Youth Responses to Anti-Smoking Advertisements From Tobacco-Control Agencies, Tobacco Companies, and Pharmaceutical Companies

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Emotional reactions to anti-smoking advertising (e.g., fear, sadness, anger) may play an important role in promoting smoking-related attitudinal and behavioral change. Overall, 278 youth completed response ratings of 16 different elements of 50 anti-smoking ads made by tobacco-control agencies, tobacco companies, and pharmaceutical companies. Compared with tobacco-control ads, tobacco-company ads were more likely to elicit positive emotions and less likely to elicit negative emotions and to be of interest to youth. Compared with tobacco-control ads, pharmaceutical company ads were less likely to elicit negative emotional responses or cognitively engage youth and more likely to elicit positive emotions. These findings suggest that youth may be unlikely to respond to tobacco-company advertising in ways that may lead to a lower likelihood of smoking.

Although anti-smoking advertising is an important component of efforts to reduce youth smoking (Farrelly, Niederdeppe, & Yarsevich, 2003; Siegel & Biener, 2000; Wakefield, Flay, Nichter, & Giovino, 2003), research to identify the optimal elements of anti-smoking advertisements have yielded mixed conclusions. By and large, the research literature on anti-smoking advertising has been guided more by inquiring about particular ads, campaigns, or approaches than by theories of advertising effectiveness.

Studies have focused on different kinds of effectiveness and different marketing and advertising strategies in different situations. Hence, the actual questions

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that the research literature asks and the methods and measures used to address them often differ considerably across studies, and no consistent overall accumulation of findings has emerged. However, two approaches are particularly common and relevant to the research at hand: studies that have focused on apparent content (themes) of ads or campaigns, and studies that have focused on emotional responses to the ads or campaigns. Also relevant, but less of a focus in the research literature, is the broad spectrum of anti-tobacco advertising campaigns that have been aired and the programs of which they are part (Farrelly et al., 2003; Wakefield et al., 2003).

Advertising Content or Themes

Research has begun to identify and characterize anti-smoking ads based on some form of content analysis. For example, Goldman and Glantz (1998) reviewed selected descriptions of focus-group studies of anti-smoking ads and concluded that the most effective ads were those that featured tobacco-industry manipulation and deception and those featuring secondhand smoke. They also recommended that advertisers avoid messages focusing on youth access to tobacco, short- and long-term health effects of tobacco, and romantic rejection of smokers. However, this study was criticized for having poor methods and ignoring many of the other elements of advertising (Balch & Rudman, 1998; Worden, Flynn, & Secker-Walker, 1998).

In their experimental study, Pechmann and Goldberg (1998) found that ads containing family or social norm messages about smoking significantly lowered 7th and 10th graders’ intentions to smoke. The three types of messages in this category included ads that discussed the negative impact of smoking on family members, ads implying that youth who smoke have taken the wrong life path, and ads that depicted nonsmoking as normative and acceptable to peers. However, ads that focused on short-term cosmetic effects, long-term personal health effects, or tobacco marketing practices had no impact on intentions to smoke.

Yet, another study using 110 focus groups of youth in five U.S. states and 40 different ads found that ads that made youth “stop and think” and that they found more relevant, credible, and persuasive included message themes of addiction, short-term health effects, long-term health suffering (as distinguished from the general category of effects), athletic performance, role modeling for younger siblings, and effects on the family (Teenage Research Unlimited, 1999). Ads with a theme emphasizing that teens need to make a choice about whether or not to smoke generally had the lowest response ratings among youth (Teenage Research Unlimited, 1999).

DeJong and Hoffman (2000) used three coders to independently code all ads from the Massachusetts Tobacco Control Program Media Campaign (TCPMC) between 1993 and 1996. Using a detailed coding scheme related to TCPMC
objectives, these investigators identified a variety of topics covered by the ads across different intended audiences. The most common topics were tobacco-industry practices, smoking prevention, health consequences for smokers, other consequences for smokers, smoking cessation, and environmental tobacco smoke. DeJong and Hoffman reported that these themes related poorly to Massachusetts data on cigarette tax receipts and self-reported smoking rates among 7th- to 12th-grade students.

A recent descriptive study by Beaudoin (2002) of 197 anti-smoking ads produced between 1991 and 1999 found that youth-oriented ads have youth characters, sociability, and humor as common appeals, as well as social and short-term consequences. In contrast, adult-oriented ads rely on fear appeals and long-term, health-related consequences. Thus, research focusing on ad themes has produced mixed findings, at least in part because of the differences in methods; choice of independent, mediating, and outcome variables and measures; and differences in the ads and campaigns studied.

Emotional Responses

Another line of research has focused on emotional responses to anti-smoking advertising. Hill, Chapman, and Donovan (1998) contended that there are good theoretical reasons why anti-smoking ads that evoke fear can be effective in reducing smoking among youth. A review of fear-based approaches to behavior change concluded that high fear messages in public health campaigns can be effective, provided that a high fear appeal message is accompanied by a high self-efficacy message (Witte & Allen, 2000).

Biener and her colleagues (Biener, McCallum-Keeler, & Nyman, 2000) investigated the broader role of emotional responses to anti-smoking ads. In a population-based study of adults, Biener et al. found that among nine specific ads studied, the more “moving” an independent panel of judges considered an ad, the more effective survey respondents rated it. In a later population survey of youth aged 14 to 17 years, Biener (2002) found that youth were more likely to perceive as effective anti-smoking ads that stressed the serious consequences of smoking, rather than ads that gave a message that one has a choice about smoking. Biener and Taylor (2002) made the point that ads may elicit not only fear, but also sadness (e.g., when family members die) and anger (at tobacco companies), as well as empathy and hope (for someone struggling to quit).

Research on the relative effectiveness of anti-drug ads also has found evidence in favor of eliciting negative emotions. Fishbein, Hall-Jamieson, Zimmer, Von Haeften, and Nabi (2002) found, in a study involving 30 anti-drug ads, that 5th to 10th graders’ perceptions of ad effectiveness were highly positively related to negative emotion, realism, and amount learned, and were negatively related to positive emotion.
There is considerable evidence that emotional arousal mediates advertising effectiveness. For example, emotional messages are better remembered than are nonemotional ones (Lang, 1995) and are more likely to promote higher-order cognitive processing (Donohew, Lorch, & Palmgren, 1998; Keller & Block, 1996). Furthermore, ads high in sensation value (e.g., reflecting content that is novel, graphic, stimulating) are more likely to increase viewers’ attention, motivation to call a hotline, ad recall, and intention to perform the target behavior than those with lower sensation value (Donohew et al., 1998). Thus, there is evidence from multiple studies that emotional responsiveness to advertising may be a key element of advertising effectiveness.

Anti-Tobacco Campaigns and Sponsors

State tobacco-control programs have varied widely in their selection of messages and target audiences for campaigns. For example, Florida, Minnesota, and Arizona have given primacy to intensive youth-specific advertising, whereas California and Massachusetts have taken a more general market approach to denormalize smoking.

In 1998, tobacco companies began to advertise on television with the ostensibly message to persuade youth not to smoke (e.g., Philip Morris’s “Think, Don’t Smoke” campaign) and to target parents to talk to their children about smoking (e.g., Philip Morris’s “Talk, They’ll Listen” campaign). In 2000, the American Legacy Foundation commenced the national “Truth” television advertising campaign focusing on the deceptive and misleading marketing practices of the tobacco industry.

Recently, a population survey evaluation of the American Legacy Foundation’s campaign indicated that confirmed recognition of “Truth” anti-smoking advertisements was consistently positively associated with youth anti-tobacco attitudes and beliefs, whereas confirmed recognition of Philip Morris’s advertisements generally was not (Farrelly, Healton, Davis, Messeri, & Haviland, 2002). In addition, respondents with confirmed recognition of Philip Morris’s advertisements were more likely to be open to the idea of smoking. Further, in an experimental study, Henriksen and Fortmann (2002) found that Philip Morris’s ads were rated less favorably by California students who were aware that the sponsor was a tobacco company than by those who were unaware (only slightly more than half of the students knew that Philip Morris was a tobacco company). This suggests that there is still some way to go in educating youth about tobacco-company behavior. It also suggests that some ostensibly anti-smoking advertising messages may confuse, negatively inoculate, or otherwise diminish the effectiveness of other anti-smoking advertising messages.

Although nicotine replacement therapy (NRT) and Zyban™ double the likelihood of long-term cessation in clinical trial settings, there have been few
peer-reviewed published studies of the effects of direct-to-consumer advertising for NRT. This advertising means that increasingly more people are being exposed to persuasive messages about the products. Because such mass-reach advertising will ipso facto reach more than the primary target group, it is important to consider the responses of those at risk of taking up smoking—namely teenagers—to the advertising. For example, teenagers exposed to the advertising might perceive a message that it is easy to quit smoking or that there is a reduced risk of addiction, and conclude that there is less of a problem with taking up smoking (Bolton, Cohen, & Bloom, 2004). This is consistent with research that finds optimism about quitting is a major predictor of trial and subsequent progression to heavier smoking among young people (Hanson & Kysar, 2001).

Given this background on themes, emotional responses, and campaigns and their sponsors, the aim of the present study is to determine how youth respond to anti-smoking advertisements that have been on the air in the United States with a wide range of different themes, sponsors, and target groups.

Method

Ad Selection and Preparation

Ads eligible for inclusion in the study were selected from the 326 ads produced and aired on U.S. television from 1997 to 2001. Anti-smoking advertising was sponsored by three main groups of organizations: tobacco-control programs, tobacco companies, and pharmaceutical companies. In total, 50 ads representing the range of advertising messages and sponsors were included for study.

Five videotaped reels of ads each contained 1 practice ad about a hair-styling product and 10 anti-smoking ads. Each reel included ads produced by each of the three groups of organizations and represented a range of eight themes including cessation methods or strategies, health effects of smoking, health benefits of quitting, secondhand smoke, exposing tobacco-industry manipulation, parental or sibling guidance about tobacco, ads portraying tobacco as uncool, and other. In order to test for potential order effects, two reels were prepared for each collection of 10 ads, with one presenting ads in the original order and the other in reverse order (see Appendix for overview of ads by reel).

Study Participants and Recruitment

Youth were eligible for participation in the study if they were in the 8th, 10th, or 12th grade; were neither confirmed nonsmokers nor regular smokers; were able to read and write English; and had not participated in a focus group within the last 6 months. Confirmed nonsmokers were defined as those who reported...
never smoking (even a puff), as well as being unwilling to try cigarettes under any circumstances. Regular smokers were defined as those who had smoked 100 cigarettes or more in their lifetimes. 

Teens were recruited by established market research agencies in two U.S. cities, representing sites with long-term (Boston) and short-term (Chicago) exposure to anti-smoking advertising. Both research agencies began recruitment with listings of families who had expressed interest in participating in market research. From these initial listings, recruitment followed a snowball sampling approach, with contacted teens referring other teens who might be willing and eligible to participate.

Recruitment goals for response-rating sessions were set at 15 teens per session, with equal quota sampling goals for gender and school grade. To minimize distraction, no more than 2 teens in each group were to know each other, and only 1 teen could be recruited per household. A $50 incentive was offered for study participation, paid out as $35 at the end of the ad rating session and $15 after completion of a follow-up call 1 week later. The Internal Review Board at the University of Illinois at Chicago approved the study.

Data-Collection Procedure

The protocol that was used for assessing teen responses to anti-smoking advertising involved each teen attending a viewing session with 12 to 15 other teens in which they appraised a total of 10 ads over a 75-min period. Participants first completed several questions about recent general anti-smoking ad exposure and personal reaction to such advertising.

At the start of viewing, a hair-styling product ad was shown to ensure all teens could hear and see the ads and understood the response-rating forms. During the session, each anti-smoking ad was shown twice, after which the teen completed a one-page response-rating form for that ad. The response-rating form sought their opinion of the ad on 16 dimensions and asked whether they recalled previously seeing the ad. Each ad was assessed using a 7-point Likert scale ranging from 1 (not at all) to 7 (extremely). This process was repeated until 10 ads had been shown.3

Sessions were held at the research agencies’ offices in similar environments, using similar video-projection equipment. In each session, the youth were randomly assigned viewing seats so as to minimize the possibility that those who knew each other would sit together. Each response-rating group was facilitated by a member of the study team,4 who explained the purpose and format of the

3Additional information on the response-rating measures and data-collection procedure is available elsewhere (Wakefield et al., 2002).
4Katherine Clegg-Smith.
response-rating session and emphasized the importance of each participant providing his or her honest evaluation of the ads. Data collection extended from March to May 2001.

Statistical Analysis

Preliminary analyses were undertaken to determine whether we could aggregate ad response ratings across sites and reels. Because youth tended to respond at one or the other end of the scales, we transformed them into dichotomous outcomes based on whether a response was above or below the median response-rating score of all respondents. Using SAS Version 8 (SAS Institute, 2000), logistic regression was used to examine the relationship between the dichotomous ad response ratings and the order viewed (even or odd reel), location of the response-ratings session (Chicago or Boston), prior exposure to ads, and respondent demographics. The “Exact” statement was specified to account for the small number (50 ads) available in each analysis.

Factor-analysis models were run on the ad rating variables using SAS Version 8 and Mplus 2.1 (Muthén & Muthén, 2001). The ad response-rating variables in their original form (range = 1 to 7) were standardized prior to analysis. Once we were satisfied with the measurement model, several structural equation models (SEMs) were developed regressing the latent ad response-rating constructs on ad sponsor. Ad sponsorship was represented by two dummy variables for the pharmaceutical and tobacco industries, with tobacco-control agencies as the reference category. Mplus 2.1 was used to run SEM using the clustered option to account for the fact that each respondent contributed response ratings for a total of 10 ads.

Results

Descriptive Characteristics of Participants and Ads

Ten response-rating sessions were held in each city, for a total of 20 sessions with 278 participants (131 [47.1%] of participants at the Chicago site). Of the 278 participants, 136 (48.9%) were male, 211 (75.9%) were White, and 31 (11.2%) were African American. School grade was distributed evenly (8th grade, 91 [32.7%]; 10th grade, 99 [35.6%]; 12th grade, 89 [31.7%]). Overall, 120 (43.2%) of the participants were susceptible nonsmokers (those who had never tried smoking and did not think they would try soon, but had not ruled out taking a cigarette from a friend or smoking within the next year), and the remaining 158 (56.8%) were early or advanced experimenters.

We first tested for the possibility that ad response ratings might be influenced by the order of ads in each reel by comparing specific ad response ratings for
each reel with those for its corresponding reverse-ordered reel. For each of the 50 ads, we had 17 variables for comparison, resulting in 850 comparisons in total. Out of the 850 comparisons, 47 (5.5%) were significantly different according to the order in which they were shown. However, this level is what might be expected by chance alone, and there was no systematic pattern of differences. We expected that if order effects existed, they might be most detectable at the extremes of order in Positions 1, 2, 9, and 10 on each reel. Of the 170 comparisons (10 ads × 17 variables), only 5 (2.9%) were significant. Therefore, we concluded that there were no apparent order effects.

We then compared response ratings from participants in metropolitan Chicago and Boston for site-specific differences in ratings. Of the 850 comparisons, 31 (3.6%) were significantly different by site. Once again, these differences are at the level of chance. Closer inspection reveals no systematic pattern of differences, so we concluded that differences were random. We also examined whether previous exposure to specific ads was associated with different response ratings. Of the 50 ads shown, 32 had been seen before by at least 2 teens. Overall, only 30 (5.5%) of 544 response ratings for the 32 ads yielded significant differences. Therefore, we concluded that previous exposure did not significantly influence ad response ratings in this study.

In addition, we tested to see if there were response-rating differences based on the demographic makeup of our sample. There were no consistently significant relationships between response-rating outcomes and respondent gender. Of 850 total models, 38 (4.5%) showed some level of significance. There were no consistently significant relationships between response rating outcomes and ethnicity of respondent as only 36 (4.2%) of all models showed some level of significance. Smoking status and grade of respondent were significantly related to response ratings in only 25 (2.9%) and 44 (5.2%) of comparisons, respectively. On the basis of these results, we pooled responses across reels and sites. Table 1 shows descriptive statistics of the pooled response ratings.

Of the 50 ads viewed, 37 (74.0%) were tobacco-control advertisements, 8 (16.0%) were tobacco-industry ads, and 5 (10.0%) were pharmaceutical company ads. Overall, 12 (11.8%) featured tobacco-industry manipulation, 10 (20.0%) were concerned with the health effects of smoking, 8 (16.0%) had a main theme of cessation methods or strategies, 6 (12.0%) featured tobacco as socially unpopular or "not cool," 5 (10.0%) were about secondhand smoke, 3 (6.0%) featured the health benefits of not smoking, 3 (6.0%) addressed parental or sibling guidance about tobacco, and 3 (6.0%) featured a mix of other themes.

Table 2 shows the relationship between ad sponsor and theme. Pharmaceutical company advertising consisted entirely of cessation themes. Tobacco-control advertisements contained no family-guidance themes; and tobacco-industry advertisements contained no cessation, secondhand smoke, health effects, industry manipulation, or other themes.
Principal components factor analysis identified four factors. One of the factors with four variables, which we initially called confrontation, did not make substantive or theoretical sense. Our options were to drop two of the variables or to split the factor into two factors. We chose the latter option, as a model with five factors held substantive meaning. Accordingly, the confrontation factor became a resistance factor and an interest factor, with two variables loading on each.

The powerful response-rating variable loaded on two factors. The boring response-rating variable did not load on any of the five factors and was therefore eliminated. Using Mplus 2.1, we confirmed that the five-factor model
provided a good fit to the data, $\chi^2(79, N = 2,780) = 511.59, p < .0001$, as detailed in Figure 1. This model suggests that the ad response ratings represented five latent variables, which we labeled as follows: cognitive engagement with the ads, negative emotions engendered by the ads, interest, resistance, and positive emotions evoked by the ads. All factor loadings were significant.

### Relationship Between Ad Sponsor and Factors

Table 3 shows the results of the SEM model, which regressed the five latent response-rating constructs on ad sponsor, indicating a good model fit, $\chi^2(99, N = 2,780) = 651.62, p < .0001$ (CFI = .88, RMSEA = .05). Table 3 indicates that both tobacco-industry ads and pharmaceutical company ads were rated as less cognitively engaging than were ads created by tobacco-control programs ($SD = -0.06$ and -0.32, respectively), although only pharmaceutical ads reached statistical significance. Ads produced by the tobacco industry and the pharmaceutical industry also were rated as having significantly less negative emotional content than were ads produced by tobacco-control programs ($SD = -.43$ and -.51, respectively). In relation to resistance to the message of the ad, tobacco and pharmaceutical industry ads were rated as similar to tobacco-control ads. However, teenagers perceived tobacco-industry ads as less interesting than tobacco-control ads ($SD = -0.34$). In contrast, tobacco-industry ads and pharmaceutical ads were rated significantly higher than state tobacco-control ads on the positive emotion construct ($SD = 0.52$ and 0.28, respectively).
Table 3

Association of Ad Sponsorship With Ad Response Ratings Made by Youth: Results of Full Structural Model

<table>
<thead>
<tr>
<th>Factor loading</th>
<th>Cognitive engagement</th>
<th>Negative emotion</th>
<th>Interest</th>
<th>Resistance</th>
<th>Positive emotion</th>
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<tbody>
<tr>
<td>Clear</td>
<td>1.000 (.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Important</td>
<td>1.418 (.108)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stop and think</td>
<td>1.426 (.126)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talk</td>
<td>1.330 (.117)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Powerful</td>
<td>0.832 (.077)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sad</td>
<td></td>
<td>1.000 (.000)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional</td>
<td></td>
<td>0.999 (.038)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angry</td>
<td></td>
<td>0.900 (.063)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scared</td>
<td></td>
<td>0.923 (.053)</td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>
### Structural model

<table>
<thead>
<tr>
<th>Industry</th>
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<th>Parameter 2</th>
<th>Parameter 3</th>
<th>Parameter 4</th>
<th>Parameter 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco industry</td>
<td>-0.057 (.042)</td>
<td>-0.433 (.093)</td>
<td>-0.337 (.060)</td>
<td>-0.002 (.058)</td>
<td>0.517 (.105)</td>
</tr>
<tr>
<td></td>
<td><em>ns</em></td>
<td><em>p</em> &lt; .05</td>
<td><em>p</em> &lt; .05</td>
<td><em>ns</em></td>
<td><em>p</em> &lt; .05</td>
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<tr>
<td>Pharmaceutical industry</td>
<td>-0.315 (.051)</td>
<td>-0.505 (.095)</td>
<td>-0.003 (.095)</td>
<td>0.009 (.043)</td>
<td>0.281 (.090)</td>
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<tr>
<td></td>
<td><em>p</em> &lt; .05</td>
<td><em>p</em> &lt; .05</td>
<td><em>ns</em></td>
<td><em>ns</em></td>
<td><em>p</em> &lt; .05</td>
</tr>
</tbody>
</table>

*Note. Standard errors are in parentheses. χ²(99, N = 2,780) = 651.62, p < .0000 (CFI = .88, RMSEA = .05).*
Discussion

Our study found that youth responded to ads made by tobacco companies in different ways than they did to ads made by tobacco-control agencies. Specifically, ads made by tobacco companies were less likely to elicit negative emotions from youth and were less interesting to them. In addition, ads made by tobacco companies were more likely than were tobacco-control ads to elicit positive emotions from youth.

The reasons for these systematic differences in youth appraisal may relate to the different themes that tobacco companies used, as compared to tobacco-control agencies. Tobacco-company ads in this study involved only themes of family guidance about smoking (“Talk to your kids about smoking”), those portraying to youth the health benefits of not smoking, and that it is not cool to smoke. Tobacco-control agencies rarely use these themes.

In addition, executional characteristics of the ads may drive or reinforce these differences. Indeed, the 1-week follow-up component of our study reported
elsewhere (Terry-McElrath et al., 2005) found that ads containing either a personal testimonial or a negative visceral element (eliciting an unrelieved “Ugh!” response from the viewer) were more likely to be recalled, discussed with others outside the rating session, and thought about by youth. Ads containing these characteristics were always tobacco-control ads, and not tobacco-company ads.

When compared with tobacco-control ads, pharmaceutical company ads were less likely to elicit negative emotional responses or to be cognitively engaging to youth and were more likely to elicit positive emotions. Given that these ads have a cessation message and are not directed to youth, these findings are unsurprising. As other research with youth has shown, youth do not find these advertised cessation aids appealing or relevant to their needs (Balch et al., 2004).

It is of concern that our study findings suggest that tobacco-company ads as a whole seem to elicit positive rather than negative feelings on the part of youth and hold low interest for them. Of course, the elicitation of positive emotions should not always be viewed adversely, but to the extent that there is a preponderance of this kind of advertising by a sponsor over a more comprehensive and balanced set of messages, young viewers might be led to trivialize, discount, or otherwise be distracted from the harm wrought by tobacco and the real risks it poses. Others have suggested that the prime reason tobacco companies broadcast ads expressing concern about youth smoking is for public-relations purposes. Our findings do not challenge this interpretation.

A first potential limitation of the study is that we used 50 ads to represent the range of anti-smoking ads that are produced by the three main advertising sponsors. Although we took care to select ads that represent the range of message themes, target groups, and executional styles, a larger number of ads would have been desirable. However, it should be realized that, even if we had conducted a census of all ads, the collinearity between target audience, theme, and sponsor would have remained (Beaudoin, 2002) because of the distinctive choice of target groups and themes used by tobacco companies and pharmaceutical companies.

Second, some may be surprised that we found no differences in ad appraisal between the Boston and Chicago sites, given the longstanding media campaign in Massachusetts. However, since this study was conducted in 2001, both states had more than 1 year of intensive exposure to the American Legacy Foundation’s youth anti-smoking ads, over 2 years of exposure to youth tobacco-company advertising, and even longer exposure to pharmaceutical company advertising. We might have expected greater differences between sites had we conducted the study several years earlier, before these large national campaigns commenced.

A third issue for consideration is that the study was based on participants’ initial reactions to the ads. While these reactions may not necessarily translate into changes in smoking attitudes or behaviors, it is likely that some level of
engagement with the advertising message or evidence of processing of the message might increase the likelihood that more distal effects on smoking-related attitudes and behaviors may occur. We used measures of initial responses to advertising much like those that have been used widely in one form or another in advertising research by advertising agencies and proprietary ad-testing services. (Wells, Leavitt, & McConville, 1971; DDB Needham Worldwide, 1988).

In conclusion, youth appraise anti-smoking advertisements made by tobacco-control agencies, tobacco companies, and pharmaceutical companies quite differently. Our research suggests that, on the whole, ads made by tobacco companies are more likely to elicit positive feelings than are those made by tobacco-control agencies. In contrast, tobacco-control ads are more likely to be of interest to youth and to engage them emotionally in ways that might be expected on the basis of previous research (Donohew et al., 1998; Hill et al., 1998) to increase the likelihood of eventual smoking-related attitude change and behavior change.

References


## Appendix

### Ad Reel Preparation

<table>
<thead>
<tr>
<th>Theme</th>
<th>Reel number(^a)</th>
<th>1 and 2</th>
<th>3 and 4</th>
<th>5 and 6</th>
<th>7 and 8</th>
<th>9 and 10</th>
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<tr>
<td>Total ads per reel</td>
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<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>50</td>
<td></td>
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<tr>
<td>Theme</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Cessation</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td></td>
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<tr>
<td>Secondhand smoke</td>
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<td>1</td>
<td>1</td>
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<tr>
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<td>0</td>
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<tr>
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<td>0</td>
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<td>2</td>
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<td>2</td>
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</tr>
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\(^a\)Each set of 10 ads was shown on two reels; ads on the even-numbered reels were presented in reverse order of the odd-numbered reels.