them ground horse manure, claiming it was a special tobacco from the town of Hamadan. His successor, Shah Safi, rescinded the ban shortly after taking power, presumably in an attempt to gain legitimacy among his people, who by this time had massively taken to smoking. Yet the same ruler banned tobacco several times himself, for reasons that remain unknown.

Everywhere, tobacco restriction was temporary and unable to stop the advance of the herb. Even clerical authorities came to realize that fighting tobacco was an exercise in futility. As one Iranian cleric observed

in the late seventeenth century, "The water pipe is so well known in east and west that its removal is no longer possible. In former times a ruler proscribed it everywhere and ordered the execution of addicts, and people were indeed killed on its account, but all to no avail." (Jafariyan). Even an otherwise uncompromising Akhbari theologian such as Muhammad Baqir Majlis (d. 1699) sanctioned smoking. Like many of those who spoke out similarly, he was an avid smoker himself.

With the triumph of tobacco as the drug of choice for the masses, the continuing debates about its religious status became largely academic and moot after the seventeenth century. Secular states, having discovered the easy tax revenue tobacco generated, followed the example of western governments by ceasing to oppose the use of tobacco and in many cases began to stimulate smoking.

The rise of puritanical movements occasionally reasserted the ban on what fundamentalist preachers continued to consider an ungodly innovation. An example is the rise of the puritanical strand of Islam known as the Wahhabi movement in the Arabian Peninsula at the turn of the eighteenth century, which was accompanied by a ban on all intoxicating substances, including tobacco. In the modern Wahhabi-inspired state of Saudi Arabia, tobacco imports and smoking were banned from 1926 until 1960. The Taliban regime in Afghanistan in the late 1990s discouraged smoking. But these are anomalies, as was the clergy-led controversy over tobacco in late-nineteenth-century Iran known as the Tobacco Revolt. This movement did not target tobacco itself as much as the tobacco concession that the shah had given to a foreign firm, prompting the country's religious leaders to decry smoking as impermissible out of fear that non-Muslims would defile tobacco. The religious ban on smoking was lifted as soon as the shah rescinded the concession and, though some religious leaders continued to agitate against tobacco, smoking quickly resumed.

In the 2000s tobacco is hugely popular throughout the Islamic world, and the ban on smoking remains in place only during Ramadan, the Muslim month of fasting. In Saudi Arabia and Afghanistan, the antismoking measures that are taken or contemplated stem from medical rather than religious considerations.

See Also Christianity; Iranian Tobacco Protest Movement; Judaism; Mayas; Native Americans; Prohibitions; Regulation of Tobacco Products in the United States; Shamanism; Social and Cultural Uses.

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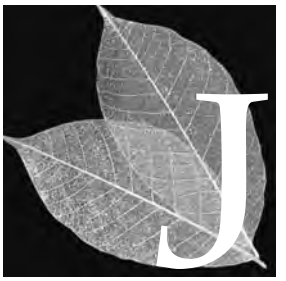
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Japan

The diffusion of tobacco from European countries to Japan began sometime during the late sixteenth and early seventeenth centuries. Scholars are unsure of the exact date and route of its arrival. However, in 1601 in Fushimi, Kyoto, Jerónimo de Jesús, a Spanish Franciscan missionary, had an audience with the soon-to-be first shogun (military governor) of the Edo period (1603–1867), Tokugawa Ieyasu. On this occasion, the missionary presented Ieyasu with an ointment made from tobacco and the seeds of a tobacco plant. Further references to tobacco appear in Japanese archives beginning in 1609. Accounts of tobacco use and cultivation are also documented in the paintings from the Keicho period (1596–1615).

During the first 100 years after introduction to Japan, tobacco was strictly regulated and generally banned by the Edo shogunate (feudal government). At first, the new custom of tobacco smoking was practiced by gangs of young men, known as *kabukimono*, notorious for their wild dress and outrageous behavior. Tobacco became a symbol of this infamous group, which resulted in the shogunate's subsequent efforts to restrict smoking. Regardless, smoking and leaf tobacco cultivation expanded, causing the shogunate to ban production and sales of tobacco completely. The Edo shogunate promulgated about forty bans on the sale and use of tobacco during the seventeenth century, though the prohibitions failed to prevent the expansion of smoking. By the late seventeenth century the government sought to regulate sales and cultivation instead, though occasionally reverting to a policy of prohibition. In the eighteenth century, the government began to actively encourage tobacco cultivation.

Consumption

At the start of the Edo period, tobacco began its popularization, but during the Genroku years (1688–1704) of the Edo period, tobacco became part of the mainstream despite its continued official prohibition. Smoking finely chopped leaf tobacco in the Japanese *kiseru* pipe became a common foundation for Japanese tobacco culture. Pipes similar



Japanese *kiseru* pipes, decorated with metal carving and inlay work, from the late Edo Period. Smoking finely chopped leaf tobacco in *kiseru* pipes became common in Japanese tobacco culture during the Edo and then the Genroku Period. COURTESY OF TOBACCO AND SALT MUSEUM

to the *kiseru* are used to smoke tobacco throughout Asia; however, the practice of smoking fine-grained tobacco in extremely small-bowled *kiseru* pipes was solely practiced by the Japanese. Even in the twenty-first century, the only fine-grained tobacco produced for use in a *kiseru* pipe is in Japan. One piece of the finely shredded tobacco, known as *koiki*, measures approximately 0.1 millimeter wide and 76 millimeters long. The late Edo period craftspeople set the standard for fine-grained tobacco production by hand. Later upgrades in technology allowed the production of fine-grained tobacco to be mechanized. The Japanese preference for a milder-tasting tobacco contributed to the development of the fine-grained type. The Japanese skill in knife and sword craftsmanship also propelled the production of a precisely chopped tobacco.

At first, tobacco consumption in Japan was mainly an indoor activity. Rooms for entertaining guests were equipped with the tobacco *bon*, a smoking tray usually containing a *kiseru* pipe, tobacco jar, ash-tray, and *hire* (tinderbox). Outdoor smoking later became customary when the tobacco pouch was introduced. The tobacco pouch was easily portable and could be used to carry tobacco for smoking on the public streets. The products used for carrying and storing tobacco were all originally developed from other receptacles such as the incense tray, flint pouch, and *inro* (pillbox). Each of these items was modified to suit its specific purpose of carrying tobacco or storing ashes. The use of particular high-priced materials as pipe decorations gave birth to the



After Japan's loss in World War II, American fashions were ascendant and included the spread of cigarette use, including Ikoi, which replaced the traditional *kiseru* tobacco pipes. COURTESY OF TOBACCO AND SALT MUSEUM

production of various smoking paraphernalia. Fast-paced production technology of these pipes and accessories was encouraged in order to address the emerging popularity of tobacco.

As smoking grew in popularity, tobacco use soon became commonplace among the performers of Kabuki theater. In the *yukaku* courtesan quarters, which served as a brothel, a prescribed manner for tobacco use also emerged. Smoking tobacco was steadily becoming a fashionable undercurrent of the Edo period common culture. The Japanese used the word *iki* to denote a fashionable character, an adjective they applied to the manners of a stylish smoker.

From 1639 to 1867, Japan was a country closed to foreigners. Against the backdrop of Japan's cultural isolation, smoking became part of the common culture of adults, regardless of social class and gender. (Although smoking had become a legal custom, Japan did not pass a statutory law forbidding minors under the age of twenty from smoking until 1897.) During the Meiji period (1868–1912), cigarettes, cigars, and pipes made their way from Europe and America to a Japan that formerly had a restricted definition of tobacco mediums. In particular, consumption of cigarettes became popular in big cities.

At the beginning of the twentieth century, 80 percent of tobacco consumed nationally was the finely shredded tobacco for *kiseru* pipes, called *kizami*. *Kizami* consumption was stable until the early Showa period (1926–1989). However, cigarette consumption, particularly in urban areas, rose drastically during the Taisho period (1912–1926). Although by 1921 the majority of tobacco sales were cigarettes, *kizami* was still enjoyed throughout Japan. With Japan's World War II defeat in 1945 and the subsequent period of reconstruction, traditional Japanese culture went into decline while an Americanized lifestyle spread throughout the country. Following the American pattern, the demand for cigarettes grew and the *kizami* tobacco and *kiseru* pipes gradually disappeared.

In 1957, the first Japanese-made filter cigarette, Hope, entered the market. Because the main tobacco choice of Japanese smokers was filter

cigarettes, demand rose quickly: By 1979, production of domestically produced filter cigarettes had reached 300 billion. Following this peak in tobacco production the percentage of Japanese smokers started to decrease, causing a fall in production as well.

The decline in smoking is linked to rapid urbanization, which led to a perceived deterioration in smoking manners, and, more importantly, a growing awareness of tobacco's negative health effects. With these two issues in mind, the Japanese government began to regulate smoking; for instance, the Health Promotion Law of 2003 prohibits smoking in public spaces. The proliferation of stronger antitobacco laws leaves the future of Japanese tobacco culture in question. At the turn of the twenty-first century, the smoking rate of Japanese adults was 49.1 percent of males and 14 percent of females. These figures bring the national average of smokers to 30.9 percent.

Production, Manufacturing, and Regulation

In the major cities of Edo (Tokyo) and Osaka, tobacco specialty shops began to appear in the late seventeenth century. These shops were typically family-owned enterprises that centered their businesses on selling tobacco leaves (some that were shredded in the shop, and others that were shredded and blended in the growing district), as well as products such as old-fashioned lighters. By the 1800s the expansion of nationwide tobacco cultivation had already begun; 250 major regions were producing tobacco. Famous tobacco leaves such as *kokubu* of Satsuma, Japan, and *hattori* of Settsu, Japan, were under production. As tobacco became an important agricultural crop, cultivation technologies and plant refinements improved.

Around the fifth year of the Meiji period (1872), domestic tobacco production, trade, and promotion intensified. During the period from 1888 to 1898, companies such as the Iwaya Co., based in Tokyo, and Murai Bros. and Co., based in Kyoto, gained power. Above all, the Murai Bros. and Co., which introduced American production technology, became the forerunner of all tobacco trade companies in Japan.

The Meiji government also brought a new approach to tobacco taxes. It aspired to replace the former land tax with a new tax on tobacco sales. During the prior Edo period, feudal lords, flouting the shogunate's efforts to prohibit tobacco, began to tax tobacco crops. After the Meiji government abolished feudalism, the incorporation of tobacco into the national tax system provided funds for building the infrastructure necessary for a free market economy. The government also utilized tax revenue from tobacco sales to finance the modernization of industries.

In 1876, the Japanese government implemented a new tobacco control law called *tabako zeisoku*. This law enforced the taxation of commercial tobacco sales and the use of revenue stamps to make sure the tax was being paid. In the ensuing decades, the government revised the law and eventually introduced a measure known as the Tobacco Monopoly Law in 1904. The Tobacco Monopoly Law placed most stages of tobacco production under the government's control. Although this law angered private tobacco dealers, the government's financial straits, partly caused by the outbreak of the Russo-Japanese War in 1904, and resentment of the enormous profits going to the British American Tobacco Company, ensured the monopoly's acceptance.

The government-run tobacco monopoly closed its doors in 1985, after eighty years. Once again, the tobacco industry became privatized, with Japan Tobacco Inc. becoming the only tobacco manufacturers in the country. The Japanese tobacco business gradually changed to fit the contemporary international market system, although, as elsewhere, the government continues to profit from taxes on tobacco. Researchers estimate tax revenue from tobacco consumption to be approximately 2 trillion Japanese yen (about $18.2 billion) in 2001.

See Also China; Origin and Diffusion; Philippines.

MASUYUKI HANDA

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Judaism

In the Bible, the Book of Numbers proclaims that Nazirites, who vowed to deny themselves wine and liquor for a specified time in special service to God, had to bring a sin offering at the end of their abstinence. Thus the Talmudic rabbis established that it is a sin to deny oneself pleasures that God has provided and not prohibited. As early as the second century C.E., then, the rabbis saw such vows not as an act of piety, but rather as an act of ingratitude for God's gifts and maybe even haughtiness in trying to be holier than others. Consequently the discovery of tobacco and its pleasures in the seventeenth century was, for Jews, another manifestation of God's goodness. While many Christian clergymen of that time condemned smoking as offering incense to Satan, the rabbis did not see it in those theological terms but rather simply as a new mode God had given people to enjoy life.

Thus by the seventeenth century smoking was widespread among Jews, and **snuff** taking was common by the eighteenth century. Scholars believe that women smoked as much as men did in the eighteenth and nineteenth centuries. Smoking was permitted in the study hall (and in the twenty-first century many ***yeshiva*** students smoke while studying), but it was forbidden in the synagogue, just as eating was.

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

yeshiva a Jewish religious school.

Ritualistic Concerns

For most of history, the only religious issues that Jews had with tobacco were ritual in nature. Since tobacco is a plant, there were no concerns about violating the Jewish dietary laws governing the eating of fish and

animals as outlined in Leviticus, chapter 11, and Deuteronomy, chapter 14. The problems rather centered on whether tobacco violated the laws of the holy days. Because lighting or extinguishing a fire is prohibited on the Sabbath (from eighteen minutes before sunset on Friday until three stars appear on Saturday evening) and the Day of Atonement, smoking was clearly forbidden on these holy days. On the other biblical holy days (Passover, for example), though, using fire from an already-burning source to light another is permitted, but extinguishing a fire is not. The question, then, was whether one might light a cigarette or cigar that way on the holy day, even though that would thereby inevitably cause it to go out when one had finished smoking it. Most rabbis ruled that one may indeed smoke.

Another question was whether one may smoke on the fast of the Ninth of Av, the day of mourning the destruction of the First and Second Temples and other national Jewish tragedies, and on the other minor fasts of the Jewish year. One issue was whether it was appropriate to indulge in the enjoyment of smoking on a fast day, when one was to avoid sexual relations and bathing, among other activities, to afflict oneself as part of the expression of mourning on the fast. The other issue was the legal status of smoke: Is it a "means of sustaining life," like food, and therefore to be prohibited on the fast, or no "substance" and therefore permissible? Here again the permissive opinion won the day, but many religious Jews nevertheless refrain from smoking on fast days, for even if it satisfies the letter of the law, it violates its spirit. In addition, historically the concern arose about sullying the reputation of Jews; thus the seventeenth-century Turkish rabbi Hayyim Benveniste declared that the name of God is desecrated when the Muslims observe Jews smoking on their fast days when Islam prohibits smoking on its fasts.

Finally, rabbis asked whether one must pronounce a blessing of God before smoking, as one must do before enjoying food. The view that smoke is not a substance led to the conclusion that no blessing was necessary or appropriate.



A Jewish woman lighting Sabbath candles and saying a prayer to mark the onset of the Sabbath on Friday before sunset. Jerusalem, Israel, 1988. Contemporary Jewish authorities disagree as to whether smoking itself is prohibited by Jewish law, but even those who permit it would prohibit smoking on the Sabbath because lighting, spreading, and extinguishing fire is prohibited on this holy day. © RICHARD T. NOWITZ/CORBIS

From Tobacco Industry to Public Health

Jews were heavily involved in the manufacture and sale of tobacco in both Europe and America. So, for example, of 110 tobacco factories in the Pale of Settlement (in western Russia) in 1897, 83 were owned by Jews, and over 80 percent of the workers were Jewish. In the United States, except for the garment industry, the largest concentration of poor, immigrant Jewish workers in the last quarter of the nineteenth century and the early twentieth century was working for cigar and cigarette factories. This group participated actively in the nascent labor union movement in the United States, organized by Samuel Gompers in the 1870s and 1880s. In the next generation, Jews often served as tobacco distributors, and while cigarette making was taken over by large companies, as late as 1935 Jews owned three of the four major cigar manufacturing businesses.

These demographics changed with the discovery of the harmful effects of smoking on health. In Judaism, God owns everything, including the human body, and the religion requires that people take care of themselves during their lifetime, which includes the duty to avoid harming themselves.

Because smoking has been shown beyond any doubt to harm human health in many ways, rabbinic rulings in the Conservative and Reform movements as early as the 1970s prohibited smoking, at least in public. Some Orthodox rabbis permit, and some prohibit, smoking as a matter of law, but even the former urge that Jews refrain from smoking as an unwise activity. The dangers of secondhand smoke have led the Rabbinical Assembly, the association of Conservative rabbis, to ban smoking in its public meetings and to call on governmental officials to ban smoking in all public places.

Moreover, Jewish legal sources would permit society to limit its assistance to those who repeatedly endanger themselves. In recent decades rabbinic authorities have specifically included in this those who engage in practices known to constitute major health risks such as smoking, for individuals must take responsibility for the consequences of their behavior, especially after being duly warned through public education or their own sickness. For example, smokers cannot rightfully expect the community to pay for repeated lung transplants; indeed, in light of the shortage of organs for transplant, the cost of the procedure, and the poor prognosis for smokers to benefit significantly from such transplants, Jewish law, like current medical practice, would deny smokers even one transplant. Thus the fundamental Jewish concern for preserving life and health, coupled with current medical findings about the dangers of smoking, has led to a complete reversal in the earlier Jewish endorsement of the use and manufacture of smoking materials.

See Also Christianity; Islam; Prohibitions; Regulation of Tobacco Products in the United States; Social and Cultural Uses.

ELLIOT N. DORFF

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Kentucky

More than any other crop, tobacco has been a central part of Kentucky culture since the late 1700s. Because of the rich soil in the central and western regions of the state, tobacco is well suited for Kentucky and was probably first harvested by the Shawnees. European settlers in Kentucky began growing tobacco as early as the mid-1700s, and the first tobacco warehouse in the area was established in 1788 when Virginia authorized warehouse inspectors to examine the tobacco's quality. Throughout the early 1800s, tobacco production increased steadily, and by the eve of the Civil War, Kentucky surpassed Virginia in tobacco production. Until the early 1900s, Kentucky led the nation in tobacco production.

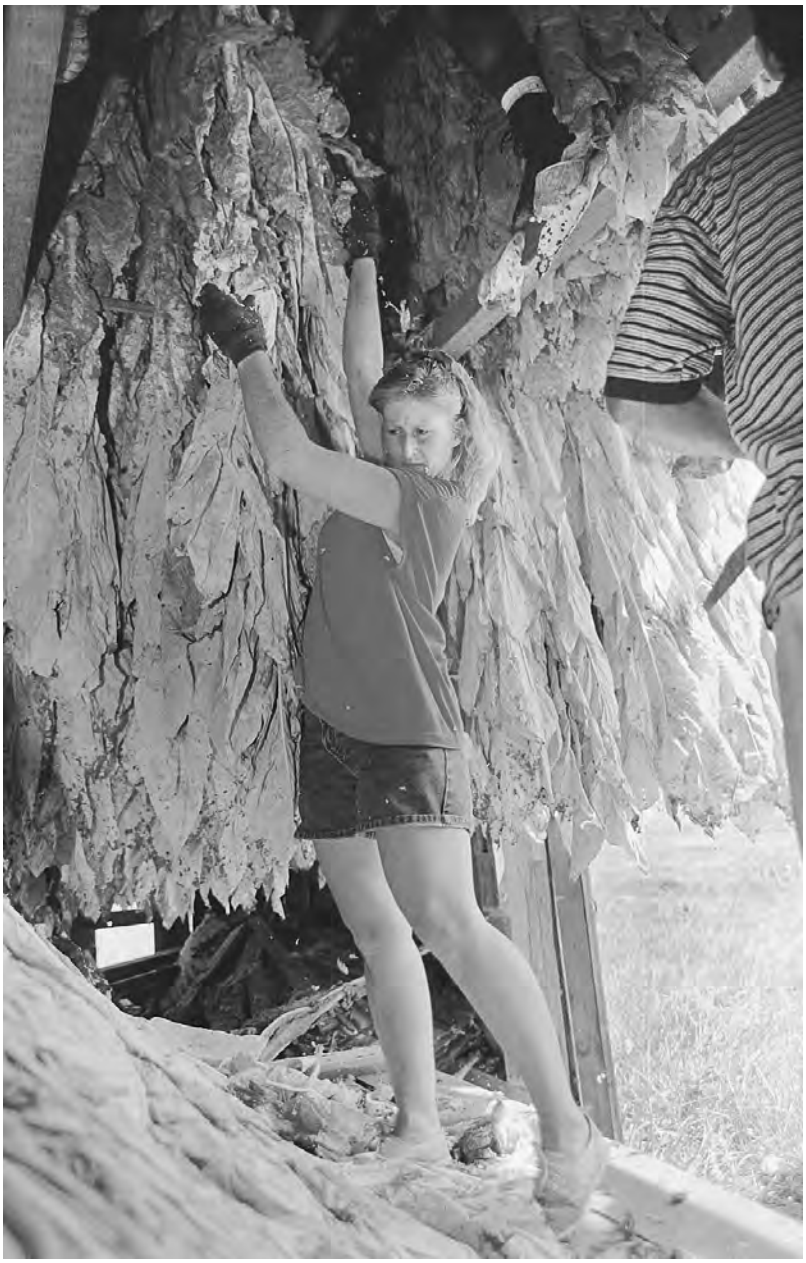
The western part of the state, known as the Black Patch, became one of the world's foremost producers of dark tobacco, used primarily in **snuff,** chewing tobacco, and cigars. This variety was often cured in a barn with an open fire and therefore was called fire- or **flue-cured tobacco.** After the Civil War a lighter blend was introduced in Bracken County in the Bluegrass Region and was cured in the open air. This milder Burley tobacco became the prime ingredient in cigarettes, which became a popular product by the 1890s.

With the spectacular growth of the American Tobacco Company (ATC), whose dominance of the industry was unrivaled by the early 1900s, tobacco growers found that the prices they received from the company's buyers were often below even the cost of production. From 1874 to 1894, Kentucky tobacco prices fell 52 percent, and farmers waged an insurgency that became known as the Black Patch War, which lasted from 1904 to 1909. In the central region, growers in 1908 staged the only successful large-scale agricultural strike in American history. The growers refused to plant a crop of Burley tobacco, thereby diminishing its supply, forcing the ATC to relent and give in to all of the growers' demands. But by 1909 the producers of Burley tobacco still had only one major buyer for their crop, and their economic straits worsened.

With the end of the hostilities against the ATC, the tobacco industry in Kentucky evolved further. Marketing underwent various changes until the 1920s, when the loose-leaf system gained prominence.

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

flue-cured tobacco also called Bright Leaf, a variety of leaf tobacco dried (or cured) in air-tight barns using artificial heat, distributed through a network of pipes, or flues, near the barn floor.



The continuing role of tobacco in Kentucky's economic, social, and political history, despite cultural and economic challenges, is represented by the photograph of this worker in Simpsonville, taken in 1998. PHOTOGRAPH BY TONY GUTIERREZ. AP/WIDE WORLD PHOTOS

Under this system, growers brought their leaf to warehouses, where buyers competed for the crop. World War I was crucial in making cigarettes a common part of American culture, and during the war prices soared. Yet when markets opened in 1920, the price fell in central Kentucky from 35 cents per pound to just 3 cents. In Lexington, angry growers drew their guns, threatening another war against the tobacco industry. Throughout the 1920s, while Kentucky remained a major producer of tobacco, its farmers continued to receive drastically lower prices. With the inclusion of tobacco as a core commodity in the Agricultural Adjustment Act in 1933, tobacco prices were guaranteed by the federal government.

Since the early 1900s, there has been a steady shrinkage of small, family-owned tobacco farms in Kentucky. What had once been a

labor-intensive crop was made easier by the invention of mechanical devices such as pickers and other machines. The cost of producing tobacco has increased and, consequently, while the number of farmers has decreased, the size of the average tobacco farm in Kentucky has increased. Despite all of these changes, tobacco remains labor intensive and promises little in the way of income. Future price support remains doubtful, causing additional worry to growers.

The role of tobacco consumption in Kentucky is also somewhat remarkable. Tobacco use has long been a core component of Kentucky culture, especially in rural areas, and Kentucky has always been one of the leading states in per capita cigarette consumption. In 1995 Kentucky had the highest per capita smoking rates in the nation at 27.8 percent. By 2000, the Centers for Disease Control and Prevention placed that figure at 30.5 percent and concluded that 7,791 Kentuckians died that year from smoking-related illnesses. Also, an estimated 15 percent of the state's **Medicaid** funds were used to treat tobacco-related diseases. By 2003 Kentucky continued to lead the nation in per capita smoking, and debates raged about the public health consequences for the state's citizens.

While smoking bans were contemplated, the state maintained the second-lowest cigarette tax in the nation at 3 cents per pack, a level that was still holding in 2004. A century earlier, tobacco brought millions to the state in income, but by 2000, with ever-diminishing prices, fewer farmers, and declining national smoking rates, the crop was becoming an economic drain on an already impoverished state.

See Also American Tobacco Company; Black Patch War; Consumption (Demographics); United States Agriculture.

TRACY CAMPBELL

The Agricultural Adjustment Act of 1933

This New Deal law was one of many passed during President Franklin Delano Roosevelt's administration to assist the American farmer. It was intended to compel farmers to reduce their production of agricultural products, thus driving up prices. While involvement in the program was voluntary, the economic reality of the Great Depression practically necessitated participation. In addition to paying farmers for allowing their acreage to lay fallow and raising fewer animals, the government promised participants a minimum price for the goods they did produce and protected them from creditors by providing generous loans.

Medicaid a public health program in the United States through which certain medical expenses of low-income persons are paid from state and federal funds.

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Kretek

A prescription for cigarettes may seem highly unlikely in today's world where cigarettes are well known to be harmful to one's health, but just about one hundred years ago in a small town called Kudus, Central Java, smoking cigarettes was the most popular way to cure the common cough. These were no ordinary cigarettes, though. They were the clove-spiced *kretek*, which today are a **ubiquitous** feature in the lives of over 200 million Indonesians.

Around 1880, a Kudus resident named Jamahri was suffering from a mild case of asthma. To relieve his suffering, he rubbed oil of cloves

ubiquitous being everywhere; commonplace; widespread.



Workers handrolling kretek cigarettes at Gudang Garam in Kediri, East Java, Indonesia. Gudang Garam was the largest kretek manufacturer in the world at the time this photograph was taken (1990). The average kretek roller can produce up to 8,000 sticks per day, and the rolling is exclusively done by women. © CHARLES O'REAR/CORBIS

eugenol an aromatic chemical derived from cloves. It is the active ingredient found in clove cigarettes.

(**eugenol**) on his chest. Eugenol has been used for centuries as an astringent and today is common in dentistry. While this eased his pain somewhat, he decided he needed to bring the healing powers of the cloves in closer contact with his troubled lungs. What would happen if he mixed cloves with tobacco and smoked it?

According to the legend, this is what he did and his cough ended immediately. He began to distribute his product through the local *apotik* (pharmacies), and soon his *rokok cengkeh*, or clove cigarettes, were as common a remedy for coughing as is today's cough syrup. A short time later this new product was renamed *kretek* (kreh-TEK) because of the pop and crackle the cloves make when burned (*keretek-keretek*). While Jamahri failed to grasp the commercial potential of his invention, another Kudus resident did. This man, the original father of the kretek industry, was called Nitisemito.

Nitisemito was holding various odd jobs around Kudus when he noticed that more and more people were taking up the habit of smoking tobacco mixed with cloves. At that time, all kretek were rolled by hand, and its ingredients were bought separately. Nitisemito decided to mix the ingredients himself, package them, and sell them as a branded product. He experimented with several names but in the end he chose Bal Tiga ("three balls"), and in 1906 he founded his company as Bal Tiga Nitisemito.

The 1920s and 1930s saw a rapid rise of kretek production, but kretek were unable to displace white cigarettes as the most popular cigarette in the region. Kretek were regarded as cigarettes for the middle classes, while white cigarettes conferred style and prestige. World War II

and Indonesia's occupation by the Japanese halted most production due to the scarcity of tobacco and cloves. Shortly after the end of the war and subsequent independence, Indonesia revived kretek production.

It was not until the late 1960s and early 1970s that kretek's status changed from just a spicy cigarette to that of a national icon. Two factors contributed to the rapid rise of kretek production and consumption. The first was the oil boom in the early 1970s, which resulted in a cash windfall in the government's coffers and an upsurge in domestic industries, with kretek leading the way. The second and perhaps more important factor was a government decision to allow select companies to purchase machines to automate the manufacturing process. Up until that time, all kretek were rolled by hand and therefore looked rustic when placed alongside the machine-made white cigarettes. That all changed when Bentoel in East Java produced the first machine-made kretek, Biru International, in 1974.

By the end of the twentieth century, kretek commanded roughly 85 to 90 percent of the entire cigarette market in Indonesia. The industry is one of the largest sources of the Indonesian government's excise revenue and it is one of the only domestic industries to survive the country's financial crises nearly unscathed. It is one of Indonesia's most well-known cultural **signifiers,** with its distinctive scent greeting each visitor who comes to Indonesia.



signifier a word, sound, or image that symbolizes an underlying concept.

See Also South East Asia; Therapeutic Uses.

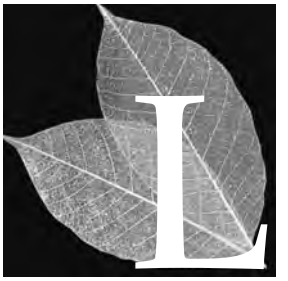
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Labor

Since tobacco first emerged as a commercial crop, its production and manufacture have depended on onerous and often exploitative labor arrangements. In newly established colonies in Latin America and the British Caribbean, slaves began cultivating tobacco for the world market during the 1500s and 1600s. In the Chesapeake, planters relied on indentured servants until they eventually substituted them with slave labor. By the seventeenth century, slavery was the predominant form of labor throughout the Americas. The abolition of slavery, which occurred at different times in different places, necessitated a shift to other labor forms. From the late nineteenth century to the 2000s, tobacco cultivation has relied on relations of production that have included wage work, child labor, and migrant labor.

The manufacturing of tobacco products has also involved various forms of labor. The emergence of an industrial working class in Europe rested, in part, on the growth of cigar production during the seventeenth century. In the Americas, the production of cigars, **snuff,** and cigarettes has occupied many different types of workers over time, including slaves, indentured servants, convicts, home workers, and factory workers. Since the 1950s, wage work has dominated factory production.

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

Farm Labor

INDENTURED SERVITUDE. For the first two generations of tobacco cultivation in the Chesapeake, indentured servants raised the crop on the farms of small planters. These servants, mostly young, poor, and unmarried men, signed contracts, or indentures, in England agreeing to immigrate to Virginia and Maryland and work a specified number of years in exchange for payment of their transatlantic passage. During their term of service, indentured servants were considered the chattel property of the planters who had purchased their indentures. Typical contracts obligated the master to provide clothing, food, and shelter.



Farm Security Administration supervisors inspecting the tobacco crop, Puerto Rico, 1942. LIBRARY OF CONGRESS

In return, the indentured servants raised tobacco. They expected in time to become landowners themselves. Historians estimate that one-half to three-fourths of all immigrants to the Chesapeake between 1630 and 1680 came as indentured servants. While the total population of Virginia and Maryland was just under 1,000 in 1620, it increased to 60,000 by 1680.

During the late seventeenth and early eighteenth centuries, tobacco planters in the Chesapeake began to replace indentured servants with slaves because the supply of servants began to dwindle. Several factors contributed to the decline of indentured servitude. Better living conditions in England and agricultural depression in the Chesapeake stemmed the flow of migrants. Some freed servants themselves were becoming landowners and searching for laborers to work their fields. In addition, imported African laborers were living longer, enhancing their value as slaves for life.

SLAVERY. In Brazil and the Caribbean, planters had been employing slave labor since the seventeenth century, when tobacco emerged as a major staple in the colonial export trade. With the introduction of slaves into the Chesapeake and other North American colonies, slave labor became the major foundation of growth and prosperity throughout the New World. Scholars cannot produce precise figures for the number of slaves who grew tobacco, but estimates from Brazil and Cuba report that slaves accounted for at least one-third of the population in the tobacco districts of colonial and nineteenth century Bahia, the state in Brazil where tobacco cultivation flourished. Slaves numbered 89,000 in the region between 1816 and 1817, and still numbered between 72,000 and 81,000 in 1873. As late as 1862, more than 17,000 slaves still worked on tobacco farms in Cuba.

The slave societies of the southern United States and Bahia in Brazil were unique among American plantation societies in their ability to maintain their supply of slaves through natural increase. By the 1730s,

there were sufficient numbers of women born in the North American colonies to allow the slave population to grow by natural increase. Planters on the tobacco **plantations** of Brazil also did not have to rely on importing newly enslaved Africans to sustain their supply of slaves.

plantation historically, a large agricultural estate dedicated to producing a cash crop worked by laborers living on the property. Before 1865, plantations in the American South were usually worked by slaves.

Slaveholdings on tobacco plantations varied enormously by size. Throughout the New World, both small and large tobacco planters held slaves, varying from between 50 to 200 on the largest farms to 2 or 3 slaves on others. In Brazil, there were plantations with large slaveholdings, but it also seems that a greater percentage held no more than a dozen slaves. The United States also had a mix of large planters and small farmers, but the larger growers cultivated the bulk of the crop. Among the largest slaveholders was Samuel Hairston of Pittsylvania County, Virginia. In 1855, he owned 1,500 slaves, and his plantations were worth $600,000.

Regardless of the number of slaves on a plantation, the work of growing tobacco was arduous. During the winter, slaves cut wood to be used in curing barns. Before spring, they sprinkled tiny tobacco seeds on the soil and planted them firmly into small seedbeds. They kept them watered throughout most of the growing season to ensure their growth. Eight to ten weeks would pass before the seedlings would be mature enough to be transplanted. Slaves gently uprooted the plants by hand and transferred them to the field row by row. After the seedlings had been transplanted, regular hoeing kept the field clear of weeds, and constant vigilance and picking kept worms, caterpillars, and other pests from damaging the plant. As tobacco plants continued to develop, they formed flower clusters on top. Slaves removed these growths in a process called "topping" or "capping." The purpose of this task was to increase leaf growth, but it also led to the appearance of secondary leaf shoots, or suckers. These, too, had to be removed by hand in a process called "suckering." At harvest time, slaves cut the entire stalk of each tobacco plant and cured them in barns. They performed all of these jobs under the strict supervision of overseers.

Although slavery was the main form of labor on tobacco plantations, other types of labor organization existed to a limited extent. In the United States and Latin America, some **smallholders** (landowning family farmers) produced the crop, relying heavily on the work of the entire family. In nineteenth-century Cuba, indentured laborers, apprentices, and smallholders worked in tobacco cultivation and manufacturing in addition to slaves.

smallholders farmers and other rural folk who own modest-sized farms and provide their own labor.

Nevertheless, slavery remained the main source of labor for the cultivation of tobacco until its abolition, which occurred across the Americas at different times. In 1833, an act of Parliament emancipated slaves throughout the British Empire. Most British colonies replaced slavery with a period of enforced "apprenticeship." Colonial assemblies eventually dismantled the apprenticeship system in 1838. Slavery ended in the United States with passage of the Thirteenth Amendment in 1865. In Cuba, slavery ceased in 1886, after a prolonged, gradual process of emancipation that varied by region. With the abolition of slavery in Brazil in 1888, slavery completely ended in the Americas.

SHARECROPPING, TENANT FARMING, AND WAGE WORK. The abolition of slavery sent tobacco planters scrambling for new ways to organize labor on their farms. In the United States, an increased demand



Workers at a long bench roll and spin tobacco leaves. Two other workers sit nearby binding together a cluster of leaves taken from large baskets, c. 1722.
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tenant farmer landless farmer who rented acreage from landowner. The tenant family usually moved to a house on the rented land where they lived and worked. The rent was payable in cash or sometimes a specified amount of produce. The tenant often owned draft animals and implements and had established credit. Tenants were typically more independent than sharecroppers and occupied a higher place in the hierarchy of rural America.

for the new variety of Bright leaf tobacco coincided with this need to devise new systems of labor. Sharecropping and tenant farming emerged on tobacco farms during the 1870s and 1880s. Sharecroppers were essentially wage workers who received a share of the crop as payment. **Tenant farmers,** on the other hand, paid rent to landowners with a portion of the crop proceeds. Both systems typically trapped workers in a cycle of debt. Landowners charged exorbitant interest rates for the necessities that sharecroppers purchased on credit throughout the year.

Planters in Brazil and Cuba also switched to sharecropping when slavery ended. An increase in the demand for Cuban tobacco leaf in the United States market accounted for the rapid development of sharecropping. As sharecropping became more prevalent in Cuba, many formerly independent growers lost their land and were forced to raise tobacco on other owners' land. Between 1862 and 1877, the number of tobacco farms dropped by 40 percent as Cuban manufacturers consolidated landownership and hired farmers as sharecroppers. In Oaxaca, Mexico, tobacco growers relied on debt peonage, an abusive practice in which courts hired out individuals to work off their debts.

During the early twentieth century, increased demand for cigarette tobacco contributed to the spread of tobacco cultivation to new areas and, consequently, the creation of more tobacco workers. In colonial Zimbabwe, where production of Bright leaf tobacco took off after 1904,

tobacco workers received wages for their work on European-owned farms. Tobacco growers instilled discipline in the workers through physical abuse. It also was common for women and children to work during busy seasons in exchange for additional rations of food for the family.

SMALLHOLDING. Despite the encroachment of sharecropping and tenant farming, some independent cultivators managed to make a living in tobacco growing areas of the Americas during the twentieth century. Burley producers in North Carolina, Kentucky, and Tennessee were predominantly landowning family farmers, and smallholders farmed to a lesser extent in **flue-cured** production areas of North Carolina. In many places throughout Latin America, Africa, and Asia, tobacco has and continues to offer subsistence farmers a better livelihood. Many family farmers mixed farming with work in tobacco factories to make ends meet.



flue-cured tobacco also called Bright Leaf, a variety of leaf tobacco dried (or cured) in air-tight barns using artificial heat, distributed through a network of pipes, or flues, near the barn floor.

MIGRANT LABOR. Eventually, the advent of mechanical and chemical innovations after the 1950s decreased the need for a permanent labor force on the tobacco farms of the American South. Landowners increasingly turned to migrant workers from Mexico to fill their seasonal labor needs. Migrant workers typically arrive on tobacco farms in the spring and work until the fall. Working in tobacco fields often places migrant workers in danger because they are in close proximity to tobacco plants that have been treated with toxic pesticides. In many other tobacco regions, however, chemicals and machinery have been slower to encroach on existing labor arrangements. In the 2000s tobacco growers in Zimbabwe and other countries continue to rely on labor-intensive methods of production. Still evident, too, are poor living and working conditions. Low wages, substandard medical care, and poor housing for workers are still common in tobacco-growing regions throughout the world, including the migrant work quarters on the farms of the American South.

MANUFACTURING LABOR. As in tobacco cultivation, the forms of labor used to manufacture tobacco products have varied over space and time. Before the nineteenth century, most of the tobacco grown in the Americas was exported to either Europe or Africa. The production of cigars, pipe tobacco, and chewing tobacco in eighteenth-century Europe rested on wage labor. In Seville, the center of cigar manufacturing, women known as *cigarreras* rolled cigars by hand in factories. *Cigarreras* came to represent the autonomy of women workers because of factory uprisings that they led in Seville and Madrid during the 1880s and 1890s. Cigar factories in France, Germany, and England also used wage workers.

Beginning in the late eighteenth century, workers in the New World became involved in tobacco manufacturing. Cuba and the United States exemplify the development of tobacco factory labor in the Americas. In Cuba, small workshops relied on wage workers to produce cigars, while manufacturing in Cuba's large cigar and cigarette factories rested on the labor of prisoners, soldiers, and home workers. Most small cigarette workshops had small staffs, employing no more than 45 workers in 1848, and only 65 factories were registered. Only 6 of these small

factories employed 50 or more workers. The vast majority of work was done in the large factories, which employed slaves, indentured Chinese workers, and orphans as apprentices, often under horrendous conditions. They worked in poorly ventilated rooms, received pay only partly in cash, and had to carry identification cards that recorded their debts, a method that factory owners used to restrict workers' ability to move from one factory to another. Outwork for large factories involved the labor of women and children working in their homes.

With the mechanization of cigarette production during the late nineteenth century, the number of workers in Cuba's tobacco factories grew rapidly. By the 1860s, several factories in Havana employed hundreds of workers, and the number reached into the thousands by the late 1880s, with the cigar factories employing more than 50,000 workers throughout the island. Although many workers lost their jobs during the depression of the late nineteenth century, tobacco workers constituted one of the largest groups of industrial wage laborers in Cuba by the early twentieth century. Most of them were white men. However, outwork by women persisted in cigarette manufacturing because not all tasks could be accomplished with machinery. Outwork and small sweatshop production also continued in cigar manufacturing in Cuba because technological developments did not emerge until the latter part of the twentieth century.

Several Cuban cigar factories moved to Tampa, Florida, during the 1880s to escape the political and economic unrest that accompanied Cuba's attempts to end Spanish colonial rule. Cuban cigar makers in the United States had a vibrant tradition of labor unionism through World War I. They protested dust-filled working conditions and low pay. In addition to Cuban workers, Italian workers began migrating to the region to work in cigar factories. Small cigar workshops and large factories also existed throughout the eastern and Midwestern United States. In the face of competition from the United States throughout the twentieth century, an ever-dwindling number of Cuban factories continued sweatshop and home production.

Despite the migration of cigar production, tobacco workers remained one of the largest parts of the Cuban working class until the 1950s. When cigar factories became further mechanized during the 1950s, factory owners continued to use a predominantly male workforce to run the new machines. Cigarette manufacturers gradually employed more women workers. By the 1950s, women worked as cigarette packers and placed the bands, cellophane and metal tubes on cigars. They also performed the job of "stemming," the task of removing the hard center core from the tobacco leaf. Upwards of 90 percent of stemmers were women, and almost 40 percent of those women were black.

Like Cuban workers during the late eighteenth century, laborers in the United States assumed more responsibility for manufacturing tobacco products as an increasingly large amount of tobacco grown in the Chesapeake went to local manufacturers. Between 1790 and 1860, commercial factories emerged in the tobacco-growing districts of the American South. Enslaved men made up the majority of the workforce in these southern factories before 1865. They manufactured snuff, cigars, and chewing tobacco. Most of the tasks they performed involved

hand labor, and heavy lifting under hot, dusty conditions. In comparison, women made up more than half of workers employed by the Spanish *estanco*, or colonial monopoly, at its cigar and cigarette factory in Mexico City during the 1790s.

Following the U.S. Civil War (1861–1865), white workers began seeking employment in tobacco factories as the industry grew and production shifted to cigarette manufacturing. Serious conflicts occurred between these newcomers and black workers. One such incident contributed to a major riot in Danville, Virginia, in 1883. Despite the introduction of white workers, black workers continued to predominate in the less mechanized factory jobs, and filled the dirtiest, lowest-paying positions in the new cigarette and smoking tobacco sectors.

The division of labor in the newly mechanized tobacco factories reflected the racism and sexism of the Jim Crow South. White men held more secure and lucrative jobs supervising workers and operating most of the newer machines. Stuck in menial jobs, black men occupied less secure and lower-paying jobs that required exhausting physical exertion, such as lifting **hogsheads** and carrying tobacco. Both white and black women performed highly repetitive tasks and received less pay than men for the same work. However, white women completed cleaner tasks than black women, who, like their counterparts in Cuba, predominated in the less desirable job of stemming. By 1943 most stemmers worked on a machine that cut the leaf away from the stem.



hogshead a large wooden barrel formerly used to store and transport cured leaf tobacco. A hogshead typically held approximately 800 to 1000 pounds of tobacco.

During World War II, black women union leaders and activists mounted a strike against the R.J. Reynolds tobacco company to force company officials to the negotiating table. They were protesting the subjugation of black workers at menial jobs in the industry, low wages for all tobacco workers, and intolerable working conditions. Their efforts met with success until the cold war created a dangerous climate for labor radicalism.

Since the end of World War II, tobacco manufacturing has continued to undergo mechanization, contributing to the displacement of tobacco workers. In the 2000s, smaller corps of workers operate machines that produce upward of 10,000 cigarettes per minute. United States tobacco companies have transferred many of their manufacturing operations to other countries.

The forms of labor used to produce tobacco products have undergone tremendous change. Cultivation shifted from a reliance on slavery and other forms of paid labor to myriad forms of unfair wage labor. Likewise, the manufacture of cigars, cigarettes, and other products has depended on both wage labor and various forms of coerced labor. However, the degree of change has varied across space and time, especially in terms of farm labor. Mechanization transformed tobacco cultivation and manufacture in the United States in particular, decreasing the number of workers needed for production. But in many tobacco-growing societies, including China, Brazil and Zimbabwe, tobacco production remains a peculiarly labor-intensive affair.

See Also Industrialization and Technology; Processing; United States Agriculture.

ADRIENNE PETTY

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"Light" and Filtered Cigarettes

tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

The introduction and marketing of filtered and low-**tar** cigarettes transformed the use of cigarettes over the last half of the twentieth century, with a 60 percent fall in the average tar values for U.S. cigarettes and a transition from less than 5 percent of cigarettes being filtered in 1950 to the 2004 level of over 97 percent. Statements made by public health agencies supported this transition. These agencies recommended that smokers who could not stop smoking were well advised to switch to these purportedly lower yield products. These recommendations were based on the expectation that lower yield cigarettes might reduce the disease risks caused by smoking, an expectation that slowly wilted in the face of a continuing rise in lung cancer death rates. In the 2000s, there is a scientific consensus that all of the changes in cigarettes since the 1950s have not resulted in a meaningful benefit to public health and that smokers should not expect a reduction in disease risks from cigarettes with lower machine measured tar and nicotine yields.

The identification of cigarette smoking as a major cause of lung cancer in the early 1950s was rapidly followed by a demonstration that cigarette tar painted on the skin of mice produced cancerous tumors. These two scientific discoveries received widespread coverage in the popular press and led to a fall in the consumption of cigarettes in the United States. They also led scientists to suggest that cigarettes designed to deliver less tar to smokers might be of benefit to those cigarette smokers who were unable to quit smoking entirely.

The tobacco industry's response to the increasing level of smokers' concern about the risks of smoking was both to deny that the scientific evidence was conclusive and to offer filtered and lower tar cigarettes to the public as a reassurance that any concern about smoking could be

minimized by smoking filtered cigarettes. The success of this public relations campaign is demonstrated by the dramatic rise in the number of cigarettes smoked following the campaign's initiation, and by the rise in the percentage of filtered cigarettes from 2.6 percent in 1950 to over 50 percent in 1960. Clearly, the American smoking public was willing to change its smoking behavior in response to the concern about the risks of smoking cigarettes. Unfortunately, the reassurance offered by the tobacco industry and echoed by the public health community turned out to be an illusion, and the result was one of the greatest public health deceptions of the twentieth century.

Early Public Health Recommendations

Tar is the particulate phase of cigarette smoke once the nicotine and water are removed. The demonstration that most of the carcinogenic effect of cigarette smoke was contained in the tar led leading public health scientists to suggest that the dose of tobacco smoke received by smokers, and the resultant risk, could be reduced if cigarette design was changed to reduce the amount of tar delivered by individual cigarettes. The focus of public health authorities on tar led to a competition to offer cigarettes that claimed to be low, or the lowest, in tar delivery. This "tar derby" led to many conflicting and confusing claims about which cigarette was lowest based on different methods for measuring tar delivery. In 1960, the Federal Trade Commission (FTC) negotiated a ban on using tar values in advertising with the tobacco industry because the Commission felt these claims were not substantiated by scientific evidence and therefore inherently deceptive.

The Public Health Service convened a committee of experts that suggested in 1966 that "the preponderance of scientific evidence strongly suggests that the lower the 'tar' and nicotine content of cigarette smoke, the less harmful would be the effect" (U.S. Congress, p. 7). That position led the FTC to reverse its ban and allow presentation of tar and nicotine yields provided that they were generated using a machine testing method specified by the FTC. Beginning in 1967, the FTC began public reporting of tar and nicotine values for all brands of U.S. cigarettes, and in 1970 the FTC reached an agreement with major cigarette manufacturers that required these tar and nicotine values to be placed in all print media cigarette advertisements.

Epidemiological studies at the time appeared to support a reduction in lung cancer risks, but not other tobacco-related disease risks, among smokers who chose to use filtered cigarettes or cigarettes with lower machine measured tar and nicotine values. The U.S Public Health Service, the American Cancer Society, and many other health agencies then recommended that smokers who were not able to quit should switch to lower yield cigarettes.

epidemiological pertaining to epidemiology, that is, to seeking the causes of disease.

Tobacco Industry Manipulation of Cigarette Design

Initial efforts to lower tar and nicotine yields using filters rapidly encountered two limitations: Filters that could remove most of the tar from the smoke also made it unacceptably difficult to draw smoke through the filter and smokers would not continue smoking cigarettes that did not deliver sufficient nicotine to satisfy their addiction. A variety of engineering

changes were used in an effort to lower the tar yield, including expanding the tobacco so that it took up more space, increasing the burn rate of the paper so that more of the cigarette was consumed between puffs, and moving the end of the filter overwrap, the paper that surrounds the filer material, toward the tip of the cigarette so that a "smoking machine," as is used for cigarette testing by the FTC, would cease smoking the cigarette with more of the tobacco remaining unburned. However, the need to deliver sufficient nicotine to the smoker remained a barrier. Since tar is formed with a relatively fixed ratio to nicotine, if sufficient nicotine was delivered to the smoker then a comparable level of tar (and risk) would also be delivered. The tendency of the smoker to compensate for any reduced nicotine delivery by increasing the intensity of smoking, or the number of cigarettes smoked, prevented these design changes from altering the amount of tar actually delivered to smokers, even though machine measurements using the FTC's method showed reduced levels of tar and nicotine.

Recognizing that compensation would defeat any approach based on reducing the mass of smoke delivered, and understanding that a real alteration in the toxicity of tar would require both a large research expenditure and an acknowledgement that cigarettes were hazardous, the tobacco companies focused on developing cigarettes that could be presented to smokers with the appearance of risk reduction. In the late 1960s and early 1970s, lasers were developed that could cut holes in the filter wrap. When a machine smoked a cigarette with these holes, air was drawn in through the holes reducing the amount of smoke in the machine puff and lowering the machine measured tar value. When a human smoker smoked the same cigarette, however, he or she could simply take a larger puff and obtain a full dose of tar and nicotine. By varying the size of the holes, cigarettes with any level of lower tar on machine measurement could be produced without changing the amount of tobacco contained in the cigarette. Since "low-tar" cigarettes contained the same amount of tobacco, a full dose of nicotine was available to the smoker if he or she chose to smoke more intensely.

Considerable design effort was devoted to enhancing the "elasticity" of yield of cigarettes so that cigarettes purchased with the promise of low-tar delivery could be made to yield whatever dose of nicotine the smoker desired simply by changing the way the cigarette was smoked. This elasticity of delivery was enhanced by placing the holes in the filters in locations where they could be blocked by the fingers or lips of the smoker, but would remain unblocked when smoked by machine.

The result of these design manipulations were cigarettes that could be offered to the public as having less risk based on the official FTC measurements while in fact delivering a full dose of tar, nicotine, and risk to the unsuspecting smoker.

Why Was the Epidemiology Misleading?

Lower lung cancer risks are found in studies of populations of individuals who smoke cigarettes with lower yields of tar and nicotine compared with smokers of higher tar cigarettes. While researchers initially thought these differences were due to the cigarette smoked, they now understand that they are the result of three differences among individuals who smoke cigarettes with different yields. First, individuals who choose lower yield cigarettes are in general more concerned about health

and have better health-related behaviors such as diet and alcohol use, which lead to lower disease risks.

Second, people who smoke lower yield cigarettes are different from those who smoke higher yield cigarettes, as they are likely to be less intense smokers and less addicted and therefore receive lower levels of smoke exposure. For example, if a two-pack-per-day high-tar and nicotine cigarette smoker smokes each cigarette very intensely, he or she will derive a very large delivery of nicotine. In order to derive the same dose of nicotine from a lower yield cigarette, the smoker might have to smoke a much larger number of cigarettes per day, dramatically increasing the cost of smoking. That individual is likely to fail in his or her attempt to switch brands. However, a less intense smoker is more likely to succeed. Over time this means that intense smokers will stay in the high-tar group while less intense smokers will move into the low-tar group. These differences in exposure and risk are due to differences between the individuals that existed before they switched brands, not due to the differences in the type of cigarette they chose to smoke.

Lastly, when smokers shift from smoking high-yield cigarettes to smoking lower yield cigarettes, a substantial number of smokers increase the number of cigarettes that they smoke per day. Most of the epidemiological studies examining differences in lung cancer risk between high- and low-yield cigarette smokers have controlled for intensity of smoking by using cigarettes smoked per day as a measure of the exposure to smoke, and this overcontrolling may have generated the appearance of a reduction in risk where none was actually present.

Scientific Understanding of the Risks of Lower-Yield Cigarettes

Machine-measured tar and nicotine yields using the FTC method do not estimate exposure of smokers to tar or nicotine from a given cigarette, and comparisons of machine measured yields between brands are likely to mislead smokers about the exposure they will receive when they switch brands. Filters and manufacturing changes that lower machine-measured tar and nicotine yield do not reduce the disease risks produced by smoking. Medical recommendations for smokers interested in reducing their risks are to quit smoking completely, and medical and public health professionals do not recommend switching to lower-yield brands as a means of reducing risk.

See Also Cigarettes; Menthol Cigarettes; Product Design; Toxins.

DAVID M. BURNS

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Literature

Some scholars have said that religion is the topic about which, throughout time, the most books and manuscripts have been written. However, books about tobacco, a division of literary history, follow a close second. As Jerome E. Brooks noted in his multivolume *Tobacco* (1937–1952), "The most universal of the social habits adopted by man, and the plant upon which it depends (together with its appendages and associations) have had innumerable commentators." In the twenty-first century, smoking is taken for granted—in art, in life, and in literature.

Early Literature

The earliest literature about tobacco as a cultural or social custom is European, primarily because no significant treatises about the use, pleasures, and pains of tobacco were written until the discovery of the New World. Chronologically, the first writers were the explorers of the fifteenth and sixteenth centuries who observed the ritualistic use of tobacco among the indigenous people. For instance, Ramon Pane, a Catalan friar who accompanied the Spanish explorer Christopher Columbus, described in *La Historia de l'Indie Occidentale* (1534) the Indians of Hispaniola participating in the rite of *cohoba*, which was later determined to be pulverized tobacco, or **snuff.** Fernandez de Oviedo y Valdés wrote of the natives smoking crude cigars in *La Historia General de las Indias* (1535). Jacques Cartier, a Breton mariner, observed Iroquoians around Montreal smoking what he considered to be elbow pipes and noted it in *Brief Recit* (1545).

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

As tobacco became known in the Western world, herbalists and physicians crafted the next wave of literature, giving testimonials to tobacco as a cure-all for various illnesses and ailments as they sought new uses for it. As tobacco received more attention, there appeared a spate of technical textbooks from botanists who collected the plant in order to

describe and characterize it. Rembert Dodoens' *Cruydeboeck* (1554) was probably the first publication that included a description and an accompanying woodcut of *Nicotiana rustica*, a nightshade family plant.

As the seventeenth century drew near, tobacco entered a new and different literary spotlight. Edmund Spenser was the first poet to laud tobacco in his epic *The Faerie Queene* (1590), and in 1595 the first English-language book wholly devoted to the positive effects of tobacco appeared: Anthony Chute's *Tabaco*, which contained a now-famous illustration of an Englishman smoking a clay pipe.

Today's antitobacco campaign is not a twenty-first-century phenomenon. The first diatribe of record condemning the use of tobacco began was Philaretes' *Work for Chimny-Sweepers: Or a Warning for Tobacconists. Describing the pernicious use of Tobacco*. . . (1601–1602). Two countrymen immediately came to the plant's rescue in 1602: Roger Marbecke, who wrote *A Defence of Tobacco. With a Friendly Answer to the late printed Booke called Worke for Chimny-Sweepers*, and Sir John Beaumont's *The Metamorphosis of Tobacco*, the first book of flourishing verse praising tobacco and its "heavenly origin." The most damning antitobacco influence was King James I's *A Counterblaste to Tobacco* (1604), which contained the oft-quoted peroration, "a custome lothsome to the eye, hatefull to the Nose, harmefull to the braine." (Some may be more familiar with Dr. Samuel Johnson's 1773 famous oracular proclamation about the end of tobacco: "Smoaking has gone out.")

Eighteenth Century to Present

During the next four centuries, tobacco found its way into every field of literary expression. A large quantity and endless variety of contributions came from a broad spectrum of writers—an assortment of apologists, dramatists, economists, historians, novelists, philologists, philosophers, poets, and scientists. Their collective efforts addressed many aspects of tobacco:

- studies on the cultivation of the plant;
- textbooks on the manufacture of pipes, cigars, cigarettes, tobacco, and snuff;
- anthologies and miscellanies of prose, poetry and paeans to smokers;
- historical treatises on the social and cultural uses of tobacco;
- portfolios illustrating smokers' clubs and caricatures of smokers on canvas and paper by noted artists; and
- catalogues raisonnés of antiquarian and collectible smoking artifacts.

Furthermore, an uninterrupted stream of antitobacco material continues unabated in the twenty-first century. As a body of work, this represents a wealth of literary knowledge.

Few tracts of historical significance to tobacco's history were published in the eighteenth and early nineteenth centuries. It was not until England's Victorian era that tobacco literature took center stage in novels, chapbooks, and chronicles about the plant. Writers such as Robert Burns, Lord Byron, Charles Kingsley, Charles Lamb, John Milton,

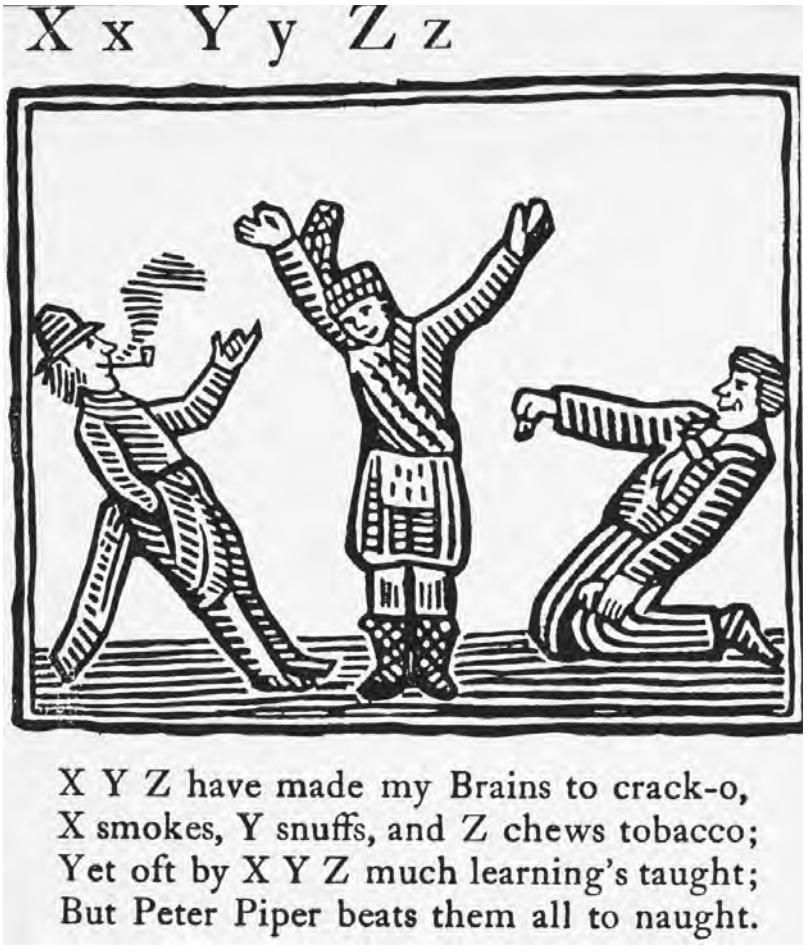


Alice talks to a hookah-smoking caterpillar sitting on a mushroom in an illustration from Lewis Carroll's *Alice in Wonderland.*
© BETTMANN/CORBIS

Alfred Lord Tennyson, and William Thackeray paid homage to tobacco in print. Following in the footsteps of tobacco-inspired antecedents, James Matthew Barrie, more well known for his stage play *Peter Pan* (1904), penned *My Lady Nicotine: A Study in Smoke* (1890), which scholars consider the most popular work of tobacco fiction and, perhaps, the singular work worthy of being called literature. It is a collection of original and humorous essays about the pipe and cigar, written in hymnal praise.

One of the most distinctive examples of Victorian journalism was an ephemeral journal of the highest literary quality, *Cope's Tobacco Plant, A Monthly Periodical, Interesting to the Manufacturer, the Dealer, and the Smoker,* that ran from March 1880 to January 1881. According to Richard D. Altick's essay "Cope's Tobacco Plant: An Episode in Victorian Journalism," printed in *Papers of the Bibliographical Society of America* (1951), "The periodical became, indeed, a monthly encyclopedia of nicotian learning. . . . Its love for literature was somewhat more inclusive than discriminating, but there can be no question that it was genuine."

During the latter half of the nineteenth century, France and Germany, two countries that raised tobacco and whose populations included



A page from *Peter Piper's Practical Principles of Plain & Perfect Pronunciation,* 1911. This book, intended as an advertisement for the many typefaces available from the Mergenthaler Linotype Company, features rhymes based on the nineteenth-century tongue twister that begins, "Peter Piper picked a peck of pickled peppers." Each page was designed by a different notable twentieth-century book or type designer and/or illustrator. © CORBIS

a very large contingent of inveterate smokers, produced many notable works on tobacco. Among the many tracts devoted to pipes, cigars, and snuff written in France during this period, perhaps the most complete and colorfully illustrated book on the culture and custom of smoking was Spire Blondel's *Le Tabac* (1891). The Germans wrote a number of scientific monographs on tobacco, on how to carve meerschaum pipes, and on how to turn amber and wood, and tracts that both romanced and railed on smoking. The most respected tome on the topic remains Friedrich Tiedemann's *Geschichte des Tabaks und anderer ähnlicher Genussmittel* (The History of Tobacco and Other Similar Luxuries) (1854).

Since Elizabethan days pipes and tobacco and, to a lesser extent, cigars and snuff, have been important symbols in literature. In the twentieth century, George Arents, the premier tobacco bibliophile, understood this better than anyone. In his speech, "Tobacco Leaves: An Address Made at the Grolier Club" delivered on November 27, 1941, in New York City, he said, "A vast literature—probably the largest single division in the history of tobacco—is devoted to pipes." This was true then, but at about the end of the last millennium and continuing into this one, an invigorated resurgence in cigar smoking has occurred, and so it is the *puro*, not the pipe, that is all the rage; myriad new books and magazines on cigars in many languages are present everywhere, and the cigar has been resuscitated as the "hot" topic most explored in tobacco literature.

The Future of Tobacco Literature

The following excerpt from an anonymous article published in 1880 best explains and summarizes the lengthy history and histrionics of tobacco literature:

> *The bibliography of Tobacco has yet to be completed. . . . Whenever it is done the result will be one of the curiosities and wonders of literature. It will show the praise and blame that has been heaped upon the Indian weed in every clime. We shall see it in every form of literary expression, from rabid denunciation to dithyrambic adulation. We shall see the same herb proclaimed as the panacea of every disease and as the cause of all the ills that flesh is heir to.*

Since 1880 a few tobacco bibliographies have been published. The controversy between those who derive pleasure from versus those who deride the use of tobacco has been incessant since this plant was introduced into the Western world, and continues into the twenty-first century. If the future is a mirror of the past and present, trees will continue to be felled, and new pro- and antitobacco books addressing assorted views of this herb and the cultural invention of smoking will continue to be written, published, and read until, perhaps, the "divine weed" is no longer.

See Also Film; Music, Classical; Music, Popular; Visual Arts.

BEN RAPAPORT

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Litigation

Since its inception, tobacco litigation has pitted injured individuals, or plaintiffs, with limited resources against the aggressive litigation defense strategies and vast financial resources of the tobacco industry. Starting in the 1950s, cigarette manufacturers have concealed their own knowledge of the addictive nature and deadly effects of their products, while aggressively rebutting scientists who sought to alert the public to these dangers. Manufacturers manipulated the amount of nicotine in cigarettes, denied the link between smoking and cancer, and targeted youth in their advertising campaigns. Despite this misconduct and more than three hundred lawsuits filed against its members, the tobacco industry never lost a lawsuit during the first forty years of litigation. It was not until the 1990s, when tobacco industry documents revealed grossly deceptive practices of the cigarette manufacturers, that the tobacco industry would pay for its manipulation of facts and its deception of the public.

There are three formative stages of tobacco litigation. The first wave of tobacco litigation witnessed approximately 150 unsuccessful lawsuits brought against the tobacco industry. During the second wave, plaintiffs armed themselves with new legal tactics and financial resources aimed at defeating the tobacco industry's aggressive litigation strategies. However, these suits also failed to produce any monetary results for plaintiffs. It was not until the third wave, which began in the mid-1990s, that cigarette manufacturers suffered their first financial losses as a result of their courtroom battles.

First Wave

The first wave of tobacco litigation began in 1954, when a Missouri smoker filed a personal injury claim against R.J. Reynolds. As scientific studies began to link smoking and health risks, plaintiffs started to sue the tobacco industry to recover medical costs as well as for pain and suffering associated with their smoking-related illnesses. In response to this rise in litigation, the tobacco industry devised aggressive and expensive legal tactics to prevent smokers from prevailing through the legal process. These tactics were effective and allowed the cigarette manufacturers to escape the first wave without losing even one lawsuit.

Before the 1950s smoking was very much a part of everyday life in the United States and was glorified by society. At the time, one out of two Americans was a regular smoker. Cigarettes were endorsed by athletes and entertainers, and were advertised on billboards, in magazines, and over the radio. By 1953, epidemiologic and animal studies strongly suggested a relationship between smoking and cancer. These studies inspired the first lawsuits against the tobacco companies. From the outset of the litigation, the tobacco industry hotly contested the link between smoking and cancer or other health problems, even though recently uncovered documents reveal that by the late 1950s some industry scientists had concluded that smoking caused lung cancer.

During the next eleven years, smokers and their family members brought nearly 150 lawsuits against the tobacco companies, yet only ten

ever reached trial. The tobacco industry had decided that it would defend every claim no matter what the cost and make it too expensive for individuals to continue lawsuits. The companies delayed, denied, and filed unjustified preliminary legal motions to drive up the expense of the litigation, financially overcoming plaintiffs prior to the trial phase. Many of these early suits were brought by lawyers working alone who did not have the financial resources to pursue the suits over the numerous and expensive years called for by tobacco litigation. Most plaintiffs ran out of money, their cases finished before they ever reached the courtroom.

In the event that a plaintiff made it to the trial stage of litigation, the tobacco industry would deny any causal link between smoking and lung cancer. The industry claimed that it lacked any sufficient knowledge or notice about the health risks associated with smoking that would amount to a duty to warn its customers. Even where juries concluded that smoking cigarettes caused the plaintiffs' injuries, they did not hold the tobacco companies liable because they believed the industry's argument that it did not know about the link between smoking and health risks. In later years, tobacco industry documents would reveal that cigarette manufacturers lied about this and in fact had scientific knowledge of the potential harm smoking could cause its customers.

Second Wave

The second wave of tobacco litigation began in the early 1980s and was fueled by plaintiffs' lawyers experienced with the successful lawsuits against the asbestos industry, as well as the public's increased understanding of the connection between smoking and health problems. By this time, several surgeon general reports had been released. These reports scientifically linked smoking with cancer and other related illnesses and dramatically increased public understanding about the hazards of smoking. During this time, federal legislation was also enacted which required warning labels on cigarette packages and banning broadcast advertising of tobacco products.

Armed with a better understanding of the effects of smoking on health, plaintiffs' lawyers began a second tobacco litigation effort. They realized that, in order to prevail against the tobacco companies, they would first need to overcome the financial resources the tobacco industry lawyers had used in the first wave. To address this issue, some plaintiffs' lawyers combined resources with other lawyers so that they could adequately respond to the expensive and overwhelming pretrial defense tactics of the tobacco lawyers. This allowed the lawyers to successfully manage the daunting litigation costs associated with suing tobacco companies.

Despite these collaborative efforts, tobacco companies still had an impenetrable defense strategy. The tobacco companies continued to make the litigation process outrageously expensive for plaintiffs' lawyers. As R.J. Reynolds tobacco attorney J. Michael Jordan stated, "We won these cases not by spending all of [the tobacco company's] money, but by making the other [side] spend all of his" (Memorandum 1988). The tobacco industry did a complete turnaround in its defense strategies. It claimed that health risks associated with smoking—which they denied existed in the first wave—were so well known that they were common knowledge and that smokers were fully aware of the dangers associated



Winston Bryant, Arkansas attorney general, speaking at a news conference in 1998 in Little Rock, Arkansas, and gesturing toward a mock check from the tobacco industry, signed by Joe Camel and made out to the state of Arkansas for $1.6 million.
AP/WIDE WORLD PHOTOS

with smoking. The industry went so far as to state that the dangers of smoking were so well known that smokers could not have reasonably relied on the cigarette manufacturers' assertions that smoking was not hazardous. As a result, jurors held plaintiffs who smoked responsible for their smoking-related health problems. These strategies were so effective that, at the end of the second wave, the tobacco industry could still claim that after thirty-five years of litigation it had not paid a cent in legal awards.

Plaintiffs' attorneys recognized that the only way to convince the juries that the cigarette manufacturers were to blame for the smokers' health problems was to uncover incriminating internal documents from the tobacco companies, demonstrating that the industry had long known about the hazards of smoking and had suppressed scientific information. Unfortunately for the plaintiffs, the tobacco companies' defense strategy had so far been successful in preventing plaintiffs' lawyers from accessing those vital tobacco industry documents.

However, there was one case during the second wave that obtained internal industry documents and laid the groundwork for successful litigation. *Cipollone* v. *Liggett Group, Inc.* was a personal injury case filed in 1983 on behalf of a New Jersey smoker and lung cancer victim. The legal approach to the case was to try and gain access to as many tobacco industry documents as possible and prove that the tobacco companies had conspired to make money at the expense of the public's health.

While this attempt met with limited success, some very damaging documents were released. These documents revealed fraud and deceit

Rose Cipollone

Rose Cipollone estimated that she smoked a pack and a half of cigarettes a day beginning when she was 16-years old. By 1981, after smoking for nearly forty-two years, the New Jersey native was diagnosed with lung cancer, and in 1983 she filed a product liability suit against three cigarette companies: Phillip Morris, Lorillard, and the Liggett Group. She died in 1984 at age 58, but the lawsuit labored on. Her argument was straightforward: Cigarette makers did not warn her adequately of the dangers of smoking cigarettes until it was too late and she was addicted. When the trial finally ended, tobacco litigation history was made when a jury ruled that the Liggett Group must pay $400,000 in damages to Cipollone's family—the first-ever tobacco liability case won by a plaintiff. However, an appeals court set aside the money in 1988 and asked for a retrial. In the meantime, Rose Cipollone's husband died and the remaining family never went back to trial.

▮ DONALD LOWE

and denial of important health information that the industry knew to be true, and proved to be so damaging that the jury awarded $400,000 for the plaintiff, the first verdict for plaintiffs in more than thirty years of litigation. An appeals court set aside the jury verdict on a technicality, leaving the case open to be retried. The lawyers and family members were exhausted, the plaintiff had been dead for seven years, and the family decided not to pursue the case. While this case showed the potential power of industry documents to sway courtroom results, by the end of the second wave cigarette manufacturers still had not paid any money to individuals who had been injured by tobacco smoke.

The Third Wave

The third wave of tobacco litigation began in the mid-1990s and would change the litigation tide in favor of plaintiffs for the first time since 1954. Three major events opened the door for successful tobacco litigation during this wave. First, an employee of a law firm that represented tobacco companies released documents to the public that exposed the tobacco companies' misconduct. Second, class-action litigation and litigation on behalf of state governments allowed plaintiffs to combine their resources and expertise on a scale not before realized. Finally, attorneys developed new legal theories that avoided and overcame many of the tobacco industry's traditional victim-blaming defenses.

SETTING THE STAGE. One of the most important factors in the initiation of the third wave of tobacco litigation was the disclosure of tobacco industry documents that proved that the tobacco industry knew of the addictive nature of nicotine and its harmful effects on consumers' health. As the trustees of the American Medical Association put it in an editorial in the *Journal of the American Medical Association*:

> *[T]hese documents . . . provide massive, detailed, and damning evidence of the tactics of the tobacco industry. They show us how this industry has managed to spread confusion by suppressing, manipulating, and distorting the scientific record. They also make clear how the tobacco industry has been able to avoid paying a penny in damages and how it has managed to remain hugely profitable from the sale of a substance long known by scientists and physicians, to be lethal (Todd 1995).*

On 12 May 1994, a gentleman calling himself "Mr. Butts" mailed a box of tobacco industry documents to public health researcher Professor Stanton Glantz at the University of California. "Mr. Butts" was a paralegal at a law firm that represented the Brown & Williamson Tobacco Company. The documents contained information indicating that the tobacco industry had known for thirty years that smoking was dangerous to human health and that it led to many illnesses. The documents demonstrated how the tobacco industry had funded scientific research aimed to create controversy and uncertainty about the health effects of smoking and to divert public attention to other causes of cancer and heart disease, such as diet and heredity. Additionally, these documents showed how the tobacco industry had targeted children through advertising.

STATE ACTIONS FOR REIMBURSEMENT OF MEDICAID FUNDS. One of the most important legal strategies that developed during the third wave was the focus on injuries incurred by state governments in the United States. The state governments sought to sue tobacco companies for all **Medicaid** expenses that state governments had to pay in order to care for sick smokers. From 1993 to 1998, almost every state filed an action against the tobacco companies. The theory underlying the states' legal actions, based on information revealed by the tobacco documents, was that the tobacco industry had conspired to conceal the addictive nature of nicotine and the dangerous health effects, and, as a result, many smokers had developed and would develop health problems related to smoking. The states argued that the tobacco industry should have to pay for the medical costs of smokers. For the first time since 1954, the tobacco companies were facing an opponent that not only had vast financial resources but also had very damaging evidence. On 20 March 1997, one small tobacco company, Liggett and Myers, broke a fifty-year-long conspiracy of silence. The company and the states settled, or agreed to end the lawsuit, with the states' attorneys general and, in the process, made some very damaging admissions regarding the industry's long-standing conspiracy of silence and denial.



Medicaid a public health program in the United States through which certain medical expenses of low-income persons are paid from state and federal funds.

In 1997 and 1998, the states and the tobacco industry agreed to five settlement agreements covering all fifty states. There were individual settlements with the states of Mississippi, Florida, Texas, and Minnesota, and a "Master Settlement Agreement" with the remaining forty-six states. The Master Settlement Agreement provided for payment of $206 billion over the initial twenty-five years of the agreement. The four states settling separately received another $40 billion in damages. The Master Settlement Agreement did not just provide monetary relief to the states but also placed restrictions on the tobacco companies that included ending cigarette billboard advertising, banning the use of merchandise with cigarette brand names, and limiting sponsorships. The industry also formally agreed to stop targeting youth in its advertising and agreed to stop engaging in anticompetitive practices. Despite these promises, the industry has, according to two federal courts and the National Association of Attorneys General, violated the Master Settlement Agreement on numerous occasions.

CLASS ACTIONS. During the third wave, class actions became a method to bring smokers' claims against tobacco companies. Class actions are the consolidation of individual cases, where the injured parties all have similar injuries, factual circumstances, and legal issues. Plaintiffs used class action lawsuits because the cost of litigation could be spread across thousands of claims, making the cases against the tobacco companies affordable for the first time. There was also an unprecedented potential for large damages justifying the investment of vast resources in suing the tobacco companies.

A group of sixty law firms, called the Castano group, filed a class action that helped launch the third wave of litigation. It was estimated that the nationwide class action could represent between 40 million and 100 million smokers. The Castano group focused on the issue of addiction, seeking to represent all smokers who were addicted to nicotine. The legal claim was based on allegations that the tobacco companies had concealed and suppressed material research that showed nicotine is



Jury at Miami Dade County Courthouse during a class action lawsuit against the tobacco industry. In the mid-1990s class action lawsuits made cases against the tobacco companies affordable for the first time and cigarette manufacturers suffered their first financial losses as a result of their courtroom battles. AP/WIDE WORLD PHOTOS

highly addictive. In 1996, despite the Castano group's ambitious efforts, the court determined that the class was too large to manage efficiently, a fate that befell most class actions brought on behalf of smokers.

In 1991 a successful class action was filed by a husband and wife legal team on behalf of nonsmoking airline flight attendants injured by their exposure to secondhand smoke. This case, called *Broin* v. *Philip Morris Companies*, was heard by Florida courts as a nationwide class action. In this case the class members were not smokers, which prevented the tobacco industry from blaming the plaintiffs for their health problems. Four months into trial the tobacco industry settled for $349 million dollars and the case never finished trial.

Another class action was *R.J. Reynolds Co.* v. *Engle*, which was filed in 1994 and sought damages on behalf of all citizens of Florida injured by their addiction to cigarettes. The jury in *Engle* found that cigarettes were addictive and caused some twenty diseases or medical problems, that tobacco companies had committed fraud and conspired to mislead the public, and that punitive damages should be awarded. On 7 April 2000 the *Engle* case made history when it became the first class action to assess actual damages against the tobacco industry. The jury decided that punitive damages for the entire class should be $145 billion. On 21 May 2003, a Florida appeals court overturned this $145 billion verdict. The court ruled that the claims of each class member were too unique to be tried collectively.

OTHER TYPES OF LITIGATION. The third wave of tobacco litigation has seen an expansion of claims by nonsmoking plaintiffs who are trying to recover damages from the tobacco industry based on its deceptive and manipulative practices. Asbestos manufacturers have also filed suits seeking contribution from tobacco companies for the role of cigarettes in causing or aggravating the cancers of asbestos victims. Fire victims have sued tobacco companies for the failure of manufacturers to make cigarettes self-extinguishing. The United States Department of Justice is also

suing the tobacco industry and is seeking injunctive relief and damages for "an unlawful conspiracy to deceive the American public" (Tischler 2003). Governments of other nations have filed litigation in the United States to recover for the role of cigarette manufacturers in global tobacco smuggling schemes. And individual and governmental cases are also being filed in dozens of countries around the world.

Conclusion

From its inception in 1954 to the 2000s, tobacco litigation has been a battle. While the industry has paid record settlements to state governments, it has yet to deliver any substantial compensation to individual smokers. In light of the evidence of the industry's deception and manipulation together with the staggering statistic that cigarettes kill at least 450,000 American smokers and up to 65,000 nonsmokers each year, and about 5 million smokers worldwide, it appears as if the scales of justice have yet to tilt in favor of the many victims of this tobacco use.

See Also British Empire; Caribbean; Dutch Empire; French Empire; Spanish Empire.

▮ RICHARD DAYNARD
▮ ROBERT KLINE
▮ KRISTEN DALEY

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Lobbying

Lobbying is defined as the effort to affect legislation by influencing the opinions of legislators, legislative staff, and government administrators directly involved in drafting legislative proposals. These efforts may be achieved through direct overtures to legislators themselves, or more indirectly through other parties that may hold sway over them. Lobbying can be seen as part of the healthy functioning of a democratic political system within which many groups compete to further their interests. It is thus part of the accepted political process within all democracies for interest groups to, for example, seek an audience with key decision makers, submit position papers to them on specific issues, or even provide financial support for maintaining them in office. Interest groups may include business associations, labor unions, charitable foundations, or professional groups.

To ensure that the lobbying process is transparent, accountable, and ethical, in some countries there are guidelines regulating lobbying activities. In the United States, for example, the U.S. Lobbying Disclosure Act (1995) and Internal Revenue Service regulations require that lobbying activities be documented and reported.

The U.S. Tobacco Industry and Lobbying

Lobbying is a major strategy of the tobacco industry in its efforts to protect and further its interests. Tobacco companies and industry associations (led in the United States from 1958 by the Tobacco Institute until it was disbanded in the late 1990s) employ staff, professional lobbyists, public relations companies, and legal firms to lobby legislators, public officials, and other prominent individuals directly on tobacco-related

issues. These actions are often carefully timed to coincide with the legislative process, such as the proposal of a new bill or revision of a law. Lobbyists approach legislators and government officials directly to present their positions in oral or written form, even offering specific wording for proposed legislation.

However, the tobacco industry also engages in more indirect forms of lobbying via a wide range of other parties. The recruitment of prominent individuals, such as former politicians, to advance the industry's interests is a well-known strategy. The mass media is actively wooed to run favorable coverage. Other industries, including hotels and restaurants, advertising, and professional sports, are also lobbied to gain support for specific issues, such as opposing public smoking bans or advertising restrictions. More covertly, the tobacco industry may rely on "front groups" to put across their views. This is achieved through organizations representing the rights of smokers or tobacco farmers (for example, International Tobacco Growers Association) where a financial link to the tobacco industry may or may not be disclosed. More controversially, the industry creates and funds a wide range of organizations which, in turn, present their views as being independent.

In the United States, industry expenditure on direct lobbying is substantial. Record expenditure by the industry was reached in the late 1990s as the outcome of legal action by the attorneys general of forty-six states against tobacco companies to recover health care costs of tobacco-related diseases reached a climax. Under the proposed Master Settlement Agreement (MSA) between the attorneys general and the tobacco companies, the tobacco companies agreed to change the way tobacco products are marketed and pay the states an estimated $206 billion over twenty-five years. Antismoking organizations, however, felt the MSA fell significantly short of the real costs to be recovered and gave the industry too much latitude in advertising and promotional activities. As debate over terms of the settlement commenced in 1997, intense lobbying ensued by the industry, costing approximately $35 million, a 23 percent increase from 1996, to persuade the U.S. Congress to approve the MSA. The agreement was signed by the attorneys general in 1998.

On the back of negotiations over the MSA, legislators sought to put forth comprehensive national tobacco control legislation. As reported by Public Citizen in its report, "Blowing Smoke," these bills prompted another major increase in lobbying expenditure by the tobacco industry to over $43 million during the first half of 1998 or $81,000 for each member of Congress. This paid for a 70 percent increase in the number of lobbyists on Capitol Hill. The most notable success for the industry was the defeat of Senator John McCain's bill in the U.S. Senate in June 1998, which tobacco control groups attributed to "unprecedented amounts [of lobbying expenditure] to keep crucial public health legislation from being passed" (Public Citizen 1998).

In 2002 more than $20 million was spent to lobby Congress as it prepared for the first time since 1998 to take up the issue of tobacco regulation by the Food and Drug Administration. Another $10.6 million was spent during the first half of 2003. Overall, the tobacco industry was the top spender on lobbying in 1998 led by British American Tobacco (BAT) and Philip Morris (PM). PM is the eighth largest all-time donor to American politics since 1989 and among the most partisan, with three-quarters of its donations to the Republican Party.



Ron Olinger, a tobacco company lobbyist, testified Monday 3 March 2003 in Pierre, South Dakota, against a bill that would raise tobacco taxes. The Senate State Affairs Committee approved the bill, sending it to the full state Senate. AP/WIDE WORLD PHOTOS

The government does not require that figures for spending on indirect lobbying be reported, and therefore they are difficult to estimate. Nonetheless, it is important to recognize that political contributions, advertising, funding of front groups, and similar expenditures are intended to lobby legislators indirectly. It is reported that at least $40 million was spent on television and other advertising in the first half of 1998, with an additional $5.6 million on political party contributions to influence the outcome of federal elections during this period. In 2002 the industry spent $9.4 million on political contributions.

Studies of tobacco industry lobbying have found that lobbying activities have paid off well for the industry. Fred Monardi and Stanton Glantz (1996), for example, found that lobbying activities in the state of Washington coincided with the tabling of a number of local smoke-free and youth access ordinances. The authors found a statistical relationship

between campaign contributions and how individual legislators voted. Similarly, in the U.S. Congress in 2002, members who sponsored a tobacco regulation bill backed by Philip Morris received on average twenty times more money from the industry than the sponsors of a competing bill sponsored by the public health community.

Tobacco Lobbying in Other Countries

Public health officials know less about tobacco lobbying in other countries, although analyses are beginning to emerge. In 2002, Mark Neuman and colleagues described how lobbying by the industry effectively slowed legislation on tobacco advertising in the European Community. Targeting of key figures in politics, industry, and the mass media successfully enabled the industry to mount "a coordinated and effective effort . . . to make them [legislation] as weak as possible." Similarly, in the Middle East, a 2000 analysis of internal industry documents by Ross Hammond and Celia White found that a highly organized strategy of lobbying was undertaken, including the enlistment of prominent political figures and third parties, to prevent the adoption of effective tobacco control legislation.

Lobbying by the tobacco industry is increasingly seen as controversial because of the large sums spent compared with the resources available to public health groups, which raises questions about undue corporate influence over an issue of public health concern. Even more questionable is the extent of indirect and often covert lobbying undertaken, much of it undocumented and thus poorly regulated. This is especially problematic in countries, such as in the developing world, where there are weak or nonexistent guidelines on political lobbying.

See Also Documents; Litigation; Politics.

KELLEY LEE

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Lucky Strike

plug a small, compressed cake of flavored tobacco usually cut into pieces for chewing.

Noting the success of R.J. Reynolds Tobacco Company's Camel cigarettes, the American Tobacco Company (ATC) resurrected an old name, Lucky Strike, to introduce its own new brand. Originally a trade name for **plug** tobacco during the California Gold Rush (1848–1849), the name Lucky Strike was already well known.

Using a similar tobacco blend as that of the Camel cigarette, which consists primarily of sweetened Burley and Bright tobaccos, ATC needed something to set Lucky Strike apart and found it in the slogan "It's toasted." While all cigarette tobacco was similarly treated, this slogan was nonetheless hammered home in Lucky Strike advertising as unique to "Luckies." Learning from Camel's success, ATC adopted a similar marketing strategy for Lucky Strike. For a period in the 1920s, ATC leased most of its other brands to another company so that it could concentrate entirely on promoting its Luckies.

From 1916, with the introduction of Lucky Strike, until his death in 1946, George Washington Hill controlled every aspect of the brand's promotion. When Hill became ATC's president in 1926, the Camel brand held 40 percent of the American market. In 1930, due to ATC's more aggressive marketing, Lucky Strike surpassed Camel, capturing roughly 35 percent of the domestic market and producing 43 billion cigarettes annually.

Hill's success can be attributed to several strategies. He marketed Lucky Strike to a more upscale clientele than Camel. While ATC was sponsoring the *Your Hit Parade* radio show, for example, Hill made sure that the songs played fit his idea of what a fashionable audience wanted to hear. He was particularly aggressive in targeting women as that gender gradually took up smoking; "Reach for a Lucky instead of a sweet" was one of Hill's more famous slogans directed toward women.

ATC arranged a "Torches of Freedom" parade in which women marched down Fifth Avenue in New York City carrying cigarettes at a time when a degree of social stigma was still attached to women smoking in public. When Hill discovered that women tended to dislike Lucky Strike's dark green pack because it clashed with their couture, magically, in 1934, major fashion designers began to feature green. Years later, in 1942, using the excuse that the copper used to make the green ink for



Advertising for Lucky Strike attempted to present toasting as unique to Lucky Strike, when in fact all cigarette tobacco was toasted. This 1928 advertisement features famous aviatrix Amelia Earhart as the celebrity spokesperson, claiming that Lucky Strikes were carried on her famous trans-Atlantic flight. © BETTMANN/CORBIS

the pack was needed for the war effort, Lucky Strike green "went to war," and the pack turned white, solving the color problem permanently.

With the increasing popularity of king-size cigarettes, Lucky Strike's **market share** began declining. Later, filtered brands took an ever-increasing share of the market. By the 1960s, Lucky Strike's position had declined to less than 10 percent of the domestic market. Attempts to extend the brand to filter and **menthol** versions were largely unsuccessful despite imaginative advertising campaigns such as "Lucky Strikes Again" and "Light My Lucky."

In 1994 British American Tobacco (BAT), which had owned the international rights to the Lucky Strike brand since 1902, acquired ATC and increased its promotion of the brand worldwide. Because they were marketing it internationally as a quality American cigarette, BAT was reluctant to discount Lucky Strike in its home market, so as not to cheapen its image elsewhere in the world. During the late 1990s, when

market share the fraction, usually expressed as a percentage, of total commerce for a given product controlled by a single brand; the consumer patronage for a given brand or style of product.

menthol a form of alcohol that imparts a minty flavor to some cigarettes.

it was promoted as an "American Original," Lucky Strike achieved some sales success with the young, urban market in the United States. Although BAT later began price discounting, today Lucky Strike retains only a very small percentage of the American market.

See Also Camel; Cigarettes; Gitanes/Gauloises; Marlboro; Virginia Slims.

JOSEPH PARKER

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Lung Cancer

Once a very rare disease, lung cancer emerged during the twentieth century as one of the leading preventable forms of cancer, accounting for about a third of total cancer deaths in the United States in the 1980s. Recent research suggests that smoking is responsible for about 90 percent of lung cancer cases.

Concern about rising mortality from lung cancer gained particular attention in the 1940s and 1950s. Whereas, in the 1930s lung cancer accounted for 5 percent of cancer deaths in men and 2 percent in women in the United States, in the next decade the mortality rate for men doubled. By the 1950s, cancer of the lung was by far the most common form of cancer among men in the United Kingdom and the United States. Between 1956 and 1959, 9,108 male deaths in England and Wales were attributed to carcinomas of the lung (compared to 10,265 deaths from other cancers). In the United States, 18 percent of male cancer deaths in the 1950s were due to lung cancer.

For women the number of deaths from lung cancer increased less rapidly than for men (1,202 deaths in England and Wales between 1956 and 1959, compared to 14,119 from other cancers). This slower increase in mortality corresponded to the smaller numbers of female smokers. The lung cancer rates for men in both Western Europe and the United States reached a peak in the 1990s, after which they started to decrease slowly. However, female lung cancer mortality continues to rise, and carcinomas of the lung have superseded breast cancer as the leading cause of cancer deaths among women. In the United States, in the last decade of the twentieth century, carcinomas of the lung accounted for 33 percent of all cancer deaths in men and 23 percent in women.

By 1980, lung cancer was estimated to be the second most common cancer in the world. By the 1990s, it had risen to first place, representing

about 12 percent of the cancer burden, but with large international variations. Lung tumors are most common in males in North America, Europe, and Oceania. Lower rates can be found in parts of Latin America and most of Asia, though the incidence is expected to rise as a result of the increasing popularity of smoking in those regions.

Responding to the Rise

1900s–1950s. As mortality from lung cancer began to rise in Europe and North America, attention came to focus on possible reasons for the increase. At first, it was unclear whether the rise was real, or an artifact of better diagnosis and reporting. Because lung cancer was not directly visible to physicians, unlike advanced breast cancer, it could often be confused with other chronic lung diseases, such as tuberculosis. But, even as the consensus moved towards acceptance of the reality of the increase, disagreement and uncertainty persisted as to the reason for the rise. Some suggested the rise might be due to an increase in atmospheric pollution, some thought that it was due to the tarring of the roads, some highlighted occupational causes of disease, and some suggested smoking, for the rise in lung cancer appeared to follow rising consumption from cigarettes. Smoking was, thus, only one of many possible causes. For many British and American physicians the link between smoking and lung cancer remained unproven.

Several factors help to explain such uncertainty. From the late nineteenth century, scientific medicine had come to be dominated by ways of thinking derived from the bacteriological and **physiological** laboratory. Causal relationships were usually "proved" by experiments in which a group of animals (the experimental group) was exposed to a suspected causative agent, while another group (the control group) was kept under identical conditions but not given the agent. If the experimental group got the disease and the control group did not, the agent was said to have "caused" the disease. The term "cause" here implied a process in which *A* (smoking) would, by necessity, always lead to *B* (lung cancer). Thus, to be deemed a "cause" a particular agent—a microbe or **carcinogen,** for example—had *always* to be associated with a particular disease. Once identified, research then aimed to clarify the biological processes by which this agent produced the disease.

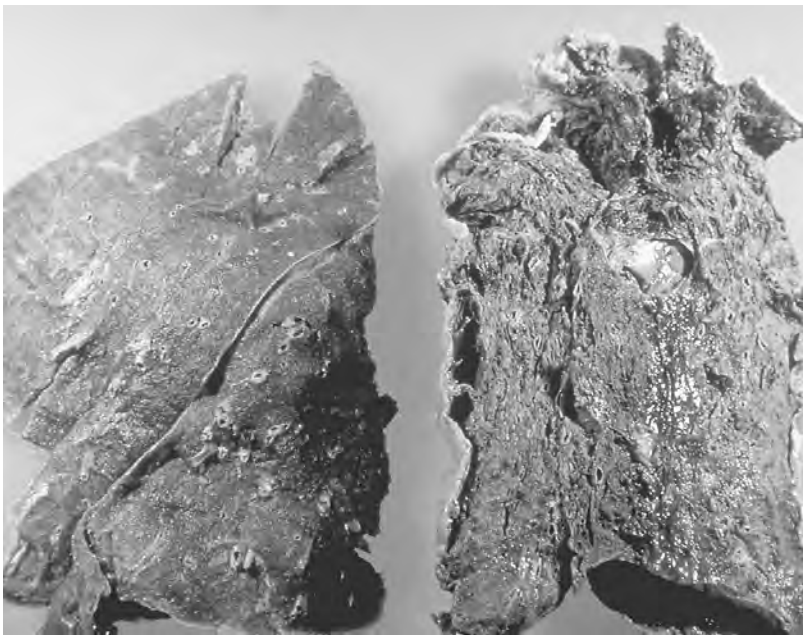
physiology the study of the functions and processes of the body.

carcinogen a substance or activity that can cause cancer. Cigarette smoking has been proven to be carcinogenic, that is, cancer causing.

Cigarettes did not fit into such a model of causation. There seemed to be no consistent relationship between smoking and lung cancer. Not everyone who smoked got the disease, and some nonsmokers succumbed to it. Thus, if smoking was a factor, it was only one of many, and it was unclear how to determine absolutely how much each factor contributed to the disease. Besides, there were other practical problems in determining a causal connection between smoking and lung cancer. For example, the protracted length of time it took for the disease to emerge made it almost impossible to develop evidence of a direct causal relationship. Furthermore, laboratory experiments in which animals were painted with tobacco **tar** or exposed to tobacco smoke gave mixed results.

tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

Other factors also help to explain why lung cancer was not central to the campaigns either against smoking or against cancer. Many physicians were themselves smokers, and some may have seen smoking as an antidote to the anxiety, worry, pressure, and exhaustion that characterized fast-paced, modern, urban living. Physicians who did speak out against



Comparison of a normal lung (left) and a smoker's lung (right). It took many years for the association between smoking and lung cancer to be accepted. PHOTOGRAPH BY A. GLAUBERMAN. NATIONAL AUDUBON SOCIETY COLLECTION/PHOTO RESEARCHERS, INC.

tobacco often did not adopt a scientific position, and sometimes resorted to shaky moral arguments to justify their positions. Ironically, in their efforts to distance themselves from the moralizers, physicians sometimes found themselves tacitly arguing that tobacco was not harmful.

Furthermore, smoking did not fit well with the dominant models of disease control. It was not compatible with the germ theory model of preventing contagion through cleanliness that dominated public health efforts against infectious diseases. If it did not fit bacteriological models of prevention, it also did not easily fit with the early detection campaigns against cancer that emerged in the first half of the twentieth century. The numbers dying of lung cancer were small compared to other major cancers, and the problems of diagnosis were immense. Despite the introduction of the x-ray and the bronchoscope in the early part of the century, most lung cancers were identified postmortem, and physicians found it difficult to distinguish the problem from other lung diseases, such as bronchitis or pneumonia.

The major exception to the tendency to downplay the link between smoking and cancer was Nazi Germany. Before World War II, the Nazis launched perhaps the world's most vigorous antismoking crusade as part of a broader policy of racial hygiene. In their view, tobacco was a genetic poison that caused cancer as well as infertility and heart attacks, and they instituted a wide range of bans on smoking and on advertising tobacco products. Nazi-era scientists also undertook substantial research on the health effects of tobacco. They were among the first to identify a statistical link between smoking and lung cancer, and to identify passive smoking as a danger to nonsmokers. Such research was well known outside of Germany, as was the German antismoking campaign. But many British and American physicians continued to doubt the association between smoking and lung cancer. The outbreak of war (and later the horror at Nazi racial policies) made it even more difficult to adopt policies and beliefs associated with the regime.

1950s. Attitudes changed in the 1950s with the publication of **epidemiological** reports that drew an association between smoking and lung cancer, notably by Richard Doll and Austin Bradford Hill in England, and Ernst Wynder and Evarts Graham in the United States. Downplaying the earlier work in Germany, these researchers began a process that substantially changed the ways in which physicians and scientists thought about the relationship between smoking and lung cancer. Yet, it was a long and hard process, and there was no immediate certainty that they would be successful. Their research did not immediately dispel the doubts, not least because there was considerable disagreement as to whether a statistical *association* between smoking and lung cancer implied that smoking was a *cause* of the disease.

epidemiological pertaining to epidemiology, that is, to seeking the causes of disease.

At the heart of this debate was a substantive challenge to the model of causation derived from the bacteriological and physiological laboratory. Epidemiologists thus came to think of a "cause" not as a single event or agent, but as the configuration of circumstances that lead to disease. Such a model implied that *A* (smoking) did *not always* lead to *B* (lung cancer). The best that could be said was that *A* was a contributory factor in the onset of *B*. Such a model of causality was implicit in the new approaches developed by epidemiologists to explore the relations between smoking and lung cancer. One approach, termed retrospective, proceeded by interviewing patients diagnosed with lung cancer about their lifestyle before diagnosis; another, termed prospective, involved interviewing people about their lifestyle, and then correlating this information later with the cause of death.

Substantive differences between scientists and physicians were complicated by the commercial interests at stake in this debate. As epidemiological and clinical data came to implicate cigarettes as a cause of lung cancer, the tobacco industry began an enormous crusade to belittle these scientific studies and fuel a "controversy" about the risks of smoking. In January 1954, U.S. tobacco companies issued a "Frank Statement to Cigarette Smokers"— a full-page advertisement, published in 448 newspapers across the country—accepting "an interest in people's health as a basic responsibility, paramount to every other consideration in our business." The tobacco companies stated their belief that their products were "not injurious to health," claiming that they had cooperated in the past and would continue in the future to "cooperate with those whose task it is to safeguard the public health." The industry also promised to fund scientific research into smoking and cancer. Yet, in reality, it created a sophisticated public relations operation to deny the harm of smoking. At the same time, as internal corporate documents uncovered in litigation reveal, tobacco industry scientists consistently confirmed the presence of multiple carcinogens in tobacco.

Historians often take reports by the Royal College of Physicians (1962) and the U.S. Surgeon General (1964) as marking a shift in official attitudes toward the acceptance of epidemiological proof that smoking "caused" cancer. The reports also marked the triumph of multicausal explanations of the onset of disease, and represented a key moment in the emergence of the "risk factor" concept of disease. The last stated that persons exposed to the **etiological** agent (smokers) were more likely to develop the disease (lung cancer) than those not exposed to it (nonsmokers). Such a concept raised many questions. How much more likely? What other factors were involved? Was the relationship a direct one or coincidental?

etiological concerned with the origins of disease.



Dr. Roswell Park, credited with recognizing cancer as a public health issue and organizing against it, is shown in this early 1900s unretouched file photo. Park's legacy lives in the cancer research and treatment center in Buffalo, New York, that bears his name. The Roswell Park Memorial Institute, the world's first center linking laboratory discoveries with patient care and professional and public education, turned 100 in 1998. AP/WIDE WORLD PHOTOS

Scientists and physicians approached such questions from a variety of disciplinary, ideological, and institutional perspectives, which tended to shape the sorts of answers they produced. The tobacco industry further complicated the situation by financing research that, some critics claim, served to sustain artificial uncertainty over causation and risk. While other diseases and forms of cancer came to be linked to smoking as well, lung cancer remained at the center of debates over medical proof because it had received far more scientific study than any other disease linked with smoking. The 1964 Surgeon General's report cited 29 retrospective epidemiological studies of smoking and lung cancer, all of which suggested a causal relationship.

1964 TO PRESENT. The post–1964 period was marked by an expansion and politicization of the issue of the relationship between lung cancer and smoking. First, public health researchers and activists sought to broaden the scope of the debate. Thus, for example, following the publication of epidemiological evidence that associated lung cancer with secondhand smoking, in the 1970s and 1980s they began to focus increasing attention on the harmful effects of passive smoking on so-called "innocent" nonsmokers such as children, spouses, and coworkers. Furthermore, especially in the United States, public health experts also broadened the debate by linking concerns about lung cancer to nicotine addiction. The tobacco industry and libertarian groups defended cigarettes in terms of individual choice. By highlighting the addictive quality of cigarettes, activists fundamentally undermined such a defense by questioning the truth of claims that individuals could fully choose whether or not to smoke. Moreover, by suggesting that the tobacco industry both knew of such addictive qualities and simultaneously publicly denied them, they also opened the door to litigation against the industry over the health effects of cigarettes, including lung cancer.

Second, the period was also marked by continued insistence by the tobacco industry that the case against cigarettes had yet to be scientifically proven. The tobacco industry contended that more research was needed to prove that smoking caused cancer, and that the scientific "controversy" over smoking and lung cancer was not settled. Thus, in 1994, seven tobacco company chief executive officers told a U.S. congressional committee that they did not know whether smoking caused the disease, and that they did not believe cigarettes were addictive. By the end of the 1990s, however, the industry had reversed its position, acknowledging the cancer risks associated with tobacco. Critics argued that such statements were little more than an effort to reduce legal liabilities, and to rehabilitate a stigmatized product and a rogue industry. They also argued that efforts to promote cigarette smoking in Eastern Europe, Asia, and Africa were likely to result in rising lung cancer rates abroad, even as mortality began to drop in the West.

The growing politicization of the issue around lung cancer was also accompanied by growing factionalism over the issue. In the 1950s and 1960s, public health campaigners had often collaborated with the tobacco industry over the hazards of smoking. For example, following reports in the 1950s that painting smoke condensate on the skin of animals produced tumors, industry and government experts collaborated in programs to produce safer (often filtered) cigarettes that would ideally reduce the total particulate matter in cigarette smoke and so reduce the

risk of developing lung cancer. However, by the 1970s and especially the 1980s, the beginnings of tobacco litigation, and the growing influence of public health activists led to the breakdown of such relations. The process was aided by doubts about the effectiveness of filtering in reducing cancer risk, and by the discovery of industry efforts to cover-up and confuse evidence of the association between smoking and lung cancer.

The growing politicization of the debates about smoking and lung cancer was crucial to a broader transformation in cancer control. Whereas, for most of the twentieth century cancer control had focused on early detection and treatment, the identification of smoking as a cause of cancer helped to spearhead a shift in cancer control policies in the 1970s and 1980s toward prevention. Thus, in 1981 Richard Doll (epidemiologist and cancer specialist) and Richard Peto (medical statistician and epidemiologist) attributed 80–90 percent of all lung cancers to smoking. They further concluded that almost a third of preventable cancers were smoking-related. The implication was obvious. Dissuading people from smoking could help to slow the rise in cancer mortality rates, and perhaps send them into decline.

However, if the association of lung cancer with smoking helped to revive cancer prevention, it did less for therapeutics. After early experiments with chemotherapy for certain types of lung cancer in the 1940s, medical oncologists have only recently become interested in lung cancer therapy again, and some feel that there is a far greater stigma attached to this form of cancer than to others. Despite its addictive nature, smoking is often seen as a voluntary act, and this has led to the widespread notion that lung cancer patients are at least partly to blame for their own illness. Diagnostic methods have become more refined, but for most forms of lung cancer surgery has remained the main line of therapy. Operative techniques have not changed dramatically since the 1950s, when chest surgeons found that lung cancer was replacing tuberculosis as their main line of work. While diagnosis and the prediction of treatment outcomes have become more precise and reliable, the chances of survival after being diagnosed with lung cancer are not much better than in the 1960s, as the tumors are usually fairly advanced by the time they cause symptoms.

See Also Disease and Mortality; Doctors; Nazi Germany; Secondhand Smoke; Toxins.

DAVID CANTOR
CARSTEN TIMMERMANN

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Marginal Populations *See* Advertising; Documents; Ethnicity; Marketing; Sponsorship; Women; Youth Marketing.

Marijuana *See* Alcohol, Tobacco, and Other Drugs.



Marketing

From the outset of the mass production of cigarettes, cigars, and **plug** tobacco, manufacturers have used diverse and often outrageous means to publicize these products in order to entice nonsmokers and smokers alike to sample their wares. Marketing techniques ranged from package inserts, giveaways, contests, and sponsorships to the targeting of specific populations of nonsmokers. Legislation banning various forms of tobacco advertising following the mountain of evidence confirming the health risks of smoking did not deter the marketers; rather, as the American and Canadian models attest, the companies used marketing to circumvent the bans. By 1984, almost 50 percent of the advertising and promotions budgets of the giant tobacco companies were directed to promotions, compared with 25 percent in 1975.



plug a small, compressed cake of flavored tobacco usually cut into pieces for chewing.

Package Inserts/ Coupons

James Buchanan "Buck" Duke of Durham, North Carolina, founder of American Tobacco, initiated the age of mass cigarette production with his adoption of the Bonsack rolling machine. Facing the prospect of overproduction by the 1880s, Duke countered with new packaging such as a sliding box with a piece of cardboard to stiffen the package. He printed the cardboards with various images, producing collectible card sets to encourage repurchasing. In an era before graphic reading material was widely available, **cigarette cards** were instantly successful, and the series, which were targeted to the masculine clientele and their sons, ranged from the educational: politicians, soldiers, flags, athletes, and



cigarette cards paper trading cards sometimes featuring sports personalities or movie stars packaged with cigarettes and offered as an incentive for purchase.

exotic animals; to the risqué: lithographs of attractive women in scanty garments.

Coupons, either in the packages or attached to advertisements, were targeted to groups short of cash, including children and teens. In the 1880s, Duke provided coupons redeemable for college pennants and rugs for his Lucky Strike and Cameo brands. During the Great Depression (1929–1933), Raleigh Tobacco offered coupons for playing cards and electric toasters. In the 2000s, in magazine advertisements, companies offer one-or two-dollar coupons toward the price of cartons, to counter the effects of high taxes, which discourage young people's access to cigarettes. Coupons have the added bonus of providing the companies with mailing lists for direct mail-outs.

Dealer Promotions

As the first point of contact between the manufacturer and the customer, tobacconists were encouraged to push particular brands. Positive inducements included Lucky Strike clocks and chairs, life-size Native American statues to grace front porches, and a popular diversion of the late nineteenth century, R.J. Reynolds' Schnapps Kicking Machine, which was a metal foot, attached to strings and pulleys, which "kicked" consumers of rival plug tobacco. In the 1940s and 1950s, when Philip Morris used the catchphrase "Calling Philip Morris!" on its sponsored radio shows, so popular was the voice of the "page-boy" that 100,000 cardboard likenesses and life-size statues were sent to tobacconists across the United States.

As the giant tobacco companies diversified their holdings in the late twentieth century, they were able to enforce negative inducements on retailers. Philip Morris and R.J. Reynolds, which owned General Foods and Nabisco respectively, were able to demand prime display territory from grocers and other retailers who needed their other products. Imasco of Canada, parent company of Imperial Tobacco, owns the largest pharmacy chain—Shoppers Drug Mart—resulting in a major health product outlet pushing tobacco sales.

Outdoor Displays

In the pre-radio and television ages, tobacco companies used a variety of publicity stunts to promote brand recognition. George Washington Hill, Duke's successor, introduced skywriting as advertising soon after World War I (1914–1918). The giant Lucky Strike letters formed at 10,000 feet drew crowds of onlookers. No less dramatic (and certainly more dangerous) was the stunt organized by the Canadian "Red Cross" brand in 1903. The company hired a high wire artist to cross Quebec's Montmorency waterfalls, an event that reportedly attracted 30,000 people. Other stunts involved hot air balloons, parachutes, and parades.

More pedestrian outdoor displays involved plastering fences, barns, billboards, and streetcars with advertisements. In 1942, when R.J. Reynolds first began promoting its Camel brand, the company erected a giant two-story billboard in New York's Times Square. The billboard, which displayed the head of an American serviceman blowing real smoke through his mouth, became a city institution for twenty-five years.



Testimonials by film stars have been used by tobacco producers to sell their wares. This 1950s advertisement for Chesterfield featured Ronald Reagan in his film heyday. The advertisement also shows how the packaging was tailored for the Christmas buying season. Marketing often capitalizes on holidays and other special, thematic occasions. THE ADVERTISING ARCHIVE, LTD.

The World Wars

Mass tobacco consumption in North America may well have languished for some time longer in the twentieth century had it not been for the continent's involvement in the two world wars. Prior to World War I, cigarettes retained a slightly effeminate image, but that image was dispelled during the war by their popularity among the troops. Cigarette smoking became associated with all of the positive aspects of war participation, denoting courage under fire and alertness during night watch. Exchanging cigarettes or offering matches became symbols of camaraderie among troops, democratic acts between officers and enlisted men, and even gestures of peace among enemies. Cigarettes became symbols of masculinity, even among those women, such as nurses, who courageously took part in the war effort overseas. Because life in the trenches of France and Belgium was characterized by human carnage, filth, and disease, any efforts to limit the soldiers' access to the momentary pleasures of tobacco were considered unpatriotic and spiteful. General "Black Jack" Pershing, commander-in-chief of the American Expeditionary Forces, appealed to the home front to provide cigarettes to the troops. Families and relief organizations responded to the calls in the United States and Canada alike by sending massive quantities of cigarettes overseas.



Philip Morris cigarette girl at the Cotton Club, New York City, 1936. The Cotton Club was one of the centers of the Harlem music scene of the 1920s, which saw the great crossover of blues/jazz from black to white audiences. Cigarette girls were common in nightclubs in the twenties through the forties and into the fifties.
© BETTMANN/CORBIS

Once war was again declared in 1939 (in Canada) and 1941 (in the United States), the tobacco companies convinced the wartime regulatory agencies in both countries that tobacco was an essential product that could be advertised accompanied by patriotic messages promoting Victory bonds and blood donor clinics. More importantly for the long-term expansion of the smoking market, cigarettes were supplied freely in the daily rations to all in uniform, including women and nonsmokers. Whether provided directly by the companies, through their associations such as the Overseas Tobacco League, or through philanthropic agencies like the Canadian and American Red Cross, the Royal Canadian Legion, the Young Men's Christian Association, and the Knights of Columbus, these rations quickly became objects of barter among troops and prisoners of war and with occupied populations. The tobacco companies also sponsored entertainments for the troops overseas during World War II (1941–1945) and the Korean conflict (1950–1953).

During World War II and in the years afterward, smoking became synonymous with patriotism and courage in magazines, films, and television. In the film classic, *Casablanca* (1942), Humphrey Bogart's character and his morally corrupted Vichy colleague find their patriotic core over cigarettes as the film closes. So closely are the Allied leaders—Winston Churchill, Franklin Delano Roosevelt, and Joseph Stalin—identified with their smoking habits that an **iconographic** photograph of an ashtray with a cigar, a cigarette in holder, and a pipe is universally recognized

iconography representing or conveying meaning through visual symbols without words. Certain traffic signs are a common form of iconography.

to signify the Yalta Conference. Adolf Hitler's distaste of smoking is cited to illustrate the characteristic idiosyncrasies of the dictator. World War II was the apex of tobacco's popular esteem.

Targeting Health Concerns

Yet the popular image of cigarettes could not long mask growing concerns about the health consequences associated with the habit. Even before cigarettes were linked to cancer in the 1950s, manufacturers were making health claims in marketing their products. In the 1930s, American Tobacco addressed the concern over "smoker's throat" by devising the statement that Lucky Strike's tobacco was "toasted" and therefore soothing to the throat. Albert Lasker, creator of Lucky's advertising campaigns (see sidebar), enlisted celebrity endorsements from opera singers, stage and screen performers such as Helen Hayes, Billie Burke, and Al Jolson, and even pioneer aviator Amelia Earhart to attest to the company's claims. Even into the 1950s, Canada's Craven "A" cigarettes were claimed to have no irritating effects upon the throat.

The claim that one brand was less harmful than another was standard advertising practice for decades. Camels were advertised in the 1930s as the brand of choice among doctors (indisputable since Camels was the best-selling brand among all groups). In response to growing public concerns and news reports about the health effects of smoking, some tobacco manufacturers introduced filter cigarettes. P. Lorillard Co. launched Kent cigarettes in 1952 with its "micronite" filter, which contained fibers that the company claimed trapped dust particles in the smoke.

Arts Promotion

While their popular image began to sink, the tobacco companies' financial and political clout remained unchallenged, and targeted sponsorship of elite activities such as the fine arts, as well as mass entertainments. Elite institutions such as museums and concert halls were esteemed as high culture, yet they faced perennial financial difficulties. By associating themselves with these institutions, the company giants demonstrated their commitment to the commonweal. At the same time, those who attended elite cultural events and their board of directors tended to be members of the elite. These included media leaders and politicians, who could influence the nature of antitobacco legislation. At a minimum, the directors of these institutions that received financial support from the tobacco companies would be expected to make statements defending the existence of public smoking spaces.

One of the earliest brands to be associated with elite culture was the Canadian Buckingham cigarettes, which in 1929, sponsored the Buckingham Booster radio orchestra, every member of which, the leader confirmed, was a Buckingham smoker. Pall Mall, another Canadian brand marketed to "the elite," was a frequent promoter of concerts and galas. Lucky Strike sponsored the weekly radio broadcasts of the New York Metropolitan Opera and of political commentator Dorothy Thompson. Luckies also backed the radio programming of the popular Kay Kyser, Eddie Duchin, and Jack Benny. Its most popular venture was the Lucky Strike Hit Parade, a favorite with young radio audiences.

Albert and Mary Lasker

Referred to as the "Father of Modern Advertising," Albert Lasker masterminded a monumentally successful Lucky Strike cigarette advertising campaign in the mid-1920s. The campaign came about after Lasker's first wife, Flora, was ordered to stop smoking in a restaurant. Lasker's fury over this incident became the impetus for a series of ads aimed at bringing women into the fold as smokers. The key slogan, "Reach for a Lucky instead of a sweet," made Lucky Strike the best-selling cigarette brand in the country. Lasker remained ad executive until 1942, at that point having made more money in advertising than anyone else in the industry's history. However, after three nervous breakdowns from stress, he abruptly left business and, with the encouragement of his third wife, Mary, turned to philanthropy. Together, the Laskers set up the Lasker Foundation, which supported medical research and advocacy for a variety of diseases—some of which championed an antismoking stance in an effort to curb cancer. Albert died in 1952. Mary, who helped bolster the American Cancer Society by raising one million dollars for their research program in 1946, lived until 1994. The Lasker Foundation remains in the forefront of efforts to raise medical public awareness and the Lasker Award is one of the most coveted in the medical science arena.

▮ DONALD LOWE



ubiquitous being everywhere; commonplace; widespread.

Early television programming was replete with both tobacco advertising and consumption. In 1951, Philip Morris sponsored the most popular comedy show of all time, *I Love Lucy*, whose protagonists smoked frequently. One of the most respected American journalists, Edward R. Murrow, interviewed world leaders through a haze of tobacco smoke. By the early 1960s, the epitome of sophisticated cool in the entertainment world was the so-called Rat Pack, led by singers Frank Sinatra, Dean Martin, and Sammy Davis Jr., who drank, wenched, and partied in Las Vegas shows, Hollywood films, and television series accompanied by the **ubiquitous** cigarette.

Fine arts promotion remains a strong component of tobacco advertising. In the 1980s, Brown & Williamson promoted its youth-oriented Kool brand by offering a series of concerts, called The Kool Super Nights, at American military bases. The epitome of the elitist association between arts and cigarettes would have to be the activities of George Weissman. Soon after he retired as the chief executive officer of Philip Morris, Weissman was elected chairman of the board of New York's Lincoln Center for the Performing Arts, one of the most prestigious of American cultural institutions. In February 1987, Lincoln Center hosted the Marlboro Country Music Festival, complete with a huge banner with the red and white logo of Marlboro, the brand's typeface, and a medical warning in the corner adorning the building. Philip Morris also sponsored an art exhibit titled *Treasures of the Vatican*, and a photograph of former first lady Nancy Reagan, Terence Cardinal Cooke, the Metropolitan Museum's director, Philippe de Montebello, and George Weissman subsequently adorned the pages of the *U.S. Tobacco and Candy Journal*.

Sports Promotion

The promotion of sporting events has a venerable history for the tobacco industry, and can have a number of spin-off results that circumvent legislation such as advertising bans. In the late nineteenth century, Duke of Durham's marketing director, Edward F. Small, noted the national craze for roller skating, and convinced Duke to sponsor a touring team, called the Cross Cuts, after one of the company's newer brands. The roller skating events, which attracted thousands of spectators, provided the company with conveniently captive audiences to paper with advertisements for the new cigarettes. During the 1930s, print advertisements for Lucky Strike and other cigarettes used sports endorsements from athletes such as long-distance runners proclaiming that their product "did not get your wind" (although, of course, such references to health concerns made implicit admissions that other cigarettes did indeed affect breathing). In 1932, Turrett brand, geared toward a working-class clientele, held one of the most popular and characteristically Canadian contests—the hockey pool—offering cash to those who accurately estimated the numbers of goals scored in the National Hockey League. Sweet Caporal also sponsored early Canadian football radio broadcasts, including the national championship, the Grey Cup, during the 1930s. A variation on the hockey pool was the Camel Scoreboard; in 1981, R.J. Reynolds published weekly team rankings of a number of sports in newspapers. So popular was this pseudo-news contribution that Philip Morris later introduced the Marlboro Sports Calendar.



A key marketing strategy of tobacco companies is to give away free merchandise, often at concerts and cultural events sponsored by the tobacco industry. This boy in Senegal wears a hat advertising L&M, a brand of the U.S.-based multinational tobacco company Philip Morris. PHOTO BY ANNA WHITE

By the 1980s, the tobacco companies' reliance upon sports promotion was in full swing, particularly since it was an effective way to circumvent bans on television advertising. While American manufacturers had agreed not to use sports stars in celebrity endorsements of their products, the stars' equipment, cars, and clothing (as well as scoreboards, fences, and grandstands) were plastered with the names and logos of the tobacco brands. When these events were televised, the logos reached millions of viewers of all ages, during broadcasts and re-broadcasts.

The industry particularly favored motor sports, skiing, tennis, and golf. In the 2000s, RJR Nabisco (successor to R.J. Reynolds) sponsors many motor sports, ranging from stock cars to motorcycles. The most prestigious of these is the NASCAR circuit, whose glittering prize is the Winston Cup. U.S. Tobacco featured its own Skoal Bandit race car, also on the NASCAR circuit, named for a brand of chewing tobacco, and prior to the voluntary ban on celebrity endorsements, Skoal Bandit race driver Chuck Brown toured shopping malls and fairs throughout the United States signing autographs while samples of Skoal were distributed.

In Europe during the 1970s, Philip Morris expanded the market for Marlboro through its support of Formula I auto racing. The Marlboro name, logo, and colors were plastered on cars, racers' jackets, and signs at the tracks. By the mid-1970s, the Marlboro brand enjoyed one-quarter of Italy's cigarette market and had made significant inroads in the German and French markets. Camel sponsored soccer's World Cup in Mexico City in 1986, in conjunction with its inroads in South America.

Tennis and golf are other favorite sports for the tobacco companies, since they share an elite image. Nabisco sponsors the Nabisco Grand Prix of tennis, while du Maurier has been an important backer of Canadian golf. In 1994, when Du Maurier held its Classic golf tournament in Ottawa, every municipal politician was given free passes to the event. The Canadian industry suffered a setback in 1983 when health groups, forming the Coalition of Health Interests, organized opposition to RJR-MacDonald's Export A's sponsorship of amateur ski events. Dr. Andrew Pipe, a member of the Canadian Ski Association's medical committee, was one of the critics of the industry's involvement, and Pipe later formed Physicians for a Smoke-Free Canada, one of the leading voices of the antismoking cause. After Olympic skiing stars Ken Read and Steve Podborski supported the opposition by refusing to accept the Export A cup, Canadian sports minister Otto Jelinek announced that amateur sports organizations that accepted tobacco sponsorships in the future would not receive federal funding.

Targeting Children and Teenagers

Early antitobacco groups were concerned about children smoking and the reasons for it, many of which bear resonance in the 2000s. The Children's Act of 1908 recognized the decades-long crusade of the British Anti-Tobacco Society by making it illegal to sell tobacco to minors less than sixteen years of age. The nineteenth-century antismoking crusaders noted that children smoked to emulate adult male behavior. In the tracts produced by the Anti-Tobacco Society, children were assured that famous athletes, soldiers, and professionals did not smoke, and the founder of the Boy Scouts movement, Lord Baden-Powell, lectured that smokers were unmanly. Nevertheless, such pronouncements did not make much of a dent among the urban, working-class youth for whom smoking soon became part of the lifestyle.



snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

In North America in the post–World War II era, the cigarette industry began targeting young people. By the 1950s, **snuff** and chewing tobacco were handed out to adolescents at rodeos and other sports events, and endorsed by sports celebrities admired by young boys. U.S. Tobacco created a driver's education film for fifteen- and sixteen-year-olds, which was shown in high schools. Starring a shill for U.S. Tobacco, race car driver Harry Gant, the film displayed Gant's Skoal Bandit race car while he lectured the audience on driver safety. The target audience was not limited to fifteen-year-olds, however. U.S. Tobacco sold toy cars with the words Skoal Bandit, and caps, emblazoned with the company's logos, were available in children's sizes. Even younger children were targeted in the 1950s by Brown & Williamson with the cartoon character of Willie, the KOOL penguin. The mascot for Kool cigarettes, Willie's image appeared on posters and

salt and pepper shakers. From 1951 to 1952, Willie the Penguin appeared in his own comic book. In 1991 Brown & Williamson attempted to resurrect a new, hipper version of Willie complete with punk haircut and sunglasses.

In 1987, RJR Nabisco test-marketed a new cigarette called Magna, whose chrome and cherry-red design resembled a flashy car, which was geared to a younger male audience. The most aggressive youth marketing, however, would be Reynolds' promotion of Camel cigarettes through the character of Joe Camel. Old Joe's visage was plastered on youth-oriented products such as T-shirts, posters, mugs, knapsacks, and beach sandals, which could be purchased with C-Notes—coupons redeemable from empty packages of Camels.

Auto races and other dangerous sports are popular among young working-class males, a disproportionate number of whom will become smokers. At the same time, since the dangers of smoking have become widely known after the 1960s, the companies have replaced their own denials of these dangers with the acceptance of smoking within the constellation of risk-taking behaviors. In other words, smoking may be dangerous, but so are auto racing, snowboarding, and other activities favored by teenagers, who have a keen (albeit mistaken) sense of their personal immortality. Cigarettes therefore are marketed as dangerously cool.

In Canada, the federal government began targeting marketing activities directed toward children and youth in the 1980s. In 1984, Health Minister Jake Epp asked Imperial Tobacco to remove advertisements from Canada's Wonderland, an amusement park. Two years later, Epp's department also was instrumental in RJR-McDonald's abandonment of a new brand, Tempo, which featured youthful models wearing "cool" clothing. When Canada's Tobacco Act of 1997 banned arts and sports sponsorship except the use of the corporate name, many tobacco companies created new names, such as Player's Ltd., Du Maurier Ltd., and Rothman's Ltd. as shell corporations so that the brand name could still be used in signage and programs. An amendment to the Tobacco Act in 1998 attempted to close this loophole by banning tobacco manufacturers from displaying a brand name on a permanent sports or cultural facility. France has passed similar bans on tobacco sponsorships, and other members of the European Union have until 2005 to comply.

Targeting Women

The group with which the tobacco companies made the greatest inroads in the twentieth century was women, and the arguments they used with such success to entice women to smoke were twofold: that smoking equalled liberation, and that smoking aided weight loss. Both of these arguments can be traced to the 1920s, and the superb marketing partnership of American Tobacco's George Washington Hill and his advertising guru, Edward Bernays. In 1929, Bernays, a nephew of Sigmund Freud and early proponent of the psychological bases of advertising, initiated a campaign to encourage women to believe that cigarettes were "torches of freedom." He organized a well-publicized Freedom March on Easter Sunday on New York's Fifth Avenue; debutantes and noted feminists smoked ostentatiously as the cameras clicked, and reports of the event were printed as news items. Similarly, when

Hill encouraged women to "Smoke a Lucky instead of a sweet," he was pandering to the 1920s fashions of short skirts and slim figures.

Not all of Hill's ventures were so successful. When surveys showed that women did not like Lucky Strike's green packaging, he attempted to change the women, rather than the package, by publishing fashion "reports" that green was the color of the day, and psychological "studies" that green conferred mental health. Yet women would not be swayed, and Luckies eventually were repackaged. Canadian advertisements featuring women smokers appeared in 1927, and retailers reported that women no longer preferred perfumed brands but regular masculine brands. Tobacco products directed toward women included brands with red or "rouge" tips and flowery designs.

As the ideal fashion profile became slimmer, so did the cigarettes. Canadian brands such as Matinee Slims and Contessa Slims, geared toward the "modern" woman who used cigarettes as a meal replacement, copied the great leader, Virginia Slims, whose clever ads and slogan, "You've come a long way, baby," represented smoking as both the culmination of a century of struggle for women's liberation, and the means to get the figure to wear elite fashions. The Virginia Slims logo graced a number of marketing giveaways, such as the Book of Days, an appointment diary chronicling women's advancements. Its most prestigious venture was the Virginia Slims women's professional tennis circuit. Fronted by international tennis champion Billie Jean King, the tournaments brought women's sports to the forefront while the athletes wore snappy costumes modeled after the cigarette packages. In Canada, the Du Maurier Women's Golf Classic associated smoking with an upscale event, a situation noted by Physicians for a Smoke-Free Canada, who employed guerrilla tactics in 1995 by plastering "Cigarettes kill women" posters on the route to the tournament. Following the ban on advertising, the Matinee Ltd. Fashion Foundation established awards for young Canadian designers, neatly incorporating the female and the hungry, publishing not advertisements but "award winners" with the company logo.

As the tobacco companies absorb or are absorbed by other corporate giants, marketing can be subtle and indirect. For instance, Amer Group PLC, a Finnish company which is licensed to sell Marlboro and L&M brands in Finland, Sweden, Estonia, and Russia, also owns Wilson Sporting Goods and Atomic and Oxygen ski equipment. Wilson Sporting Goods is a corporate sponsor of the Breast Cancer Research Foundation, even though it sells a leading carcinogenic agent to the public. Compagnie Financiere Richemont AG of South Africa, which controls British American Tobacco (BAT), owner of Rothmans brand, has a constellation of luxury consumer brands, such as Cartier, Piaget, and Baume & Mercier watches, and Chloe fashions, as well as Europe's largest pay-television network. Japan Tobacco Inc., which bought the international tobacco operations of RJR Nabisco, also owns the Japanese Burger King restaurants chain. Japan Tobacco's Mild Seven brand sponsors auto racing in that country. With such globally interlocking holdings, it will be increasingly challenging for public health regulators to control marketing initiatives.

See Also Advertising; Sponsorship.

CHERYL KRASNICK WARSH

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Marlboro

"Mild as May." This was how the Marlboro cigarette was advertised shortly after its introduction in 1925. Originally a premium-priced, unfiltered product aimed primarily at women at a time when cigarette brands were not typically marketed to women, Marlboro sold, on average, roughly 250 million cigarettes a year for nearly thirty years before undergoing a sex change in one of the greatest marketing successes of the twentieth century. At the same time, Marlboro's success propelled Philip Morris (PM) from a relatively minor American producer to the largest cigarette manufacturer in the world.

Following the 1952 publication of Roy Norr's article "Cancer by the Carton" in *Readers Digest*, filtered cigarettes began increasing in popularity.



"Up in Smoke" cigarette advertisement exhibit in New York City featuring ads praising and attacking cigarette smoking opposite each other in the same room, 2000. © SCOTT HOUSTON/CORBIS SYGMA

merchandising a serious sales effort that typically includes aggressive advertising and promotion.

Slowly at first, but then with increasing speed, the sales of filtered brands increased to roughly 50 percent of the American market by 1960. Sensing an opportunity, PM began developing a filtered cigarette, creating a new blend, and securing the American rights to a new kind of packaging, the flip-top box. Then, to complete the picture, the company designed a new advertising campaign for the introduction of the new Marlboro in 1955, and the old-style cigarette was discontinued.

To counteract the then-current view that filtered cigarettes were somewhat effeminate, PM's advertising campaign was designed to create a macho image for the new cigarette. Although several masculine images, such as that of the outdoorsman and the navy officer, were used initially, it was the cowboy who proved the most effective marketing image, and therefore he quickly became the centerpiece of Marlboro's marketing and **merchandising** campaign. Beginning with probably the most complete product image change ever, Marlboro's campaign became arguably the most successful of all time. So consistently was the message delivered, and for so many years, that, by the 1990s, a picture of the western desert landscape was all that was necessary to evoke images of Marlboro Country.

By the early 1960s, PM had begun marketing Marlboro outside the United States. The company sometimes did this in partnership with local investors rather than exporting cigarettes from the United States. Blends were adjusted to suit local tastes, and international sales began growing. Within a few years, Marlboro became the largest-selling cigarette in the world, although, from 1972 until 1975, it was the second-largest seller in its home market, just behind Winston cigarettes.

PM's consistent marketing campaign for Marlboro paid off in the early 1970s after Congress banned cigarette advertising on all

broadcast media. Marlboro Country made the transition from broadcast to print far better than the Winston jingles. In short order, producing roughly 150 billion cigarettes annually, Marlboro surpassed Winston in domestic sales, capturing 26 percent of the American market in 1975. PM began challenging British American Tobacco as the largest cigarette manufacturer in the world.

Even as American sales began slowly to decline, PM continued to grow, largely because of Marlboro's international sales. At home, as retail prices increased, lower-priced generic cigarettes began eroding the sales of PM's flagship brand, leading to PM's unprecedented decision to lower wholesale prices on its premium brands by $4.50 per carton on April 2, 1993. Nonetheless, PM remains the world's largest cigarette manufacturer, largely due to Marlboro's international sales. The Marlboro cowboy and the inverted red "v" package are recognized worldwide as symbols of this American brand.✦

✦ *See "Developing Countries" for a photograph depicting today's global reach of Marlboro cigarettes.*

See Also Camel; Cigarettes; Gitanes/Gauloises; Lucky Strike; Philip Morris; Virginia Slims.

JOSEPH PARKER

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Mayas

The area occupied by the Mayas before the Spanish Conquest of the sixteenth century included most of present Guatemala, all of Belize, a portion of El Salvador, and Honduras, the Mexican states of Yucatán, Campeche, and Chiapas as well as the territory of Quintana Roo. Mayan peoples, who in ancient times developed one of the most advanced aboriginal civilizations in the New World, are still alive; almost two million Indians of the Maya linguistic stock inhabit Central America.

Mayan arts and science reached their astonishing heights during the span of the Classic epoch, which began during the third century C.E. and ended at the turn of the ninth century. This period was followed by a cultural decline that was sudden in some areas and gradual in others. The arriving Spaniards found the Mayas to be ardent tobacco smokers, using the herb and engaging in a habit previously unknown to the Western world. According to ethnological and archaeological evidence, this custom not only was a social pastime, as it is today, but it also had significant religious and mythological implications; it deeply penetrated Mayan folklore and heavily influenced art.



The old God L smoking a large cigar. Door jamb, Temple of the Cross, Palenque. Chiapas, Mexico. FRANCIS ROBICSEK, MD PHD

The Habit of Tobacco Smoking

Among the Maya, the habit of tobacco smoking probably developed from the custom of incense burning during religious and secular ceremonial rites. In feeding the fire, the shamans used dry twigs, resins, and leaves of aromatic plants including tobacco, which in its wild state often attained a remarkable luxuriance of growth. While thus engaged, the acolytes would blow on the embers and inhale the smoke, experiencing the pleasing effects of the herb. It may have been from this primitive form of "smoke sniffing" that the three principal ways of smoking tobacco—in pipes, cigars, and cigarettes—evolved.

According to ethnological and historical data, tobacco smoking played an important role in the ancient religion, folklore, and healing of the Mayas. In describing their ceremonies, several contemporary observers attributed narcotic and hallucinogenic effects to tobacco.

Why did *Nicotiana tabacum*, an herb consumed without such effects by millions, produce those effects in some regions? The question could be answered in one of the following ways: (1) the Mayas smoked a different, more potent tobacco; (2) they smoked *tabacum* in very large quantities; (3) the Maya shamans used nonpharmacological means, such as reverberation, chants, dancing, and different forms of music, to induce trancelike states; or (4) on some occasions they consumed herbs with hallucinogenic properties simultaneously with or instead of tobacco.

Role of Tobacco

The importance of tobacco in Mayan culture is evidenced by its appearance in surviving sacred texts. For instance, it figures in the *Popol Vuh*, a book of the Quiché (a Mayan group native to the midwestern highlands of Guatemala), which recounts the origins of humankind, the actions of gods, and Quiché history through 1550. In one episode, two heroes undergo an ordeal in which they must spend the night in a cave in total darkness and keep their cigars lit. Instead, the men put out their cigars, but they mount fireflies on the cigar ends so as to fool the beings of the underworld (who are testing them) into thinking the cigars remained lit. The following morning the heroes relight their cigars and come out of the cave victorious.

Scenes pictured in the codices (manuscript books), carved on stone monuments, and portrayed on ceramics appear to depict smoking. Scenes in the *Madrid Codex* (an illustrated glyphic book probably dating from the late pre-Conquest period) almost certainly portray figures smoking objects resembling cigars or cigarettes. Similar representations decorate the tablets of city ruins in Palenque (north of Chiapas), ceramic vases, plates, and shell carvings. Scenes that probably portray smoking, but without representing the smoke, are also seen on vases and ceramic sculptures. Objects that could be large cigars, either held in the hands of figures or interspersed in the composition, are portrayed on many of the artifacts. The Flare Gods—supernatural figures with smoking cigars stuck through their foreheads—are depicted on many vases, plates, and other artifacts.

The objects the Mayas appear to have smoked, as represented surviving artifacts, can be divided by size into cigars and cigarettes. Large, flarelike objects held in the hands may be very large cigars. There are also distinct categories in the style in which the smoke is portrayed. In some cases (where the color is determinable) the cigarettes are painted white, giving the impression that the Mayas either wrapped their tobacco in some other substance, like cornhusks, in much the same manner that cigarettes are wrapped nowadays, or applied some coating, such as lime, to the tobacco.

Performed by persons of apparently high rank, smoking in the time of the ancient Mayas was probably an activity of considerable importance rather than just a pleasurable act. Examples of Mayan art



Ceramic vase probably from the Usumacinta region in Guatamala. It shows a seated lord smoking a cigarette. FRANCIS ROBICSEK, MD PHD

and other archaeological artifacts prove that tobacco and the act of smoking had deep religious meaning in the life of the ancient Mayas. Possibly the use of tobacco was at first only esoteric, confined to shamans, priests, and medicine men. Only later, through migrations, the interchange of tribal customs, the abundance of tobacco in some areas, the ease by which the practice of smoking was acquired, and European influence, did the plant pass from its sacerdotal exclusiveness to general use.

The possibility that smoking for pleasure was also a widespread custom among the ancient Maya population can be neither proved nor disproved. The lives of ordinary people were simply not considered important enough to record and preserve for posterity.

See also Shamanism.

FRANCIS ROBICSEK

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Medical Evidence (Cause and Effect)

In the twentieth century, scientific debate over the link between tobacco use and disease has been influential in shaping modern thinking about medical evidence. The centrality of tobacco use in bringing about this transformation is intimately associated with the major shift in patterns of disease and death during this time. At the beginning of the twentieth century, the major cause of disease and death was infectious disease (disease caused by exposure to a particular infecting agent or germ, such as tuberculosis or cholera); at the beginning of the twenty-first century, the major cause of disease and death was chronic disease (disease associated with prolonged exposure to multiple factors and often the result of lifestyle choices on the part of individuals, such as cancer). Historically, these different classes of disease, infectious and chronic, have been investigated using different forms of scientific evidence.

At the end of the nineteenth century, the requirements of what constituted legitimate medical evidence for a cause-and-effect relationship were clearly articulated in a series of famous postulates developed by the German bacteriologist Robert Koch. According to Koch, a particular organism or germ could be regarded as the cause of a particular disease provided that: (1) the organism could be discovered in every instance of the disease; (2) the organism could be isolated from the infected body and be reproduced in a pure culture in a laboratory setting; and (3) the reproduced organism could produce the disease anew when administered to laboratory animals. Central to Koch's view of medical evidence was a specific cause-and-effect relationship—that is, a specific cause always (and unambiguously) produced a specific effect.

About a quarter of a century after Koch had stated his views on causation, an alternative view of causation was developed by Karl Pearson, a professor at University College London and a pioneer in mathematical statistics. For Pearson, scientific reasoning in all fields consisted of nothing but the association of antecedents and consequents, which meant that correlation (the degree of association between two series of events) was seen as a much more fundamental organizing construct for scientific inquiry than specific causation. Implicit in Pearson's view of science was a critique of the notion that one could locate the one cause of any

outcome; rather, one could only determine the likelihood of events based on the degree of association that been observed in the past. The implications of Pearson's ideas for medical evidence would be realized by the pioneering biostatistician Sir Austin Bradford Hill, an individual who learned statistical methods from Pearson while a student at University College.

Causation and Mid-Twentieth-Century Epidemiology



epidemiological pertaining to epidemiology, that is, to seeking the causes of disease.

At the end of World War II, Austin Bradford Hill became the head of the Statistical Research Unit of the Medical Research Council in Great Britain. In 1951, Hill and his associate Sir Richard Doll launched a prospective **epidemiological** study to try to determine whether there was a relationship between cigarette smoking and lung cancer. Earlier epidemiological studies (that is, studies of the incidence level of disease within populations) indicated that cigarette smokers were at a higher risk of contracting lung cancer than nonsmokers; however, these studies were retrospective in nature—that is, individuals were interviewed about their smoking habits after they had already developed cancer. By contrast, Hill and Doll's study was prospective in nature because it studied a population before members of that population showed signs of cancer. In the study, Hill and Doll sent questionnaires to all British physicians inquiring about their smoking habits. When individuals who responded to their survey died, Hill and Doll obtained data about their cause of death and tried to determine statistically whether there was an association between individuals who smoked and those who died of lung cancer. At about the same time, E. Cuyler Hammond was conducting a similar prospective study in the United States with the support of the American Cancer Society. By 1954, both studies yielded results consistent with the retrospective studies: Cigarette smoking increased one's risk of contracting cancer.

The potential problem with such studies—from the standpoint of Koch's postulates—was that epidemiological surveys only demonstrated the characteristics of individuals that were either at high or low risk of contracting a disease; they offered only probabilities rather than the one-to-one correspondence between infecting germ and disease appearance that Koch's postulates prescribed. These potential weaknesses of proving cause and effect through studying populations were clearly articulated by various researchers in the 1950s. For example, Wilhelm Hueper, a pioneer in the study of occupational diseases and head of the Environmental Cancer section at the National Cancer Institute from 1948 to 1964, criticized population-based studies because of the tendency for over-rapid generalization of results (that is, conclusions based on particular populations were said to be applicable to the population of an entire nation) and the lack of concrete evidence from animal experimentation to back up these epidemiological findings.

In 1955, Joseph Berkson similarly raised the issue of sampling bias—that is, spurious associations may be found if the evidence did not accurately reflect the characteristics of the population in question. At the end of the decade, Jacob Yerushalmy and Carroll E. Palmer pointed out the difficulty of adequately controlling for all relevant factors when drawing comparisons in human populations. As they observed, "The possibility always exists, therefore, that such associations . . . may . . . Be due to factors other than those under study" (Yerushalmy and Palmer 1959).



An item from New York's "Up in Smoke" exhibit features an antismoking ad stressing the damage tobacco causes in the heart and lungs. © SCOTT HOUSTON/ CORBIS SYGMA

In response to these perceived inadequacies, researchers on both sides of the Atlantic articulated causality criteria for epidemiological studies that could serve as the chronic disease analogue to Koch's famous postulates for establishing causality in infectious disease. As a "first approach" for determining the factors that caused chronic disease, Yerushalmy and Palmer suggested: (1) "The suspected characteristic must be found more frequently in persons with the disease in question than in persons without the disease"; (2) "Persons possessing the characteristic must develop the disease more frequently than do persons not possessing the characteristic"; and (3) "An observed association between a characteristic and a disease must be tested for validity by investigating the relationship between the characteristic and other diseases and, if possible, the relationship of similar or related characteristics to the disease in question" (Yerushalmy and Palmer). More detailed criteria were invoked in the 1964 report of the United States Surgeon General, *Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health Service*, which posited a link between cigarette smoking and lung cancer.

In 1965, Hill outlined a list of criteria by which one could determine whether an association between two phenomena could be construed as implying an underlying causal relationship. These criteria were:

- Strength of association
- The consistency with which the association is observed across different studies

- The specificity of the association (Is the exposure associated with a single disease or with lots of diseases?)
- Temporality (Do the events always occur in the same order?)
- Biological gradient (Is there a clearly delineated dose-response relationship?)
- Plausibility of the causal relationship based on the most up-to-date biological knowledge
- Coherence of the purported causal relationship with other known facts and biology of the disease
- Experimental evidence, when available
- Analogy between the purported causal relationship and similar biological events that have already been shown to be causally related.

To illustrate how these criteria were used in biomedical research practice, Hill discussed the epidemiological findings on the relationship between cigarette smoking and lung cancer in a 1965 lecture, "The Environment and Disease: Association or Causation?" He noted that the twenty-nine retrospective and seven prospective studies used in the U.S. Surgeon General's Report had shown consistent results of the smoking/cancer connection and that the death rate from lung cancer and the number of cigarettes smoking daily was positively related. He quoted from the Surgeon General's report, which had found that "in the discussion of lung cancer . . . its association with cigarette smoking [is] coherent with the temporal rise . . . in the two variables over the last generation." In short, the mid-twentieth-century research on the relationship between smoking and lung cancer proved to be seminal in leading to the development of what came to be called the "Bradford Hill criteria"—one of the most influential and widely used in the 2000s.

The Debate about Secondhand Smoke in the 1990s

Throughout much of the twentieth century, the debate about the health risks from tobacco had been posed in individualistic terms. In other words, what were the health risks posed to particular individuals who elected to consume tobacco products? By the 1990s, however, the issue of health risks came to be framed more in terms of the health risks to society as a whole raised by the presence of secondhand smoke—smoke released into the environment when cigarette smokers exhaled. Central to the ensuing discussion was a 1992 report from the Environmental Protection Agency (EPA), which concluded that secondhand smoke caused lung cancer in adult nonsmokers and that it also impaired the respiratory health of children. In reaching its conclusion, the EPA invoked criteria similar to those articulated by Hill, such as biological plausibility, supporting evidence from animal experiments, consistency of response, and the strong association for the highest exposure groups. The EPA declared that "the widespread exposure to environmental tobacco smoke (ETS) in the United States presents a serious and substantial public health impact" (EPA 1992).

Although the Environmental Protection Agency made no specific public policy recommendations, the implications of its findings were

abundantly clear, namely, the exposure of the public to secondhand smoke should be significantly reduced, primarily through regulation of how and where people could smoke. Such potential restrictions on one's "right" to smoke soon became the focal point of lobbying efforts by the tobacco industry, primarily by claiming that the EPA's conclusions were based on unsound science. In a media campaign, the tobacco industry asserted that the EPA had manipulated its data to reach a predetermined conclusion rather than relying on objective scientific evidence. This charge (that the EPA's study lacked scientific foundation) was developed in the 1999 book *Passive Smoke: The EPA's Betrayal of Science and Policy* by Gio B. Gori and John C. Luik, two researchers with various ties to the tobacco industry. Emphasizing "testability" as the key criterion needed to make a conclusion scientific, Gori and Luik pointed out how the presence of multiple causal factors in epidemiology made the prospect of an unambiguous test virtually impossible. Furthermore, they noted that one of the study's key techniques—the use of "meta-analysis," which combined disparate epidemiological reports into a single risk assessment—meant that the groups under study were not truly comparable; they argued that this could further compound the bias of the results. The virulence of the tobacco industry's lobbying caused the EPA to issue a brief second report to "set the record straight about an indisputable fact: Secondhand smoke is a real and preventable health risk" (EPA 1994).

As the exchange between the tobacco industry and the EPA illustrates, the health risks posed by tobacco pit two societal norms against one another; namely, the individual's right to self-determination (a main argument of the tobacco industry and smokers) against the role of the state in protecting the health of its citizens (the view espoused by various government reports in the second half of the twentieth century). These debates turn centrally on the credibility of medical evidence. When the primary cause of disease was a single infecting agent, the policy implications of the scientific findings were relatively clear (that is, remove the presence of the infecting agent). However, in an era where the nature of disease requires that medical evidence confront multiple causal factors, the policy implications of scientific findings can become much more contentious.

See Also Doctors; Lung Cancer; Secondhand Smoke.

▮ J. ROSSER MATTHEWS

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Menthol Cigarettes

menthol a form of alcohol that imparts a minty flavor to some cigarettes.

tar a residue of tobacco smoke, composed of many chemical substances that are collectively known by this term.

The first **menthol** cigarettes were developed by accident. In the 1920s a young man named Lloyd "Spud" Hughes had been treating his cold symptoms with menthol and happened to store the menthol crystals in the same tin with his smoking tobacco. This resulted in a cigarette that seemed less irritating. He went on to produce the first menthol cigarette brand in 1926, named Spuds. Competing brands were introduced in the 1930s, most notably the brand Kool, which was easily identifiable by its famous penguin marketing character. These early so-called menthol-cooled cigarettes were positioned as specialty products, offering medicinal throat comfort for smokers with colds or as an occasional-use alternative ("In between the others, rest your throat with Kools"). However, menthol brands remained an insignificant player in the overall cigarette market until the introduction of filtered cigarettes in the 1950s.

In 1955, Salem—a filtered, less heavily mentholated brand—was developed and marketed as a refreshing everyday cigarette and showed particular success among women smokers. This marked a major shift in the positioning of menthol brands as more than simply medicinal alternatives. At around the same time, growing public concern over health risks led to market-wide reductions in cigarette **tar** and nicotine deliveries, and menthol brands were repositioned to the new segment of low tar smokers, achieving dramatic sales growth. Although easier to

smoke, these menthol brands were no lower in tar delivery than nonmenthol cigarettes.

In the 1960s menthol brand marketing in the United States began to target the African American consumer market, possibly responding to cultural beliefs regarding the health-enhancing effects of menthol, and in the following decades menthol cigarettes became increasingly identified with the urban African American community. As of 2001, menthol cigarettes made up approximately 26 percent of the total U.S. cigarette market but had been adopted by 70 percent of African American smokers ("First Conference"). The popularity of menthol cigarettes internationally varies, but in some countries, such as the Philippines, Hong Kong, and Cameroon, menthol cigarettes are used by a majority of smokers.

The primary component of a menthol cigarette is tobacco. Menthol is added to commercial menthol cigarettes at less than 1 percent by tobacco weight. Nonetheless, menthol cigarettes are perceived differently from regular cigarettes, are advertised differently, are smoked differently, and demonstrate unique **physiological** and respiratory effects. Menthol stimulates cold receptors, resulting in a sensation of coolness not only in the mouth and throat but also the lungs. It increases the sensation of free breathing when airways are constricted (as demonstrated by menthol lozenges) and significantly increases involuntary breath holding, which may lead to greater uptake of smoke in the lung.



physiology the study of the functions and processes of the body.

Menthol may also affect drug absorption and metabolism of nicotine and other constituents in tobacco smoke. Studies of smoker perception have found that menthol cigarettes are perceived as less harsh, easier to inhale, and easier to inhale more deeply. These changes in perception may correspond to important differences in measured smoke inhalation patterns (such as puff volume and duration) for smokers of menthol cigarettes, although research to date is inconclusive. Menthol is the only aspect of cigarette design that is explicitly marketed today based on the physiological effects of being cooler and less irritating.

Whether menthol cigarettes differ from regular cigarettes in terms of health, addiction, or related effects is a critical research question that has only recently been raised. In the United States this question is of particular importance with regard to explaining known health disparities among Caucasian and African American smokers. Although African Americans tend to smoke fewer cigarettes per day, the burden of lung cancer and other smoking-related diseases is much higher among African Americans. Whether differences in menthol cigarette use between these groups contribute to this disparity has yet to be answered.

See Also Cigarettes; Ethnicity; "Light" and Filtered Cigarettes; Toxins.

GEOFFREY FERRIS WAYNE

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Mercantilism

See British Empire; Dutch Empire; French Empire; Retailing; Spanish Empire; Trade.



Mexico

Tobacco possesses a long and enduring significance in Mexico's culture, society, and economy. Its popularity in Mesoamerican precolombian cultures quickly spread among Spanish settlers in the sixteenth and seventeenth centuries. The Spanish monarchy targeted tobacco as a major source of public revenue and reorganized the tobacco industry in Mexico as a royal monopoly. Post-independence governments in Mexico also attempted to retain monopoly control of the industry. Improvements in the quality of tobacco leaf in the late nineteenth century, mechanization, and investment of foreign capital resulted in a **diversification** of production which targeted export markets as well as domestic markets.



diversification in agriculture, to avoid overdependence upon one crop by producing several different crops.

Pre-Columbian Mexico

In pre-Columbian Mexico, the Aztec, Maya, and other indigenous groups cultivated tobacco and consumed it in various ways and for a variety of purposes. Indigenous peoples smoked tobacco as primitive cigars and cigarettes (crushed tobacco leaves rolled in a wrapper of corn husk or bark cloth, or stuffed into hollow reeds or canes) and in tubular pipes (pottery and stone). Tobacco was inhaled in the form of powdered tobacco and also ingested through chewing, licking, and drinking tobacco juice. The use of pipes appears to have been the prerogative of lords, nobles, and priests, and indicative of social status. Tobacco was used as offerings to the gods, for medicinal purposes, and as protection against witchcraft and wild animals. Tobacco has retained its cultural importance among indigenous groups in contemporary Mexico and serves a fundamental role in both private and community rituals and ceremonies.

Colonial Mexico (1521–1821)

Spanish conquistadors rapidly adopted the use of tobacco as did other colonists in the New World. The Spanish, Portuguese, Dutch, and English soon exported tobacco to Europe. Scholars do not fully understand the structure of tobacco production and trade in the first two-and-a-half centuries of Spanish rule in Mexico (1521–1765). What historians do know is that cultivation of the leaf was widely dispersed throughout colonial Mexico. Prosperous Spanish planters as well as poorer farmers and Indian peasants cultivated tobacco. The manufacture and sale of cigars and cigarettes was carried out by small shopkeepers, and artisans and their families.



Workers take a break from building a house in the tarahumara community of Basigochic in the Copper Canyon region of Mexico, c. 1998. © NATALIE FOBES/CORBIS

The major development of the tobacco trade in colonial Mexico occurred in 1765 when Spain implemented a state monopoly as part of a broader series of reforms designed to produce increased revenues from its American colonies. Between 1717 and 1783 state monopolies of the tobacco trade were implemented in all of Spain's American colonies although the degree of control varied. Only in the case of Mexico and the Philippines did the colonial Spanish government take over all aspects of the domestic tobacco trade, from cultivation of leaf, manufacture of cigars and cigarettes, and distribution through government-licensed stores. Private trading, manufacture, and cultivation of leaf tobacco became punishable offenses. A military corps employed by the monopoly administration enforced compliance with monopoly regulations but **contraband trade** was never eliminated. By the 1790s the tobacco monopoly was one of the largest organized industries in colonial Mexico and employed more than 20,000 individuals. In fiscal terms, tobacco revenues ranked second after the silver tax as the most valuable source of government revenue from Mexico.

contraband trade trafficking in a banned or outlawed commodity. Smuggling.

The reorganization of the tobacco trade by the state monopoly resulted in the restriction of tobacco cultivation to small areas in Veracruz and Yucatén. Supply of tobacco leaf was regulated through a series of contracts that stipulated amounts of tobacco to be produced, grades, purchase prices, and credit advances. With the exception of the designated production zones, the cultivation of tobacco as a commercial crop was prohibited to peasants and large landowners alike throughout Mexico. During the colonial period Mexican tobacco could not compete

with finer tobaccos from Venezuela, Cuba, and Virginia and was not exported. Tobacco cultivation as a cash crop for export would continue until the nineteenth century.

Tobacco supplied to the government monopoly was processed into cigars and cigarettes in six state-run tobacco manufactories, the largest located in Mexico City. The monopoly made it illegal to produce cigars and cigarettes outside of the authorized state manufactories. The Mexico City tobacco manufactory at its peak employed almost 9,000 workers—both men and women—an extraordinary size for a single manufactory anywhere in the world in the eighteenth century. By the 1780s, 90 percent of monopoly revenues derived from sales of cigars and cigarettes to the domestic market. Monopoly cigars and cigarettes were sold in government-licensed stores operated throughout Mexico.

Although profits from the tobacco monopoly were significant, monopoly policies focused on short-term profits and deflection of political conflict with tobacco workers and planters (particularly over prices of leaf). Over the long term, innovations that may have resulted in productivity gains and improved performance of the monopoly were sacrificed.

The Development of the Mexican Tobacco Industry, 1821–2002

After Mexico's independence from Spain in 1821, the tobacco monopoly was repeatedly abolished and reestablished, and redefined in the process. Production of leaf remained a state monopoly nationwide but each state chose whether or not to monopolize the manufacture of cigars and cigarettes. Unable to administer the monopoly directly due to lack of financial and administrative resources, the Mexican state sought help from private investors. In the 1830s new entrepreneurs assumed control of the monopoly as the state withdrew from direct management. The Empresa del Tabaco became the largest of a number of joint-stock companies to exploit exclusive rights to control the cultivation, manufacture, and marketing of tobacco products in Mexico. Despite the Empresa's attempts to modernize the tobacco industry in the 1840s their efforts were hampered by lack of capital and a national market, poor infrastructure, antiquated cultivation and processing techniques, and political and economic instability.

Major transformations in the development of the tobacco industry occurred during the regimes of Porfirio Diaz (1876–1880 and 1884–1911) facilitated by nascent industrialization, electrification, and infusions of foreign capital. Large tobacco factories were established, especially in Mexico City and Veracruz, which produced for both domestic and export markets such as England, Germany, and Russia. Key to the development of the cigarette industry was its mechanization and aggressive marketing, epitomized by such factories such as El Buen Tono. Owned by the French entrepreneur Ernesto Pugibet, El Buen Tono began operations in Mexico City in 1894.

With mechanization came the concentration of the industry and worker layoffs. Within a ten-year period, the workforce employed in cigarette factories was almost halved from an estimated 20,392 workers in 1900 to 9,604 in 1910. Increasingly, labor protests and strikes in

the tobacco industry were fueled not by arbitrary fines and dismissals or excessive demands on cigarette output, but by mechanization as cigarette companies installed Decouflé, Bonsack, Comas, and Wistone machines. Such machines revolutionized cigarette production since they could roll off much greater quantities of cigarettes per minute than was possible with manual labor. As a result cigarette production became faster and cheaper.

A consequence of Mexico's industrialization was the establishment of and **acquisition** by foreign-owned enterprises of cigarette factories and tobacco companies. International companies such as British American Tobacco (BAT) created cigarette factories in Mexico City, Irapuato, and Monterrey in 1923 and in 1925 founded the El Águila Manufacturing Company. By the beginning of the twenty-first century, although three major companies dominate the industry—Cigarrera La Moderna (Cigamod), Cigarrera La Tabacalera Mexicana (Cigatam), and La Libertad—99 percent of the national market is controlled by Cigamod and Cigatam, effectively a duopoly, owned by the transnational companies BAT and Philip Morris.

acquisition the purchase—sometimes called a merger—of a smaller company by a larger one. During the late twentieth century, major tobacco companies diversified their holdings through acquisition of non-tobacco products.

Cigar manufacturing registered much slower growth as consumer preference shifted heavily in favor of cigarettes. The majority of cigars were produced for export markets, their quality increasingly recognized by cigar aficionados. In the 1980s, cigars produced by Tabamex for both domestic and export markets received awards from London, Germany, Switzerland, Spain, and Paris.

The tobacco industry's development in the early twentieth century is demonstrated not only by increased cigarette and cigar production but also by the large volumes of tobacco leaf produced. Oaxaca and Veracruz dominated leaf production for the export market and Nayarit for the domestic market. Increasing demand for cigarettes made with blonde tobaccos stimulated experiments to produce them in Mexico as part of a broader strategy to reduce imports of cigarettes made with such tobaccos. Traditional Mexican varieties have gradually been substituted by those such as Bonanza, Orinoco, and Burley.

Nayarit's climate and soil qualities, suitable for the cultivation of blonde tobaccos, resulted in major expansion of tobacco cultivation and a shift from cotton to tobacco in its coastal regions as the most important cash crop in the state. Approximately 5,000 small farms in Nayarit produce 90 percent of the total Mexican tobacco crop. The remaining 10 percent is produced by the states of Chiapas, Jalisco, Oaxaca, and Veracruz. Mexico is currently the seventeenth largest supplier of tobacco in the world and the ninth largest supplier of Burley tobacco with markets in Japan, the United States, Portugal, Denmark, Germany, Switzerland, and Sweden.

In 1936 the El Águila Manufacturing Company formed a new entity, Tabaco en Rama S.A. (Tersa), located in Nayarit, to aid initiatives for the continued improvement and production of high-quality tobacco leaf. Increasingly disillusioned with Tersa's indifference to their demands, in 1972 tobacco producers in Nayarit, Veracruz, and Chiapas sought the intervention of the president of Mexico. Subsequent discussions resulted in the creation of Tabacos Mexicanos, S.A. (Tabamex) to replace Tersa. Tabamex effectively became a national intermediary between Mexican producers, the Mexican government, and transnational

corporations. In 1989, however, it too was replaced with a *comité Regulador* (a regulatory committee) and an Instituto de Tabaco (Institute of Tobacco). The Asociación Rural de Interés Colectivo (ARIC) was also formed with the purpose of representing tobacco producers' interests to multinational buyers.

Despite these changes, transnational tobacco companies continue to impose their own prices and conditions and handle financing of tobacco production directly through a "forward contracts" system. Within this system, farmers sign a one-year contract with a leaf dealer in return for financial support, primarily because the majority of them cannot afford to cover all production costs themselves. Conflict over prices, credit, and inputs remains an integral part of the politics of tobacco production. ARIC has become yet another focus of discontent for tobacco farmers in Nayarit with price levels and corrupt leadership emerging as central issues.

In the twenty-first century, attention has focused on the use of child labor in tobacco cultivation, especially children from indigenous communities who migrate with their parents to work on the tobacco harvest for farmers in Nayarit. In 2001, Cigamod (BAT) implemented Project Blossom designed to eventually eliminate the use of child labor.

Mexico is the fifteenth largest cigarette market in the world and cigarette sales are booming. In the face of increasing restrictions and shifting consumer attitudes toward smoking in the United States and Great Britain, Mexico is attractive to companies such as Philip Morris and BAT not only because of the size of its market but for its cheap labor, cheap supplies of tobacco, and trading privileges with the United States and the European Union. Even so, a growing antitobacco lobby and recognition of health problems caused by tobacco consumption within the medical community and the public in Mexico suggests that the transnational tobacco companies' aggressive expansion into Mexico may not go unchallenged in the future.

See Also Caribbean; Cuba; South and Central America; Spanish Empire.

SUSAN DEANS-SMITH

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Middle East

Prior to its breakup after World War I, the Ottoman Empire (1288–1918) controlled, in various degrees, the territories that today constitute most of the Middle East. A discussion of the introduction of tobacco into this area, its reception, and its early production and commerce must therefore include discussion of the Ottoman Empire. Tobacco consumption in the Middle East began in the early seventeenth century, about one hundred years after it first arrived in Europe as a novel curiosity. Upon its introduction many in the Ottoman Empire opposed the new fashion and deemed smoking a despicable social habit. Consumption of tobacco was also argued against for economic reasons because, for example, in seventeenth-century western Anatolia, tobacco cultivation as a cash crop diverted land and resources from much-needed foodstuffs. Furthermore, since smoking required the use of fire, it constituted a constant threat to city dwellers because much of the city's private and public buildings were made of wood.

In 1631 Murad IV (1612–1640) tried to curtail tobacco consumption by outlawing its cultivation, but this campaign was not effective. Therefore, in 1633 he forbade tobacco consumption outright and inflicted severe punishment on smokers. He also banned coffee and ordered the closure of all coffeehouses, where tobacco and coffee were consumed together. This ban, however, did not produce the desired results but proved that coffee and tobacco consumption were already well rooted.

The public debate over the use of tobacco was conducted in religious terms; its use was finally allowed by a **fatwa** by the chief **mufti** of Istanbul, Mehmed Baha-i Efendi, who earlier, in 1634, had been dismissed and exiled for smoking. Despite this early fatwa, smoking remained a source of much legal controversy in the region. Although tobacco consumption spread rapidly soon after its introduction into the Ottoman Empire, several generations passed before it became a legitimate social practice, and it was only in the eighteenth century that smoking became moderately respectable.



fatwa a ruling by an Islamic cleric upon a religious issue. Many Islamic clerics have declared cigarette smoking a sin and forbidden Muslims to sell cigarettes.

mufti a Muslim cleric who interprets Islamic law.

The Socio-Cultural Significance of Early and Modern Smoking

Ottomans smoked tobacco in either a long-stemmed pipe, most commonly called the chibouk, or in a water pipe, called the narghile. Such smoking vehicles suggest that tobacco consumption required much time and attention by the smoker and was a socio-cultural celebration of leisure through consumption. The quality of the smoke and the

smoking device were also visible manifestations of the smoker's place in society. Paintings of the Ottoman elite illustrate that the size of the pipe corresponded to the status of its user. While regular smokers carried their pipes, the affluent kept a servant or a slave who carried their smoking device and prepared their smokes for them. Such distinctions strongly testify to the place of the pipe as a signifier of social hierarchy within Ottoman society.

Smoking also conveyed a variety of messages in accordance with the male-dominated public spheres in which the tobacco was consumed. Because the use of tobacco was so widespread, offering tobacco was a standard act of courtesy when entertaining guests, family, and friends and at official gatherings. Travelers also gave and received gifts of tobacco as a token of appreciation for the help they hired and for their hosts. For the poor, sharing a smoke was a common practice in the countryside as well as in the city. Collective smoking probably reasserted a sense of belonging and communality. The sharing of the pipe also symbolized a mutual commitment to support an individual in times of need. Consumption of tobacco and coffee at the bazaar served to create a bond between buyer and seller in order to smooth the way for business transactions. In sum, smoking on all such occasions suggests the multiple cultural meanings of smoking and the fact that this once imported consumption habit became an integral part of Ottoman material culture and daily life.

It is much harder to infer smoking practices and their meaning for women during this period. European travelers' accounts, the main source of information about early smoking in the Middle East, tend to be biased, for Ottoman women would not ordinarily smoke in public, mostly because they were regularly excluded from such spheres. The women whom travelers encountered in public spheres such as the marketplace were usually of the urban or rural poor. Travelers also encountered women who worked in socially stigmatized professions like prostitution and dancing. These travelers' accounts represent a certain bias toward reporting tobacco consumption among women who were less compelled to follow conventional social practices.

Some travelers, mostly women, did get access to the harems of the Ottoman upper classes. Their accounts indicate the smoking practices of the female Ottoman elite, which were quite similar to those of males of high social status. The evidence above, therefore, allows us a glimpse into the two extreme sides of women's tobacco consumption in the Middle East until the break-up of the Ottoman Empire in the aftermath of World War I. Lower-class women, because they lacked social standing, and upper-class women, because they were rich and powerful, smoked regularly. Other than that, we do not have sufficient information to clearly address the question of whether the majority of women in the city and the countryside consumed tobacco.

Cultivation, Processing, and Commerce

Local cultivation of the tobacco plant started soon after the reception of tobacco for consumption, and tobacco became a widespread cash crop even before the political and religious controversy over its consumption



This 1858 portrait by the Italian painter Amadeo Preziosi shows a wealthy lady being served coffee while she smokes a water pipe, or hookah. Because this painting was created during a period when men, especially Europeans, had little access to the harem where such upper-class women lived, it most likely represents an Orientalist European image of the time rather than an actual Ottoman upper-class woman of the period. © HISTORICAL PICTURE ARCHIVE/CORBIS

had settled down. The same was true regarding the taxation of tobacco. Against the objections of some state officials, tobacco nevertheless became an important financial resource for Ottoman coffers. This was especially so because the state rendered tobacco an immoral commodity and a luxury item, which meant that it could be taxed with little popular resistance.

To benefit from taxation further the state increased its level of control over tobacco production and sale. During the seventeenth century, when commerce in tobacco first started in Egypt, a guild of tobacco sellers in Egypt was registered on the lists of the *subashi* (police prefect). The *subashi* was responsible for all so-called immoral and criminal guilds, and tobacco sellers were placed under his supervision together with prostitutes and pickpockets. This further strengthens the impression that the Ottoman authorities made little socio-cultural discrimination regarding the source when it came to extracting revenues. Rather than trying in vain to eradicate certain occupations, they choose to tax them. Because tobacco was widely used among Ottoman subjects from different social backgrounds, industry and commerce developed to serve a variety of tastes and budgets. Like other professions the industry tended to concentrate in one part of the bazaar, which was the center of trade and commerce in the city.

From Pipes to Cigarettes

In the mid-nineteenth century the cigarette found its way to the Ottoman Empire from France, a not surprising event considering the general increase in circulation of commodities and people between the two countries during that period. Upon its arrival, the cigarette quickly gained a popular following; according to one source, about a quarter of all tobacco consumers in the Ottoman Empire smoked cigarettes in the late 1850s or early 1860s (Issawi).

The transition from pipes to cigarettes represented broader changes in the region. The cigarette became part of a new office culture that first developed with the establishment of a large state bureaucracy and educated professionals. The *fallah*, or peasant, in the countryside switched to the cigarette after the workload increased significantly due to the introduction of industrialized cash-crop agriculture. As traditional manufacturing gradually made way for production in workshops and, to a lesser extent, factories, the work became more regimented, and the pipe was not welcomed. Even old bazaar practices such as smoking the chibouk and drinking coffee with clients disappeared. The cigarette also became a popular smoking device in the modern army. In all these cases the transition to cigarette consumption was closely related to the intensification of work and an increase in workload. Unlike the pipe, the cigarette offered quick satisfaction or comfort while at work. Furthermore, the cigarette became an icon representing a break from the past and a certain dynamism associated with modernity.

The cigarette was not confined to the workplace or the battlefield. It also entered Ottoman social life, where it provided a business-like atmosphere in spaces of leisure. Women of the Ottoman elite also adopted the new fashion, and the cigarette became a favorite smoke in the harem. Because cigarette consumption was not limited to the upper class and the cigarette was adopted simultaneously (and enthusiastically) by various segments of Ottoman society, the demand for this new product rapidly increased, and the chibouk soon disappeared. The water pipe fared better because it was protected by the interests of coffeehouse owners, who benefited from renting it to their clients. The water pipe has enjoyed a revival more recently as a symbol of the traditional lifestyle in an ongoing search for local meaning and identity.

Because the cigarette industry in the United States was developed initially by Armenian, Greek, and Turkish immigrants from the Middle East, Egyptian and Turkish brands (both manufactured from Middle Eastern tobacco cultivated in these areas) had a lasting influence on American cigarette manufacturing. Handmade cigarettes from the Middle East enjoyed tremendous popularity among American consumers even after James Duke of the American Tobacco Company (ATC) began selling cheaper brands made from American tobaccos in the early 1880s. At this time the ATC, a conglomerate that came to control most U.S. cigarette production, engaged in a negative advertising campaign against Middle Eastern brands. When it failed, the company took over major Middle Eastern tobacco manufacturers in the United States. It later manufactured cigarettes developed from a blend of Middle Eastern and American tobaccos to compete with the Middle Eastern brands. Once undertaken by the ATC, blending became a standard practice in the production of cigarettes.

In 1913 the American company R.J. Reynolds introduced its Camel brand, the first American brand to be sold nationwide. The company selected the name Camel to evoke exotic images of the Middle East. The manufacturer further associated its brand with the Orient by printing pyramids, palm trees, and Islamic architecture on the packages. Many years later, after the reputation of the Middle Eastern cigarette had all but disappeared, Camel continued to stand as a reminder of its past glory and its influence on international production and consumption of cigarettes.

Modern Production and Consumption

World War I brought an end to the Ottoman Empire and with it the end of Ottoman state monopoly. Starting in 1860 and increasingly so in the years to come, this monopoly effectively controlled cultivation, production, and sale of tobacco and cigarettes in Ottoman lands; its revenues first went to Ottoman coffers and later to European lenders to whom the Empire owed extensive sums of money.

Nevertheless, in most of the countries that emerged after its demise the tobacco trade was also reinstated as a state monopoly. This happened either in the aftermath of the war, or later, after World War II, when the majority of Middle Eastern states received independence and with it entered a stage of state-led economic development in which they nationalized and later managed major sectors of the local economy including tobacco. Privatization of tobacco industries, and with it competition from abroad, started during the 1990s. The latter part of the twentieth century also witnessed the renewed involvement of multinational cigarette companies in local markets, especially Philip Morris.

Throughout the twentieth century and still today, the majority of consumers have chosen tobacco products based on price rather than quality. Per capita cigarette consumption increased during the oil boom and subsequent economic upturn between the early 1970s and mid-1980s but leveled off when this period ended and economic conditions deteriorated. Smoking is mostly limited to cheap brands and male consumers. According to a 1995 World Health Organization report, 44% of men in the Middle East smoked (World Bank, *Economics of Tobacco Control*). This number translates into many millions of smokers in the region. For example, in the year 2000 an estimated 19 million people in Egypt smoked (World Bank, "Economics of Tobacco in Egypt").

The World Health Organization report cited above suggests that only 5% of women in the Middle East smoke. For the majority of females in the region smoking is what might be called a veiled practice, and their social and economic dependence on their family and spouses as well as their limited opportunities to work and play outside the home continue to play against their freedom to smoke. Youth smoking is underreported. In many cases the young are not expected to smoke in the company of their family. The gradual development of youth culture, which includes more opportunities for (mostly male) adolescents to study and frequent leisure environments and an increase in youth employment, explain an increase in smoking among young people in the Middle East. While in recent years antismoking campaigns have been promoted by government ministries and other officials responsible for health

ulema the body of Islamic scholars who interpret and advise on matters of religious law and practice.

and environmental issues, World Health Organization workers, anti-globalists who resist tobacco multinationals' interference, and Islamic **ulema,** they have been only partially successful in curtailing smoking in the Middle East; there is a growing public awareness of the perils of smoking, but de facto decrease in smoking is still to come.

See Also American Tobacco Company; Antismoking Movement From 1950; British American Tobacco; Camel; Cigarettes; Islam; Philip Morris; Pipes.

RELLI SHECHTER

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Missionaries

For centuries, many missionaries have reflected the ambivalent and sometimes shifting views held by their peers back home, with their actions shaped by local circumstances as well as moral debates. In other cases, missionaries—most notably Mormons, Seventh Day Adventists, and members of various evangelical sects of Protestantism—have long been opposed to smoking. Today, most missionaries around the world at least publicly speak out against tobacco use because of associated health risks. Whether only by example or as direct introducers or suppliers, missionaries joined other colonial agents in the spread and support of tobacco use historically, regardless of what their common attitudes might be today.

Changing Views

humoral theory the idea, first advanced by the ancient Greeks, that health and temperament were determined by the balance of the four humors, or bodily fluids: blood, phlegm, choler (yellow bile), and melancholy (black bile). This idea dominated medicine until the late 1700s.

snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

By the late sixteenth century tobacco seeds had been brought to Europe from the New World, and European gardens commonly included tobacco as a medicinal herb. This practice reflected **humoral theory** and other ancient views that identified tobacco as a curative agent for certain maladies. The cleansing effects of tobacco also were seen as leaving the user more able to resist temptations of the flesh. Consequently, by the early 1600s many European clergy were addicted. Smoking and taking **snuff,** even during Mass, were common in Spain and Italy.

In the seventeenth century, however, tobacco use became somewhat controversial. King James I of England published a strong condemnation of tobacco in 1604, largely because of its association with the so-called savages of the New World. Clergy all over Europe debated whether tobacco was a gift from God or a tool of the Devil, with some



Woodcut of Father Marquette approaching the Indians with a peace pipe. Many missionaries not only used tobacco but also traded it to maintain friendly relations and to support financial and practical objectives. © BETTMANN/CORBIS

arguing that Noah, and even Adam, had been tempted to fall from grace through tobacco provided by Satan.

The sneezing, smell, and fumes accompanying tobacco use, together with behavior associated with excessive use, resulted in Papal bulls in 1642 and 1650 condemning tobacco use as unseemly and profane and carrying the threat of excommunication. However, by 1655 addiction was so widespread (including among the clergy) and the sale of tobacco produced such considerable revenue for papal states that these threats were virtually meaningless. The next two centuries would see little such opposition.

Missionaries Caught in the Middle

When Spanish and Portuguese ships arrived in the New World in the late fifteenth and early sixteenth centuries they found that tobacco use spread from Brazil through Mexico and into North America. Initially they recorded amazement at this custom, but by the late sixteenth to the mid-seventeenth centuries ambivalence and contradiction best characterized their attitudes. Both feeding and reflecting controversies back home, many were faced with a dilemma. While the Franciscan missionaries in the American Southwest adopted smoking themselves and dispersed tobacco to the natives without qualms, the Jesuits in the Northeast were conflicted, reporting alarm at the association of tobacco with what they considered **heathen** rituals, but they also understood that it was beneficial to one's health. In any event, they

heathen any person or group not worshiping the God of the Old Testament, that is, anyone not a Jew, Christian, or Muslim. May also be applied to any profane, crude, or irreligious person regardless of ethnicity.



tithe a one-tenth portion of produce or income given to the church. Historically, tithes were sometimes levied without the consent of the population.

claimed they needed to give tobacco as gifts to maintain friendly relations with the indigenes.

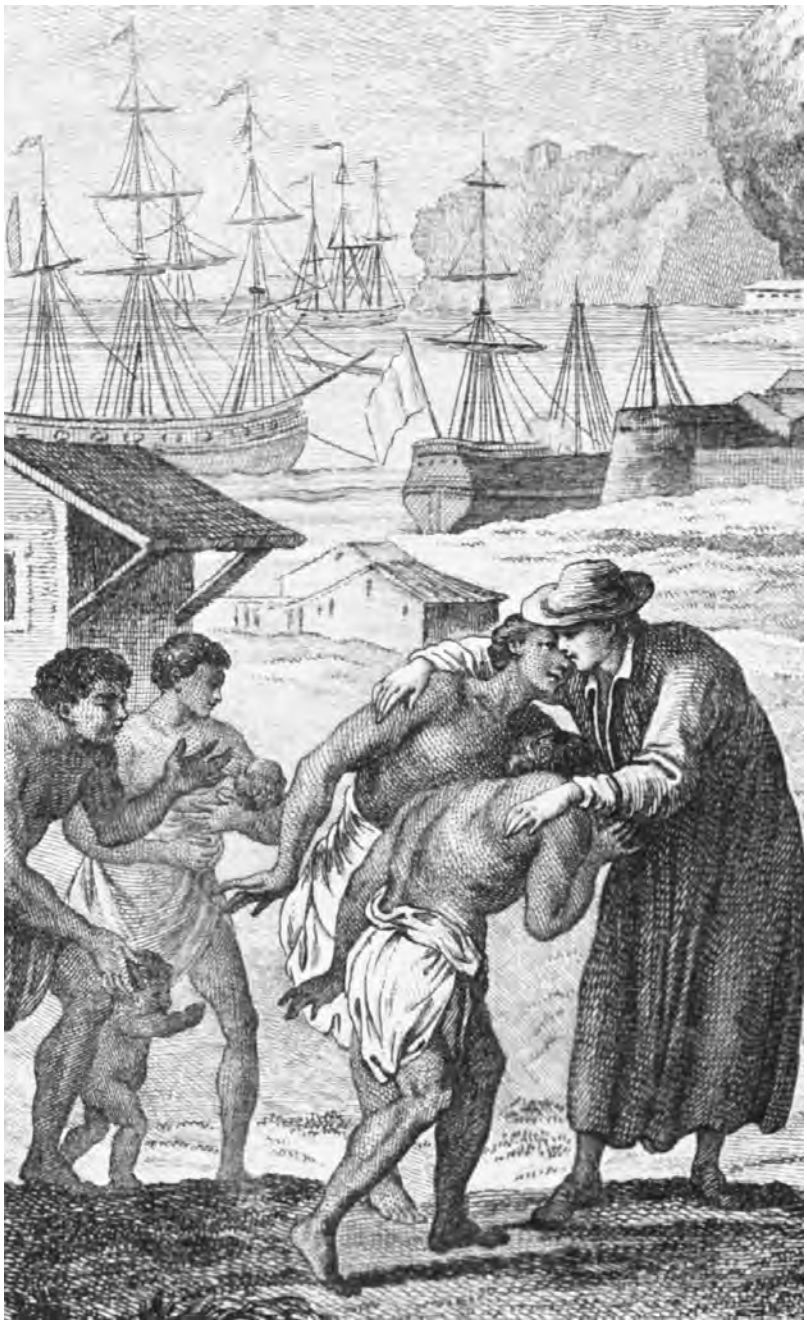
Moreover, as tobacco began to be cultivated for export, **tithes** received were beneficial to the Church. In the late sixteenth century both the Mexican Council and the Lima Provincial Council forbade the use of tobacco in church, but this was largely ineffectual because by then many of the clergy were themselves addicted.

In China in the early seventeenth century Jesuits tried to replace tobacco smoking with the use of snuff, but for the next two centuries contradictory practices and pronouncements would be the norm as missionaries tried to reconcile their own habits and moral qualms with local realities. In the early eighteenth century French missionaries in Canada were significant suppliers of tobacco, using it to lure the native people to church, but the missionaries often required abstinence after conversion. In 1832 a missionary-led campaign against smoking failed in Hawaii, as did an attempt by Wesleyan missionaries in the 1880s in Fiji, where blue ribbons were awarded to abstainers, but this resulted in strife with a colonial government that wanted the revenue from taxation on tobacco. In some cases, as in British New Guinea in the 1880s (where the London Missionary Society vessel was called locally "the tobacco ship"), conflict arose within the organization as the director back home expressed opposition to "buying converts," while on-site missionaries complained that it was impossible for them to survive without payments of tobacco for food and labor as well as souls.

Missionaries as Promoters of Tobacco

While some missionaries in the New World of the sixteenth and seventeenth centuries were sometimes conflicted, others apparently were not. Very early in the seventeenth century Spanish and Portuguese colonists, accompanied by Catholic priests, carried tobacco seed from the Americas to the Philippines, Persia, India, Indo-China, Java, and Japan, cultivating it for their own use and teaching people to acquire a craving for what would become a very useful trade item. In Virginia in the 1630s Protestant ministers' salaries were paid in tobacco. In the eighteenth century Moravian missionaries in New York and later in the Midwest were often the first white settlers seen by the indigenous people, with whom they happily joined in smoking sessions and distributed tobacco and pipes.

By the mid-nineteenth century tobacco use was common throughout most of the world, but was still unknown in much of the South Pacific. There, whalers and traders often introduced smoking, although not usually tobacco cultivation, lest the native people grow their own and be less dependent on foreign suppliers. This helped create a situation in which many missionaries found themselves under pressure to be among the suppliers. But it is also clear that they often created, as well as responded to, such demands. For example, the first missionary to land among the Wamira people of southeastern New Guinea immediately offered tobacco to people who had no idea what it was. After they were taught to smoke, with the mission as the sole source of commercially produced tobacco, food, labor, and converts were readily available. This scenario was doubtless repeated many times in the last part of the world to receive tobacco, as witnessed by a pattern of



An engraving from 1800 of Christian missionaries looking for converts and embracing native villagers. GETTY IMAGES

widespread tobacco addiction among former nonsmokers within two decades after the arrival of European missionaries.

See Also Calumets; Christianity; Native Americans; Oceania; Sailors.

▮ TERENCE E. HAYS

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Music, Classical

The tobacco plant has attracted the imagination of Western classical composers and musicians almost from the start of its introduction to Europe. Classical music has often celebrated the enjoyment of tobacco in the lyrics of its songs and in operas, while smoking has been an important element in the participation and enjoyment of music making in a variety of contexts.

Early-Seventeenth-Century England

One of the first connections between smoking and music making is found in late-sixteenth-century Elizabethan England, where men gathered to sing madrigals, ballads, and songs. These gatherings gave rise to some of the first musical pieces advocating the pleasurable and medicinal qualities of tobacco, including a five-part madrigal, "O Metaphysical Tobacco" (1606) by Michael East; "Tobacco, Tobacco, Sing Sweetly" (1605) by Captain Tobias Hume; and "Of Drinking Ale and Tobacco" in Thomas Ravenscroft's *Briefe Discourse of Music* (1614), the beginning of which reads, "Tobacco fumes away all nastie rheumes." A song about tobacco by Thomas Weelkes in his *Ayeres or Phantasticke Spirites* (1608) includes the lines:

> Fill the pipe once more,
> My braines daunce *trenchmore* [a popular dance tune],
> It is headdy,
> I am geedy,
> My head and braines,
> Back and raines,
> Jointes and vaines,
> From all paines
> It doth well purge and make cleanne.
> (Weelkes)

The song "Tobacco's an Indian Weed," which also evolved during this time, has been enduringly popular in England and has become part of the folk tradition in that country; versions of it have been made by, among others, Samuel Wesley (1800) and Ralph Vaughan Williams (1934).

Even more directly related to smoking is the round "A Catch on Tobacco" by Dr. Henry Aldrich (1686), which not only has content celebrating tobacco but also the instruction that it is to be "Sung by 4 Smoaking their Pipes."

Seventeenth- and Eighteenth-Century Europe

The seventeenth-century Dutch song "Tabakslied" demonstrates the negative reception of tobacco smoking by describing the disputes between smoking men who defend tobacco use and women who point out tobacco's negative effects on the smokers.

In eighteenth-century France certain verses published in the *Recueil des plus belles Chansons et Airs de Cour* (1714) speak ironically of **snuff** taking, notwithstanding that this was the customary method of tobacco consumption in Europe at this time. In contrast, the widely known folk song "J'ai du bon tabac dans ma tabatière" (I have good tobacco in my snuff-box) was also popular during this period. References to tobacco usage also appear in many German vocal compositions, such as Georg Philipp Telemann's lied "Sing-, Spiel-, und Generalbassübungen" (1733–1734), Christoph Gluck's arietta "Je n'aimois pas le tabac beaucoup," (I don't care much for tobacco) and Johann Sebastian Bach's "Erbauliche Gedanken eines Tobackrauchers" (Uplifting thoughts of a tobacco-smoker).



snuff a form of powdered tobacco, usually flavored, either sniffed into the nose or "dipped," packed between cheek and gum. Snuff was popular in the eighteenth century but had faded to obscurity by the twentieth century.

Nineteenth- and Twentieth-Century Compositions

In nineteenth-century England, early Victorian moralists and opponents of smoking cautioned their contemporaries that those songs written in praise of smoking and sung on the stage were "paid for by the proprietors of cigar-divans and tobacco shops, to make their trade popular" (*Hints* 1854). One such song, by John Cooke Jr., is "Milly's Cigar-Divan," celebrating the cozy cigar divan in Piccadilly and its owner Milly. Songs praising the qualities of tobacco continued to appear in the nineteenth and early twentieth centuries, such as the American song "Smoking" (1915) by Gladys Hall.

Tobacco consumption is referred to in ballet and opera as early as the middle of the seventeenth century, such as in the interlude "Le Récit des preneurs de tabac" (*The snuff-taker's tale*) of the *Ballet Royal de l'Impatience* (1661) by Isaac de Bensérade and Jean-Baptiste Lully. During the prelude of Pierre Gaveaux's song "Contre les chargins de la vie . . . Quand j'ai ma pipe de tabac" from his one-act opera *Le Petit Matelot* (The little sailor, 1796), the stage directions indicate that the singer "bat le briquet en mesure, allume sa pipe et fume" ("Beats the lighter in time with the music, lights his pipe and smoke"); about 1800 this song reached the United States, published with the title "La Pipe de Tabac" (The tobacco pipe). The last quarter of the nineteenth century saw the first act of Georges Bizet's opera *Carmen* (1875) set in a cigarette factory; some years later the English composer J. Haydn Parry composed the music to the romantic opera *Cigarette* (1891), and the main narrative thrust of E. Wolf-Ferrari's opera *Il Segreto di Susanna* (Susanna's secret, 1909) concerns the female protagonist's secret smoking habit.

Tobacco Themes in Musical Entertainment and Advertising

Not only has musical content often reflected an engagement with tobacco culture, but musical performance has a long established relationship with the practice of smoking. In the seventeenth and eighteenth centuries, amateur music making encouraged the creation of numerous private musical societies and clubs for music making at different social levels. Many such groups held their "Musique Meetings" in taverns, where music was accompanied by liquid refreshments and occasionally supper, and where audience participation and smoking were essential elements of the entertainment. Smoking gave the performance of art music an informal feel.

SMOKING CONCERTS. In England during the second half of the nineteenth century, a new form of entertainment emerged, the "smoking concert," in which smoking was allowed during a musical performance itself. These "smoking concerts" started in the 1860s as private and exclusively male forms of entertainment, but became increasingly fashionable in the 1880s and 1890s. They developed into a type of concert in their own right and facilitated the acceptance of smoking during the performance of art music in both private gatherings and at public concerts. They promptly spread to other countries such as the United States, Canada, and Australia. Although initially established by aristocratic and bourgeois amateur music societies, smoking concerts gradually evolved to accommodate a socially diverse audience, including women, and became so popular among all classes that they were a characteristic feature of the times.



The violinist Joyce Nixon smokes a cigar during rehearsals at the Royal Opera House, for Richard Rodney Bennett's opera *Victory,* April 1970, London, England.
© HULTON-DEUTSCH COLLECTION/CORBIS

Overall smoking concerts represented an evolution from private smoking concerts to public smoking concerts, and then to the acceptance of smoking in certain mainstream public concerts. Their appearance in such public concert halls in the later part of the Victorian era reflected changes not only in Victorian society, but also in its attitude toward the performance of art music. These smoking concerts were distinguished by the social status of their members and patrons, by the venue, and by the musical content and form of entertainment they offered. In the aristocratic and upper-class smoking concerts, the music consisted of mixed programs of overtures, symphonies, light orchestral items, virtuoso or sentimental pieces, modern compositions, and songs, thus combining a convivial occasion with educational and intellectual experience. In the smoking concerts for the lower-middle and working classes the programs reflected the more populist taste of the audience, with the entertainment consisting mainly of part songs, comic songs, sketches, recitations, a few instrumental solos, and particularly audience participation, all accompanied by liberal amounts of drinking and smoking.

The working-class smoking concert eventually dominated this particular musical scene and survived well into the twentieth century (with several still given in the twenty-first century for charity or as variety events). Thus, by the late nineteenth century a wide variety of events across all social classes were described as smoking concerts, and they had become a notable feature of the Victorian era's musical landscape on both sides of the Atlantic. They also contributed substantially to increasing sales of sheet music and tobacco products.



Spanish cellist, composer, and conductor Pablo Casals (1876–1973) during his recording of Dvorak's concerto for violoncello in Prague, Czechoslovakia, 1 April 1937. ERICH AUERBACH/GETTY IMAGES

In these social settings, smoking served an inclusive function. Where tobacco was welcome, it was seen as a contributor to friendship and companionship, and it is this positive approach to smoking that led to the social development of music making in eighteenth-century music clubs and nineteenth-century smoking concerts. In particular, in the second half of the nineteenth century smoking played an important role in changing social attitudes toward both the enjoyment of music and the nature of the performance event in which it was found, the consequences of which were felt throughout the twentieth century.

In the aristocratic and upper-middle classes the association of smoking with high-class art music, through the vehicle of the smoking concert, legitimized smoking and drinking and made them more socially acceptable. Simultaneously, the association of art music with smoking, a cultural practice more readily identified with informality and easy conviviality, contributed to the demystification of this form of music by presenting it in less formalized contexts. For the lower classes smoking similarly informalized art music, while simultaneously elevating singing

club culture, and the particular types of entertainment designated as smoking concerts clearly demonstrate an aspiration toward upper- and middle-class practices.

Smoking concerts acted as agents of cultural change, and this trend changed the function and appreciation of the music performance event.

TOBACCO ADVERTISING. Smoking concerts were not the only means by which music contributed to increasing tobacco sales. In the later part of the nineteenth century cigarette advertising by the major manufacturers emphasized the pleasant and supposed medicinal qualities of the cigarette, and opera singers were used to testify to the throat-easing qualities of certain brands. Such endorsements by musicians were further underlined when the United Kingdom's Wills of Bristol became the first company to issue a series of **cigarette cards** depicting musical celebrities; this particular series of cards, however, was among the casualties of World War I, not only because of the need to reduce production costs but also because they depicted a number of musicians of Germanic origin. Classical music has subsequently been used by both advocates and opponents of smoking in support of their various causes.

cigarette cards paper trading cards sometimes featuring sports personalities or movie stars packaged with cigarettes and offered as an incentive for purchase.

The use of classical music in tobacco advertising, thus attempting to imbue a given product with class and refinement, continued well into the twentieth century. Perhaps the most famous example of this was a 1980s English advertisement suggesting that "Happiness is a cigar called Hamlet," accompanied by a sentimental arrangement of Bach's "Air on a G String"; thereafter the piece became popularly known as the "Hamlet music." In contrast, light and classical music has also been used by antitobacco campaigners as a means to facilitate quitting smoking, with "stop smoking" compact discs and cassettes common in the record market of the late twentieth and early twenty-first centuries.

See Also Film; Literature; Visual Arts.

EVA MANTZOURANI

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Music, Popular

The heritage of cigarette imagery and tobacco themes in American music is long standing. Long before Joe Camel and the Marlboro Man appeared on 1990s billboards, there were televised chants ("Call for Phillip Morris!"), dancing girls garbed in Old Gold cigarette packs, catchy radio acronyms ("L.S.M.F.T.—Lucky Strike means fine tobacco!"), and often-repeated advertising phrases ("So round, so firm, so fully packed—so free and easy on the draw"). Just as Old Gold sponsored "Your Hit Parade," the "Camel Caravan of Musical Stars" was led on tour by Vaughn Monroe and His Royal Canadians.

The pre–World War II period featured a variety of tobacco tunes. Hit songs included "Let's Have Another Cigarette" by the Benny Goodman Orchestra, "Love Is Like a Cigarette" by Duke Ellington, "One Cigarette for Two" by Freddy Martin and His Orchestra, "Two Cigarettes in the Dark" by Bing Crosby, "Weed Smoker's Dream" by the Harlem Hamfats, and "While a Cigarette Was Burning" by Paul Whiteman and His Orchestra. After World War II songsmiths and recording artists promulgated the most remarkable spectrum of audio images concerning cigarette smoking.

Smoking Themes Reflected in Popular Music

Since smoking is a personal habit, it is hardly surprising that many songs depict the activity as a time of individual relaxation and private reverie. Comfortable memories glow like embers on a cigarette ash. Whether alone blowing "Smoke Rings" and contemplating "My Cigarette and I," or waiting impatiently in "Smoky Places" for someone who may say "Let's Have a Cigarette Together," a smoker tries to be at ease. The 1957 Fred Waring recording of "A Cigarette, Sweet Music, and You" captures the romantic theme. Still positive, but much more assertive and challenging, are youthful smokers like "Charlie Brown," who vent their cynicism about school rules and adult authority figures by "Smokin' in the Boys' Room."

The most frequently illustrated feelings of individuals who smoke alone are attitudes of melancholy and sadness. "Cigarettes of a Single Man," "Share with Me a Lonely Cigarette," and "Smoking My Sad Cigarette" are laments to better times. The same sentiments of despair pervade "Cigarettes and Coffee Blues," "Coffee, Cigarettes, and Tears," and "I'm Down to My Last Cigarette." The rolled tobacco tube is imaged as a consoling companion, the same way that one's own reflection is treated in songs like "My Echo, My Shadow, and Me" and "Me and

My Shadow." The recent loss of a loved one is symbolized in Benny Spellman's haunting "Lipstick Traces (On a Cigarette)."

More difficult problems facing an individual smoker appear to stem from social stigma, self-deception, and self-ridicule. Addiction to nicotine is usually not understood by nonsmoking friends or family members. Excessive use of tobacco and the corollary compulsion to interrupt ongoing conversations, card games, or even romantic encounters is often puzzling, frustrating, and annoying. Although Paula Abdul maintains that "Opposites Attract," the reality is that former smokers and nonsmokers often find chain-smoking habits to be incomprehensible. Heartfelt and humorous commentaries on cigarette use are found in "Smoke! Smoke! Smoke! (That Cigarette)," "Trying to Live My Life Without You," and "Smoke Smoke Smoke (But Not Around Me)." The latter song, which hit the airwaves in the 1960s, appears to be a precursor to the passive smoking or secondhand smoke arguments that gained prominence during the late 1980s and early 1990s.

The frustration of a smoker who genuinely wants to terminate association with the so-called "evil weed" is revealed in many songs. Once again, solitary reflection is usually the setting, with lyrics that feature hostility born of a genuine love/hate relationship. Jimmy Martin concedes "I Can't Quit Cigarettes." Jerry Reed takes "Another Puff" while debating when to stop. Merle Haggard and Willie Nelson look for "Reasons to Quit." And Jim Nesbitt finally acknowledges, "I Love Them Nasty Cigarettes." Helplessness abounds. Stern advice that seems reasonable: If you want to quit, don't ever start.

Tobacco use is also a cultural phenomenon. The notion of being trapped in an isolated, single-crop economy American town has provided lyrical material for such diverse artists as Roy Clark, Jamul, the Nashville Teens, and Lou Rawls. The early 1960s song "Tobacco Road" is a challenge to the freedom and individual spirit more than to the addictive nature of cigarettes. Location and setting are also defined by poor air quality in many tunes. Bars, saloons, juke joints, and basement cabarets are illustrated in "Dim Lights, Thick Smoke, and Loud, Loud Music," "Hangin' Out in Smoky Places," and "Smoky Places." The Corsairs' 1961 version of the latter song depicts a secret affair that can only be carried on in a dark, cloudy venue. A more humorous acknowledgment of enforced tobacco isolation is Helltrout's 1990 recording "Smoking Lounge."

Social settings blend easily into workplaces. Occupational associations with tobacco use may be either voluntary or involuntary. Billy Joel's "Piano Man" cannot control the smoky atmosphere he encounters during his club's Happy Hours. But many workers treasure the opportunity to take a smoke break, like the young female model in Van Morrison's "Blue Money." The western image of casual, roll-your-own tobacco use is featured in "The Cowboy's Serenade (While Smoking My Last Cigarette)" of 1941 and "The Gambler" of 1978. For the long-distance trucker, however, nicotine is just one of several over-the-counter drugs used to sustain lengthy periods of boring highway coverage. Jerry Reed pleads this case in "Caffeine, Nicotine, and Benzedrine (And Wish Me Luck)." Finally, Jim Croce lionizes a southern racetrack hero known for rolling his pack of cigarettes into his T-shirt sleeve. This hard-driving man is "Rapid Roy the Stockcar Boy." From bartenders to those behind bars, there are numerous settings where

A chronological list of selected songs featuring cigarette references and tobacco images or themes,1947–1993

Year of release	Song title (record number)	Performing artist(s)
1947	"Cigareetes, Whuskey, and Wild, Wild, Women"	Sons of the Pioneers
1947	"Smoke! Smoke! Smoke! (That Cigarette)"	Tex Williams
1948	"Cigarette Song (Always Grabbing Someone's Butt)"	Larry Vincent
1948	"Don't Smoke in Bed"	Peggy Lee
1948	"Coffee, Cigarettes, and Tears"	Larks
1952	"Coffee and Cigarettes"	Johnny Ray
1952	"Smoke Rings"	Les Paul and Mary Ford
1953	"Smoking My Sad Cigarette"	Jo Stafford
1955	"Smoke From Your Cigarette"	Billy Williams Quartet
1956	"Smoke Another Cigarette"	Harry Revel
1956	"While a Cigarette Was Burning"	Patti Page
1957	"Ashtrays for Two"	Bob Crosby
1957	"Share with Me a Lonely Cigarette"	Daniel DeCarlo
1957	"Three Cigarettes in an Ashtray"	Patsy Cline
1957	"A Cigarette, Sweet Music, and You"	Fred Waring and the Pennsylvanians
1958	"Cigarettes and Coffee Blues"	Lefty Frizzell
1958	"Got a Match?"	Frank Gallop
1958	"Let's Have a Cigarette Together"	Vaughn Monroe
1959	"Charlie Brown"	Coasters
1960	"Don't Smoke in Bed"	Nine Simone
1961	"Cigarettes"	Yaffa Yarkoni
1961	"Jet Song" from *West Side Story*	Russ Tamlyn and The Jets
1961	"Saved"	LaVerne Baker
1961	"Smoke! Smoke! Smoke! (That Cigarette)"	Jimmy Dean
1961	"Smoky Places"	Corsairs
1962	"Cigarette Gil"	Bob Peck
1962	"Lipstick Traces (On a Cigarette)"	Benny Spellman
1962	"Twenty Cigarettes"	Little Jimmy Dickens
1962	"When You Smoke Tobacco"	Ernie Sheldon
1963	"Cigarette"	Visions
1963	"Cigarettes and Coffee Blues"	Marty Robbins
1963	"Cigareetes, Whusky, and Wild, Wild Women"	Johnny Nash
1963	"Smoke Rings"	Sam Cooke
1964	"Down to My Last Cigarette"	Billy Walker
1964	"My Cigarette and I"	J's with Jamie
1964	"Smoke from Your Cigarette"	Drake Sisters
1965	"Cigarettes and Whiskey"	Sammy Jackson
1965	"Get Off of My Cloud"	Rolling Stones
1965	"King of the Road"	Roger Miller
1965	"Lipstick Traces (On a Cigarette)"	O'Jays
1965	"Smoke, Drink, Play 21"	Tony Williams
1966	"Cigarettes and Coffee"	Otis Redding
1966	"I Can't Quit Cigarettes"	Jimmy Martin
1966	"Tobacco"	George Hamilton IV
1967	"Cigarette Ashes"	Ed Henry
1967	"One Little Packet of Cigarettes"	Herman's Hermits
1968	"Cigarette"	Mike Stewart
1968	"May I Light Your Cigarette"	Beacon Street Union
1968	"Smoke, Smoke, Smoke -'68"	Tex Williams
1969	"Cigarette Smoking"	Brother Sammy Shore
1969	"The Cigarette Song" from *Promenade*	Sanda Schaeffer, Ty Connell, and Gilbert Price
1969	"Smoke Smoke Smoke (But Not Around Me)"	Grandpa Jones
1970	"Cigarette Grubber"	Sam Taylor, Jr.
1971	"Blue Money"	Van Morrison
1971	"Cigarette Blues"	Roger Hubbard
1971	"I Love Them Nasty Cigarettes"	Jim Nesbitt
1972	"Another Puff"	Jerry Reed
1972	"Tobacco, White Lightning, and Women Blues, No.2"	Buck Owens
1973	"Smoke"	Roger Cook
1973	"Smoke! Smoke! Smoke! (That Cigarette)"	Commander Cody and His Lost Planet Airmen
1973	"Smokin' in the Boys' Room"	Brownsville Station
1974	"Cigarettes and Muskatel Wine"	Little Joe Cale
1974	"Fool for a Cigarette"	Ry Cooder
1974	"Should I Smoke"	Badfinger
1974	"Smokin' Room"	Rufus
1974	"Smoking Cigarettes"	Golden Earring
1974	"Workin' at the Car Wash Blues"	Jim Croce
1975	"Candy, Brandy and a Carton of Cigarettes"	Lou Carter
1976	"Smokin'"	Keith Hudson
1977	"Flick the Bic"	Rick Dees
1977	"Lipstick Traces"	Jimmie Peters
1978	"A Beer and a Cigarette"	Terraplane
1978	"Cigarettes"	City Boy
1978	"The Gambler"	Kenny Rogers
1978	"Smoke Rings and Wine"	Ralph MacDonald
1979	"You Burn Me Up-I'm a Cigarette"	Robert Fripp
1981	"Caffeine, Nicotine, Benzedrine (and Wish Me Luck)"	Jerry Reed
1981	"Smokin' and Drinkin'"	James Brown
1981	"Tryin' to Live My Life Without You"	Bob Seger
1983	"A Beer and a Cigarette"	Hanoi Rocks
1983	"Reasons to Quit"	Merle Haggard and Willie Nelson
1984	"Cigarette Head"	Hype
1985	"Cigarettes"	Full Nelson
1985	"Smokin' in the Boys' Room"	Motley Crue
1986	"Cigarette"	Smithereens
1986	"Smoke Rings"	Laurie Anderson
1986	"Cigarettes of a Single Man"	Squeeze
1987	"No Smokin'"	Todd Rundgren
1988	"I'm Down to My Last Cigarette"	k.d. lang
1988	"Love Is Like a Cigarette"	Kip Hanrahan
1988	"Smoke Another Cigarette"	Toll
1989	"Cigarette"	Sidewinders
1989	"Cigarette in the Rain"	Randy Crawford
1989	"Opposites Attract"	Paula Abdul
1989	"Pack 'O Smokes"	Prisonshake
1990	"Cigarette Breath"	Shinehead
1990	"Smoking Lounge"	Helltrout
1992	"Ashtray"	Screeching Weasel
1992	"Cigarette Ashes on the Floor"	Miki Howard
1992	"Smokers"	Cancer Moon
1993	"Three on a Match"	Mickey Finn

cigarettes are so ubiquitous that notions of "smoke-free" environments are laughable.

One might consider a match, a lighter, or an ashtray to be the most logical accompanying elements to cigarette use. Lyrically, this assumption is only partially accurate. Recordings highlighting smoking equipment include "Ashtray," "Ashtrays for Two," "Flick the Bic," "Got a

Match," "Three Cigarettes in an Ashtray," and "Three on a Match." However, the items most frequently linked with a smoker's activity tend to be coffee and alcohol. Failure to note that addictive behavior toward nicotine is often associated with surrender to other nonprescription drugs is a frequent error among tobacco apologists. Lyricists are not so gullible. The chain-smoker/alcoholic personality is depicted, often tongue-in-cheek, in the following tunes: "A Beer and a Cigarette," "Candy, Brandy, and a Carton of Cigarettes," "Cigareetes, Whuskey, and Wild, Wild Women," "Cigarettes and Coffee," "Cigarettes and Muscatel Wine," "Cigarettes and Whiskey," "Smoke, Drink, and Play 21," "Smoke Rings and Wine," "Smokin' and Drinkin'," and "Tobacco, White Lightning, and Women Blues, No. 2." Two more extreme tobacco and drug use songs are "Dope Smokin' Moron" by the Replacements and "My Mom Smokes Pot" by the Lookouts.

Smoking Slang and Metaphor

The seemingly endless list of pejorative slang terms that relate to smoking provide a roomful of gallows humor. From terms like "butt," "cancer stick," and "evil weed" to "fag," "gasper," and "coffin nail," the cigarette is an object of linguistic condemnation and ridicule. Comedians have jumped on the lyrical bandwagon to satirize, mock, and degrade the smoking habit. Bob Peck threatens to put his "Cigarette Girl" into a flip-top box (coffin) if she doesn't stop smoking. Larry Vincent's "Cigarette Song" condemns a cheap colleague who is described as always grabbing someone's butt. Mooching behavior is also chided by Sam Taylor, Jr. in "Cigarette Grubber." Phil Harris attacks compulsive nicotine pursuit in "Smoke! Smoke! Smoke! (That Cigarette)" and Tex Williams extends this same joke in "Smoke, Smoke, Smoke—'68." Recorded comedy sketches by Steve Martin ("Smokin'") and Brother Sammy Shore ("Cigarette Smokin'") attack the society that permits self-inflicted vaporous suicide. Other less caustic, more offbeat jabs at cigarette use include "Got a Match?," "Nick Teen and Al K. Hall," "Smokin' in Bed," and "You Burn Me Up—I'm a Cigarette."

Native American Influences

Many smoking terms have been borrowed from the Native American culture and adapted to popular songs. Beyond references to calumets (highly ornamented ceremonial pipes), numerous illustrations of cultural and socioeconomic distinctions are lodged in smoking songs. These themes include poverty ("King of the Road"), prison life ("Twenty Cigarettes"), daydreaming ("Workin' at the Car Wash Blues"), urban gangs ("The Jet Song"), and the Salvation Army ("Saved"). Often, lyrics depict cigarette use as a code that identifies stratified ranks in society.

Beyond Cigarettes

Tobacco products other than cigarettes are featured in popular lyrics as well. "Chew Tobacco Rag" by Arthur Smith honors chewing tobacco. But the dominant option in recordings is not smokeless tobacco, but the cigar. Although once the comic physical trademark of Groucho Marx, the honor of singing about "A Real Good Cigar" was reserved for comedian George Burns. Cigar songs are few in number, unencumbered

by associated addictions, and generally upbeat. In addition to "Working at the Carwash Blues," songs that laud cigars include "Cigar Eddie," "Have a Cigar," "A Man Smoking a Cigar," and "There Goes a Cigar Smoking Man."

See Also Film; Literature; Visual Arts.

B. LEE COOPER

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Europeans discovered snuffing, or snuff taking, from Native Americans. Snuff was the most fashionable method of tobacco consumption in the eighteenth century and it was still used in the nineteenth and twentieth centuries, though it lost popularity to other forms of consumption. The ladies in this 1824 image by L. Roilly daintily take snuff, presumably thinking—as the caption suggests—"Tis very good! (Indeed)."
© HULTON-DEUTSCH COLLECTION/CORBIS



Barns are an integral part of tobacco processing. The air-curing barns of the Burley culture of Tennessee have changed little in 200 years; while the materials are better, the basic design is persistent. On the other hand, flue-curing barns in the Bright culture regions of Virginia, the Carolinas, and Georgia have evolved a great deal; a modern bulk-curing barn would be unrecognizable to a tobacco farmer of the 1950s. The geometric design in this air-curing barn is formed by beams and farm workers in Tennessee.
© KEVIN FLEMING/CORBIS



Pipes in traditional societies continue to be made from materials easily available. This modern-day G/wi bushman from Botswana's Kalahari Desert smokes tobacco in a crude device known as a tobacco tube. It is made from the shinbone of a gemsbok oryx.
© PETER JOHNSON/CORBIS



Cigar advertisements often depicted women in sexually suggestive poses and as the objects of desire for cigar-smoking men. This image is unusual because women were seldom shown blowing smoke or wearing smoking jackets in cigar commercials, even though by the end of the eighteenth century European women were beginning to adapt the smoking habits of men.
© BETTMANN/CORBIS



Botanical descriptions of the tobacco plant (genus *Nicotiana*) appeared in Europe in the sixteenth century, first in exploration accounts and conquest narratives, and then in pharmaceutical treatises. This French print of *Nicotiana tabacum* is from the eighteenth century.
© STAPLETON COLLECTION/CORBIS



The *narghile* (sometimes called *hookah* in English or *sheesha* in colloquial Egyptian) never disappeared from use in the Middle East after the arrival of the cigarette. The practice was sustained by consumer preference coupled with the motivation of coffeehouse owners to keep this money-generating smoking fashion alive. This man from Giza (Cairo) in Egypt smokes a modern-day version of the *narghile.* © OWEN FRANKEN/CORBIS



A Thai man smokes from a large bong in front of his village house. Although it isn't certain what is being smoked, the big bong suggests that the product is cannabis, as tobacco and opium are seldom smoked in such bongs. © BOHEMIAN NOMAD PICTUREMAKERS/ CORBIS



This intricate cigar box label (c. 1910) is for a brand of the Imperial Royal Tobacco Monopoly of Austria. The phrase is an abbreviation of *Kaiserliche Köenigliche Tabak-Regie,* which means the Kaiser's Royal Tobacco Administration. Until recently, it was a government monopoly; the double spread eagle symbol identifies the item as a product of the monopoly. Every tobacco-related product manufactured or sold in Austria carried this symbol. © AUSTRIAN ARCHIVES/CORBIS



Pipes range from simple creations to works of art. This exceptionally radiant Meissen pipe bowl from the early nineteenth century features the head of the king's jester ("le Bouffon du Roi"), gilt helmet, and raised blue bead décor, with an ornately turned ivory stem. FROM THE COLLECTION OF DR. SARUNAS PECKUS



Tobacco advertisements of the early twentieth century often featured children but they were not usually depicted consuming the product. When they were shown smoking cigarettes or pipes, it was often either in jest or to portray the product's mildness. The idea of children using tobacco was not popularly approved. This image of a child smoking a pipe is from a Russian movie poster from the 1930s. © SWIM INK/CORBIS



Natives of North and South America were the first to use tobacco in its various forms. This illustration shows a Native American preparing tobacco leaves for a ceremony. The calumet (ceremonial pipe) rests on two supports while preparations are made.
© LEONARD DEL SELVA/CORBIS



In this modern-day powwow, a Narraganset medicine man in full headdress holds a pipe in the air as he puffs.
PHOTO RESEARCHERS, INC.



This advertisement (c. 1860), for snuff and other tobacco products of the Peter Lorillard Company, is a typical representation of the "primitive" or Native American, holding a calumet (ceremonial pipe) and giving raw material (tobacco) to the "civilized" white culture, represented by an idealized nude figure placed at a higher level than the Native American. All the animals and vegetation are probably references to the American habitat. © MUSEUM OF THE CITY OF NEW YORK/CORBIS



Deadly air pollution emanates from smoker—artist Richard Abarno's reminder of the dangerous consequences of secondhand smoke. © RICHARD ABARNO/CORBIS