
Will Government's Crusade Against Tobacco Work?

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*Contemporary
Issues Series 86*

July 1997



Center for the
Study of
American Business

Washington University in St. Louis

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Federal, state, and local governments are crusading against tobacco. The charge is being led at the federal level by the Food and Drug Administration (FDA) with its restrictions on cigarette advertising. At the state level, 40 attorneys general have sued the tobacco industry for reimbursement for Medicaid expenses. State excise taxes have been increased on cigarettes, with much of the revenue earmarked for a host of anti-smoking mass media campaigns. This crusade led to an historic agreement (yet to be ratified by Congress) in which the tobacco industry would pay more than \$360 billion over 25 years to, among other things, reimburse states and fund anti-smoking media campaigns. Also, cigarette advertising would be further restricted with no billboard ads, no ads at sporting events, and no pictures of humans or cartoons within those ads.

Will this crusade reduce smoking, particularly among teen-agers? Probably not. Despite the claims of organizations that receive funding from tobacco tax revenues, punishing and preaching have not been, and are unlikely to be, significant factors influencing smoking rates, especially among teen-agers. And the evidence is even weaker that government restrictions on tobacco advertising reduce tobacco use.

Are Tax Increases an Effective Way to Reduce Smoking?

Like most goods, the quantity of cigarettes de-

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manded is inversely related to price. So of course, increasing the price of cigarettes with excise taxes reduces the amount sold.

States that have significantly increased their excise tax on cigarettes have reported large reductions in cigarette sales. For example, both New York state and California have imposed sharp excise tax increases on cigarettes since 1988, and both report large declines in sales: 31 percent in New York and 28 percent in California. Similarly, Michigan's sales dropped 30 percent the following year.¹ Such evidence seems to support the argument that raising taxes is an effective way to reduce smoking. A closer look, however, shows that this is not the case.

Much of the cross-border traffic in cigarettes is supplied by organized smuggling.

When a state increases its cigarette tax, it increases the price of cigarettes taxed within its borders. There is also an increase in the sale of cigarettes brought in from other states or jurisdictions with lower taxes. Some of these cross-border sales are the result of people bringing in small quantities of cigarettes after visits to nearby low-tax states, or Indian reservations and military bases where state taxes don't apply. But much of the cross-border traffic in cigarettes is supplied by organized smuggling.

Michigan, for example, has suffered from a smuggling epidemic since it raised the cigarette excise tax to 75 cents from 25 cents per pack in May 1994. The *Detroit Free Press*, in a front-page article entitled "Smugglers Win," reveals pervasive smuggling networks in Michigan. According to the article, "Michigan's higher tobacco tax has spawned rampant cigarette smuggling that's siphoned mil-

lions of tax dollars from the state treasury, while lighting up huge profits for traffickers."²

So while legal cigarette sales in Michigan dropped by 30 percent from July 1, 1994, to June 30, 1995, this drop was not accompanied by a decline in smokers in the state. In fact, smoking increased in Michigan from 25.2 percent to 25.7 percent from 1993 to 1995, according to a survey by the Centers for Disease Control. Not surprisingly, while Michigan cigarette sales were declining, cigarette sales in low-tax states within a day's drive increased significantly. For example, in the year after the Michigan tax increase, sales increased 12 percent in North Carolina, 8.5 percent in Indiana, 7.5 percent in Tennessee, 6 percent in Kentucky, 6 percent in Missouri, 4.5 percent in Ohio, and 4.5 percent in Virginia.³

Similarly, Maryland increased its cigarette tax by 20 cents per pack in 1992, and in the following year sales of cigarettes taxed in Maryland fell by 10 percent. But as in Michigan, the percentage of smokers in Maryland increased from 20.4 percent to 21.2 percent from 1993 to 1995.⁴ Obviously, the increase in cigarette sales in the low-tax states did not reflect large increases in smoking in those states. Rather most of the increase in cigarettes sold in the low-tax states was going to supply smokers in the high-tax states.

Similarly, the evidence from the large cigarette-excise tax increase in California provides little reason to believe that smoking is significantly reduced by state taxes. In 1988 California increased the state excise tax on cigarettes from 10 cents to 35 cents per pack. As was easily predicted, given the size of the California market and the proximity of that market to low-taxed cigarettes in Mexico, Indian reservations, and military bases, contraband cigarettes began flooding into the state. It has been estimated by the Canadian accounting firm Lindquist, Avey and Macdonald that from 17.2 percent to 23 percent of the cigarettes sold in California come from contraband sales, with a major source

coming from cigarettes exported to Mexico and then smuggled back into the United States.⁵ This clearly suggests that the 28 percent decline in legal cigarette sales in California provides an unreliable measure of any reduction in smoking due to the tax increase. Interestingly, if contraband cigarettes make up just 13 percent to 14 percent of the California market, smoking in California has not declined since the tax increase by any more than the nationwide average over the same period.

Increasing cigarette excise taxes is not a very effective way to reduce smoking.

The experience of Canada is also instructive. It was widely reported that smuggled cigarettes made up 30 percent to 50 percent of the Canadian market. Taxable cigarette sales nose-dived as taxes increased during the mid-1980s and early 1990s. At the same time, massive cigarette-smuggling was making up for the apparent decline in smoking, as measured by legal, or tax-reported, Canadian sales. In the end, when all the cigarettes were counted, the Canadian smoking rate fell no more than in the United States during the same period, according to Lindquist, Avey and Macdonald.⁶

Canada recently reduced its cigarette tax by a substantial amount, as much as \$22 per carton in some provinces, to stem a smuggling epidemic. Canada cut its tax rate not only because smuggling was greatly reducing the sale of taxable cigarettes, but also because of concern over youth smoking. Contrary to the usual argument, many Canadian officials concluded that high taxes made it more difficult to control teenagers' access to cigarettes. To explain the tax cut, Canadian Health Minister Diane Marleau said, "It will end the smuggling trade and enforce children to rely on regular stores for

their cigarettes, where they will be forbidden from buying them until they are 19."⁷

State governments can increase the price of legally taxed cigarettes. But states can do little to increase the price smokers pay for cigarettes unless they are willing to divert far more police resources from protecting the public against traditional crimes and into smuggling control than they seem willing to do. Increasing cigarette excise taxes is not a very effective way to reduce smoking.

Are Anti-tobacco Media Campaigns Effective?

Attempting to punish cigarette smoking with high taxes does little to reduce smoking. But what about preaching the "evils" of smoking through media campaigns funded by the revenue from high cigarette taxes? It appears that preaching is even less effective than punishing. Expensive media campaigns appear to have no long-run effect on tobacco use. At best, the evidence suggests that media campaigns are just one of many factors that influence decisions to smoke and that any influence they might have is short lived. For example, in a report favorably evaluating the California Tobacco Control Program (which is funded by state cigarette excise taxes) for the California Department of Health Services, Pierce, et al. acknowledge:

It is important to stress that long-term changes in community norms and behaviors related to smoking are unlikely to be the result of media interventions alone. Research in this area has consistently demonstrated that the factors contributing to the formation of an enduring health belief or behavior are extremely varied. In addition, analysis of one of the few media campaigns comparable to the California project suggests that anti-tobacco media campaigns may be primarily effective in stimulating immediate and *short-lived* changes in health behavior. (emphasis added)⁸

Anti-tobacco ads that emphasize the health effects of tobacco use are particularly unsuccessful. Commenting on this ineffectiveness, Lisa Unsworth, executive vice president at the ad agency Houston Effler Herstek Favat (which has created anti-tobacco ads in Massachusetts), says, "Kids think they will live forever. Talking about a disease that you may get when you're 50 or 60 isn't a compelling motivator."⁸ While there may be some truth in Unsworth's comment, it is more likely that teenagers are not discouraged from smoking by health claims because they already have an exaggerated impression of the health risks of smoking.

There is no evidence that [an anti-tobacco ad campaign] affects the ultimate decision to quit.

Few things have been so widely disseminated and accepted as the evidence that smoking is harmful to your health. Research by Kip Viscusi, an economist at Harvard University, shows that people consistently overestimate the risks of smoking. In particular, Viscusi finds that teenagers believe smoking is a greater health hazard than indicated by the surgeon general's reports, and indeed they have a more exaggerated perception of the risks than do adults.¹⁰ Anti-smoking ads that emphasize health concerns simply do not provide teenagers with any new information, and therefore it is not surprising that these ads have no long-run influence on their smoking behavior.¹¹

It is not that all anti-tobacco ads are ineffective or that no teenagers will stop smoking after being exposed to an anti-tobacco media campaign. Some evidence indicates that a number of teenagers do stop smoking in response to certain types of ads.¹² But the important issue is the long-run influence of

anti-tobacco ads, and here, the evidence for the effectiveness of these ads is very weak. Many teenagers experiment with smoking, but most quit. And they quit for a wide range of reasons that have nothing to do with anti-tobacco ads. An anti-tobacco media campaign may marginally affect the timing of a person's decision to quit, but there is no evidence that it affects the ultimate decision to quit.

The objective of anti-tobacco ads targeted to teenagers is laudable. No responsible person favors teenage smoking, which explains why laws against selling cigarettes to anyone under 18 have long existed in every state and the District of Columbia. But no case can be made for pouring resources into anti-tobacco ads if they are ineffective, no matter how laudable the objective. Of course, those receiving money to prepare anti-tobacco media campaigns can be expected either to deny that their ads are ineffective or to argue that more money is needed to make them effective. In the recent (but still unratified) agreement between the cigarette industry and government in which the industry will pay over \$360 billion in return for some degree of immunity against lawsuits, one report predicts that "about \$500 million [of this amount] would go toward anti-smoking education projects."¹³ But this surely underestimates the effect of the political activity that \$360 billion will motivate on the part of advocates and beneficiaries of anti-tobacco media campaigns.¹⁴

The claim is that anti-smoking campaigns must continue and expand to offset the large amount of money that the cigarette industry is spending on ads to encourage smoking. But there is no serious evidence that anti-tobacco media campaigns have any long-run effect on tobacco use. Nor is there any credible evidence that cigarette advertising does anything to encourage people to begin smoking. This raises the question, why spend lots of money to run ineffective anti-tobacco media campaigns to combat equally ineffective tobacco advertising?

Tobacco Advertising Does Not Encourage Smoking

It is plausible to believe that tobacco advertising encourages people to start smoking. All advertising presents products in ways to appeal to consumers, and why would the tobacco industry spend so much on advertising if it is ineffective?

First, it is easy to explain why tobacco companies would advertise even if it did nothing to encourage people to smoke. By advertising, each company hopes to profit by convincing customers to use its brands rather than those of another company. Of course, if advertising does nothing to increase total consumption, all companies would be better off collectively if no one advertised. The problem is in enforcing a general agreement not to advertise.

For each company, the best thing to do is advertise no matter what other companies in the industry are expected to do. Advertising will help a company increase market share if other companies do not advertise and will help avoid a decrease in market share if they do. For example, advertising surely does nothing to increase the public's awareness of, or desire for, the convenience of automobile transportation. Automobile advertising can be explained entirely in terms of each auto company's desire to get consumers to purchase one of its cars instead of a car from a competing company.

The effect of cigarette advertising is not as obviously limited to market share considerations as is the case of automobile advertising. Smoking is a widespread and visible activity, with advertising adding nothing to public awareness of smoking as a consumption choice. But people have more flexibility in deciding whether to smoke than they typically have in deciding whether to drive. So the question of whether cigarette advertising causes people to start smoking is an empirical one. The preponderance of the empirical evidence shows that advertising does not motivate people to become

smokers.

The teen-age smoking rate in Finland was decreasing before 1978 when the Finnish government imposed a nationwide ban on advertising tobacco products. After the ban, the teen-age smoking rate began increasing. A similar reversal in the teen-age smoking rate occurred in Sweden after it imposed tight restrictions on tobacco advertising in 1979. There has been a ban on all tobacco advertising in Norway since 1975, with no noticeable effect on smoking and with the teen-age smoking rate far higher than that experienced in countries with little, if any, restrictions on tobacco advertising.¹⁵ In 1992 Australia imposed a ban on cigarette advertising, and smoking rates among adolescents increased.¹⁶

Scholars who have seriously studied the issue find little reason to believe there is a connection between youth smoking and tobacco advertising.

This counterproductive response to advertising bans should not be surprising given the tendency of young people to rebel against what they see as restrictions on their independence. Adult disapproval of an activity often contributes to the activity's popularity among the young. Turning smoking into a "forbidden fruit" can easily have the effect of increasing teen-age smoking.¹⁷

Scholars who have seriously studied the issue find little reason to believe there is a connection between youth smoking and tobacco advertising. Academics meeting in 1990 to discuss the impact of smoking ads on children concluded, "The emerging consensus was that the group was skeptical of the view that advertising contributes significantly to either the initiation or maintenance of smoking."¹⁸ Former U.S. Surgeon General C. Everett Koop, well

known for his anti-smoking views, stated in his 1989 *Surgeon General's Report*, "There is no scientifically rigorous study available to the public that provides a definitive answer to the basic question of whether advertising and promotion increase the level of tobacco consumption."¹⁹

Yet the media are constantly reporting claims that smoking in general, and youth smoking in particular, could be significantly reduced if only the government would impose additional restrictions on tobacco advertising. Most notable are the stories of studies indicating that the Joe Camel ads have enticed a large number of young people to smoke. It is true that the ads successfully increased the market share of Camel cigarettes. But increasing the market share of one brand of cigarettes is not the same as increasing the number of young smokers or smokers of any age.

Research has shown that there is not a necessary connection between repeated exposure to an ad, recognizing the ad, and a favorable attitude toward the product being advertised.

The study that attracted so much media attention found that 51.1 percent of the sampled three-to-six-year-old children recognized the Camel cigarette cartoon character Joe Camel and that 91 percent of the sampled six-year-olds correctly matched Joe Camel to cigarettes.²⁰ The results of this study have been questioned on methodological grounds by several subsequent studies.²¹ But even if the results are correct, it does not follow that recognizing Joe Camel makes an adult want to run out and smoke a cigarette or, even more implausibly, programs a four-year-old to want to start smoking Camel cigarettes 10 years later. But Paul Fischer and his col-

leagues would not have had an interesting paper if all they said was that children are good at remembering cartoon characters. So they also claimed "that brand awareness created in childhood can be the basis for product preference later in life."²² This claim is based on the assumption that frequent exposure to a product's trade character not only increases recognition of that character, but leads to a favorable attitude toward it. But research has shown that there is not a necessary connection between repeated exposure to an advertisement, recognizing the advertisement, and a favorable attitude toward the product being advertised.²³

In research related to the Fischer, et al. study, Richard Mizerski investigated not only the ability of children to recognize Joe Camel and associate this cartoon character with cigarettes, but also the connection between this recognition and the attitude of the children toward cigarettes. Although Mizerski finds levels of recognition lower than those found by Fischer, et al., he finds recognition of, and the ability to, appropriately match trade characters is positively associated with age. However, Mizerski also finds that increased recognition of Joe Camel is associated with an increased dislike of cigarettes. According to Mizerski, "Comparing the recognition of Joe Camel and the liking of cigarettes across each age group illuminates the strong negative relationship between the two."²⁴ Furthermore, Mizerski states, "With Joe Camel, I found no link between recognizing their associated products and the measure used to predict future use."²⁵ The implied assumption of Fischer et al. and the one conveyed by media reports of their study is that increased recognition of Joe Camel by children means an increased likelihood that those children will eventually become smokers. Mizerski's work refutes this assumption.

Two recent studies, conveniently announced as the FDA was pushing for more control over tobacco advertising, claim to show that cigarette advertising significantly increases the likelihood that adolescents

will start smoking. Based on telephone interviews with 3,536 California adolescents who said they had never smoked, Nicola Evans and her colleagues found, after trying to take peer pressure into consideration, that those rated as receptive to cigarette advertising were two to four times more likely to be in the group classified as susceptible to smoking than those rated as unreceptive to advertising.²⁶ In the second study, John Pierce and his colleagues found a correlation between increased smoking among 14- to 17-year-olds and each of the four major advertising drives since the late 1800s. Pierce seems convinced that his studies establish advertising as a major influence, even more so than peer pressure, on the rate of teen-age smoking. He stated at a press conference on his studies that his methodology would withstand efforts to discredit it.²⁷ His confidence was unwarranted.

Even those who see Evans' and Pierce's work as justifying action against cigarette advertising point out that their studies have failed to distinguish cause and effect and are therefore inconclusive.²⁸ For example, even if the sampled teen-agers were accurately characterized as receptive to cigarette advertising and susceptible to smoking, and the correlation between these two groups is positive, nothing in this correlation would establish causation. It is just as likely that a predisposition to smoking causes teen-agers to be more receptive to cigarette advertising than the opposite. Or some third factor not considered by Evans could be the major influence behind both receptivity to cigarette advertising and susceptibility to smoking.

The study showing a correlation between major advertising drives and increased teen-age smoking also fails to establish what is the causal factor. Pierce wants us to believe that the advertising caused the increase in teen-age smoking. But nothing in his study suggests that this is more likely than the increase in teen-age smoking (and smoking in general) motivating cigarette companies to increase their advertising in an effort to increase market share.²⁹

If the advertising campaigns caused the increase in smoking, the question is: why only four drives? And why did they occur when they did? Why didn't the cigarette companies continue the high level of advertising associated with the drives if they were so effective at causing more people to smoke? Or does Pierce believe that the cigarette companies decided that they didn't want the additional business and profits that would have resulted from the additional advertising?

It is just as likely that a predisposition to smoking causes teen-agers to be more receptive to cigarette advertising than the opposite.

Unfazed by these flaws, the authors of these studies are eager to draw policy conclusions from their research which they simply cannot support. According to Pierce, "If something appears dangerous we pull it. The prudent public health policy would be to pull [cigarette] marketing until they can prove it does no harm."³⁰ This is a strange comment for a scientist to make. As Pierce is surely aware, it is impossible to prove any empirical proposition; all we can do is accept or reject such propositions at specified levels of confidence, always recognizing that we may be mistaken. In making this statement, Pierce is pushing a political agenda, not making a scientific defense of his studies. He also is recommending a policy that no sane person would want to generalize to the advertising of all products that some groups believe are harmful.

Conclusion

Raising cigarette excise taxes has been a politically expedient way for states to obtain more tax revenue, in part, because it has been justified as an effective way to reduce smoking. Additional tax revenue always attracts organized groups that want to spend that revenue and are quick to promise social benefits if only they are allowed to do so. In the case of cigarette tax revenue, a common promise is that smoking can be significantly reduced by increasing the cost of smoking with higher taxes and by using some of the additional tax revenues to alter attitudes with anti-tobacco media campaigns. The fashionable view that it would be a better world if only fewer people smoked has also been seized

The evidence is that the price paid for cigarettes increases far less than the tax increase indicates.

upon by government regulators (in particular those at the FDA), who claim that smoking can be reduced if only they are allowed to further restrict tobacco advertising.

To the extent that tax increases raise the price smokers actually pay for cigarettes, they will reduce smoking. But the evidence is that the price paid for cigarettes increases far less than the tax increase indicates, with smokers substituting to a significant degree contraband cigarettes for legally taxed cigarettes. Apparently, states that have imposed high cigarette excise taxes have not experienced a decline in smoking outside the norm. In some cases the number of smokers actually rose after the tax increase. Neither does using revenue from cigarette taxes to fund anti-tobacco media campaigns have any long-run effect on smoking rates, a

result acknowledged in candid moments even in studies favorable to such campaigns. Such campaigns add nothing to the public perception on the risks of smoking, a perception that already exaggerates those risks. Finally, the evidence from a variety of sources and countries fails to establish that additional restrictions on tobacco advertising will affect the smoking rate.

Of course, the organized groups benefiting from raising taxes on cigarettes and exercising more political control over information on tobacco products will continue to support taxation and control no matter how erroneous their claims. These claims will continue to be made and supported with arguments that are only superficially plausible. Will such arguments be sufficient to maintain the political crusade against tobacco? The answer depends on the gullibility of the public and the whims of political fashion.

Notes

1. These numbers are compiled by The Tobacco Institute, "The Tax Burden on Tobacco," Volume 31, 1996.
2. "Smugglers Win," *Detroit Free Press*, February 17, 1995, p. A1.
3. The data on the smoking rates in this paragraph on Michigan and in the next paragraph on Maryland come from the Office on Smoking and Health, "State Tobacco Control Highlights," 1993, and the Centers for Disease Control, "Mortality and Morbidity Weekly Report," Volume 45, Number 44, (Atlanta: CDC, 1995), p. 963. The information on the per-capita sales in the states comes from The Tobacco Institute, "The Tax Burden on Tobacco," Volume 31, 1996.
4. CDC, p. 963. An increase in the percentage of smokers is consistent, of course, with less smoking as smokers reduce the number of cigarettes they smoke. One could argue that even though a state cigarette tax increase does not increase the cost of smoking in that state by nearly the amount of the tax increase, it does increase the cost at least some, and therefore should cause some decrease in cigarettes smoked. But even if true, this may be a hollow victory for those who see tax increases as a way of reducing what they see as the harmful health consequences of smoking. Smokers may smoke fewer cigarettes if the cost of smoking increases, but they will typically compensate by shifting to stronger brands or by smoking more of each cigarette. Even if a state can marginally increase the cost of cigarettes, it cannot increase the cost of nicotine and tar.
5. Lindquist, Avey, and Macdonald, "Cigarette Smuggling Quantification Feasibility Study," December, 1996.
6. *Ibid.*
7. "Interviews with Canadian Health Minister, Diane Marleau," *Maclean's News Magazine*, February 1994.

8. John P. Pierce, et al., "Tobacco Use in California: An Evaluation of the Tobacco Control Program, 1989-1993," 1994, p. 63.
9. Yumiko Ono, "Teenagers Tell Which Antismoking Ads Work," *Wall Street Journal*, August 30, 1995, p. 31.
10. Kip W. Viscusi, "Smoking: Making the Risky Decision," 1992, p. 72. According to Viscusi, "The youngest age group (age 16-21) has the highest risk perceptions. . . ." On p. 128, he reiterates this finding, stating, "There is certainly no evidence of greater neglect of smoking risks by the very young. Indeed, the opposite is the case."
11. *Ibid.*, p. 100. Indeed, if the ads brought public beliefs on the risks of smoking in line with the surgeon general's reports on those risks, teen-age smoking would actually increase. Considering all age groups, including teenagers whose perceptions of smoking risks are exaggerated by more than adults, Viscusi estimates "accurate lung cancer risk perceptions would boost the societal smoking rate by 7.5 percent."
12. Ono, p. 31.
13. Jolie Solomon, "Smoke Signals," *Newsweek*, April 28, 1997, p. 51.
14. For an interesting discussion of the political maneuvering, deception, and lobbying among contending groups, including advocates of anti-smoking media campaigns over cigarette tax revenues, see James T. Bennett and Thomas J. DiLorenzo, "Cancer Scam: The Diversion of Federal Cancer Funds to Politics," 1997.
15. Currently about 36 percent of 15-year-olds in Norway smoke. See Daniel J. Murphy, "Can Government Stop Kids' Smoking?," *Investors Business Daily*, August 4, 1995, for information on smoking rates in the above mentioned countries.
16. Before the ban 12.3 percent of males and 13.1 percent of females aged 12 to 15 smoked. Three years after the ban, 17 percent of males and 16.7 percent of females aged 12 to 15 smoked. See Marilyn

Much, "Study Finds No Link Between Ads, Kids' Smoking," *Investors Business Weekly*, September 27, 1995, p. A-4.

17. Indeed, this is already happening. See Barnaby J. Feder, "Young Smokers Weaken Industry Stance," *The New York Times*, April, 20 1997, p. 1. "The percentage of 12th graders who smoked daily last year jumped 20 percent since 1991. The rate among 10th graders jumped 45 percent . . . and the rate for 8th graders is up 44 percent.
18. Murphy, *ibid.*
19. U.S. Department of Health and Human Services, "Reducing the Health Consequences of Smoking: 25 Years of Progress," A Report of the Surgeon General, Public Health Services, Centers for Disease Control, DHHS Publication No. 89-8411, 1989, p. 516.
20. Paul M. Fischer, et al., "Brand Logo Recognition by Children Aged 3 to 6 Years," *Journal of the American Medical Association*, 1991, pp. 3145-48.
21. For examples, see William Krumske, "When Medical Doctors Conduct Marketing Research: JAMA and Old Joe Camel," *AMA Winter Educators' Conference Proceedings: Marketing Theory & Applications*, 1993, pp. 405-10; and Richard Mizerski, Brenda Sonner, and Katherine Straughn, "A Re-Evaluation of the Reported Influence of the Joe Camel Trade Character on Cigarette Trial and Use by Minors," *Proceedings of the 1993 American Academy of Advertising*, 1993.
22. Fischer, et al., p. 3147.
23. For example, see Alice Eagly and Shelly Chaiken, "The Psychology of Attitudes," 1993, and Robert Schindler, Morris Holbrook, and Eric Greenleaf, "Using Connoisseurs to Predict Mass Taste," *Marketing Letters*, 1989, pp. 47-54.
24. Mizerski also investigates these relationships for other product characters and products as well. Richard Mizerski, "The Relationship Between Cartoon Trade Character Recognition and Attitude Toward Product Category in Young Children," *Jour-*

nal of Marketing, 1995, pp. 58-70.

25. Much, p. A4.
26. Adolescents were classified as receptive to cigarette advertising on the basis of how they answered questions such as whether they owned, or wanted to own, items which promoted cigarettes, and what was their favorite cigarette advertisement. Whether an adolescent was classified as susceptible to smoking depended on how he or she answered questions such as, "If one of your best friends were to offer you a cigarette, would you smoke it?" Nicola Evans, et al., "Influence of Tobacco Marketing and Exposure to Smokers on Adolescent Susceptibility to Smoking," *Journal of the National Cancer Institute*, Volume 87, Number 20, October 18, 1995, pp. 1538-45.
27. Pierce, p. 63.
28. Rachel Nowak, "New Studies Trace the Impact of Tobacco Advertising," *Science*, October 27, 1995, pp. 573-74.
29. See the comments of epidemiologists Malcolm Maclure of the Harvard School of Public Health and Charles Poole of Boston University in Nowak (1995).
30. One of the major advertising drives considered by Pierce and Gilpin was aimed at women and coincided with an increase in smoking rates among adolescent women. But one does not have to believe that advertising causes an increase in smoking to understand why cigarette companies would increase advertising aimed at women if, for whatever reason, more of them started smoking. John P. Pierce and Elizabeth A. Gilpin, "A Historical Analysis of Tobacco Marketing and the Uptake of Smoking by Youth in the United States: 1890-1977," *Health Psychology*, Volume 14, Number 6, November 1995, pp. 500-508.

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