REVIEW

Industry sponsored anti-smoking ads and adolescent reactance: test of a boomerang effect

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Objective: To examine whether adolescents' exposure to youth smoking prevention ads sponsored by tobacco companies promotes intentions to smoke, curiosity about smoking, and positive attitudes toward the tobacco industry.
Design: A randomised controlled experiment compared adolescents' responses to five smoking prevention ads sponsored by a tobacco company (Philip Morris or Lorillard), or to five smoking prevention ads sponsored by a non-profit organisation (the American Legacy Foundation), or to five ads about preventing drunk driving.
Setting: A large public high school in California's central valley.
Subjects: A convenience sample of 9th and 10th graders (n = 832) ages 14–17 years.
Main outcome measures: Perceptions of ad effectiveness, intention to smoke, and attitudes toward tobacco companies measured immediately after exposure.
Results: As predicted, adolescents rated Philip Morris and Lorillard ads less favourably than the other youth smoking prevention ads. Adolescents' intention to smoke did not differ as a function of ad exposure. However, exposure to Philip Morris and Lorillard ads engendered more favourable attitudes toward tobacco companies.
Conclusions: This study demonstrates that industry sponsored anti-smoking ads do more to promote corporate image than to prevent youth smoking. By cultivating public opinion that is more sympathetic toward tobacco companies, the effect of such advertising is likely to be more harmful than helpful to youth.

In 2003, the latest year for which expenditure data are available, the five largest US cigarette manufacturers spent $72.9 million to advertise themselves as proponents of youth smoking prevention.[1] In fact, Philip Morris was the single largest anti-smoking advertiser in the USA in 1999 and 2000, even in states with aggressive anti-tobacco campaigns.[2] The company's ''Think. Don't Smoke'' campaign, which premiered in 1998, marked the first tobacco company advertising on US television since the ban of televised cigarette advertising in 1971. The Lorillard tobacco company launched its youth smoking prevention campaign (''Tobacco is whacko if you're a teen'') in 1999, with advertising in teen magazines and on cable television, including the most popular teen shows on MTV, ESPN, and Warner Brothers.[3] Such advertisements are not unique to US television. In 2001, Philip Morris International, British American Tobacco, and Japan Tobacco International launched a youth smoking prevention campaign (''You can be cool and not smoke'') on MTV in Asia, Australia, Europe, and Latin America.[4]

The tobacco companies' current marketing strategy has been described as ''the most bizarre and extraordinary mixed message in commercial history: 'Buy our product. It will kill you'''.[5] This characterisation misses an important point, however. The tobacco companies' smoking prevention ads never say that their product will kill you. Indeed, references to negative consequences of smoking are noticeably absent from their messages. A fleeting appearance of a United States Surgeon General's warning is the sole mention of any health risks caused by smoking. The teenagers who populate the ads seem convinced that not smoking is ''cool'', but do little to persuade others of this viewpoint. These ''role models'' mention few advantages of *not* smoking and no specific reasons to reject it.[6–8]

Little is known about what happens when tobacco companies tell youth not to smoke. Despite numerous warnings that the tobacco industry's youth smoking prevention ads are counterproductive,[3 9–12] only one study to date has tested whether the ads do more harm than good. Using data from a nationally representative sample of adolescents (ages 12–17 years), Farrelly and his colleagues assessed attitudes toward smoking and intentions to smoke as a function of exposure to American Legacy's ''truth'' campaign and Philip Morris' ''Think. Don't Smoke'' campaign.[13] After controlling for social influences to smoke, home environment, and other sociodemographic characteristics, adolescents' exposure to Philip Morris ads was independently associated with more favourable attitudes toward the tobacco industry and greater odds of intending to smoke. Because evidence of this boomerang effect is based on cross-sectional data, it is also plausible that adolescents who held more favourable opinions toward cigarette companies or were more susceptible to smoking were more attentive to Philip Morris ads.

To address this concern, the current study tests the tobacco industry's youth smoking prevention ads using a randomised controlled trial. To test a boomerang effect, we sought to determine whether adolescents exposed to industry sponsored ads were more inclined to smoke than adolescents who saw no anti-smoking ads at all. Additionally, we examined whether a boomerang effect may be either greater for or limited to adolescents who score high on a trait measure of psychological reactance.

Psychological reactance

The theory of psychological reactance[14 15] explains why attempts to persuade adolescents not to smoke may have the opposite effect. According to Brehm's theory, messages

Abbreviations: HRS, Hong reactance scale; TRS, therapeutic reactance scale

that are perceived to reduce or threaten personal freedoms (for example, choosing to smoke) arouse a motivational state, reactance, which directs individuals toward re-establishing the lost or threatened freedom. This effect is illustrated nicely in a study that compared different types of alcohol prevention ads.[16] Undergraduates rated high threat ads that used phrases such as ''conclusive evidence'', ''any reasonable person must acknowledge these conclusions'' or low threat ads with parallel phrases such as ''good evidence'' and ''you may wish to consider these conclusions carefully''. As predicted by reactance theory, high threat messages were evaluated more negatively and prompted greater intentions to drink than low threat messages. In a follow up study, students consumed more beer in a taste test after exposure to high threat than to low threat ads.[16] Thus, exposure to some alcohol prevention ads actually increased alcohol consumption.

Psychological reactance also explains why threatened or eliminated freedoms seem more attractive.[17] Objects or behaviours perceived to be off limits for certain audiences are more attractive to audience members to whom the restriction applies. For example, warning labels have been shown to make violent movies and television more appealing to youth.[18 19] In addition, attributing the warning to a highly authoritative source increased this ''forbidden fruit'' effect. Violent films with a warning from the US Surgeon General were more attractive to adolescents than films with the same warning label attributed to no source.[18]

What characteristics of the tobacco industry's anti-smoking ads might invoke psychological reactance? One obvious difference between ads from the tobacco companies and other sources is the inclusion of a US Surgeon General's warning. However, even more threatening restrictions are found in the industry's slogans. Instead of communicating reasons not to smoke, ads from Philip Morris issue rules that teenagers will want to break (''Think. Don't smoke''), and the Lorillard slogan defines tobacco as off limits for teens. Indeed, some focus group participants especially disliked ads that ''sound like their parents'' by commanding teens not to smoke.[20] If the effect of the slogans or Surgeon General's warning is to motivate psychological reactance, then the industry's ''prevention'' messages may backfire.

The ability of persuasive messages to promote reactance is typically construed as a situational response.[16 21 22] However, the current study also examines reactance as a dispositional factor. Brehm[14] himself suggested that individuals may differ in their potential for reactance, which subsequent research confirms.[15 23–25] Although little is known about individual differences in psychological reactance among adolescents, other indicators of their oppositional attitudes toward authority are associated with tobacco use.[26] For example, adolescents who rejected parental authority over tobacco and alcohol use were approximately four times more likely to smoke and drink.[27] Similarly, adolescents' evaluations of and responses to proscriptions about substance use from other sources, such as advertisements, may be explained by individual differences in psychological reactance.[21 28]

Consistent with previous research,[13] we hypothesised that adolescents will rate industry sponsored anti-smoking ads less favourably than ''truth'' ads. Additionally, we hypothesised that adolescents exposed to industry sponsored ads will express greater intentions to smoke, more curiosity about smoking, and more favourable attitudes toward cigarette companies. Finally, we tested the prediction that all anti-smoking ads will be rated less favourably by adolescents with high reactance potential and that industry sponsored anti-smoking ads are most likely to backfire with these youth.

METHOD

Ninth and 10th graders (ages 14–17 years) attending a large public high school in central California were invited to participate in a study about health promotion advertising. A single factor, between subjects experiment compared participants who saw youth smoking prevention ads sponsored by either a tobacco company or a non-profit organisation, or health promotion ads unrelated to smoking.

Sample

Active parental consent and student assent were obtained following a protocol approved by Stanford University's institutional review board. Of the initial sample (n = 1022), 31 parents refused permission, 60 students did not return parental consent forms, and 96 were absent for data collection, yielding a response rate of 82%. After excluding three incomplete surveys, the final sample (n = 832) was 53% female and 37% white, 23% Hispanic, 13% Asian, 5% African American, < 2% American Indian or Pacific Islander, and 20% multi-ethnic.

Stimuli

Each experimental treatment consisted of five television commercials. Two treatments represented the youth smoking prevention campaigns sponsored by the Philip Morris and Lorillard tobacco companies. Five of 14 Philip Morris ads were selected to represent the ''Think. Don't Smoke'' campaign in which teen role models affirmed their decisions not to smoke. In one such ad, several young teens claim that they do not have to smoke to be cool or to prove themselves to others. At the time data were collected, Lorillard's youth campaign was comprised of five ads that used humour either to depict refusal skills or to portray smoking as gross or costly. Compared to the Philip Morris ads, Lorillard's role models were less ''clean cut''. For example, cigarette offers were refused by a boy who visits a piercing parlour and a girl who sneaks out of her house to a late night party. All five Lorillard ads featured the slogan ''Tobacco is whacko if you're a teen''.

A third experimental treatment was comprised of youth smoking prevention ads sponsored by the American Legacy Foundation (ALF), a non-profit organisation whose ''truth'' campaign is the largest national, youth focused anti-tobacco media campaign in the USA.[29] The ''truth'' ads dramatise the tobacco industry's deceptive marketing practices and its denials about the addictive and harmful nature of cigarette smoking. The current study examined ''truth'' ads because they were compared to industry sponsored ads in a previous study[13] and because the advertising has been shown to be effective in reducing adolescent smoking.[30–33] Five of seven ads were selected to represent the 2002–2003 ''Orange Curtain'' campaign, which juxtaposed outlandish statements from tobacco industry documents with factual information about the detrimental effects of smoking. In one ad, a male teen quotes the head of a major tobacco company who testified, ''I am unclear in my own mind as to whether anybody dies from cigarette smoking related diseases''. Showing viewers a larger-than-life mural of his father who died of throat cancer from smoking, the teen asks, ''Is that clear enough?''. In an ad that dramatises the effects of smoking on infant birth weight, a female teen compares a tobacco executive's statement that some women prefer smaller babies with the results of a poll in which women demonstrate an overwhelming preference for a baby of normal rather than low birth weight. All five ads featured the slogan ''Truth Behind the Curtain''.

The control condition consisted of five commercials that either dramatised the tragic consequences of driving drunk or used celebrity testimonials to discourage this behaviour. For

example, one ad depicted a male teen reading a poem that mourns the loss of his best friend who was killed by a drunk driver. All five ads included the slogan ''Friends don't let friends drive drunk'' and were sponsored by the Ad Council, the largest non-profit producer of public service announcements in the USA.

Procedures

Data were collected in biology or related science courses in May 2003, and 38 classes were randomly assigned to see either five youth smoking prevention ads sponsored by a tobacco company (Philip Morris or Lorillard), or five smoking prevention ads sponsored by a non-profit organisation (the American Legacy Foundation), or five ads about preventing drunk driving. Following a ''forced exposure copy test method'' that is recommended for ad evaluations,[8 34] each ad was shown twice in succession without extraneous ads or programming to ensure a strong manipulation. Before viewing, participants answered questions about their media use, favourite celebrity sponsors, and personality. Thus, psychological reactance was measured before advertising exposure was manipulated. After viewing each ad twice, the videotape was stopped while participants completed a brief evaluation. After viewing all five ads, participants responded to questions about smoking cigarettes and drinking alcohol as well as attitudinal items about tobacco companies. The data collection and debrief were completed in a single class period (approximately 50 minutes). For returning a parental consent form and completing a questionnaire, participants received a $1 coupon to redeem at the student store.

Outcome measures

Perceived effectiveness

After viewing each commercial twice in succession, participants responded to three items: (1) Was the message convincing? (Definitely no, Definitely yes); (2) Would it be helpful in keeping your friends from smoking cigarettes/drinking and driving? (Definitely no, Definitely yes); (3) After seeing the ad, would people your age who have never smoked cigarettes be more or less likely to smoke (Definitely more, Definitely less).[35] The third item was not asked of students in the control condition. All responses were measured on a four point scale and the perceived effectiveness of each treatment was calculated by averaging responses across the five ads with higher numbers indicating more favourable evaluations (Cronbach's $\alpha = 0.69$).

Intention to smoke

Three items asked respondents about their intentions to smoke in the future (at any time during the next year, if a best friend offered it, and one year from now).[36] Responses on a four point scale (Definitely no, Definitely yes) were averaged such that higher numbers indicated greater intention to smoke (Cronbach's $\alpha = 0.92$).[21 37]

Curiosity about tobacco use

A five item measure of curiosity about marijuana use[38] was adapted for this study. Using a seven point Likert scale, students responded to statements such as ''Smoking cigarettes might be fun. It would be interesting to know what smoking cigarettes feels like''. Curiosity was measured by averaging responses to the five items (Cronbach's $\alpha = 0.77$).

Tobacco industry sympathy

Using a five point Likert scale, participants responded to five statements such as ''Cigarette companies get too much blame for young people smoking'' and ''Cigarette companies should have the same right to make money as any other type of company''. The five items were adapted from the Legacy Media Tracking Survey II.[39] Responses were averaged such that higher numbers indicate more sympathetic attitudes toward cigarette companies (Cronbach's $\alpha = 0.73$).

Covariates

Psychological reactance

Items with wording that seemed most appropriate for adolescents were culled from the therapeutic reactance scale (TRS)[23] and Hong reactance scale (HRS).[25] Before viewing ads, participants responded to a five item TRS subscale that assesses resentment of authority figures[40] and a three item HRS subscale that assesses resistance to influence attempts.[41] Sample items are ''If I am told what to do, I often do the opposite'' and ''It makes me angry when another person is held up as a model for me to follow''. All eight items loaded on a single factor with loadings > 0.45 (Eigenvalue = 3.31, pct var = 0.41). The eight responses, measured on a five point Likert scale, were averaged to create a composite measure of psychological reactance (Cronbach's $\alpha = 0.79$). A mean split was used to compare adolescents with high reactance potential (above the mean) with a reference group (at or below the mean) and to test for interactions with the experimental treatment.

Ad familiarity

A single item asked participants to rate their familiarity with each commercial on a four point scale. This item was included to control for a priori differences in exposure to the commercials.

The following categories of factors that might be associated with the outcomes were also measured: current smoking (any cigarette smoking in the past 30 days), social influence (exposure to at least one parent or friend that smokes), and sociodemographic characteristics (sex, grade level, self reported grades in school).

Analyses

Because classrooms rather than participants were randomly assigned to ad exposure, all hypotheses were tested with multi-level modelling using PROC MIXED for SAS version 8.0.[42] For each dependent variable (perceived effectiveness, intention to smoke, curiosity, and tobacco industry sympathy) an analysis of covariance model specified classroom as a random effect and ad exposure as a fixed effect nested within classrooms. All models controlled for the same set of covariates: psychological reactance, current smoking, exposure to smoking by parents and peers, sex, grade level, and self reported grades in school. To determine whether industry sponsored ads were more likely to backfire with youth who scored high on psychological reactance, all models tested an interaction of this covariate with the experimental treatment.

Ad familiarity was included as a covariate in the model that tested perceived effectiveness of the ads. This analysis excluded participants in the control condition because it made little sense to compare ads about preventing youth smoking with ads about drunk driving.

As a check on random assignment, χ^2 tests compared the distribution of psychological reactance, smoking status, sex, and grade level across the four categories of ad exposure. Although there were fewer 10th graders in the Lorillard condition than in other groups, all multivariate models controlled for grade level. No significant relationships between assignment to condition and other variables were found.

RESULTS

Advertising evaluations

The ads used in this study were familiar to most adolescents: 94.1% had seen at least one of the Philip Morris ads, 83.7%

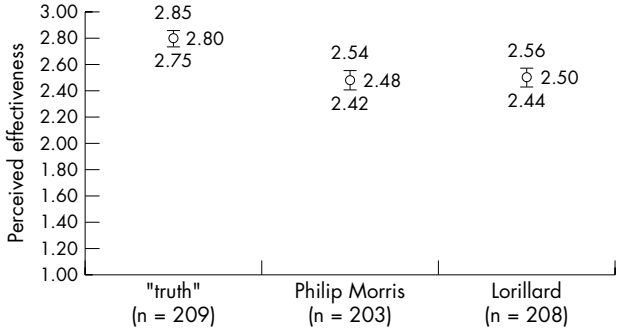

Figure 1 Adolescents' (n = 620) mean ratings of ad effectiveness for three youth smoking prevention campaigns. Graph portrays mean ratings and the 95% confidence interval.

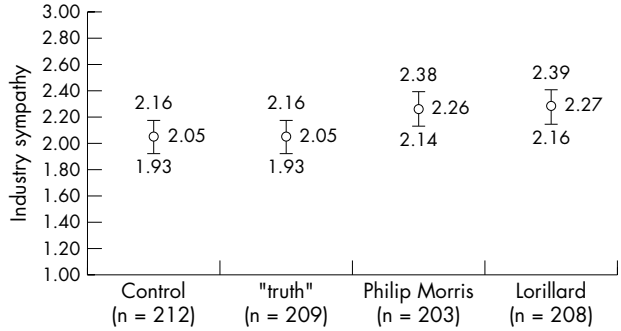

Figure 3 Average tobacco industry sympathy by ad exposure (n = 832). Graph portrays mean ratings and the 95% confidence interval.

had seen at least one Lorillard ad, and 92.3% had seen at least one ''truth'' ad. The three anti-smoking campaigns were not equally familiar to participants, as indicated by a significant main effect ($F_{3,34} = 11.7$, $p < 0.001$). According to post-hoc comparisons, adolescents were less familiar with Lorillard ads (M = 2.1, SD = 0.8) than ads sponsored by Philip Morris (M = 2.4, SD = 0.8) or ''truth,'' (M = 2.5, SD = 0.9).

As shown in fig 1, adolescents did not perceive the three anti-smoking campaigns to be equally effective ($F_{2,26} = 18.8$, $p < 0.001$). Even after controlling for mean differences in ad familiarity and all other covariates, post-hoc comparisons confirmed that Philip Morris and Lorillard ads were perceived to be less effective than ''truth'' ads ($p < 0.001$). Regardless of the ads they saw, participants with high psychological reactance rated youth smoking prevention ads less favourably (M = 2.47, SD = 0.45) than participants with low psychological reactance (M = 2.67, SD = 0.42, $F_{1,575} = 24.2$, $p < 0.001$). However, the interaction of reactance and ad exposure on perceived effectiveness was not significant.

Behavioural intent

Although intention to smoke was slightly greater among students who saw ads sponsored by ''truth'' (M = 1.8, SD = 0.9), Lorillard (M = 1.8, SD = 0.9), or Philip Morris (M = 1.7, SD = 0.9) than the control group (M = 1.6, SD = 0.7), these differences were not significant. Overall, adolescents who scored high on psychological reactance expressed greater intentions to smoke (M = 1.9, SD = 1.0) than adolescents who scored low (M = 1.4, SD = 1.0, $F_{1,778} = 31.9$, $p < 0.001$), but there was no significant interaction of this variable with ad exposure on intention to smoke.

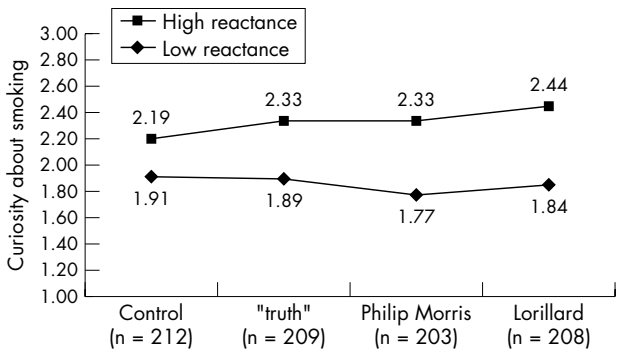

Figure 2 Average curiosity about smoking, by ad exposure and psychological reactance (n = 832).

Curiosity about smoking was slightly but not significantly higher among adolescents exposed to ads sponsored by ''truth'' (M = 2.1, SD = 0.9), Lorillard (M = 2.2, SD = 1.0), and Philip Morris (M = 2.1, SD = 1.0) than the control group (M = 2.0, SD = 0.8). High reactance youth expressed greater curiosity about smoking (M = 2.3, SD = 1.0) than low reactance youth (M = 1.9, SD = 0.8, $F_{1,779} = 40.7$, $p < 0.001$), and an interaction of this variable with ad exposure approached significance ($p = 0.09$). As shown in fig 2, exposure to industry sponsored youth smoking prevention ads increased the disparity between adolescents with low or high psychological reactance. Thus, curiosity about smoking was greatest among adolescents with high psychological reactance exposed to Lorillard ads.

Tobacco industry sympathy

As shown in fig 3, adolescents' sympathy toward tobacco companies differed as a function of ad exposure ($F_{3,34} = 3.0$, $p < 0.05$). After controlling for reactance and other covariates, a planned comparison confirmed that adolescents exposed to Philip Morris and Lorillard ads expressed greater sympathy for cigarette companies than the other experimental groups ($p = 0.006$). Regardless of which ads they watched, high reactance youth were more sympathetic toward cigarette companies (M = 2.3, SD = 0.8) than low reactance youth (M = 2.0, SD = 0.9, $F_{1,780} = 24.1$, $p < 0.001$), but the interaction of this variable with ad exposure was not significant.

DISCUSSION

This study is the first randomised controlled trial to test the effectiveness of youth smoking prevention ads sponsored by tobacco companies. The study examined whether adolescents exposed to such advertising expressed greater intentions to smoke, more curiosity about smoking, and more positive attitudes toward the tobacco industry than adolescents exposed to anti-smoking ads sponsored by ''truth'' or ads about drunk driving.

As predicted, adolescents perceived Philip Morris and Lorillard ads to be less effective than ''truth'' ads. Of course, perceived effectiveness of the ads may not accurately measure their actual effectiveness. However, the finding complements previous research in which young audiences rated Philip Morris anti-smoking advertisements less favourably than those from non-profit or government sponsors.[13 43 44] Although adolescents' reasons for disliking the industry sponsored ads are not well understood, one plausible explanation is that they fail to use content themes or executional styles of anti-smoking advertising that adolescents find most persuasive.[45 46] By systematically varying the source attribution, Surgeon General's warning,

and slogans, further experiments should determine what other features make the industry's ads objectionable to teenage audiences.

Adolescents' exposure to industry sponsored anti-smoking ads engendered greater sympathy toward cigarette companies. This finding extends previous research in two ways. Because random assignment ensures that exposure to industry sponsored ads cannot be explained by a favourable disposition toward cigarette companies, the current study eliminates a potential bias associated with previous quasi-experimental research.[13] More importantly, the current study demonstrates that the effect is not limited to the ''Think. Don't Smoke'' campaign. Lorillard's youth smoking prevention campaign appears to have been an equally effective public relations tool. Research is needed to understand adults' responses to such advertising. In 2004, Lorillard replaced its smoking prevention ads aimed at youth with ads aimed at parents—''the best thing between kids and cigarettes''.[47] A Philip Morris campaign that also promotes parental responsibility for talking to children about not smoking (''Talk. They'll listen'') has aired since 1999, and in 2003 the tobacco company began advertising its website as a resource for quitting smoking.[2 48] Research should address whether these shifts in target audiences represent a more effective strategy to garner public sympathy for tobacco companies and to forestall legislation that would restrict the industry's sales and marketing activities.

Interestingly, adolescents exposed to ''truth'' ads were no less sympathetic toward cigarette companies than the control group. This result is noteworthy in light of pending litigation about whether ads sponsored by the American Legacy Foundation violate the terms of the Master Settlement Agreement.[49] If, as Lorillard claims, the ''truth'' campaign vilifies the company and its employees, it would be logical to expect less sympathy toward the tobacco industry from adolescents exposed to ''truth'' ads than from the control group exposed to ads about drunk driving. A null finding contradicts Lorillard's claim. However, it is difficult to argue against the fact that the ''truth'' ads cultivate anti-industry attitudes and that changes in these attitudes are the underlying mechanism for observed reductions in adolescent smoking.[13 50 51] Inconsistent results may be attributed to different item wording: predominantly positive statements about cigarette companies used in this study and negative statements about cigarette companies used in other studies probably do not measure opposite ends of the same dimension or construct. Indeed, a growing body of evidence suggests that adolescents' attitudes and beliefs about the tobacco industry are multifaceted.[50 52] Scale development work is needed to understand better how adolescents think about the tobacco industry and its member companies, and to compare the effects of anti-smoking ads from various sources on these opinions.

Contrary to expectation, industry sponsored ads neither increased adolescents' intentions to smoke nor promoted curiosity about smoking. This boomerang effect, which has been demonstrated elsewhere,[13] may have been too difficult to demonstrate in the context of a controlled experiment. Indeed, the artificial nature of adolescents' exposure to advertising was a primary limitation of this study. Moreover, an experimental design is not ideally suited to studying the cumulative effect of such messages in the course of adolescents' everyday lives.

The small size and nature of the sample are also limitations of this study. The participants lived in California, a state with the longest running anti-tobacco media campaign. Prior exposure to state sponsored ads that highlight the tobacco industry's deceptive marketing practices may have made the participants more sceptical of the industry to start and, thus, less susceptible to the effects this study investigated. Research is needed to gauge the impact of industry sponsored youth smoking prevention ads in media markets where the ads enjoy less competition from anti-smoking campaigns sponsored by non-profit or government sources. Although this study examined industry sponsored ads that no longer air in the USA, similar campaigns appear in Europe, Latin America, and Southeast Asia.[4 53]

What this paper adds

Little is known about the impact of youth smoking prevention ads sponsored by tobacco companies. In a previous cross-sectional survey, adolescents' exposure to such ads was associated with greater intentions to smoke and more favourable opinions of the tobacco industry. This is the first controlled experiment to examine adolescents' reactions to anti-smoking ads sponsored by Philip Morris and Lorillard. Results suggest the ads are, at best, ineffective and, at worst, counterproductive. The study provides empirical support for proposals to restrict tobacco industry involvement in youth smoking prevention.

This study is the first we are aware of to demonstrate associations between individual differences in psychological reactance and adolescents' evaluation of anti-smoking ads. Adolescents who scored high on a measure of psychological reactance expressed the strongest intention to smoke and were least responsive to anti-smoking ads from any source. The finding underscores the challenges in framing anti-smoking messages for this target group and in understanding their impact on smoking behaviour.[21 28] Future research should also examine whether psychological reactance is a unique risk factor for adolescent smoking or an indicator of other known risk factors like risk taking and rebelliousness.

This study provides empirical evidence of the tobacco industry's success in using tobacco education programmes to garner public sympathy—a result that is counterproductive for tobacco control. Advertisements that foster sympathy for tobacco companies may weaken support for anti-tobacco policies, an outcome that has negative consequences for adolescent smoking.[54] Although the study results did not demonstrate a boomerang effect of industry sponsored advertisements on adolescents' intention to smoke, there are other ways in which the messages may backfire. Future research should determine whether the tobacco companies' ads make audiences more resistant to criticism of the tobacco industry or otherwise dilute the impact of industry focused tobacco control campaigns. Specialised counter-advertising may serve to inoculate the public against the tobacco companies' claims that they are good corporate citizens.

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