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16th District, Pennsylvania

Committee on the Budget

Committee on Transportation and Infrastructure

Assistant Republican Whip

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cc: Melanne ✓ fill Hollywood fill Tobacco

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September 23, 1997

First Lady Hillary Clinton
The White House
1600 Pennsylvania Avenue
Washington, D.C. 20500

Dear Mrs. Clinton:

We would like to express our appreciation for your efforts to reduce the level of glamorization of smoking in Hollywood blockbusters. While we applaud your actions on this issue, we believe that there are even more egregious messages being sent from Hollywood than on-screen smoking. We agree that many of this summer's films glamorize smoking as a sexy cure-all for life's problems, but we are even more concerned with the rampant glamorization of illicit sex, violence against women, promiscuity, infidelity, and drug and alcohol abuse.

In fact, the same films which you have impugned for glamorizing smoking are also films in which you can find scenes with undertones of child rape, descriptions of bi-sexual incest, misogynistic themes, senseless violence, widespread drug abuse, satanic worship, and the glamorization of the mob. We believe that your criticism of the exaltation of these vices by Hollywood producers would better reflect the priorities of the American family.

We urge that in addition to your crusade against smoking, you direct your efforts toward other negative messages coming from Hollywood. As you continue your advocacy, we request that you focus attention on all content carried in contemporary film which could be harmful to children, and that you urge film makers to produce products which send positive messages to our nation's youth.

Please do not turn a blind eye to those images portrayed in films which can lead to activities even more damaging to America's children than smoking. We thank you for your consideration, and look forward to learning of your actions on this important issue.

Sincerely,

SCIENTIFIC AMERICAN

File Tobacco

The Global Tobacco Epidemic

Cigarette smoking has stopped declining in the U.S. and is rising in other parts of the world. Aggressive marketing and permissive regulations are largely to blame

by Carl E. Bartecchi, Thomas D. MacKenzie and Robert W. Schrier

Since the early 1960s, medical research, public information campaigns and government assessments have exposed the dangers of tobacco smoke. The result has been a substantial drop in the number of smokers in the U.S.—from a peak of 41 percent to its current level of about 25 percent. Yet despite considerable scientific evidence and continuing exhortations from the medical community, the trend has now mostly ceased: the number of adult smokers has remained static since 1990. Similarly, the proportion of adolescents who smoke has changed little in the past 10 years. Perhaps even more disconcerting is that in the global picture, cigarette production during the past two decades has increased an average of 2.2 percent each year, outpacing the annual world population growth of 1.7 percent. Because of growing cigarette consumption in developing nations, worldwide cigarette production is projected to escalate by 2.9 percent a year in the 1990s, with China leading the way with jumps near 11 percent a year.

To understand the driving forces behind modern directions in tobacco consumption and to formulate strategies to combat its pervasiveness, the medical community has had to extend observations beyond the individual smoker and the addictive power of nicotine. The focus of some recent work has been on the tobacco industry itself. In this context, changes in smoking behavior depend in large part on cigarette pricing, advertising, promotion and exportation. Researchers in preventive medicine and public health agree that education campaigns must be supplemented. The new strategies should aim to regulate the marketing of cigarettes, to raise taxes on tobacco and to rethink current trade practices.

CARL E. BARTECCHI, THOMAS D. MACKENZIE and ROBERT W. SCHRIER collaborate at the University of Colorado School of Medicine. Bartecchi, who helped to found the Southern Colorado Clinic in Pueblo, is a clinical professor in the department of medicine at the school. MacKenzie is a general internist with the Denver Department of Health and Hospitals and an assistant professor of medicine at the University of Colorado Health Sciences Center. Schrier is professor and chairman of the department of medicine at the University of Colorado School of Medicine.

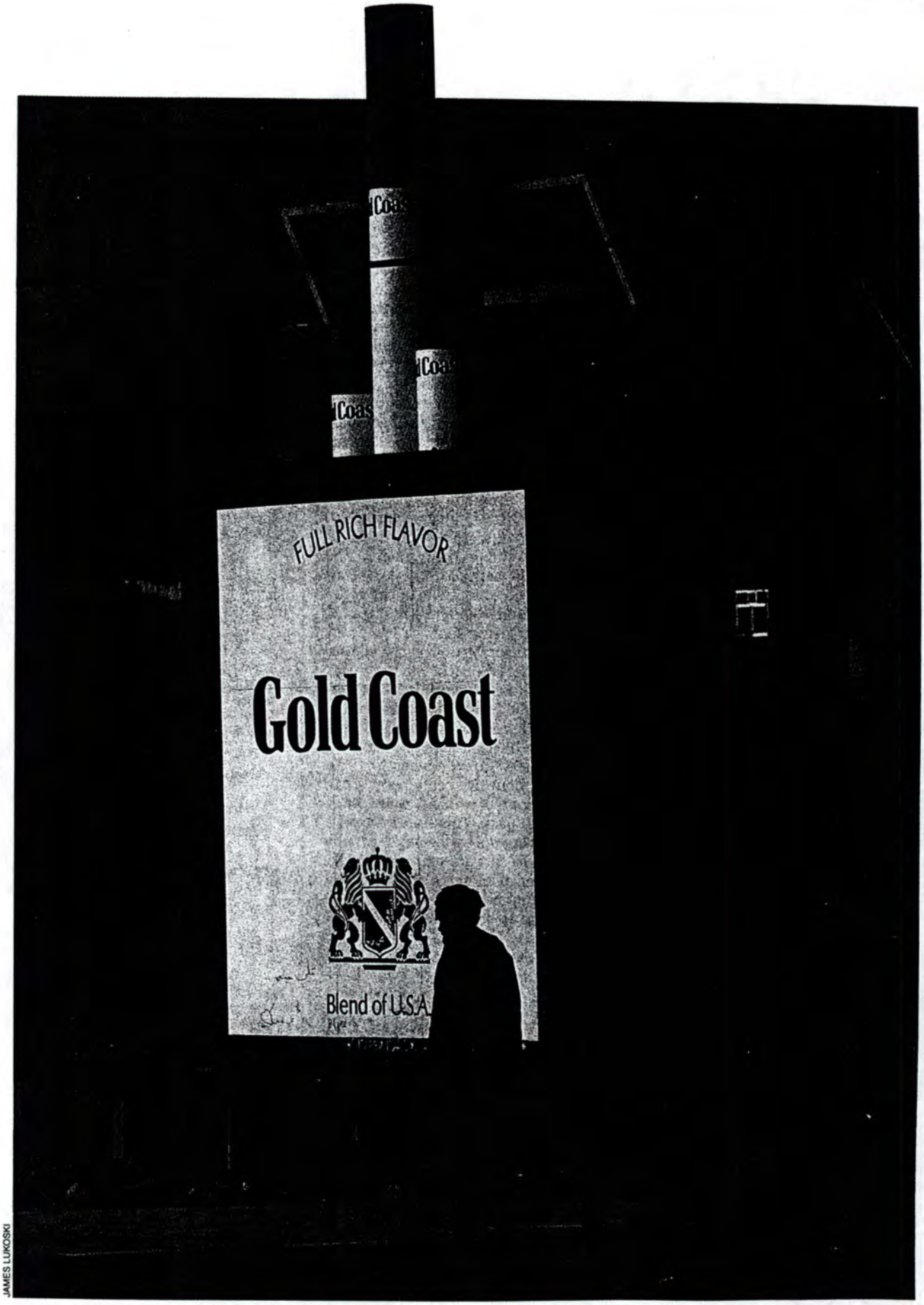
A 1,000-Year-Old Habit

Although humans probably began sampling tobacco during the first millennium, based on Mayan stone carvings dated at about A.D. 600 to 900, physicians did not begin to suspect in earnest that the plant could produce ill effects until around the 19th century. The renowned colonial physician Benjamin Rush condemned tobacco in his writings as early as 1798. By the mid- to late 1800s, many prominent physicians were expressing concern about the development of certain medical problems connected with tobacco. They suggested a relation between smoking and coronary artery disease, even recognizing the potential association between passive smoking (inhaling smoke from the air) and heart problems. They also noted a correlation with lip and nasal cancer.

Although tobacco use was relatively common in that century, it did not produce the widespread illnesses it does today. Individuals of the time consumed only small amounts, mostly in the form of pipe tobacco, cigars, chewing tobacco or snuff. Cigarette smoking was rare. Then, in 1881, came the invention of the cigarette-rolling machine, followed by the development of safety matches. Both significantly encouraged smoking, and by 1945 cigarettes had largely replaced other forms of tobacco consumption. Smokers increased their average of 40 cigarettes a year in 1880 to an average of 12,854 cigarettes in 1977, the peak of American consumption per individual smoker.

The rise in tobacco use made the adverse effects of smoking more apparent. Medical reports in the 1920s strengthened the suspected links between tobacco and cancers. The connection to life span was first noted in 1938, when an article in the journal *Science* suggested that heavy smokers had a shorter life expectancy than did nonsmokers.

In 1964 U.S. Surgeon General Luther Terry released a truly landmark public health document. The work of an independent body of scientists, it was the country's first widely publicized official recognition that smoking causes cancer and other diseases. In many subsequent reports by the surgeon general's office, cigarette smoking has been identified as the leading source of preventable morbidity and premature mortality in the U.S. These statements enumerate many experimental studies in which animals have been exposed to tars, gases and other constituents in tobacco and tobacco smoke.



JAMES LUKOSKI

EXPORTATION OF CIGARETTES, such as the Gold Coast brand marketed by R. J. Reynolds in San'aa, Yemen, is one strategy tobacco companies are adopting in order to offset lowered consumption in the U.S.

A review of mortality statistics underscores the tobacco epidemic. Of the more than two million U.S. deaths in 1990, smoking-related illnesses accounted for about 400,000 of them and for more than one quarter of all deaths among those 35 to 64 years of age. When deaths from passive smoking are included, estimates near 500,000. A recent British study suggests that one half of all regular smokers will die from their habit. Statistically, each cigarette robs a regular smoker of 5.5 minutes of life.

Tobacco also drains society economically. The University of California and the Centers for Disease Control and Prevention (CDC) have calculated that the total health care cost to society of smoking-related diseases in 1993 was at least $50 billion, or $2.06 per pack of cigarettes—about the actual price of a pack in the U.S. That price figure greatly exceeds the average total tax on a pack of cigarettes in the U.S., now currently about 56 cents. Although a 1989 study suggested that smokers "pay their own way" at the current level of excise taxes (because they live long enough to contribute to their pensions and to Social Security but die before they enjoy the benefits), more recent estimates show otherwise. These newer calculations, which incorporate the effects of passive smoking, indicate that smokers take from society much more than they pay in tobacco taxes.

Moreover, because tobacco kills so many people between the ages of 35 and 64, the cost of lost productivity must be accounted for in the analysis. With this factor in mind, the average annual expense to an employer for a worker who smokes has been pegged at $960 a year. The total toll of tobacco consumption for the country may exceed $100 billion annually.

Staying Addicted

Expanding public awareness of tobacco's dangers is probably the reason for the decline of smoking in the U.S. Based on a 1993 count, an estimated 46 million adults (25 percent) in the U.S. smoke—24 million men and 22 million women. Smoking prevalence is highest among some minority groups—in particular, black males, Native Americans and Alaskan natives—and among those with the least education and those living below the poverty level. Perhaps most disheartening, an estimated six million teenagers and another 100,000 children younger than 13 years smoke.

Of greatest concern, however, are the most recent data from the CDC. They suggest that overall smoking prevalence among adults, at approximately 25 percent, was unchanged from 1990 to 1993. Moreover, smoking prevalence among adolescents has remained static since 1985.

On a global scale, the patterns are even more alarming. Although the smoking habit in most developed countries is being kicked, the rate of decline has been slower than it has been in the U.S. In developing countries, data suggest that cigarette smoking is up by 3 percent a year. Richard Peto of the University of Oxford has estimated that the total number of deaths attributable to smoking worldwide will increase from 2.5 million today to 12 million by the year 2050.

There are several reasons for the current pattern of cigarette consumption. In the U.S. the flattened decline since 1990 may have resulted from recent price wars between premium and discount brands. For years, tobacco companies have maintained a high profit margin despite dwindling consumption because smokers are willing to pay a stiff price to satisfy their craving. The addiction of their customers has allowed tobacco companies to boost the price of cigarettes with minimal fear of losing sales. Throughout the 1980s, for instance, the price of cigarettes outpaced inflation.

But the rapidly rising popularity of discount brands has made cigarettes cheaper and more accessible. The market share of these brands rose from 10 percent in 1987 to 36 percent in 1993. They earn about five cents per pack in profit, compared with 55 cents for a brand-name pack. This trend forced a series of price cuts by the major brands in 1993. If the cuts are sustained, smoking prevalence in the U.S., especially among young and poor populations (for whom price is often important), may actually increase.

Despite the recent price deductions, cigarette companies are likely to remain financially and politically potent entities. The two biggest corporations—Philip Morris and R. J. Reynolds—expanded their presence appreciably in the consumer market during the 1980s by acquiring many big, nontobacco-related firms. For instance, Philip Morris bought Kraft and General Foods, among others, and now sells more than 3,000 different products. In 1992 it ranked as the seventh largest industrial corporation in the U.S., with $50 billion in sales, and made more money that year than any other U.S. business. Almost half of its $4.9 billion in profits came from cigarette sales. The major tobacco companies will undoubtedly be able to afford a price war with discount competitors as well as establish their own discount brands. And unlike the discounters, the larger companies can market their products aggressively, both at home and abroad.

There has been little government restriction on the marketing of cigarettes in recent decades. The bulk of today's regulations stems from actions taken shortly after the 1964 surgeon general's report. In 1966 the Federal Trade Commission required that all cigarette packages carry warning labels and that tobacco advertising not be directed at

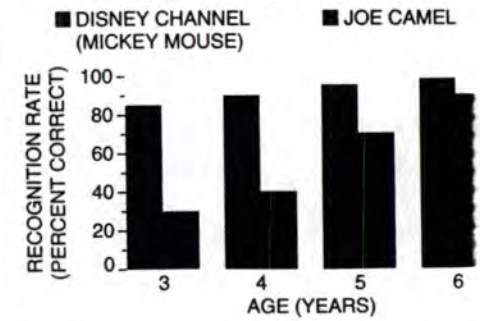
Socioeconomics of Smoking

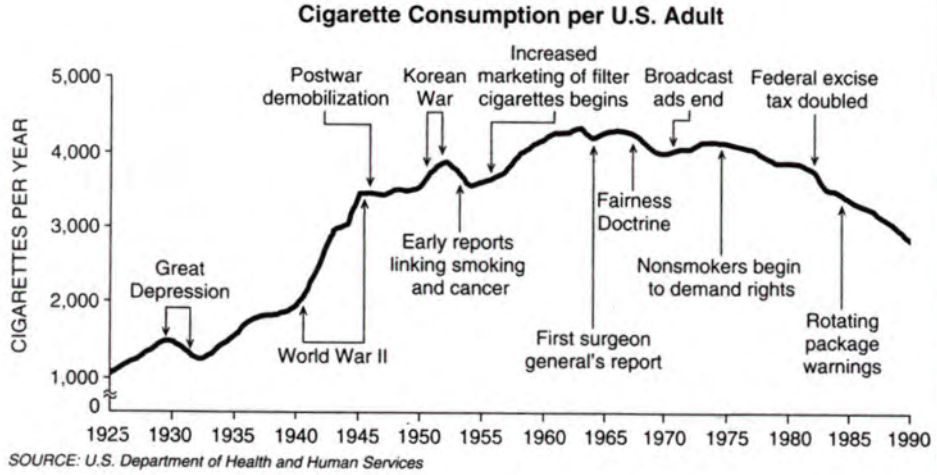
Average Price of 20 Cigarettes

Deaths from Preventable Causes in the U.S. in 1990

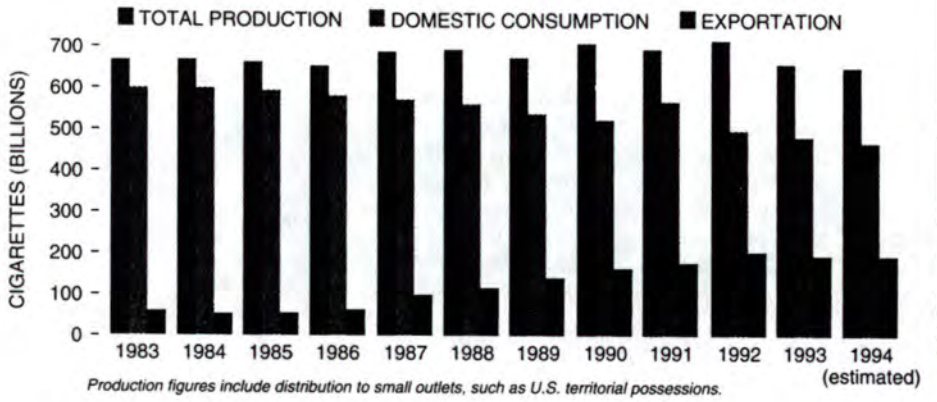
CAUSE	ESTIMATED NUMBER OF DEATHS	PERCENT OF TOTAL DEATHS
Tobacco	400,000	19
Diet/activity patterns	300,000	14
Alcohol	100,000	5
Microbial agents	90,000	4
Toxic agents	60,000	3
Firearms	35,000	2
Sexual behavior	30,000	1
Motor vehicles	25,000	1
Illicit use of drugs	20,000	<1
TOTAL	1,060,000	50

Recognition of Logos by Children

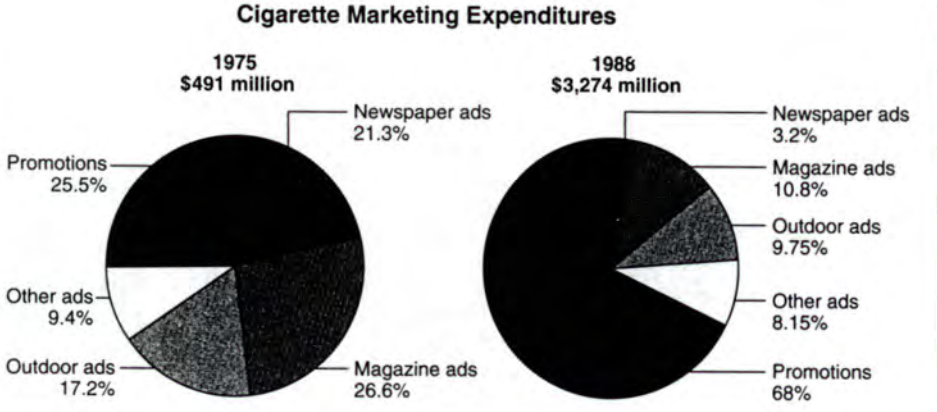




SOURCE: U.S. Department of Health and Human Services



Production figures include distribution to small outlets, such as U.S. territorial possessions.



people younger than 25 years. In 1967 the Federal Communications Commission mandated that local television and radio stations that ran cigarette advertisements had to compensate by airing public service announcements about the product's bad effects. Cigarette advertising shifted completely from television and radio in 1971, when Congress banned all such advertising on electronic media. As a result, magazines, newspapers and billboards took over.

Magazines benefited substantially from the shift. For some, revenues from the tobacco industry increased by $5.5 million per magazine a year (figured in 1983 dollars). Moreover, coverage of smoking-related health issues decreased by 65 percent in magazines that carried cigarette advertisements, as compared with a 29 percent drop in similar stories in periodicals that did not carry them. During the three years following the electronic media ban, per capita cigarette consumption actually rose slightly before resuming its drop. Many analysts attribute the brief surge to the cessation of public service announcements that coincided with the electronic ban.

Several major health organizations, including the American Medical Association, have recommended barring tobacco advertising completely. In other developed countries, such antitobacco legislation is common. By mid-1986, 55 countries had enacted legislation to control advertising: 20 with total bans, 15 with strong partial bans and 20 with moderate ones.

In comparison, the U.S. has been lax. Since 1971 it has passed nothing to restrict cigarette advertising, despite many attempts to do so by several members of Congress. Instead tobacco has become the most displayed product on billboards and the second most marketed product in magazines. In 1989 Philip Morris spent $2 billion on advertisements—more than any other U.S. company. The industry as a whole increased expenditures on advertising from $500 million in 1975 to more than $5 billion in 1992, which represents a fourfold increase in constant 1975 dollars.

The tobacco industry has also concentrated on promotion. Sponsorship of sporting events, the distribution of free cigarettes and other strategies have increased from one quarter of the marketing budget in 1975 to two thirds in 1988. Of particular note are widely televised competitions such as the Camel motocross and the Virginia Slims tennis tournament (Philip Morris, however, voluntarily pulled out of sponsorship last year). Despite the advertising ban on electronic media, sponsorship of such tournaments has granted substantial airtime. For example, during the 93-minute broadcast of the 1989 Marlboro Grand Prix, the Marlboro name flashed on the screen or was mentioned by the announcers 5,933 times, for a total of 46 minutes. For 18 of those minutes, the Marlboro name was clear and in focus, which represents an estimated $1 million of commercial airtime.

Appealing to the Young

These marketing efforts have begun to focus on minorities, women and children, an approach that the medical community has strongly criticized. Recent work has found a link between the start of smoking and targeted advertising [*see box on pages 50 and 51*]. Children are probably the most vulnerable segment. The average age that habitual smoking begins has been dropping for decades and is currently 14.5 years. Approximately 90 percent of regular smokers start before the age of 21.

Data suggest that the tobacco indus-

try recognizes these figures and develops advertisements to appeal to children and teenagers. For example, in 1988 R. J. Reynolds fashioned "Old Joe Camel," a cartoon character who shoots pool, rides motorcycles and associates with attractive women as he smokes cigarettes. Three years after the campaign began, several studies clearly demonstrated that children and teenagers easily recognized Joe Camel. One study showed that six-year-olds knew the character as often as they picked out Mickey Mouse. Teenagers were likewise influenced. Surveys done in 1988 and 1990 show that the proportion of teenage smokers who bought the Camel brand increased from 0.5 to 32 percent. In this same period, it is estimated that Camel cigarette sales to minors soared from $6 million to $476 million.

How can minors purchase cigarettes so easily? Although 46 states have laws prohibiting the sale of cigarettes to minors, compliance has been consistently poor in many communities. Furthermore, only nine states have stopped the sale of cigarettes in vending machines, and just 22 states prohibit the free distribution of cigarettes to underage individuals. Many legislators and health officials have suggested that the sale of cigarettes should require licensing similar to that for the sale of alcohol.

The tobacco industry may be relying on a more insidious strategy to gain new customers—that is, through smokeless tobacco. It is estimated that 7.5 million people in the U.S. use tobacco in this way, with snuff (shredded tobacco that is sucked but not chewed) being the most popular. A 1994 *Wall Street Journal* article reported that tobacco companies doctor their snuff products to increase the nicotine that the mouth can absorb—an alarming assertion, given that the average age of first-time snuff users is nine years. The article argued that these companies try to appeal to young people with pleasant-tasting, milder forms that are lower in free nicotine (that is, in a form immediately available for absorption) and then to graduate these consumers to very potent, very addictive brands high in free nicotine. Although the tobacco companies admit they can control the amount of nicotine in the product, they deny that they do so to addict individuals.

Despite the toxic effects of tobacco, the agencies primarily responsible for protecting the consumer—the Food and Drug Administration and the Consumer Product Safety Commission—have never subjected tobacco products to health and safety regulations commonly used for hazardous compounds. Their permissiveness very likely stems from the lobbying efforts by the tobacco industry, which is considered one of the most powerful at all levels of government today. In 1992 the tobacco industry donated more than $4.7 million to the leading political parties, representing three times the amount given in 1988. Few government representatives refuse these contributions. In 1989 it was reported that over a two-year period, 420 of 535 congressional representatives and 87 of 100 senators accepted tobacco campaign contributions, making the tobacco lobby one of the most influential forces in government.

Tobacco companies have also formed industry organizations to channel contributions and to give them a central voice. One such group, the Tobacco Institute, has consistently created a public smoke screen by questioning the association between smoking and human disease. As late as 1986, a Tobacco Institute publication stated that "eminent scientists believe that questions relating to smoking and health are unresolved."

The regulation of tobacco products may change because of allegations that the industry has knowingly manipulated the nicotine content of cigarettes to maximize addiction and has suppressed evidence pointing out the hazards. To many, the congressional testimony of tobacco executives last year—who stated their belief that nicotine was not addictive and that cigarettes were not proved to cause cancer—was designed to avoid any potential liability. The FDA is now considering regulating cigarettes as drug-delivery systems for nicotine (which can act as a stimulant or as a tranquilizer, depending on the amount used). Although the new Congress is much less enthusiastic about such regulations, the health care community regards the FDA's case to be strong enough to force passage of some kind of legislation. How new laws will alter the control of tobacco is unclear. But given current standards of consumer product safety, the introduction and sale of a similar product today would assuredly be denied.

MICHELE McDONALD

JOHN DURICKA AP Photos

ADDICTION TO NICOTINE can turn youngsters such as this Albanian boy in Kosovo into regular smokers (*top*). After having been sworn in before a congressional hearing in April 1994 (*bottom*), executives from major U.S. tobacco firms later testified that they believed nicotine was not addictive.

Taxing Tobacco

The political might of the tobacco industry has prevented significant rises in cigarette excise taxes, thus keeping the cost of the habit affordable. The federal tax has risen from eight cents a pack of 20 cigarettes in 1951 to only 24 cents today, a climb far less than inflation. (Adjusted for inflation, the 1951 tax would be approximately 40 cents today, meaning that the tax has actually declined.) With the addition of state and local taxes, the average total tax on a pack of cigarettes in the U.S. is 56 cents, or 30 percent of the average retail price. This amount is substantially lower than those in many other industrial nations.

The tobacco companies have employed a strategy of

The Medical Effects of Tobacco Consumption

Discovered in the early 1800s and named nicotianine, the oily essence now called nicotine is the main active ingredient of tobacco. Indeed, researchers recognized in 1942 that smoking dried tobacco leaves was basically a means of administering nicotine, just as smoking opium was a means of obtaining morphine. Nicotine, however, is but a small component of cigarette smoke, which contains more than 4,700 chemical compounds, including 43 cancer-causing substances. Condensates of tobacco smoke suspended in acetone and applied to the skin of mice for long periods cause papillomas or carcinomas at the site. Toxins in cigarette smoke cause breaks in the DNA of cultured human lung cells. In some cases, these carcinogens greatly accelerate the mutation rate in dividing cells, which in turn can lead to tumor formation.

Unfortunately for the smoker, no threshold level of exposure to the toxins has been found. What is clear is that years of cigarette smoking vastly increase the risk of developing several fatal conditions. In addition to being responsible for more than 85 percent of lung cancers, smoking is associated with cancers of the mouth, pharynx, larynx, esophagus, stomach, pancreas, uterine cervix, kidney, ureter, bladder and colon. Cigarette smoking is thought to cause about 14 percent of all leukemias and 30 percent of new cases of cervical cancer in women. All told, cigarette smoking is responsible for 30 percent of all deaths from cancer and clearly represents the most important preventable cause of cancer in the U.S. today.

Smoking also increases the risk of cardiovascular disease, including stroke, sudden death, heart attack, peripheral vascular disease and aortic aneurysm. Cigarettes caused almost 180,000 deaths from cardiovascular disease in the U.S. in 1990. Components of cigarette smoke damage the inner lining of blood vessels, which can lead to the development of atherosclerosis. The toxins can also stimulate occlusive elements in coronary arteries, thus promoting clots to form and triggering spasms that close off the vessels. In this regard, the smoking of a single cigarette can profoundly disturb blood flow to the heart in patients with existing coronary artery disease.

Furthermore, cigarette smoking is the leading cause of pulmonary illness and death in the U.S. In 1990 smoking caused more than 84,000 deaths from pulmonary disease, mainly resulting from such problems as pneumonia, emphysema, bronchitis and influenza.

Passive smoking—the breathing of sidestream smoke (emitted from the burning tobacco between puffs) or of smoke exhaled by the smoker—poses a similar health risk. A 1992 Environmental Protection Agency report emphasized the dangers, especially of sidestream smoke. This type of smoke contains more particles of smaller diameter and is therefore more likely to be deposited deep in the lungs. On the basis of this report, the EPA has classified environmental tobacco smoke as a "group A" carcinogen, to which radon, asbestos, arsenic and benzene belong.

Of the estimated 53,000 annual deaths in the U.S. caused by passive smoking, 37,000 come from associated heart disease. A nonsmoker living with a smoker has a 30 percent higher risk of death from ischemic heart disease or myocardial infarction. Lung cancer risk also skyrockets. Any exposure from a spouse who smokes is associated with at least a 30 percent excess risk of lung cancer. Increasing daily amounts and the number of years of smoking significantly heighten the risk. The figure jumps to 80 percent if the spouse has been smoking four packs a day for 20 years. Another recent study points out that 17 percent of the cases of lung cancer among nonsmokers can be attributed to exposure to high levels of tobacco smoke during childhood and adolescence.

The health consequences of smoking among women are of special concern because of the deleterious effect on reproduction. Unfortunately, the fastest-growing segment of smokers in the U.S. is women younger than 23 years. Smoking reduces fertility, spurs the rate of spontaneous abortions and stillbirths, can cause excessive bleeding during pregnancy and results in lower birth weights in infants. Moreover, children of smokers do not grow as large or attain the same level of educational achievement as unexposed children.

Smoking is a significant cause of cardiovascular diseases and strokes in women, especially if they also use oral contraceptives. Lung cancer has now surpassed breast cancer as the primary cause of death from cancer among women. In 1993 lung cancer claimed an estimated 56,000 deaths, whereas breast cancer took 46,000 lives.

The elderly also face special harm from smoking. Among those older than 65, the rates of total mortality among current smokers are twice those among people who have never smoked. A 1992 *Time* magazine article noted that three life insurers owned by tobacco companies charge smokers nearly double for term insurance.

Smoking is associated with a variety of other ailments: cataracts, delayed healing of broken bones, periodontal maladies, predisposition to ulcer disease, hypertension, brain hemorrhages and skin wrinkles, to name just a few.

Recently some studies have suggested that cigarette smoking ameliorates symptoms of Alzheimer's disease. It is not surprising that with its powerful effect on the central nervous system, nicotine may influence the condition. Yet methodological flaws plague many of these studies. Moreover, other researchers suggest that smoking may increase the risk of Alzheimer's, in that it accelerates the natural consequences of aging. With its many and potent toxins, cigarettes would in any case be an inappropriate vehicle for delivering nicotine should the compound ever prove valuable in treating Alzheimer's.

There is much to be gained by those who kick the habit. After a year, mortality from heart disease drops halfway back to that of a nonsmoker; by five years, it drops to the rate of nonsmokers. A person's risk of lung cancer is cut in half in five years; by 10 years, it drops almost to the rate of nonsmokers. Such gains make sense, however, only if smokers quit in time, before they show any signs of tobacco's lethal effects.

Looking for a Market among Adolescents

In 1992, the most recent year for which data are available, the tobacco industry spent $5 billion on domestic marketing. That figure represents a huge increase from the approximate $250-million budget in 1971, when tobacco advertising was banned from television and radio. The current expenditure translates to about $75 for every adult smoker, or to $4,500 for every adolescent who became a smoker that year. This apparently high cost to attract a new smoker is very likely recouped over the average 25 years that this teen will smoke.

In the first half of this century, leaders of the tobacco companies boasted that innovative mass-marketing strategies built the industry. Recently, however, the tobacco business has maintained that its advertising is geared to draw established smokers to particular brands. But public health advocates insist that such advertising plays a role in generating new demand, with adolescents being the primary target. To explore the issue, we examined several marketing campaigns undertaken over the years and correlated them with the ages smokers say they began their habit. We find that, historically, there is considerable evidence that such campaigns led to an increase in cigarette smoking among adolescents of the targeted group.

National surveys collected the ages at which people started smoking. The 1955 Current Population Survey (CPS) was the first to query respondents for this information, although only summary data survive. Beginning in 1970, however, the National Health Interview Surveys (NHIS) included this question in some polls. Answers from all the surveys were combined to produce a sample of more than 165,000 individuals. Using a respondent's age at the time of the survey and the reported age of initiation, the year the person began smoking could be determined. Dividing the number of adolescents (defined as those 12 to 17 years old) who started smoking during a particular interval by the number who were "eligible" to begin at the start of the interval set the initiation rate for that group.

Mass-marketing campaigns began as early as the 1880s which boosted tobacco consumption sixfold by 1900. Much of the rise was attributed to a greater number of people smoking cigarettes, as opposed to using cigars, pipes, snuff or chewing tobacco. Marketing strategies included painted billboards and an extensive distribution of coupons, which a recipient could redeem for free cigarettes and a variety of other premiums. Some brands included soft-porn pictures of women in the packages. Such tactics inspired outcry from educational leaders concerned about their corrupting influence on teenage boys. Thirteen percent of the males surveyed in 1955 who reached adolescence between 1890 and 1910 commenced smoking by 18 years of age, compared with almost no females.

The power of targeted advertising is more apparent if one considers the men born between 1890 and 1899. In 1912, when many of these men were teenagers, the R. J. Reynolds company launched the Camel brand of cigarettes with a revolutionary approach. In the months before the Camel debut, every city and hamlet in the country was bombarded with print advertising. According to the 1955 CPS, initiation by age 18 for males in this group jumped to 21.6 percent, a two thirds increase over those born before 1890. The NHIS initiation rate also reflected this change. For adolescent males, it went up from 2.9 percent between 1910 and 1912 to 4.9 percent between 1918 and 1921.

It was not until the mid-1920s that social mores permitted cigarette advertising to focus on women (public clamor forced a 1919 ad aimed at women by Lorillard Company to be with-

identifying themselves as "citizens against tax abuse" and spend millions of dollars to fight against tax increases. The industry probably feels that such large expenditures are necessary to fend off the perceived threat to profits. A 10 percent increase in cigarette prices reduces consumption by 4 percent, mostly by keeping new smokers away. The drop would probably be much larger in populations that are highly sensitive to price hikes, such as teenagers. Because the vast majority of smokers begin in their teens, a major drop in teenage smoking would seriously threaten the future of the tobacco industry.

The American Heart Association, the American Cancer Society and the American Lung Association have recommended a $2 increase in federal tax per pack of cigarettes. Their counsel is based in part on data from Canada and California, where cigarette tax hikes have significantly reduced consumption. The potential benefits of high tobacco taxes are many. Several states have earmarked the revenue for public health education campaigns, antitobacco advertising and health care for the poor. With the recent fall in average cigarette prices, tax increases have become particularly important to counteract a possible acceleration in consumption among teenagers. Many bills were introduced in Congress during the past two years to up the federal tax by $1 or less, both as independent proposals and as part of health care reform packages. None received sufficient support to pass.

Exports to Hook New Customers

Even if tighter marketing restrictions and higher excise taxes prove successful in decreasing tobacco smoking in the U.S., the industry has a means to counteract loss of revenue: exportation. Indeed, although total cigarette consumption in the U.S. has been declining for over a decade, domestic production has been buoyed by steadily increasing shipments overseas. Cigarette exportation climbed from 8 percent of production in 1984 to 30 percent in 1994. Unmanufactured tobacco leaf exportation now exceeds 34 percent of production. The U.S. currently leads the world in tobacco exports and has capitalized on the markets in underdeveloped countries, which have few if any restrictions on advertising or product labeling.

The six major transnational tobacco companies (three are based in the U.S., and the others in the U.K.) have experienced little resistance to gaining footholds in these developing countries. Often the only competition comes from government-run production companies, for which there is marginal advertising. Many have argued that the introduction of Western advertising in developing countries has done much more than shift the existing market share to the transnational companies. In Hong Kong, for instance, only 1 percent of the women now smoke, but the advertising by transnational companies has heavily targeted women---clearly indicating that the companies are making an effort to carve out a new market. This kind of exploitation equates with the disgraceful export of opium from England to China in the 1830s.

As assistant secretary of health under President George Bush, James Mason stated in 1990 at the Seventh World Conference on Tobacco and Health in Perth, Australia: "It is unconscionable for the mighty transnational tobacco companies to be peddling their poison abroad, particularly because their main targets are less developed countries. They play our free trade laws and ex-

drawn). In 1926 a poster depicted women imploring smokers of Chesterfield cigarettes to "Blow Some My Way." The most successful crusade, however, was for Lucky Strikes, which urged women to "Reach for a Lucky Instead of a Sweet." The 1955 CPS data showed that 7 percent of the women who were adolescents during the mid-1920s had started smoking by age 18, compared with only 2 percent in the preceding generation of female adolescents. Initiation rates from the NHIS data for adolescent girls were observed to increase threefold, from 0.6 percent between 1922 and 1925 to 1.8 percent between 1930 and 1933. In contrast, rates for males rose only slightly.

JAMES NUBILE, JB Pictures

OLD JOE CAMEL coolly surveys Times Square.

The next major boost in smoking initiation in adolescent females occurred in the late 1960s. In 1967 the tobacco industry launched "niche" brands aimed exclusively at women. The most popular was Virginia Slims. The visuals of this campaign emphasized a woman who was strong, independent and very thin. Consequently, and ironically in conjunction with the rise of the women's movement, initiation in female adolescents nearly doubled, from 3.7 percent between 1964 and 1967 to 6.2 percent between 1972 and 1975 (NHIS data). During the same period, rates for adolescent males remained stable.

Thus, in four distinct instances over the past 100 years, innovative and directed tobacco marketing campaigns were associated with marked surges in primary demand from adolescents only in the target group. The first two were directed at males and the second two at females. Of course, other factors helped to entrench smoking in society, such as the provision of free cigarettes during wartime and the romanticization of actors smoking in the movies. Yet it is clear from the data that advertising has been an overwhelming force in attracting new users.

Despite subsequent regulations barring advertisement geared to minors, the tobacco industry nonetheless has retained its targeted approach. In 1988 R. J. Reynolds introduced another novel campaign featuring the ultracool cartoon character "Joe Camel." Recent data from California indicate a rising market share for Camels in youths and a turnaround in adolescent smoking prevalence, which had been declining during the 1980s. Future surveys of adults will most likely show a jump in adolescent smoking initiation rates coincident with the rolling out of this campaign. *—John P. Pierce and Elizabeth A. Gilpin*

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port policies like a Stradivarius violin, pressuring our trade promotion agencies to keep open—and force open in some cases—other nations' markets for their products."

The U.S. government has remained remarkably unresponsive to such claims. One reason for this inaction may be that in 1990 the U.S. realized a $4.2-billion trade surplus from tobacco exports, accounting for 35 percent of the entire agricultural trade surplus. In that same year Vice President Dan Quayle stated during a North Carolina news conference: "I don't think it's news to North Carolina tobacco farmers that the American public as a whole is smoking less. We ought to think about the exports. We ought to think about opening up markets, breaking down the barriers rather than erecting new tariffs, new quotas and things of that sort."

Much of the aggressive trade behavior by the tobacco industry is sanctioned under section 301 of the 1974 Trade Act. Public health officials have repeatedly asked that Congress reevaluate this act and current tobacco trade practices, but the representatives have failed to take action. Moreover, many have questioned the difference in health standards applied to domestically consumed and exported tobacco. For example, there are no U.S.-imposed regulations on the labeling, tar content or advertisement of tobacco products exported to developing nations. It is truly ironic that the U.S. freely exports cigarettes to countries such as Colombia in the face of huge expenditures on both sides to restrict the trade of cocaine, which accounts for many fewer deaths.

The magnitude of tobacco-related diseases and deaths around the world cannot be overstated. Cigarette smoking is the number-one preventable cause of premature death in the U.S. Yet it enjoys remarkable tolerance among Americans. On an international level, trends in smoking prevalence suggest an even more profound rejection or ignorance of the health risks of tobacco use.

For these reasons, the obstacles facing the antitobacco campaign are formidable. From the standpoint of public health, it is clear that a battle plan must emphasize intervention programs that specifically target children and adolescents. These plans include increased government regulation of tobacco advertisements, restrictions on access to cigarettes by minors and higher tobacco taxes. Other possibilities are support for personal-injury litigation against the tobacco industry, government subsidies for the conversion of tobacco crops to other plants and comprehensive restrictions on workplace and public smoking. Concerned citizens, public health officials, government representatives and health care providers must join forces to adopt a multidisciplinary strategy to control this global epidemic.

FURTHER READING

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