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The Effects of Antismoking and Cigarette Advertising on Young Adolescents' Perceptions of Peers Who Smoke

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Prior research suggests that young adolescents' perceptions of smokers are strongly associated with smoking initiation. Thus, we experimentally investigated the effects of antismoking and cigarette advertising on nonsmoking youths' perceptions (evaluative judgments) of a peer who smokes. Results suggest that exposure to the antismoking ads made salient our seventh-grade subjects' preexisting beliefs that smokers foolishly endanger their health, which resulted in even less favorable evaluations of the smoker's common sense and personal appeal. Further, unlike subjects who saw unrelated (control) ads, those who saw the antismoking ads judged the smoker to be relatively immature and unglamorous. Exposure to the cigarette ads did not significantly affect scale ratings of, but resulted in more favorable thoughts about, the smoker.

The tobacco industry is important to our economy; in 1991, worldwide tobacco sales by the top five U.S. producers exceeded $59.8 billion ("100 Leading Advertisers" 1992). However, there are significant social, economic, and personal costs to tobacco use; in fact, 22 percent of all deaths of adults older than 35-years-old are believed to be caused by smoking (California Department of Health and Human Services 1990). Thus, many nonprofit groups and government agencies, local and regional, both here and abroad, are turning to social marketing (Andreasen 1993; Kotler and Zaltman 1971) in the hopes of dissuading consumers from smoking cigarettes. In particular, numerous policies that would further restrict cigarette advertising and/or markedly boost antismoking advertising are under consideration. However, scientific evidence is lacking on whether such policies would actually deter tobacco consumption (U.S. Department of Health and Human Services 1989).

Central to the issue is how to design social marketing programs that can prevent youngsters from starting to smoke cigarettes. Most smokers take up the habit before they reach the age of 18, even though tobacco sales to minors are banned (U.S. Department of Health and Human Services 1989). In effect, legally underage consumers constitute the largest group of product adopters. Further, the smoking rate among high school seniors has remained at about 19 percent for the past decade rather than paralleling the decline in the adult rate (Bachman, Johnston, and O'Malley 1987); indeed, the mean age of initiation is actually declining (U.S. Department of Health and Human Services 1989). These facts are of particular concern, because the earlier in life people start smoking, the more likely they are to become heavy smokers and the less likely they are to quit (Weissman et al. 1987).

Schools have been quite successful at educating students about the health consequences of tobacco use (U.S. Department of Health and Human Services 1989), but this knowledge of the consequences has not deterred many youths who feel they are personally invulnerable to the risks or who plan to quit before suffering any detrimental effects (U.S. Department of Health, Education, and Welfare 1979). Thus, there is an increased interest in combating underage smoking through advertising regulations and restrictions. Although cigarette ads have been banned from U.S. television and radio

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since 1971, the tobacco industry was, nonetheless, the nation's twentieth largest advertiser in 1992 with media expenditures of $381.4 million; it ranked first and tenth in billboard and magazine expenditures, respectively (Arbitron 1993). There is particular concern about youths' exposure to magazines that carry cigarette ads (Davis 1987; Mazis et al. 1992). Examples include *Glamour* and *Sports Illustrated:* 12- to 19-year-olds constitute 2.2 million (28 percent) and 6.7 million (33 percent) of these magazines' respective audiences (Simmons 1990). It has been speculated that the alluring images in cigarette ads help to create and/or perpetuate favorable myths about smokers and that antismoking ads are needed as a countervailing force (Burton et al. 1989; Davis 1987; DiFranza et al. 1991; Fischer et al. 1991; Gordon 1986). It is important to note that there is a strong association between perceptions of smokers and smoking initiation: youngsters who smoke or intend to do so are more likely than others to think smokers look cool, sexy, exciting, and grown-up (Barton et al. 1982; Chassin et al. 1981; Collins et al. 1987; Gordon 1986; Grube et al. 1984; McAlister, Krosnick, and Milburn 1984). However, youths' perceptions of smokers are heavily influenced by peers, parents, and siblings (Gordon 1986; Jenkins 1988; McAlister et al. 1984; Moschis 1989). So what are the effects of cigarette and antismoking ads—if any—on youths' perceptions of smokers and, thus, on smoking initiation? If the ads are influential, what are the public policy implications?

PAST RESEARCH AND CURRENT APPROACH

Researchers have examined whether advertisers are in compliance with the tobacco industry's guidelines against targeting underage consumers. Mazis et al. (1992) found that 17 percent of the models in cigarette ads look as if they are younger than 25 years old, which violates the 1964 Cigarette Advertiser's Code; also, younger models appear more frequently in magazines with significant teenage audiences. Furthermore, Pollay has reported that Canadian cigarette advertisers researched and then targeted underage consumers (Pollay 1990; Pollay and Lavack 1993). However, it is conceivable that such marketing activities principally affect youths who are already habitual smokers by influencing which brands they buy. Policy officials are more concerned about cigarette advertising that might encourage nonsmokers to take up the habit. Thus, longitudinal and cross-sectional surveys have been conducted to assess whether cigarette advertising exposure (measured via recall of cigarette ads or identification of cigarette brands in masked ads) is correlated with adolescents' smoking intentions and behaviors (Aitken and Eadie 1990; Aitken et al. 1991; Goldstein et al. 1987). Significant positive correlations have been reported. These findings suggest a link between cigarette advertising and smoking but, because the data are based on surveys, the direction of the link cannot be ascertained: cigarette ads may encourage smoking, or smokers may pay more attention to cigarette ads (Moschis 1989).

Other surveys have examined whether cigarette advertising engenders positive attitudes toward smoking among youths. R. J. Reynolds' Old Joe Camel campaign, with its hip cartoon figures, has been the focus of several recent investigations. Ninety percent of school-age children recognized that Old Joe promotes cigarettes (Fischer et al. 1991), which is a higher recognition rate than that among adults (DiFranza et al. 1991). Also, 43 percent of the youths surveyed thought Old Joe was "cool," and 35 percent liked Old Joe "as a friend" (DiFranza et al. 1991). Nevertheless, these responses could simply reflect favorable attitudes toward the cartoon character and not toward smoking. Some researchers have also asked youths directly if cigarette ads are convincing and have found that up to 50 percent of smokers and 14 percent of nonsmokers believe that cigarette ads make people want to smoke (Gordon 1986; Monismith et al. 1981); 56 percent of smokers and 62 percent of nonsmokers think antismoking ads have the opposite effect (Monismith et al. 1981). However, it has been argued that these data are invalid and/or unreliable (Moschis 1989).

Another means of assessing whether smoking-related advertising affects smoking initiation is to track both media expenditures and cigarette sales to adolescents; however, sales to minors—because they are illegal—are difficult to trace. Thus, field studies are rare—one exception being the Lewit, Coate, and Grossman (1981) research, which examined self-reported tobacco use rather than actual sales. That investigation focused on the Fairness Doctrine period of 1968–1969, which was when broadcasters were required to air one antismoking ad for every three cigarette ads; the Federal Trade Commission estimated that the actual ratio was about 1:4 (Schuster and Powell 1987). The results suggest that during this period, because of the antismoking advertising, the teenage smoking rate declined by 3 percent. As with many field studies, though, it is difficult to ensure that there were adequate controls for other factors that affect tobacco consumption (e.g., prices and availability).

The current investigation complements and extends previous research by examining in a controlled experimental setting the *causal* effects of smoking-related advertising. Our subjects, nonsmoking seventh graders, were first exposed either to cigarette ads, antismoking ads, or unrelated-to-smoking (control) ads that were embedded inconspicuously in a magazine. Later, they participated in an ostensibly unrelated study in which they read trait information about a peer who was either identified or not identified as a smoker. The subjects' perceptions (evaluative judgments) of their peer, as well as their thoughts and inferences about this person, were then assessed. As discussed earlier, numerous studies have documented a strong association between youths'

perceptions of smokers and smoking initiation, so we focused on perceptions rather than on ad or brand attitudes. We did not measure purchase or usage intentions or behaviors, because ethical considerations precluded us from using cigarette ad exposure levels that could possibly have caused some underage youths to start smoking cigarettes.

HYPOTHESIZED EFFECTS OF SMOKING-RELATED ADS

Predictions Regarding Antismoking Ads

Most young children are taught at school that smoking is unwise, because it causes life-threatening diseases such as cancer. Many teachers also discuss short-term health effects such as shortness of breath, bad breath, and yellow teeth and nails. These educational efforts appear to work, as evidenced by surveys that show that most youngsters tend to perceive smokers as unhealthy and lacking in common sense (Barton et al. 1982; Chassin et al. 1981). Psychological research suggests that such generalized beliefs or schemas, which are sometimes referred to as naive "theories," can have very powerful effects on subsequent social perceptions or judgments (Bodenhausen and Wyer 1985; Hamilton and Rose 1980; Nelson, Biernat, and Manis 1990; Neuberg and Fiske 1987; Taylor and Crocker 1981). In forming impressions, one often categorizes the target individual as a member of a particular group (e.g., a lawyer or an African-American) and then evaluates that individual, in part, on the basis of generalizations about that group (e.g., "lawyers are aggressive" or "African-Americans are good athletes"). Another basis for judgments is individuating information, that is, facts or "data" about the person (Alloy and Tabachnik 1984; Pechmann and Ratneshwar 1992). However, relying on prior beliefs requires less cognitive effort and helps people to cope when the data are perceived as being nondiagnostic (Alloy and Tabachnik 1984; Bodenhausen and Lichtenstein 1987; Pechmann and Ratneshwar 1992).

We suggest that adolescents, when forming impressions of smokers, may tend to rely—at least in part—on their preexisting beliefs. A verbal or behavioral sign that a person smokes (henceforth referred to as the "smoker label") may serve as a cue that prompts the use of judgmental rules of thumb stored in memory (Bodenhausen and Wyer 1985; Chaiken, Liberman, and Eagly 1989; Ratneshwar and Chaiken 1991). For example, the smoker label may cue the rule "Since s/he smokes, s/he is likely to be unhealthy," which causes the perceiver to produce a negative inference about the smoker. Note that if such prior beliefs are veridical, their use should not reduce—and may increase—judgmental accuracy (Pechmann and Ratneshwar 1992).

Now, what would happen if youths are exposed to antismoking ads that remind them that smokers are unwisely endangering their health? It is conceivable that these ads would be relatively ineffectual, because youths already know about smoking's adverse health effects. On the other hand, the ads could enhance the salience of such prior beliefs, particularly if the ad exposures have occured frequently or recently (Higgins and Bargh 1987; Wyer and Srull 1986). When these youths later encounter a smoker, perhaps they will be even more apt to rely on their preconceived notions and generate negative inferences about the person's health, overall common sense, or even personal appeal. Such inferences should result in even less favorable judgments of the smoker on such traits.

We were particularly interested, though, in antismoking ads that also try to "immunize" youths so they do not come to believe the myths that smokers are cool, sexy, popular, adventurous, and independent. An exemplary ad of this type, from California, shows animals looking silly and naive with cigarettes dangling from their mouths. Such ads attempt to preclude youths from forming positive impressions about smokers by depicting smokers in a negative light—as being generally unglamorous and immature. Advertising of this type may not immediately produce new beliefs but may at least suggest the possibility that smokers could have undesirable psychosocial traits. When youths later have occasion to evaluate a smoker, they may be inclined to interpret individuating information (data) about this person in a manner that is supportive of such speculations (Deighton 1984; Hoch and Ha 1986). Consistent evidence may be given undue attention and cognitive elaboration, while inconsistent evidence may be ignored or reinterpreted (Taylor and Crocker 1981; Wyer and Srull 1986). Thus, a smoker may be judged unfavorably even on traits (e.g., glamour or maturity) that were not part of the *original* smoker-related beliefs, because of how the trait information is interpreted. For the aforementioned reasons, we posited that antismoking ads have the following effects on youths' judgments, inferences, and thoughts about a smoker:

H1: Young adolescents who are exposed to antismoking ads (vs. unrelated-to-smoking ads, i.e., control) should (*a*) judge a smoker more negatively, (*b*) produce more negative inferences on the basis of the smoker label, and (*c*) generate more negatively valenced thoughts regarding trait information about the smoker.

Predictions Regarding Cigarette Ads

Our research focused on the type of cigarette ads that antismoking activists consider to be particularly troubling: ads that depict attractive, sexy models (or icons like Old Joe Camel) who are engaged in exciting and cool activities (Chapman and Eggers 1983; Pollay 1990). Such ads may suggest to impressionable youths an association between the desirable traits of the cigarette models (or icons) and people who smoke. Adolescents

who have been taught that smoking is unwise and unhealthy are unlikely to be convinced outright that by smoking they can appear more glamorous and mature. The cigarette ads, though, may at least advance such ideas, and youths may later be prone to interpret individuating information about a smoker in a manner that is consistent with these conjectures.

However, strongly held preconceptions are not readily changed by advertising; in fact, counterattitudinal messages often unintentionally remind people of and reinforce their antithetical beliefs (Ringold and Calfee 1989; Tybout, Calder, and Sternthal 1981). For instance, according to Pollay and Lavack (1993), research by Canadian advertisers revealed that ads depicting cigarette models engaged in vigorous sports inadvertently elicited "no-smoking" reactions. These ads were not able to refute, and instead simply made more salient, subjects' preconceptions that smokers are readily winded. Thus, cigarette ads could also conceivably boomerang and increase subjects' reliance on negative inferences when evaluating a smoker. Because cigarette ads seemed to have the potential to produce disparate effects, we did not formulate any specific predictions regarding those ads.

METHOD

Subjects

Subjects were 304 seventh graders from four middle schools in two southern California school districts, and the data were collected in 1991. Subjects were recruited from required health and science classes, and all those with signed consent forms participated. Sixty percent of the subjects were 12 years old; the remainder were 13 years old. Fifty-nine percent were female; 41 percent were male. In selecting schools, our prime consideration was ensuring that our subject population roughly mirrored the California student population on gender, socioeconomic status, and race, three demographic variables that may be related to tobacco consumption (U.S. Department of Health and Human Services 1989). To attain the required range in socioeconomic status, we chose two schools located in middle-class neighborhoods and one school each from lower- and upper-middle-class neighborhoods. We also selected ethnically diverse schools, which resulted in a subject population composed of 44 percent Caucasians, 24 percent Asians, 15 percent Hispanics, 8 percent African-Americans, and 9 percent other groups. From the magazine study survey (to be discussed below), we learned that 37 percent of our subjects had a parent who smoked, 7 percent had a sibling who smoked, and 15 percent knew at least one friend who smoked. It is more important, though, that very few (3 percent) of our subjects indicated that they themselves smoked, and they did so only "rarely." Indeed, we used seventh graders because, on the basis of the literature (U.S. Department of Health and Human Services 1989), we expected very few of them to be smokers, and our goal was to examine potential links between smoking-related ads and effects related to smoking *initiation*.

Design

Subjects were randomly assigned to treatment conditions in a 3 (type of ad) × 2 (smoker vs. control target) factorial design experiment. A between-subjects design was used because we were concerned that, if subjects were exposed to both of the targets, they might be suspicious about our true research goals. We included a control target condition in addition to the usual control (unrelated) ad condition, or in effect used a "double control" design, for three reasons. First, by contrasting the cell means for the smoker and control targets *within* each ad condition, we obtained a measure of subjects' differential or *relative* perceptions of the smoker (Barton et al. 1982; Chassin et al. 1981). If we found that the smoker was rated significantly lower than the control target, for instance, this would unambiguously suggest that subjects had more negative perceptions of the smoker. Second, by examining subjects' relative judgments of the smoker versus the control target in the *unrelated ad* condition, we obtained evidence of subjects' prior beliefs or schemas about smokers. Third, the control target condition permitted us to isolate *ad effects* that were specific to subjects' perceptions of the *smoker target*. Alluring cigarette models might alter subjects' evaluations of how attractive people are in general (Richins 1991) or might make the experiment more interesting, thus affecting the subjects' mood and their perceptions of people. By examining whether, *across* ad conditions, subjects differed in their responses to the control target versus the smoker, we could factor out any such generalized ad effects.

Advertising Medium

Magazine ads were used because magazines are a primary medium in which youngsters are exposed to cigarette ads (Davis 1987; Mazis et al. 1992); while billboard cigarette advertising is also common, that medium was not feasible for our experiment. The four pages of stimulus ads were embedded inconspicuously in a 22-page mock-up magazine, entitled *Entertainment Today*, with 10 pages of text and seven pages of filler ads. We used a fictitious magazine to control for prior exposure, but the articles were realistic and the magazine was professionally produced in color. The magazine was modeled after *Entertainment Weekly*, because teenagers make up a rather sizable percentage of that magazine's readership (11 percent or 0.52 million individuals; (Time Warner, personal communication, 1993). But the main reason we used a magazine similar to *Entertainment Weekly* was that it would interest our subjects regardless of their gender. Most other suitable

magazines, such as *Glamour* and *Sports Illustrated,* are gender oriented; use of one of them could have produced discrepant effects in our male and female subjects.

Stimulus Ads

One stimulus ad was a two-page spread that appeared in the magazine centerfold, another appeared on page five, and the third was on the inside back cover; four full pages of color ads were used to increase the strength of the type of ad manipulation. In a pilot test ($n = 28$), we verified that subjects attended to the test ads even when the ads were embedded in the mock-up magazine. We asked subjects to look through the magazine and then, with no forewarning, measured their recall of its contents. Seventy-one percent recalled the smoking-related ads with no prompting; the percentage was unchanged regardless of the ad type (cigarette or antismoking). This testing also verified that our cover story and procedure for the magazine study were effective at disguising our research goals. Specifically, none of the subjects expressed any thoughts about the study pertaining to cigarette or antismoking advertising.

The unrelated-to-smoking (control) ads promoted Reebok athletic shoes, American Airlines, and Estée Lauder eye cream. To find suitable cigarette ads, we examined the 1990–1991 issues of national magazines; antismoking ads were provided by federal and state health departments and by consumer groups such as the American Lung Association and the American Cancer Society. All of the antismoking ads were originally posters. We selected 20 smoking-related ads, 10 of each type, to pretest on a heterogeneous group of seventh graders ($n = 90$; 45 per ad type). The cigarette and antismoking ads were evaluated for their effectiveness at portraying smokers positively or negatively, respectively, on various psychosocial traits. For each trait, subjects were asked to choose the top three ads, and their responses were weighted (very best ad, 3 points; second best ad, 2 points; third best ad, 1 point). The three ads of each type that received the highest ratings on this weighted measure were selected as the experimental stimuli (Figs. 1 and 2). As shown in Exhibit 1, the two sets of smoking-related ads were diametrically opposed in terms of how they were judged to portray smokers on the set of traits.

Procedure

Approximately two weeks prior to data collection at a school, consent forms were distributed that described two unrelated studies to be conducted by "researchers from a nearby university": a "magazine study" on whether preteens would want to read general interest magazines (parents were forewarned the magazine would contain ads for "products such as liquor and tobacco") and a "teenager impressions study." For the magazine study, subjects first completed a four-page survey, ostensibly from the magazine's publishers, with questions on the use of cigarettes and other products (e.g., alcohol and movies), on media exposure levels, and on demographics. Next, each subject was told to examine the stimulus magazine for five minutes and to "look at each and every page" at "both the articles and the ads." Afterward, in order to maintain the cover story, subjects were asked to evaluate the magazine, and about 80 percent gave it at least a moderately favorable evaluation.

For the teenager impressions study, to ensure that subjects would view it as being unrelated to the magazine study, separate experimenters who differed in gender, dress style, and mannerisms were used. This experiment was also run on the schools' personal computers. Subjects were told to read the information on their monitors about a "randomly selected teenager from a nearby high school," because the researchers were interested in their "personal impressions" of such teenagers. The instructions also specified that the subjects should spend "as much or as little time on each screen of information" as they wished, and the computer recorded the amount of time they spent on each screen. For practice, subjects first read about "Student X" and evaluated that person on the various rating scales using the computer keyboard. Then, they repeated the exercise with "Student A," who was either the smoker or control target, which was determined at random by the computer.

On the first computer screen, the control target was described as having three habits, namely "watches TV, rides a bike, and goes to the mall" while the smoker target was described as having an additional habit, "smokes cigarettes." On each of the next 12 computer screens, subjects saw a 9–10-word trait item about the target; each subject was shown the same 12 items, but the computer randomized the item order. After subjects saw this information and recorded their rating-scale judgments of the target, they were immediately administered a questionnaire with the thought-listing, recall, and recognition tasks (see below). In addition, they were asked to guess the purpose of the research. None of the subjects guessed that the two phases of the study were related or that the teenager impressions study dealt with their perceptions of smokers. The subjects' facility with English was also assessed, and all subjects had adequate language skills. After all the data had been collected at a school, subjects were debriefed by a health educator who met with the study participants in small groups. She disclosed the true objectives of the research, reiterated the health risks of smoking, and educated the students about cigarette advertising.

Trait Items

We fabricated the trait items about the target on the basis of pilot subjects' ($n = 32$) responses to open-ended

FIGURE 1

THE THREE ANTISMOKING ADS THAT SERVED AS EXPERIMENTAL STIMULI

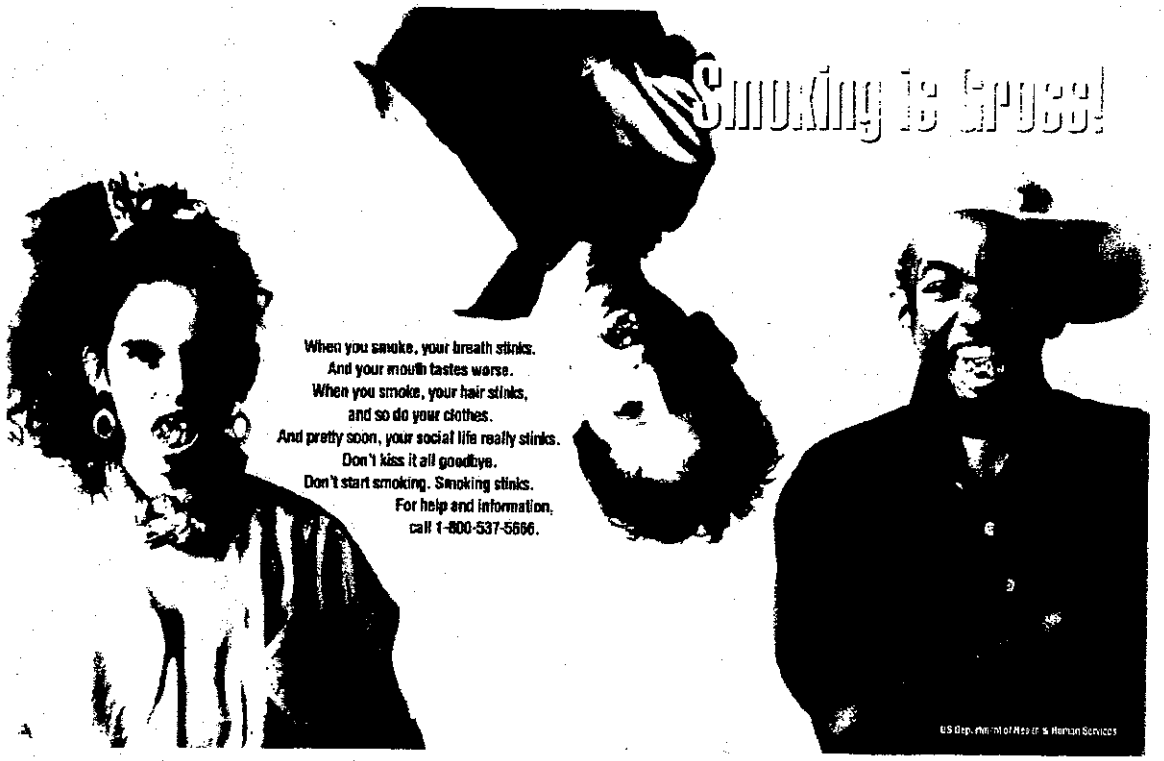
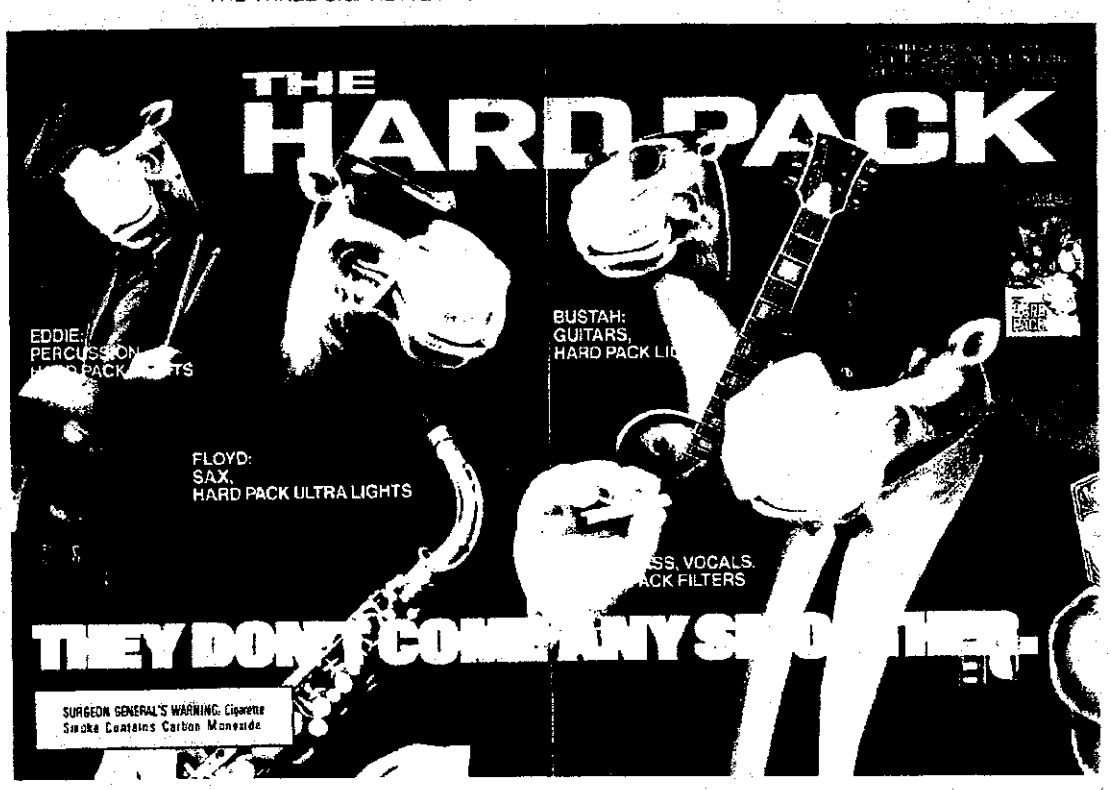
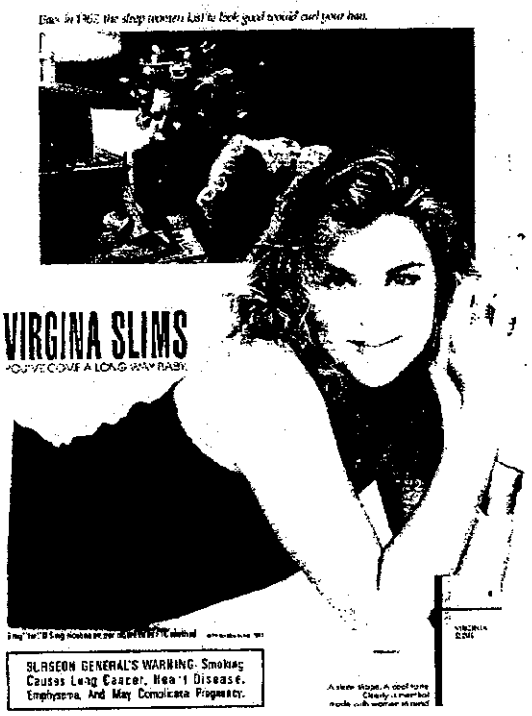


FIGURE 2

THE THREE CIGARETTE ADS THAT SERVED AS EXPERIMENTAL STIMULI





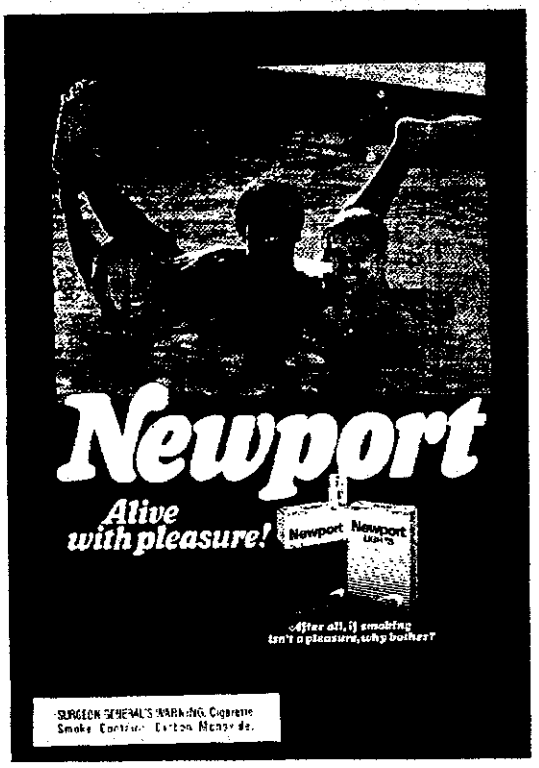


EXHIBIT 1

SMOKING-RELATED STIMULUS ADS AS EVALUATED BY PRETEST SUBJECTS

Top-ranked Ads	How Ads Depicted Smokers
Cigarette ads:	
1. Newport ad showing males and females in a swimming pool	Exciting, healthy
2. Camel ad featuring Old Joe's band	Popular, cool
3. Virginia Slims ad with a young female	Attractive, healthy, mature
Antismoking ads:	
1. California ad showing a female grimacing at a male smoking*	Uncool, unpopular, immature
2. Michigan ad picturing youths with butts and ashes in their mouths	Unhealthy, unexciting
3. American Lung Association ad depicting a young female	Unattractive, unhealthy

*Our subjects had no prior exposure to the California antismoking ad. It was designed as a poster for schools but had not been used in any of our test sites.

questions regarding peers whom they perceived favorably and unfavorably. The items dealt primarily with the target's glamour (popularity, attractiveness, and adventurousness) and maturity. We designed the information to be conflicting—and, thus, relatively nondiagnostic—by including four positive, four negative, and four neutral items (see Exhibit 2). Yet additional pretesting (n = 63) established the item valences and also verified that the trait information was not suspect. We had in-depth discussions with subjects that confirmed that they thought it plausible that such conflicting statements could be made about the same individual. Note that we used a neutral pronoun, "they," to refer to the target to avoid any gender-related biases in subjects' social perceptions; subjects were told we did so "to protect the student's anonymity."

Dependent Measures

Overview. To test Hypothesis 1*a*, we measured subjects' judgments of the target on the various psychosocial traits. To test Hypotheses 1*b* and 1*c*, we asked subjects to list their thoughts about the target. Subjects' verbal protocols were later coded to distinguish between inferences that were based on the smoker label (Hypothesis 1*b*) and interpretive thoughts that were in response to the trait information about the target (Hypothesis 1*c*). We also measured subjects' recall of the trait items and the time they spent on each item as proxy measures of attention. Finally, we measured subjects' recall and recognition of the target's habits as a manipulation check to verify that subjects had noticed the smoker label.

EXHIBIT 2

TRAIT INFORMATION ITEMS ABOUT TARGET

Valence	Items
Positive	Many people, including me, think this person is quite cute.
	Knows many people and is liked by most of them.
	Acts older than most other people in our class.
	Often thinks up fun things to do, then does them.
Negative	I definitely don't find them to be sexy at all.
	Often, this person seems to be sitting all alone.
	Many times this person acts big in front of others.
	I'm not impressed by what they do; it's really boring.
Neutral	They have normal looks; they are not anything special.
	Is about average in terms of being popular at school.
	Sometimes they seem quite grown-up, but other times not.
	Will do exciting things sometimes, but other times won't.

Judgments of Target. Subjects first rated the target on the following traits, in this order: smart, intelligent, healthy, grown-up, mature, good-looking, attractive, exciting, adventurous, popular, has friends, and cool. Subjects then judged whether they might personally like the target. The response scales in all cases ranged from 1 ("definitely not") to 7 ("definitely yes"), with the midpoint at 4 ("maybe and maybe not").

Thoughts and Inferences about Target. Subjects were instructed to report, retrospectively, all thoughts or ideas about the target that came to mind while they were reading the trait information about this person. These questions were asked after the judgment task to avoid concerns that the verbal protocols would distort judgments; in this regard, our procedure was consistent with past practice in a large number of attitude-formation studies. Subjects' responses later were classified by two independent coders who were blind to the experimental conditions that the subjects were in. Any coding discrepancies were resolved by discussion.

First, the coders identified responses indicating subjects had made inferences about the target with explicit reference to the smoker label (97 percent agreement between coders). All of these smoker inferences were negatively valenced, and virtually all referred to the smoker's common sense, health or personal appeal. Some examples include: "He is dumb because he smokes," "Not healthy because smokes," "I don't like anyone who smokes," and "Yuk! That person smokes." A valenced index of smoker inferences was created for each subject by counting the number of such inferences produced, with every inference given a score of −1.

Next, the coders identified interpretive thoughts when subjects were reacting to the trait information about the target (97 percent agreement). Each response was classified as either positive, negative, or neutral (94 percent agreement). Examples of positive thoughts are "has

lots of friends" and "likes to do exciting things." Negative thoughts included "was not sexy" and "seems stuck up," while some neutral thoughts were "okay looking" and "probably a little popular." The following valenced thought index was then created for each subject: (positive − negative thoughts)/(positive + negative + neutral thoughts). Note that a small number of miscellaneous and other thoughts could not be attributed uniquely to prior beliefs or to the trait information (e.g., "probably gets good grades," "someone I might like," and "might have family problems") and were thus excluded from both indices discussed above.

Recall of Trait Information. Subjects' recall of the trait information was assessed by asking them to write down all the items they could remember about the target. Two coders then independently analyzed subjects' protocols (98 percent agreement) to assess the total number of items recalled correctly ($\bar{X} = 1.7$). The following valenced recall index was finally calculated for each subject: (positive − negative recall)/(positive + negative + neutral recall).

Time Spent Reading Trait Information. The computer data showed that subjects spent, on average, 8.4 seconds reading each 9–10-word trait item. In our subsequent analyses, we dropped data points that either were more than 5 standard deviations above the mean for the item or were less than one-tenth of a second in length (because the subject probably skipped that screen of information accidentally). Paralleling the other measures, we then computed for each subject the total time spent reading the trait information and a valenced reading-time index, that is: (time spent on positive − negative information)/(time spent on positive + negative + neutral information).

RESULTS

Manipulation Check

We first checked whether subjects in the smoker target condition had taken notice of the smoker label. We examined their responses to both the free-recall item ("What were Student A's habits?") and the recognition item ("Was this a habit of Student A's?"). Seventy-nine percent of the subjects in the smoker target condition recalled the target smoked, while 81 percent recognized this was a habit of the target.

Factor Analysis of Judgment Items

A principal-components analysis of subjects' ratings of the target on the 13 judgment scales revealed three factors that together accounted for 67 percent of the variance. After varimax rotation, seven items loaded onto a "glamour" factor: good-looking, attractive, exciting, adventurous, popular, has friends, and cool. Three items loaded onto a "common sense" factor: intelligent, smart, and healthy. Two items loaded onto a "maturity" factor: grown-up and mature. The item loadings ranged from 0.63 to 0.89. The final item, whether subjects personally liked the target, did not load cleanly onto any of the factors, so it was treated as a separate "personal appeal" factor. A judgmental index was created for each factor by averaging subjects' ratings on the items composing that factor (Cronbach's alpha = .88, .87, and .83 for glamour, common sense, and maturity, respectively). The results below pertain to the four factors. We also conducted analyses on single items and item pairs (e.g., attractive and good-looking), but the pattern of the findings remained unchanged.

Subjects' Prior Beliefs about Smokers

We first examined our assumption that subjects had negative health-related beliefs about smokers. We used the data from subjects in the unrelated-to-smoking (control) ad condition, because their beliefs about smokers presumably were unaffected by ad exposure. These subjects judged the smoker (vs. control) target less favorably on common sense ($p < .01$) and on personal appeal ($p < .01$). However, they did not judge the smoker significantly differently from the control target on either maturity or glamour (p's $> .35$; see Table 1, middle columns). These results confirm subjects had negative prior beliefs about smokers, and their beliefs were trait specific.

Overview of Analyses of Ad Effects

As can be seen in Table 1, subjects' ratings of the control target were higher after exposure to the smoking-related (vs. unrelated or control) ads. We conjecture that the cigarette and antismoking ads made the task more interesting and put subjects in a more positive mood, which later enhanced their perceptions, even of the control target (see Design section). In any case, to isolate the ad effects that were specific to perceptions of the smoker, we focused on relative responses to the smoker, that is, the differences between the cell means for the smoker and control targets. Of interest was whether the difference between the smoker and control target means varied significantly between (*a*) the antismoking versus unrelated-to-smoking ad conditions and also (*b*) the cigarette versus unrelated-to-smoking ad conditions. The 2-*df* *F*-statistic for the ad type × target type interaction (from the omnibus two-way ANOVA) was not an appropriate test for our purposes, because it did not uniquely distinguish between effects *a* and *b*. Thus, we focused on each effect separately by testing 1-*df* contrast-contrast interactions for each measure (except for the index of smoker inferences; see below). We followed up these analyses with comparisons of the smoker versus control target means within each ad condition using two-tailed *t*-tests. For instance, the following contrast-contrast *F*-statistic was computed to de-

TABLE 1

THE EFFECTS OF SMOKING-RELATED ADVERTISEMENTS ON JUDGMENTS, INFERENCES, AND THOUGHTS ABOUT THE SMOKER AND CONTROL TARGETS

	Antismoking ads			Unrelated-to-smoking (control) ads			Cigarette ads		
	Smoker target (n = 51)	Control target (n = 46)	Difference between means for smoker and control targets	Smoker target (n = 50)	Control target (n = 56)	Difference between means for smoker and control targets	Smoker target (n = 58)	Control target (n = 43)	Difference between means for smoker and control targets
Judgments of target:									
Common sense factor	2.53	4.57	−2.04[a]	2.95	4.24	−1.29	3.56	4.85	−1.29
Personal appeal factor	2.73	5.02	−2.29[a]	3.34	4.32	−.98	3.64	4.81	−1.17
Maturity factor	3.36	4.82	−1.46[b]	3.92	4.04	−.12	3.88	4.78	−.90
Glamour factor	4.02	4.77	−.75[a]	4.33	4.23	.10	4.46	4.69	−.23
Valenced inferences based on target's smoker label	−.78[b]			−.38			−.50		
Valenced thoughts in response to trait information about target	−.06	.15	−.21	−.05	.14	−.19	.35	.16	.19[c]

NOTE.—The range for each judgmental factor was 1–7, with higher numbers indicating more favorable ratings. See text for details on valenced indices; blanks indicate index was not applicable.

[a]Effect for antismoking (vs. unrelated-to-smoking) ads was significant at $p < .05$.

[b]Effect for antismoking (vs. unrelated-to-smoking) ads was significant at $p < .01$.

[c]Effect for cigarette (vs. unrelated-to-smoking) ads was significant at $p < .05$.

termine the effects of the antismoking (vs. unrelated) ads on judgments of the smoker (vs. control) target on common sense (as in this example, all F-statistics reported below have 1,298 df unless otherwise indicated):

$$F(1,298) = n[(2.53 - 4.57) - (2.95 - 4.24)]^2/(2)\,(2)\,(MS_{error}).$$

Judgments of Target

Effects of Antismoking Ads. Hypothesis 1*a* predicted that antismoking (vs. unrelated-to-smoking) ads would negatively affect subjects' perceptions of the smoker target. The contrast-contrast interactions were supportive of this hypothesis. Subjects who saw the antismoking (vs. unrelated) ads rated the smoker lower than the control target on all traits: common sense (F = 3.95, $p < .05$, effect size [ω^2] = .01), personal appeal (F = 6.55, $p < .05$, ω^2 = .02), glamour (F = 5.95, $p < .05$, ω^2 = .02), and maturity (F = 8.65, $p < .01$, ω^2 = .03). While the antismoking (vs. unrelated) ads uniformly detracted from judgments of the smoker, there were two distinct patterns of results. Recall that subjects who saw the unrelated ads judged the smoker (vs. control) target less favorably on common sense and personal appeal; here, the antismoking ads resulted in even less favorable ratings of the smoker. On maturity and glamour, subjects who saw the unrelated ads did not judge the smoker significantly differently from the control target; here, the antismoking ads created unfavorable perceptions of the smoker.

Effects of Cigarette Ads. Because of the potential for disparate effects, we did not formulate any specific hypotheses. The contrast-contrast interactions revealed that exposure to cigarette (vs. unrelated) ads did not significantly influence (p's > .25) subjects' judgments of the smoker, relative to their judgments of the control target, on common sense (F = 0), personal appeal (F = .14), or glamour (F = .90). Subjects in the cigarette and unrelated ad conditions were similar in rating the smoker less favorably than the control target on common sense and personal appeal (p's < .01) and no differently on glamour ($p > .30$). On maturity, the contrast-contrast interaction was likewise statistically insignificant (F = 2.93, $p < .10$); notwithstanding, those who saw the cigarette ads rated the smoker as less mature than the control target ($p < .01$), while those who saw the unrelated ads did not rate the smoker and control targets significantly differently.

Inferences Based on Smoker Label

Effects of Antismoking Ads. Hypothesis 1*b* predicted that subjects who saw the antismoking (vs. unrelated) ads would produce more negative inferences on the basis of the smoker label. Subjects who judged

the control target were, of course, precluded from generating such inferences; thus, we conducted a one-way ANOVA involving only those subjects who judged the smoker. The ad type did affect the valenced index of smoker-label-based inferences as predicted (F (2,156) = 3.94, $p < .05$): subjects who saw the antismoking (vs. unrelated) ads produced more negative smoker inferences ($p < .01$).

Effects of Cigarette Ads. Here again, we made no prediction. The one-way ANOVA results showed that the cigarette ads did not influence the number of inferences generated on the basis of the smoker label ($p > .40$).

Thoughts in Response to Trait Information about the Target

Effects of Antismoking Ads. The contrast-contrast interaction involving subjects' thoughts about the trait information items (the valenced thought index) was not supportive of Hypothesis 1*c:* the antismoking (vs. unrelated) ads did not affect subjects' thoughts about the smoker differently than their thoughts about the control target ($F = .14$, $p > .50$). In both the unrelated and antismoking ad conditions, subjects' thoughts about the smoker were slightly, but not significantly ($p < .20$), less favorable than their thoughts about the control target.

Effects of Cigarette Ads. The contrast-contrast interaction revealed that thoughts about the smoker relative to thoughts about the control target were significantly more positive after exposure to the cigarette (vs. unrelated) ads ($F = 4.18$, $p < .05$). While subjects who saw the cigarette ads displayed a slight but nonsignificant tendency to report more positive thoughts about the smoker (vs. control) target, subjects who saw the unrelated ads displayed the opposite pattern, tending to produce more negative thoughts about the smoker (vs. control) target. This reversal in the relative favorability of thoughts about the smoker in the cigarette (vs. unrelated) ad condition resulted in the significant contrast-contrast interaction on the thought index.

Measures of Attention to Trait Information

Recall of Trait Information. To examine whether the ads influenced subjects' recall of the various trait information items, contrast-contrast interactions were computed both on total recall and on the valenced recall index. There were no effects for the cigarette (vs. unrelated) ads (p's > .50). With regard to the antismoking (vs. unrelated) ads, there was a nonsignificant tendency for subjects to recall more total items about the smoker than about the control target (contrasts = 0.41 vs. −0.26, $F = 2.13$, $p < .15$), as well as comparatively more negative items (contrasts = −0.14 vs. 0.25, $F = 3.51$, $p < .10$).

Time Spent Reading Trait Information. The contrast-contrast interactions revealed no effects for the cigarette ads on total reading time or on the valenced reading-time index and no effects for the antismoking ads on total reading time (p's > .30). Subjects who saw the antismoking (vs. unrelated) ads did tend to spend more time on the negative items when reading about the smoker rather than the control target, but this effect was not statistically significant (contrasts = 0.00 vs. 0.04, $F = 2.00$, $p < .15$).

Regression Analyses

We then examined the associations between subjects' judgments of the smoker target and both the valenced index of smoker inferences and the valenced thought index. Multiple regression analyses revealed there were no significant differences in the relationships among the variables across ad conditions (p's > .20) and, hence, we pooled these data. Smoker inferences were found to be predictive of judgments of the smoker on common sense (unstandardized regression coefficient [b]; $b = 1.31$, $p < .001$), personal appeal ($b = .48$, $p < .01$), and maturity ($b = .94$, $p < .001$); the more negative inferences that were produced, the more unfavorable were the judgments. However, such inferences were not predictive of judgments of the smoker on glamour ($p > .50$). The valenced thought index was predictive of judgments of the smoker on all four factors: common sense ($b = 2.69$, $p < .001$), personal appeal ($b = 1.24$, $p < .001$), maturity ($b = 1.31$, $p < .001$), and glamour ($b = 5.51$, $p < .001$). As expected, the more positive the thought index, the more favorable the judgments.

SUMMARY AND DISCUSSION OF RESULTS

Unrelated (Control) Ad Condition

The unrelated-to-smoking (control) ad condition allowed us to examine subjects' prior beliefs about smokers. Subjects' relative judgments of the smoker (vs. control) target indicated they did not believe a priori that peers who smoked were significantly different from nonsmokers in terms of being mature or glamorous (exciting, attractive, or popular). However, they did believe smokers had relatively less common sense and were less personally appealing (likable). Some subjects manifested their prior beliefs by relying, in part, on negative inferences when forming impressions of the smoker (e.g., "smokers are unhealthy" and "smokers are dumb").

Effects of Antismoking Ads

The antismoking ads in part simply reiterated what subjects already knew from teachers and perhaps also from parents about the health effects of smoking. How-

ever, we hypothesized the ads might make more salient and reinforce such negative smoker beliefs. Indeed, those who saw the antismoking (vs. unrelated) ads judged the smoker even lower on both common sense and personal appeal, in part because they relied on negative inferences about the smoker rather than on the trait information. The antismoking ads also sought to immunize youths from believing favorable myths about smokers and succeeded in adversely affecting subjects' judgments of the smoker's maturity and glamour, traits on which subjects had no negative preconceptions about smokers. Contrary to expectations, subjects' thought protocols provide no indication that they interpreted the trait information about the smoker less favorably. However, there was some evidence that subjects attended selectively to trait items that were consistent with the ad claims: those who saw the antismoking (vs. unrelated) ads had a slight tendency to spend more time on and recall more of the negative (vs. positive or neutral) items about the smoker.

It is conceivable that the short delay (about 15 minutes) between exposure to the antismoking ads and the judgment task inflated the effects of the ads on subjects' perceptions of the smoker (Wells 1993). Further, subjects who were exposed to the antismoking ads saw no cigarette ads during the course of the experiment. Both factors raise the concern that our results might not replicate under more naturalistic conditions. However, we would argue that our experiment is most likely a conservative test of the impact of antismoking advertising, given that subjects saw only three antismoking ads. In the midst of a well-financed campaign, exposure levels would be far higher and would extend over several months or even years. Frequent ad exposures should result in messages at least as memorable and impactive as those produced by the recent ad exposures in our study (Higgins and Bargh 1987; Wyer and Srull 1986). Notwithstanding, future research should examine how the effects we observed for antismoking ads might be moderated by interference, repetition, and delays.

Effects of Cigarette Ads

The models and icons in the cigarette advertising we used (Newport, Virginia Slims, and Camel advertising) were depicted as sexy, cool, popular, and exciting. While these ads might suggest that smoking leads to desirable psychosocial consequences, we also recognized the ads could be relatively ineffectual given that our subjects already had negative preconceptions about smokers. The cigarette ads did seem to cause subjects to interpret more positively the trait information about the smoker and resulted in the subjects having more favorable thoughts about this person. However, there was no corresponding reduction in subjects' reliance on negative inferences to evaluate the smoker. Moreover, the positive thoughts about the smoker produced by the cigarette ads did not lead to higher ratings of that person on common sense, personal appeal, glamour, or maturity.

There was even a nonsignificant tendency for the subjects who saw the cigarette ads to judge the smoker *lower* on maturity, which is akin to the boomerang effects observed in some past research on counterattitudinal messages (see, e.g., Pollay and Lavack 1993; Tybout et al. 1981). Nevertheless, this finding must be interpreted with caution. The models in the Newport and Virginia Slims ads looked quite young (Mazis et al. 1992) and, what is perhaps even more important, the two-page centerfold Camel ad—with its cast of cartoon characters—was quite juvenile in its tone and might have been a dominant stimulus ad. Thus, the boomerang effect could be unique to the stimulus set. We also speculated that this boomerang effect might be limited to subjects who were reminded by the cigarette ads of their unfavorable beliefs about smokers and who, therefore, relied in part on negative inferences when judging the smoker. Indeed, subjects who produced negative smoker inferences after seeing the cigarette ads tended to judge the smoker lower on maturity than the corresponding subjects in the unrelated ad condition ($\bar{X}$'s = 2.93 vs. 3.59, $p < .10$), while subjects who did not generate negative smoker inferences tended to judge the smoker higher on maturity ($\bar{X}$'s = 4.46 vs. 4.09, $p < .15$); the interaction F-statistic for this internal analysis was $F(1,104) = 2.78$ ($p = .10$). In additional post hoc analyses, we examined whether subjects who failed to report any negative smoker inferences had any defining sociodemographic characteristics (e.g., in terms of parents' or friends' smoking behavior, race, age, or gender). These subjects were of particular interest, because they could perhaps be more susceptible to influence by cigarette advertising. The results revealed that minorities (vs. whites) were less likely to have produced negative smoker inferences (16 percent vs. 32 percent, $\chi^2(1) = 8.45$, $p < .01$). Also, males (vs. females) were less likely to have generated such inferences (14 percent vs. 29 percent, $\chi^2(1) = 7.78$, $p < .01$).

Because some readers may be surprised by the null effects of the cigarette ads on judgments of the smoker, these results merit additional discussion. It does not appear that the null effects of the cigarette ads on judgments can be attributed to low statistical power, because there were significant effects for the cigarette ads on subjects' thoughts. It might also be argued that the cigarette ads were simply poor or weak exemplars. However, once again, these ads did lead to more positive thoughts about the smoker, so they were effective at least in this respect. Also, we carefully pretested numerous cigarette ads and selected those that young adolescents had ranked as most effective at portraying smokers in a favorable light. Another possibility is that the cigarette ads would have affected judgments of the smoker if, after ad exposure, subjects had judged peers who were actually smoking; nonverbal cues may be especially important for confirming ad-induced hy-

potheses that smokers are sexy and cool. However, subjects did interpret the information about the smoker more positively, despite the fact that only verbal information was provided.

Yet another reason for the weak effects of the cigarette ads on judgments may be that these ads featured familiar brands that are more heavily promoted than others in the product category. According to Arbitron, Newport was the second most heavily advertised cigarette brand in the U.S. in 1992, with $36 million in media expenditures; Camel was fourth, with $23 million in media expenditures; and Virginia Slims was fifth, with $19 million in media expenditures. Also, the ads themselves were typical of ongoing campaigns for the brands. We were motivated to use such ads in our study, because we wanted our results to have high external validity. However, it is conceivable that brand and ad-theme familiarity caused our subjects to pay somewhat less attention to the cigarette ads, particularly in relation to the antismoking ads. Our pretest results provide no indication that this occurred: subjects exhibited roughly equal recall of the cigarette and antismoking ads in the mock-up magazine. In future research, by way of comparison, it may be informative to use novel cigarette ads (e.g., from other countries or for low share brands).

Perhaps the most likely explanation for why the cigarette ads affected thoughts but not judgments about the smoker is that the ads conflicted with most subjects' strongly held beliefs that smoking is unsafe and unhealthy. It is also possible that subjects needed to be exposed to more than three cigarette ads, given that those particular ads were counterattitudinal. More frequent ad exposures may have affected not only subjects' thoughts or speculations about smokers (assimilation) but also their judgments or beliefs about such individuals (accommodation). In our study, we tried to compensate for the relatively low ad frequency (necessitated by ethical concerns) by measuring the ad effects in close proximity to ad exposure (cf. Wells 1993). But the impact of the cigarette ads does not appear to have been sufficient to weaken significantly subjects' negative preconceptions about smokers.

IMPLICATIONS

Over 20 years ago, Kotler and Zaltman (1971) advocated that social marketing be used to encourage consumers to engage in positive behaviors (e.g., recycling, exercise) and to forego problematic behaviors (e.g., littering, high-fat food consumption), arguing that "the application of the logic of marketing to societal goals is a natural development and on the whole a promising one" (p. 3). For a variety of reasons, though, social marketing continues to be underresearched (Andreasen 1993). Thus, there is inadequate information about how to develop effective programs to combat the myriad of problems facing societies both here and abroad. In our work, we hope to assist policymakers in developing effective advertising policies to discourage smoking by underage consumers. We also wish to promote more investigations of social marketing issues.

Antismoking Advertising Policies

In this country, public schools have been given the primary responsibility for developing and implementing programs to discourage youths from smoking, and they have largely responded by disseminating information about the health risks. Nevertheless, the smoking rate among high school seniors (19 percent) has remained virtually unchanged for over a decade (Bachman et al. 1987). It seems youths take up the habit because they think smokers look cool, sexy, and adventurous (Gordon 1986; Grube et al. 1984; McAlister et al. 1984); perhaps they want to enhance their own status and self-esteem (Burton et al. 1989; Chassin et al. 1981). A critical question is whether the government should then supplement health education in the classroom with image-oriented antismoking advertising. Since 1990, for instance, California has spent nearly $45 million on an antismoking ad campaign that attempts to deglamorize smoking. Our experimental findings suggest that such antismoking advertising is indeed beneficial. Ads with health-related themes ("smoking will make you short of breath") can remind youngsters of, and bolster, their beliefs that smoking is unhealthy and unwise. In addition, ads with psychosocial themes ("no one wants to date a smoker anymore") can help to create the impression that users of cigarettes are uncool, unattractive, unexciting, and unpopular. This latter effect should help to immunize youths so they do not come to believe the myth that smoking has desirable psychosocial consequences. There has been some recent controversy over antismoking posters that depict smokers in a very unfavorable light (e.g., as "buttheads"), because teachers do not want students to taunt smokers. Nonetheless, it would seem to be important to debunk the myth that smokers are cool, because health-related information does not necessarily deter youths from taking up the habit.

It is important to note that our results should not be interpreted to mean that antismoking advertising is a substitute for in-school health education. Instead, the findings suggest health-related instruction and advertising may work in tandem (see Flay 1987). It appears that our antismoking ads may have been particularly effective because these ads made more salient subjects' negative preconceptions about smokers, which were beliefs presumably attributable at least in part to antismoking school programs. We also need to point out that antismoking advertising is likely to decline in effectiveness over time or exhibit "wear out." Lewit et al. (1981) determined, for example, that antismoking ads led to a drop in teenage smoking only during the first year of the two-year Fairness Doctrine period. Thus, policy officials should consider allocating moneys for

creating new advertising executions, as well as for ad placement and school educational programs.

Cigarette Advertising Policies

Health officials are increasingly calling for more extensive regulations on cigarette advertising as a means of preventing underage consumers from starting to smoke. The policies under consideration include a ban on the Old Joe Camel cartoon character, a prohibition on all cartoon characters, and "tombstone" advertising that only shows the product packaging. Our study does not directly measure the impact of cigarette advertising on smoking initiation, but it does assess the effects of such advertising on perceptions of smokers, and perceptions have been strongly linked to product adoption. The finding that the cigarette ads did not significantly affect subjects' judgments of the smoker, while the antismoking ads did produce significant effects on judgments, seems to imply that policy officials should focus on boosting antismoking advertising. Remember that the U.S. teenage smoking rate, which is now stable, last declined during the Fairness Doctrine period when antismoking advertising was prevalent nationwide (Lewit et al. 1981; Schuster and Powell 1987). Some have speculated that the tobacco industry agreed to the current ban on broadcast cigarette advertising at least in part to end the Fairness Doctrine rationale for providing free airtime for antismoking messages (Davis 1987).

On the other hand, the cigarette advertising in our study did seem to cause subjects to interpret more favorably the trait information about the smoker, in that subjects produced relatively more positive thoughts about the smoker's maturity and glamour. One could consider thoughts about smokers as an indirect measure of perceptions, and indeed these measures were correlated in our study. Also, the prior research discussed at the onset of this article provides some indication that cigarette advertisers target young adolescents (Mazis et al. 1992; Pollay and Lavack 1993). Furthermore, there is some correlational evidence of a link between cigarette advertising and youngsters' smoking intentions and behaviors (Aitken et al. 1991; Aitken and Eadie 1990; Goldstein et al. 1987). Thus, further research is needed on the effects of cigarette ads, particularly research on nonsmoking adolescents who have relatively neutral or even mildly positive preconceptions about smokers, which would be in contrast to our subjects whose prior beliefs about smokers were quite negative.

The Interplay of Prior Beliefs and Advertising

On a final note, this study highlights the importance of conducting research on the critical interplay between people's prior beliefs and their responses to advertising. Much academic research on the effects of advertising employs fictitious brands, and, when real brands are used, the impact of prior beliefs is frequently downplayed (but see Pechmann and Ratneshwar 1991). Our findings illustrate that ads can often inadvertently remind people of their preestablished notions about brands or products. In effect, ad messages merely reinforce people's preconceived notions or naive theories (Hoch and Ha 1986; Tybout et al. 1981). Nevertheless, incongruities between prior beliefs and ad claims could also motivate consumers to reexamine the evidence and eventually update their prior beliefs (Pechmann and Ratneshwar 1992). The factors that determine which outcome is produced need to be investigated further. Still, this is only one of the many important topics that researchers might pursue to enhance our understanding of how consumer behavior is affected by the interaction between consumers' prior beliefs and marketing communications.

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