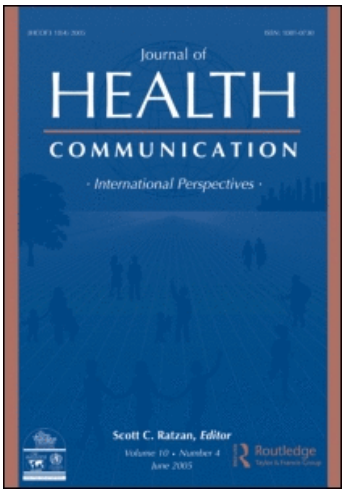

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The Effect of Antismoking Advertisement Executional Characteristics on Youth Comprehension, Appraisal, Recall, and Engagement

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The Effect of Antismoking Advertisement Executional Characteristics on Youth Comprehension, Appraisal, Recall, and Engagement

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This article examines how two executional characteristics of antismoking advertising may interact with other relevant advertising features to affect youth comprehension, appraisal, recall of, and engagement with antismoking ads. Fifty antismoking ads made by tobacco control agencies, tobacco companies, and pharmaceutical companies were appraised by 268 youth using an audience response methodology with a follow-up component. Analyses show that thematic and executional characteristics varied both across and within ad sponsor, and that executional characteristics of ''personal testimonial'' and ''visceral negative'' clearly had the strongest and most consistent effect on appraisal, recall, and level of engagement. Antismoking advertisements are not alike in their ability to engage youth. Advocates attempting to develop increasingly successful antismoking campaigns should consider the executional characteristics of proposed ads.

Introduction

Research has shown that antismoking advertising may help reduce youth smoking (Siegel & Biener, 2000; Wakefield, Flay, Nichter, & Giovino, 2003b). Such research also has examined which antismoking advertising characteristics are most strongly related to decreased protobacco beliefs, attitudes, and actual smoking behaviors.

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Advertising research offers various models to explain how advertising affects purchase intentions. For example, De Pelsmacker, Dedock, and Geuens (1998) identified three ad dimensions: emotional content, informational content, and format. De Pelsmacker and colleagues posited that these three dimensions influence both affective and cognitive response to ads that, in turn, affect brand attitude, which then influences purchase intentions. Their model suggests variables of interest in antismoking advertising research such as recall, comprehension, emotional reaction, thematic content, executional characteristics, cognitive appraisal, level of engagement showing increasing attention to advertising (e.g., thinking about an ad or discussing it with peers), target audience (youth or general adult), and ad sponsor. Relevant outcomes include both (a) attitudes and beliefs regarding smoking behaviors (the equivalent of attitude toward brand), and (b) intentions to smoke and smoking behaviors (the equivalents of purchase intentions and behaviors).

Executional characteristics refer to the ways in which an ad has been produced to deliver a specific message. For example, a message focusing on the health effects of smoking may be delivered via a simple text message, via a personal testimonial of an individual whose health has been harmed by smoking, or via a repellent health-related image such as the graphic images now found on Canadian cigarette packs. More than one executional characteristic can be used within a single ad; for example, a personal testimonial can be combined with a repellent health-related image. Such executional characteristics may be especially relevant to antismoking advertising due to the nature of health-related harm and risk messages. Youth often perceive themselves to be invulnerable to future harm or risk; messages about smoking risks may be easily dismissed as irrelevant by adolescents. Mass communication theory suggests that highly emotional appeals may be most appropriate when the target audience has low interest in the subject matter, or when the available information is considered "old news" (Hafstad et al., 1997). Hafstad and colleagues note, "provocative and dissonance arousing appeals that create affective reactions and lead to interpersonal communication should be given more attention in campaigns designed to influence adolescent smoking" (p. 227). Advertising executional characteristics such as personal testimonials or repellent images may help to break through to youth and engage them with antismoking messages, a critical step in the causal chain between media message and behavior change (Flay, 1987; Flay & Burton, 1990).

Available research has focused primarily on antismoking advertising emotional and informational content. In addition, some studies have highlighted the cognitive appraisal of such advertising, while others have focused on measures of recall (Beaudoin, 2002; Beltramini & Bridge, 2001; Biener, 2000, 2002; Biener, McCallum-Keeler, & Nyman, 2000; De Pelsmacker et al., 1998; Farrelly et al., 2002; Goldman & Glantz, 1998; Hafstad et al., 1997; Henriksen & Fortmann, 2002; Hill, Chapman, & Donovan, 1998; Homer & Yoon, 1992; Pechmann & Reibling, 2000; Pechmann, Zhao, Goldberg, & Reibling, 2003; Shadel, Niaura, & Abrams, 2002; Teenage Research Unlimited, 1999; Wakefield, Flay, Nichter, & Giovino, 2003a, 2003b; Wakefield et al., in press; White, Tan, Wakefield, & Hill (2003)). Little research is available, however, that examines such outcomes when also considering executional characteristics and their relationships with emotional and cognitive reactions to antismoking advertising, as well as levels of engagement with such ads. Furthermore, studies that use an audience response methodology to specific public health ads rarely involve a follow-up component, which might provide

additional insight into audience ad processing. Indeed, follow-up components have long been common in commercial advertising research (DDB Needham Worldwide, 1988).

The majority of studies also have focused on a limited number of ads or ad sponsors or both. Antismoking television advertising has had three main sponsors: tobacco control programs, the tobacco industry, and pharmaceutical companies. Since 1998, tobacco companies have advertised on television with the ostensible message of persuading youth not to smoke. Both Lorillard and Philip Morris have had such campaigns; however, the majority of tobacco industry antismoking advertising has been purchased by Philip Morris through the youth-targeted "Think. Don't Smoke" campaign, and the parent-targeted "Talk. They'll Listen" campaign.

Farrelly and colleagues (2002) examined population survey data comparing youth confirmed recognition of Philip Morris advertisements with confirmed recognition of the American Legacy Foundation's truth® campaign. They found that confirmed recognition of Philip Morris advertisements generally was not associated with increased antitobacco attitudes and beliefs, whereas exposure to truth® ads showed such associations. Those who confirmed their recognition of Philip Morris ads also were more likely to be open to the idea of smoking.

There has been little study of the advent of direct-to-consumer advertising for nicotine replacement therapies and Zyban® (hereafter referred to collectively as pharmaceutical ads). Because such high volume mass-reach advertising reaches more than the primary target group (adult smokers), it is important to consider the responses of those at risk of taking up smoking, especially teenagers, to the advertising. For example, teens exposed to such ads may perceive that it is easier to quit smoking or that there is a reduced risk of addiction, and thus conclude that there is less of a problem with taking up smoking (Bloom, Bolton, & Cohen, 2000). 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).

This article seeks to add to the literature by focusing on antismoking advertising executional characteristics and how these characteristics may interact with other advertising features (such as target audience, thematic content, and ad sponsor) to affect youth comprehension, appraisal, recall of, and cognitive engagement with antismoking ads. This study is the first on antismoking advertising that we are aware of to use an audience response methodology with a follow-up component.

Methods[1]

Ad Selection and Preparation

Ads eligible for inclusion were produced and aired from 1997 to 2001 and were sponsored by tobacco control programs (including state campaigns and the American Legacy Foundation truth® campaign), tobacco companies, or pharmaceutical companies. In total, 50 ads representing a range of advertising messages and sponsors were included. Videotaped reels of 10 ads each were produced, with each reel also being produced in reverse order (for a total of 10 reels). As indicated in Table 1, each

[1]For detailed information on the project methodology, including the ads used, please see Wakefield et al., 2002.

Table 1. Ad reel preparation

	Reel number*					
	1, 2	3, 4	5, 6	7, 8	9, 10	Total
Total ads per reel	10	10	10	10	10	50
Audience						
General	3	6	4	4	7	24
Youth	7	4	6	6	3	26
Executional characteristic						
Personal testimonial	1	2	1	2	2	8
Visceral negative	0	0	2	0	1	3
Neither of the above	9	8	7	8	7	39
Theme						
Cessation	2	1	1	2	2	8
Secondhand smoke	1	1	1	1	1	5
Family guidance	1	1	0	0	1	3
Health benefits	0	2	0	1	0	3
Health effects	2	2	2	2	2	10
Industry manipulation	2	2	3	3	2	12
Uncool	2	0	2	1	1	6
Other	0	1	1	0	1	3
Sponsor						
Pharmaceutical company	1	1	1	1	1	5
Tobacco control	7	7	8	8	7	37
Tobacco industry	2	2	1	1	2	8

*Each set of 10 ads was shown on two reels; ads on even-numbered reels were presented in reverse order of odd-numbered reels.

reel contained ads produced by the three ad sponsors and represented a range of 8 themes (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"[2]). Each ad was coded for its primary target audience (youth vs. a more general audience), and for the presence or absence of two executional characteristics (ads could have both characteristics): (1) personal testimonial, and (2) negative visceral image (see Table 2 for coding definitions and exemplars). Personal testimonial executions rely on emotional appeals (sadness, fear, empathy) that may enhance message relevance and credibility (Biener & Taylor, 2002). Recording the presence of negative visceral images was suggested by the literature on fear appeals (Hill et al., 1998; Witte & Allen, 2000) and by the hypothesis that such inherently emotional imagery may strongly reinforce message relevance, credibility, and recall. Although it would

[2]Previous research, such as that by Goldman and Glantz (1998), has provided categories of themes relevant to antismoking advertising. All themes used in these analyses, however, emerged from a study of the ads themselves. Thus while our themes include several of those used by Goldman and Glantz (cessation, health effects, industry manipulation, and secondhand smoke), we also found themes not previously reported on in the literature, including family guidance, health benefits of quitting, and uncool.

Table 2. Coding categories for ad executional characteristics

Executional characteristic description	Exemplar ads: Short title	Creative description
Personal testimonial		
This type of story is presented in the first person, often with a person directly addressing the camera. These ads portray real people telling how smoking has affected their life and/or the lives of their families. The story must be from personal experience, but it does not have to be about health effects.	1. Teen addiction to cigarettes (MA State Campaign)	Teen girl talks about her addiction to cigarettes.
	2. Wife ETS victim (CA State Campaign)	Older man talks about his wife who was a victim of his own secondhand smoke.
Visceral negative		
These ads use a message that elicits a visceral "ugh!" response from the viewing audience, such that the reaction endures through at least the end of viewing the ad (for example, it is not relieved by humor). The visceral negative element of the ad may or may not convey the main point of the ad.	1. Bowl cleaner (FL State Campaign)	Two teens in restroom stall; one puts head in toilet; various shots of diseased body parts; skulls.
	2. Artery (Australia/MA State Campaign)	Man lights cigarette from stove-top; surgeon squeezes fatty deposits from a young smoker's aorta. Tag line: "Every cigarette is doing you damage."

be possible to code ads for the presence of a variety of other executions, for this article, we limited the executional characteristics to the two noted based on the theoretical literature cited above as well as the relative availability of characteristics in the ads in our reels. Audience, theme, and executional characteristics were coded by agreement among five members of the research team.

Study Participants and Recruitment Methods

Youth were eligible for participation if they were in the eighth, tenth, or twelfth grade; and were neither confirmed nonsmokers nor regular smokers (Pierce, Choi,

Gilpin, Farkas, & Merritt, 1996). Thus, the sample was based on youth who were willing to consider smoking in the future, or were currently experimenting with smoking, but who had not yet smoked more than 100 cigarettes in their lives, or both groups. By eliminating youth unlikely to take up smoking and those who had already committed to smoking and perhaps had become addicted, we eliminated those whose smoking behavior was least likely to be affected by anti-smoking advertising. Although recently reported data on national smoking rates among youth do not include an exactly equivalent measure, in 2001, the national proportion of in-school eighth, tenth, and twelfth graders who reported some level of smoking experimentation but had not yet progressed to smoking 10 or more cigarettes daily was 34% for eigth graders, 47% for tenth graders, and 51% for twelfth graders (Johnston, O'Malley, & Bachman, 2002). These numbers underestimate the proportions from our population, since we also included non-smokers who did not consistently reject the idea that they would accept an offer of a cigarette, as well as youth who reported having smoked only 1–9 cigarettes in their lifetime. Additional eligibility requirements were that all youth were literate in English and had not participated in a focus group within the last 6 months.

Youth were recruited by two market research agencies in sites representing long-term (Boston) and short-term (Chicago) broadcast exposure to antismoking advertising. Agencies began recruitment with families who expressed interest in participating in market research. Recruitment also involved up to two referrals by youth of peers who might be willing and eligible to participate. Recruitment goals were set at 15 youth per rating session with 10 sessions planned for both Chicago and Boston (150 youth per site), with equal quota sampling for gender and school grade. One hundred thirty youth attended the Chicago rating sessions, and 150 for the Boston sessions, for a total of 280 youth. Two of the Boston youth, however, were excluded from analyses due to their being nonsusceptible nonsmokers based on self-reported smoking status, bringing the *N* for the rating sessions to 278. Of these youth, 268 (96.4%) participated in follow-up calls (127 youth in Chicago; 141 in Boston). Youth were paid $50 for participation ($35 following 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 protocol.

Participants were distributed equally by location (47% in Chicago) and gender (49% male). The majority were White (76%); 11% were African American, 10% Hispanic, 2% Asian, and 1% other. School grade was evenly distributed (eighth grade, 33%; tenth grade, 36%; twelfth grade, 32%). Overall, 43% were susceptible nonsmokers; 57% were early or advanced experimenters.

Data Collection Procedure and Measures

Data collection took place from March to May 2001. Each youth attended a rating session at the research agencies' offices with 10–18 other youth in which they appraised one of the 10 prepared reels (each containing 10 ads) in a 75-minute period. Study personnel facilitated each session, explaining the purpose and format of the session and emphasizing the importance of each participant providing honest evaluation of the ads. Each ad was shown twice, after which the youth completed a one-page rating form per ad.

Outcome variables for this study included measures of comprehension, appraisal, recall, and engagement. *Comprehension* was assessed by coding responses to the following open-ended questions: "What is the main point that this ad is trying to make?" followed by "What else is it trying to say?" Coding focused on agreement with the ad's presumed advertising strategy (Balch, 1999; Sutton, Balch, & Lefebvre, 1995). Two senior study personnel scored responses as "1" (generally understood the main point of the ad) or "0" (clearly did not understand the main point). Overall level of agreement for scoring was 86%.

Appraisal included two measures obtained during the rating sessions: *how good* and *most thought provoking*. Youth were asked to rate each ad via the question, "Overall, how good was this ad as an antismoking advertisement?" (response scale of 1 = not good at all, to 7 = very good). *Most thought provoking* refers to the one ad that each youth selected at the end of the session to answer the question, "Which one of these ads will most make you stop and think?"

Measures of recall and engagement were obtained during a follow-up call with each youth held one week after that youth's rating session. During follow-up calls, interviewers asked youth to identify which, if any, of the ads they could recall from the rating session. *Recall* was determined by comparison of the youth's open-end description of each ad that the youth claimed to have recalled with a written description of the ad provided to the interviewers by the researchers (all interviewers had seen all of the ads). For each confirmed recalled ad, two measures of *engagement* were asked: (1) *thought about* (coded as yes for youth who, upon recalling an ad at follow-up, reported having thought about the ad between the rating session and follow-up), and (2) *discussed* (coded as yes for youth who, upon recalling an ad at follow-up, reported having discussed the ad between the rating session and follow-up with someone not in the rating session).

The focus in this article on comprehension, appraisal, recall, and engagement is predicated on communication effectiveness research that has highlighted the outcome of recall and the importance of other variables indicating higher-order-cognitive processing (Donohew, Lorch, & Palmgreen, 1998; Keller & Block, 1996; Lang, Dhillon, & Dong, 1995). This article does not investigate actual behavior change. As Floyd, Prentice-Dunn, and Rogers (2000) note in their meta-analysis of research on protection motivation theory, however, studies examining disease prevention and health promotion have shown that for both threat- and coping-related variables, moderate effects can be expected for both intentions and behaviors (although behavior effect sizes likely will be somewhat lower than those observed for intentions).

Statistical Analysis

For the analyses reported in this article, the ad is the unit of analysis. To compare the 50 ads by response effects, original data at the youth level ($n = 268$) were aggregated up to the ad level ($n = 50$), meaning that the responses of all youth who viewed and rated a particular ad were summed and averaged for that ad. These responses should be interpreted as the proportion of youth responding to a particular outcome. For example, for ad comprehension, the variable reflects the mean proportion of youth exposed to an ad who comprehended its main message. This technique treats the aggregated ratings of the ads as characteristics of the ads themselves. This kind of analysis is common in commercial advertising research to select ads for

broadcasting; advertisers, advertising agencies, and research agencies have developed "norms" on such aggregated measures.[3]

Preliminary analyses examined whether responses differed by location (Chicago or Boston), ad order, respondent gender, race/ethnicity, grade, or whether youth reported previously seeing particular ads. No significant rating differences were observed (Wakefield et al., in press). Thus, reels and sites were collapsed for analysis purposes. Analyses were conducted using SAS v.8, specifying OLS regression models. Prior exposure, or the extent to which a specific ad had been seen before the rating session, was included in models examining comprehension, *how good*, and *most thought provoking*. Intervening exposure, indicating if any television antismoking advertising had been seen between the rating session and follow-up, was included in models examining *recall*, *thought about*, and *discussed*. Comprehension also was included in models examining follow-up variables. Target audience, executional characteristics, and themes are dichotomous yes/no measures. Comprehension, prior exposure, and intervening exposure are proportions representing the proportion of youth who comprehended an ad, or reported either type of exposure.

Results

Ad Characteristics and Outcome Measures

On average, 65% of youth understood the main message of any given ad they viewed. Further, 57% of youth were likely to rate any given ad as above 4 in the 7-point Likert response scale for *how good*. An average of 40% of youth recalled a specific ad. Only 17% reported they had thought about any specific ad, and only 13% had discussed a specific ad with individuals who were not in the rating session.

Independent variables of target audience, executional characteristics, and theme varied significantly by ad sponsor, as did prior exposure to such advertising (see Table 3). The five pharmaceutical company ads targeted only general audiences, encompassed only cessation themes, and showed no use of the executional characteristics examined. The eight tobacco industry ads strongly targeted youth, featured three themes, and included neither executional characteristic studied. The 37 tobacco control ads showed the greatest variation, targeting youth and general audiences approximately equally, including seven of the eight themes, and both personal testimonial and visceral negative executional characteristics. Tobacco industry ads were most likely to have been seen before the rating session, followed by pharmaceutical company ads, followed, in turn, by tobacco control ads. Intervening exposure to any television antismoking advertising was substantial. The mean proportion of youth reporting exposure to any ads between the session and the follow-up call was 0.57 (standard deviation = .08; not shown in table).

Bivariate Model Relationships

When comparing outcome mean proportions by ad sponsor (Table 4), we found that pharmaceutical ads were significantly less likely to be *thought about* or *discussed* than

[3]This method is frequently used in advertising research systems (DDB Needham, 1998), as well as in ecological social stratification research (for example, see Warren, Sheridan, & Hauser, 1998).

Table 3. Characteristics of ads by sponsor[a,b]

Characteristic	Pharmaceutical company ads ($N = 5$)	Tobacco control ads ($N = 37$)	Tobacco industry ads ($N = 8$)
Youth target audience	0%	54%	75%
Executional characteristic			
Personal testimonial	0%	24%	0%
Visceral negative	0%	8%	0%
None of the above	100%	68%	88%
Theme			
Cessation	100%	8%	0%
Secondhand smoke	0%	14%	0%
Family guidance	0%	0%	38%
Health benefits	0%	3%	25%
Health effects	0%	27%	0%
Industry manipulation	0%	32%	0%
Uncool	0%	8%	38%
Other	0%	8%	0%
Prior exposure	.36 (.16)	.17 (.22)	.55 (.25)

[a]Data presented with percentages are the total percent of the ad type that exhibits the noted characteristic. Data for prior exposure represent the mean proportion of youth who viewed an ad sponsored as noted who reported having seen the ad before the rating session (standard deviations in parentheses).
[b]Description of all ads used in this study is presented in Wakefield and colleagues (2002).

tobacco control ads. Further, pharmaceutical ads were also less likely than tobacco control ads to be rated highly on *how good*. There were no significant differences between pharmaceutical ads and tobacco industry ads on any variables, nor were there significant differences between tobacco control ads and tobacco industry ads. In addition, no significant differences by ad sponsor were observed for comprehension, *most thought provoking*, or *recall*. For almost all outcomes, the standard deviations for ad sponsor were quite large, indicating considerable variation within sponsor as to how youth evaluated and cognitively engaged with antismoking advertising.

To investigate what may be driving such variation, executional characteristics, target audience, thematic content, comprehension, and prior or intervening exposure were modeled with outcome variables. As noted in Table 1, only tobacco control ads contained examples of both relevant executional characteristics as well as most themes. Thus, all further analyses included only the 37 tobacco control ads (see Table 5).

In bivariate analyses, comprehension appeared to be unrelated to any of the identified predictors. Both appraisal measures—*how good* and *most thought provoking*—were significantly related to executional characteristics as well as themes. The mean proportions of both *how good* and *most thought provoking* were significantly higher for ads with personal testimonial (.34 and .18) and visceral negative (.25 and .20) executions. The mean proportions for *how good* and *most thought provoking*, however, were significantly lower for ads with cessation, industry manipulation, and uncool themes when compared with the theme of health effects.

Table 4. Cognitive appraisal and level of engagement measures by sponsor: mean proportions and standard deviations

Outcome	Pharmaceutical company ads (ad sponsor 1) ($N = 5$)	Tobacco control ads (ad sponsor 2) ($N = 37$)	Tobacco industry ads (ad sponsor 3) ($N = 8$)	ANOVA statistics examining outcomes by ad sponsor			
				Overall	1 vs. 2	1 vs. 3	2 vs. 3
Comprehension[a]	.61 (.21)	.64 (.21)	.73 (.19)				
How good[b]	.34 (.11)	.61 (.23)	.56 (.07)	*	*		
Most thought provoking[c]	.01 (.01)	.12 (.14)	.05 (.04)				
Recall[a]	.32 (.28)	.42 (.17)	.35 (.19)				
Thought about[a,d]	.03 (.04)	.20 (.14)	.13 (.09)	*	*		
Discussed[a,d]	.03 (.01)	.15 (.12)	.10 (.06)	*	*		

[a]Data presented represent the proportion of youth who viewed an ad, were followed up, and who responded "yes" to the outcome variable (standard deviations in parentheses).
[b]Data presented represent the proportion of youth who viewed an ad who rated it as 5–7 on the original 1–7 scale (standard deviations in parentheses).
[c]Proportion of youth that chose a given ad as the most likely to make them stop and think.
[d]Denominators are the sum of those who recalled the ad at follow-up, vs. those who participated in the rating sessions.
*$p < .05$.

Recall and measures of engagement (*thought about* and *discussed*) were also significantly related to personal testimonial and visceral negative executions. Mean proportions for *recall* were higher by .25 and .14 for personal testimonial and visceral negative, respectively; for *thought about* by .17 each; and for *discussed* .16 and .18, respectively. Mean proportions for *recall* were also higher among youth who reported seeing any television antismoking ads between the rating session and follow-up (.30). In comparison with health effects, mean proportions for *recall* were lower for ads with cessation, industry manipulation, or "other" themes (−.24, −.15, and −.23, respectively). *Thought about* showed a negative relationship with ads with cessation messages (−.22) compared with ads with a health effects theme; *discussed* was negatively related to ads with cessation (−.16), industry manipulation (−.13), and uncool (−.18) themes.

In summary, results from bivariate analyses showed that personal testimonial and visceral negative executions were significantly and positively related to all outcomes other than comprehension, while cessation themes were negatively related to all outcomes other than comprehension. Target audience and comprehension were not significantly related to any outcome measures.

Multivariate Relationships for Tobacco Control Ads

Full multivariate models were specified for the 37 tobacco control ads (see Table 6). As these analyses included a relatively small N, we indicate if relationships were observed at the $p < .10$ level, as well as conventional significance levels of $p < .05$.

Within a multivariate context, ads with a youth target audience had significantly higher ad comprehension (.18). Comprehension was also somewhat higher for ads with the secondhand smoke theme. The multivariate model examining ratings of *how good* showed that the personal testimonial execution remained significant (with .23 higher proportion of youth rating an ad as above average); however, the visceral negative execution, as well as industry manipulation and uncool themes, dropped to marginal significance levels ($p < .10$). In contrast to the bivariate model, the proportion of youth reporting previous exposure to an ad also showed a significant positive relationship with ratings of *how good* (.38). Multivariate results for nominations of *most thought provoking* ad continued to be significantly and positively related to personal testimonial executions (.16). Results also indicated that a visceral negative execution was associated with marginally higher ratings of *most thought provoking*.

In multivariate analyses, engagement variables continued to be strongly related only to executional characteristics. The mean proportion of youth recalling a given ad was .20 higher for ads with a personal testimonial. Both *thought about* and *discussed* were significantly higher for personal testimonial (.13) and visceral negative executions (.17 and .15, respectively).

Discussion

Our findings clearly show that thematic and executional characteristics varied significantly both across and within ad sponsor, with tobacco control ads having the most variation. Within tobacco control ads (the only group with substantive variation allowing multivariate analyses), executional characteristics (personal testimonial and visceral negative) had the strongest and most consistent relationships

Table 5. Bivariate models examining youth cognitive engagement with tobacco control antismoking advertising ($N = 37$)

	Dependent variable											
	Comprehension		How good		Most thought provoking		Recall		Thought about		Discussed	
Independent variable	$b^{\dagger}$	p	b	p	b	p	b	p	b	p	b	p
Youth target audience	0.13		−0.08		−0.09		−0.05		−0.05		−0.07	
Personal testimonial execution	0.04		0.34	*	0.18	*	0.25	*	0.17	**	0.16	**
Visceral negative execution	−0.13		0.25	*	0.20	*	0.14	*	0.17	*	0.18	**
Comprehension score[a]	–		0.27		−0.01		0.14		0.10		0.03	
Prior exposure	0.14		0.33		0.02		0.18		0.15		0.09	
Intervening exposure	N/A[b]		N/A[b]		N/A[b]		0.30	*	0.22		0.08	
Theme												
Health effects (referent)	(ref)		(ref)		(ref)		(ref)		(ref)		(ref)	
Cessation	−0.03		−0.40	**	−0.20	*	−0.24	*	−0.22	*	−0.16	*
Secondhand smoke	0.17		−0.14		−0.03		−0.07		−0.02		−0.03	
Health benefits	0.14		−0.12		−0.17		−0.06		−0.04		−0.13	
Industry manipulation	−0.09		−0.27	**	−0.12	*	−0.15	*	−0.09		−0.13	**
Uncool	−0.08		−0.45	**	−0.19	*	−0.17		−0.14		−0.18	*
Other	−0.27	*	−0.18		−0.06		−0.23	*	−0.10		−0.12	

*$p < .05$; **$p < .01$

[†]Unstandardized regression coefficient.

[a]Comprehension is included as an independent variable only in noncomprehension models.

[b]Comprehension, *how good*, and *most thought provoking* were asked in the original ad rating sessions. Thus, exposure between the rating session and follow-up is nonapplicable for these regression models.

Table 6. Multivariate models examining youth cognitive engagement with tobacco control antismoking advertising (N = 37)[a]

	Dependent variable											
	Comprehension		How good		Most thought provoking		Recall		Thought about		Discussed	
Independent variable	b[†]	p	b	p	b	p	b	p	b	p	b	p
Intercept	0.53	***	0.57	***	0.10		0.23		−0.00		0.14	
Youth target audience	0.18	*	−0.06		−0.05		−0.03		−0.05		−0.03	
Personal testimonial execution	0.07		0.23	**	0.16	**	0.20	**	0.13	*	0.13	**
Visceral negative execution	−0.03		0.20	+	0.16	+	0.15		0.17	*	0.15	*
Comprehension score[a]	–		–		–		0.09		0.12		−0.02	
Prior exposure[b]	0.03		0.38	*	0.07		–		–		–	
Intervening exposure[b]	–		–		–		0.22		0.20		0.06	
Theme												
Health effects (referent)	(ref)		(ref)		(ref)		(ref)		(ref)		(ref)	
Cessation	0.11		−0.20		−0.11		−0.12		−0.15		−0.08	
Secondhand smoke	0.22	+	0.03		0.05		0.00		0.03		0.04	
Health benefits	0.03		−0.17		−0.20		−0.16		−0.09		−0.15	
Industry manipulation	−0.07		−0.14	+	−0.04		−0.04		0.00		−0.05	
Uncool	−0.12		−0.22	+	−0.05		−0.02		−0.00		−0.07	
Other	−0.18		−0.01		0.00		−0.13		−0.04		−0.09	

$+p < 10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

[†]Unstandardized regression coefficient.

[a]Family guidance theme not included as no tobacco control ads utilized this theme. Due to concerns about time of measurement endogeneity, comprehension is included as an independent variable in follow-up variable models of *recall*, *thought about*, and *discussed*.

[b]Measures of prior exposure and intervening exposure are highly correlated, and thus cannot be entered into models simultaneously. Thus, prior exposure is used in models examining outcomes measured during the rating session itself, while intervening exposure is used in models examining measures obtained at follow-up.

with appraisal (*how good* and *most thought provoking*), *recall*, and level of engagement (*thought about* and *discussed*). Although bivariate models also showed significant relationships with theme, these became nonsignificant when executional characteristics were entered into the models, likely resulting from the fact that the personal testimonial and visceral negative executions usually involved a limited number of themes. Specifically, in our ad sample, personal testimonial executions were predominantly related to ads with themes of health effects (55%) and industry manipulation (22%), and were not used in ads with cessation, family guidance, uncool, or "other" themes. Visceral negative characteristics were found only in ads with themes of health effects and "other."

Pharmaceutical ads clearly were less likely to engage youth than tobacco control ads, with lower mean proportions for *how good*, *thought about*, and *discussed*. It is interesting to note that we found no significant differences between pharmaceutical and tobacco industry ads, or between tobacco industry and tobacco control ads. The overall *N* for each sponsor is quite low, which may have limited observable effects. A larger sample size would assist in exploring this area further, especially in regard to *most thought provoking* (data in Table 4 indicate that tobacco control ads *may* be more likely to be nominated for *most thought provoking* than either pharmaceutical or tobacco industry ads).

One possible explanation for the lack of observed difference between tobacco control and tobacco industry ads is the substantive variation of tobacco control ads in our sample. These analyses indicate that youth appraisal of and engagement with the ad is not a foregone conclusion simply because an ad has one of these sponsors versus another. Sponsors clearly differ, however, in the likelihood of having certain executional characteristics and themes. Pharmaceutical ads had neither of the executional characteristics studied here, and only a cessation theme (which significantly lowered appraisal and engagement outcomes in bivariate models). Tobacco industry ads had neither personal testimonial nor visceral negative executions, and provided a limited number of themes (none of which included health effects). To the extent that the current analyses indicate that these ad characteristics are related to higher appraisal, recall, and engagement, they are consistent with Farrelly and colleagues' (2002) conclusion that tobacco industry ads were less effective than truth® ads in promoting desirable smoking-related attitudinal or behavioral change.

This article is an initial exploration of executional characteristics. We have investigated only two of the executional characteristics that might be possible to examine, and we were limited by the 50 ads chosen for use in the rating sessions. It is highly likely that not all personal testimonials would be effective in increasing youth appraisal of or engagement with antismoking advertising. For example, the comparative effects of a personal testimonial dealing with serious health effects or the death of a loved one versus a personal testimonial dealing with social acceptance are unknown. Further, the same executional characteristic can be executed more or less fully within the same ad campaign and can have differential effects on viewers. Donovan and colleagues (2003) found that antismoking ad memorability in the Australian National Tobacco Campaign varied with the relative prominence of the same kind of visceral negative image. Future research identifying relevant executional characteristics and examining their interrelationships among themselves and thematic content is needed to help further the understanding of how to make effective public health-related advertising.

This study is consistent with other research that has highlighted the importance of personal testimonials in communicating convincing antismoking messages (Biener, 2000, 2002; Biener et al., 2000). Our findings also reinforce the use of negative visceral images, such as those used in fear appeals, as a potentially effective format (Donovan, Boulter, Borland, Jalleh, & Carter, 2003; Hill et al., 1998; Witte & Allen, 2000). Further, results suggest that many ads made with a nonyouth target audience in mind are processed favorably by youth. Although we found that ad comprehension was higher for ads targeting youth, all other outcomes were unrelated to target audience. As discussed by Hill (1999), there are good reasons why many of the antismoking messages aimed at adults may be equally successful with youth.

Clearly, all antismoking advertisements are not alike in their executional characteristics, their thematic content, the level to which they engage youth, or how youth are likely to respond. Advocates attempting to develop increasingly successful antismoking campaigns should consider the executional characteristics of proposed ads. Use of personal testimonials or visceral negative executions or both that include themes of health effects may increase the likelihood that fewer youth will be smoking in the future.

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