RESEARCH REPORT

Mixed messages on tobacco: comparative exposure to public health, tobacco company- and pharmaceutical company-sponsored tobacco-related television campaigns in the United States, 1999–2003

Melanie Wakefield[1], Glen Szczypka[2], Yvonne Terry-McElrath[3], Sherry Emery[2], Brian Flay[2], Frank Chaloupka[2,4] & Henry Saffer[4,5]

The Cancer Council Victoria, Australia,[1] University of Illinois at Chicago, USA,[2] University of Michigan, USA,[3] National Bureau of Economic Research, USA,[4] Kean University, Union, NJ, USA[5]

Correspondence to:
Melanie A. Wakefield
Director
Centre for Behavioral Research in Cancer
The Cancer Council Victoria
1 Rathdowne Street
Carlton
Victoria 3053
Australia
E-mail: melanie.wakefield@cancervic.org.au

Submitted 26 January 2005;
initial review completed 11 March 2005;
final version accepted 22 July 2005

ABSTRACT

Aims To describe and compare the extent of exposure among youth and adults to antitobacco advertising funded by tobacco control agencies, and to smoking-related advertising from tobacco and pharmaceutical companies.

Design Archival records of television advertising exposures from Nielsen Media Research for the largest 75 media markets in the United States from 1999 to 2003.

Measurements Mean monthly advertising exposures for households with televisions and adolescents aged 12–17 years for: state tobacco control programs; the national American Legacy Foundation (Legacy) program; tobacco company advertising for youth smoking prevention, parent advertising and corporate image; pharmaceutical company advertising for nicotine replacement therapy and Zyban®; and other miscellaneous tobacco-related advertising.

Findings Combined tobacco company youth/parent advertising exposures matched those for combined State/Legacy campaigns (4.56 advertisements/month versus 4.97 advertisements/month among households; 3.05 advertisements/month versus 3.38 advertisements/month among adolescents). Tobacco company corporate image advertising averaged 3.25 advertisements/month among households and 0.73 advertisements/month among adolescents. Tobacco company advertising exceeded public health-sponsored advertising by a factor of 1.57–1, and among youth by 1.11–1. Pharmaceutical companies were the largest sponsor of tobacco-related advertising for households (10.37 advertisements/month) and provided significant exposure among adolescents (2.61 advertisements/month).

Conclusions This is the first study to demonstrate systematically that public health-sponsored antitobacco campaigns in the United States are matched or exceeded by tobacco company advertising, as well as pharmaceutical cessation product advertising. Research is needed to determine whether such advertising may dilute or undermine the established benefits of tobacco control-sponsored campaigns.

KEYWORDS Adolescents, advertising, mass media, smoking, television.

 doi:10.1111/j.1360-0443.2005.01298.x

INTRODUCTION

One would have to live on a deserted and technology-free island not to appreciate how pervasive media messages are in our everyday lives. Media messages—persuasive, informational and entertaining—are endemic in society via television, radio, movies, outdoor and point-of-sale advertising, newspapers, magazines, the internet and through books, brochures and posters. Given a conservative estimate of 2.5 hours of watching television each day over a life-time, and assuming 8 hours of sleep per night, the average American would spend 7 years of approximately 47 waking years by age 70 watching television (Kubey & Csikszentmihalyi 1990).

Public health messages educating and providing people with encouragement to quit or avoid smoking exist within the context of this cluttered media environment. From an international perspective, the United States is perceived as well-funded in terms of tobacco control, with an average of US$3.17 per capita dedicated to tobacco control in fiscal year 2001, compared with, for example, US$1.31 in the United Kingdom and US$0.87 in Australia (Scollo 2003). However, it is also a nation where the tobacco industry is most threatened in the courts (Daynard 2000; Parmet & Daynard 2000), and tobacco companies have responded by using television and other advertising media to shape public opinion. News coverage about tobacco control issues often puts forward tobacco industry positions (Menashe & Siegel 1998; Magzamen, Charlesworth & Glantz 2001). Although tobacco marketing is restricted on television, radio and billboards, it is prevalent at the point of sale (Terry-McElrath *et al*. 2002), in bars (Sepe, Ling & Glantz 2002) and on the internet (Ribisl 2003). Tobacco company promotion of tobacco has grown markedly in recent years, with $12.47 billion being spent in 2002 (US Federal Trade Commission 2004). Smoking in movies, many of which are produced in the United States and disseminated around the world, remains high (Glantz, Kacirk & McCulloch 2004) and a cause for concern (Dalton *et al*. 2003).

This complex media environment for tobacco control raises an important issue related to the relative exposure of public health-sponsored media campaigns compared with other potentially competing or confusing messages about tobacco. Like other products or concepts, antitobacco advertisements must have 'adequate "share of voice" to break through ad clutter, attract attention and persuade' (Pechmann 1997, p. 195). In marketing, 'share of advertising voice' is the percentage of a sponsor's advertising of a product or concept of all advertising pertaining to that product or concept (Kotler 2003, p. 608). Share of advertising voice is thought to reflect 'share of consumer's hearts and minds' and ultimately to be equal to share of market (Kotler 2003, p. 608). Thus, major advertisers are deemed likely to dominate thinking and action in relation to the particular product or concept under study.

There is evidence that mass media antitobacco campaigns sponsored by public health agencies can reduce both youth and adult smoking (Pierce, Macaskill & Hill 1990; McVey & Stapleton 2000; Siegel & Biener 2000; Wakefield *et al*. 2003). The early state tobacco control programs that included media campaigns in California (from 1990), Massachusetts (from 1994), Arizona (from 1997) and Oregon (from 1998) were funded by a dedicated percentage of tobacco taxes, whereas the campaign in Florida (1999) was funded by a settlement between that state and tobacco companies (Wakefield & Chaloupka 2000). Following the signing of the Master Settlement Agreement (MSA) between 46 US states and tobacco companies in late 1998, more state-based tobacco control media campaigns began to be funded (Schroeder 2004). State campaigns have varied considerably in their level of funding, duration and extent to which they are aimed at the total population or youth in particular, as well as their advertising content and style. The provisions of the MSA also supported the formation of the American Legacy Foundation (Legacy), which launched the first organized ongoing United States national mass media campaign in early 2000 (Farrelly *et al*. 2002). The campaign, whose primary target audience is 14–17-year-olds, has focused upon exposing the deceptive and misleading practices of the tobacco industry, as well as correcting misperceptions about the harm caused by smoking.

In response to increasing documentary evidence and consequent growing liability that tobacco companies marketed their products to youth and misled consumers and the general public about tobacco's health risks (Landman, Ling & Glantz 2002), tobacco companies in the United States have launched their own mass media campaigns. In December 1998, Philip Morris launched a national media campaign to advertise itself as a proponent of youth smoking prevention. The campaign, with an annual budget of US$100 million before it was withdrawn in the United States in January 2003, had the slogan, 'Think. Don't smoke' and was ostensibly targeted at youth aged 10–14 years (Sussman 2002). In July 1999, Philip Morris launched a campaign emphasizing parental responsibility for talking to children about smoking with the slogan, 'Talk. They'll listen' (Fairclough 2002). In October 1999, Lorillard also launched a youth smoking prevention campaign with the slogan 'Tobacco is Whacko if You're a Teen' (Sussman 2002) with a budget of around $13 million (Farrelly, Niederdeppe & Yarsevich 2003).

Philip Morris's corporate image television campaign was launched in October 1999 with the slogan, 'Working to make a difference: the people of Philip Morris'. The advertising publicizes the company's efforts to prevent the sale of cigarettes to minors as well as its charitable assistance to causes such as homeless adolescents, the elderly, victims of domestic violence and those affected by floods in the US Midwest and war in Bosnia. Following the ruling on the Engle trial in July 2000, Philip Morris launched a more direct television appeal to the public, with the slogan 'We've changed', which sought to promote how company practices had improved after the MSA. In 2003, Philip Morris began to run advertisements directing people to its website for help to quit smoking.

Of the few studies to date that have examined the impact of these kinds of advertising from tobacco companies, none suggests that these messages are effective in encouraging youth not to smoke (Teenage Research Unlimited 1999; Biener 2002; Farrelly *et al.* 2002; Terry-McElrath *et al.* 2005; Wakefield *et al.* in press) and no studies to our knowledge have examined effects on adults.

Direct-to-consumer television advertising also permits pharmaceutical companies to advertise on television about pharmaceutical cessation aides. American pharmaceutical companies have advertised the merits of nicotine replacement therapies (NRT) from 1992 and buproprion (Zyban®) from 1997 for smoking cessation. These advertisements have been targeted to adult smokers who are ready to quit. However, some have hypothesized that because these kinds of advertisements promote products that make quitting seem easier, they might have inadvertent 'boomerang' effects on youth or adults not yet ready to quit (Bolton, Cohen & Bloom 2004).

This study is the first to quantify systematically the relative amount of advertising from these different sources, so as to paint a picture of the television advertising environment in the United States for public health-sponsored antitobacco advertising for the community in general and youth in particular.

METHOD

Occurrences of all tobacco-related television advertisements appearing on network and cable television across the largest 75 media markets in the United States for the years 1999–2003 were acquired from Nielsen Media Research (NMR). A media market or designated market area (DMA) is defined by a group of non-overlapping counties, which comprise a major metropolitan area.

NMR obtains ratings estimates for television programs in a given media market. Advertisements appearing in a given program are assigned the audience ratings for that program. Ratings provide an estimate of the percentage of households with televisions (referred to hereafter simply as 'households') watching a program or advertisement in a given media market (Szczypka *et al.* 2003). For example, if 20 000 households of a total of all 100 000 households in a media market were tuned into the same program, the program would receive a 20 rating, meaning that it was seen by 20% of households in the media market. It is customary for the advertising industry to sum rating points for a program over a specified time interval, usually weekly or monthly (Szczypka *et al.* 2003). These summed rating points are called gross ratings points (GRPs) or target rating points (TRPs). GRPs provide estimates of audience size for all households within media markets, while TRPs provide estimates for specific demographic groups within media markets. In this paper, TRPs refer to estimates for youth aged 12–17 years.

To obtain ratings, NMR uses a combination of diary measurement and television set devices that monitor television channel and time. In 52 of the largest markets, NMR obtains ratings using an electronic 'people meter'. To record each individual accurately in a household, each viewer logs into the meter before watching television. NMR uses viewer reported diaries to measure the remaining markets as well as supplement the data in electronic metered markets. For diary measurement, each person in a household writes down program and channel information for 1 week of a 4-week measurement period. NMR representatives trained in working with children and teens instruct each viewer to the proper use of the people meter and diary to ensure accuracy and fidelity of measurement.

GRPs and TRPs are often expressed in exposures, where 100 GRPs (or TRPs) is equal to an average of one exposure. For example, if an advertisement were to receive 200 GRPs across a monthly interval in a given media market, this is interpreted to mean that the average household within the media market viewed that advertisement twice during the month. Similarly, 200 TRPs per month for 12–17-year-olds is interpreted to mean that the average 12–17-year-old was exposed twice to that advertisement. In this example, because ratings are averages across the population in a media market, any given household (in the case of GRPs) or adolescent (in the case of TRPs) may have been exposed to the advertisement more or less than on two occasions. However, these measures are useful for comparing average relative exposures between advertisers, geographic regions and over time (Szczypka *et al.* 2003).

For this study, NMR provided ratings data for (a) National Broadcast, (b) National Cable, (c) National Syndication and (d) Local Broadcast or spot advertising. National Broadcast, Cable and Syndication includes advertising broadcast across all markets. NMR monitors National Broadcast and Syndication locally in each market. However, National Cable is based on a national sample and is not monitored locally. Project staff calculated local estimates for National Cable based on the percentage of households with televisions who subscribed to cable in each market. Spot advertising and the availability of independent networks such as FOX, UPN and WB in each market accounted for most of the variation in exposure between media markets, although variation was also contributed by differing subscription rates to cable television in different media markets (Szczypka *et al.* 2003).

We used database sponsor identifiers (Szczypka *et al.* 2003), digital advertisement images and information from state tobacco control programs to classify the sponsors of tobacco-related advertisements into seven categories: state tobacco control, Legacy, tobacco company corporate (sponsored by Philip Morris), tobacco company parent (sponsored by Philip Morris), tobacco company youth (sponsored by Philip Morris and Lorillard), pharmaceutical company and 'other' (including non-government organizations and miscellaneous smoking cessation services). Prior to data collection, a list of potential advertisers was created using marketing and news databases such as Business and Industry, Video Monitoring Service and Lexis-Nexis. If an advertisement could not be determined clearly to be an antismoking advertisement from database identifiers, a digital copy of the advertisement provided by NMR was reviewed to verify sponsorship and relevance. We aggregated ratings data by sponsor to derive GRPs and TRPs for each month for each media market during the period from January 1999 to December 2003, and then averaged monthly GRPs and TRPs across the media markets by sponsor by year. We expressed the average GRPs and TRPs as average advertising exposures per month.

RESULTS

Figures 1 and 2 summarize and Table 1 details mean monthly tobacco-related advertising exposures for households and adolescents aged 12–17 years. The majority of tobacco-related advertising was sponsored by one of four main advertisers—state programs, Legacy, pharmaceutical companies and tobacco companies—with only a small fraction accounted for by mix of 'other' sponsors, such as advertising for World No Tobacco Day and television network sponsored antismoking public service announcements. As indicated by standard errors and minimum and maximum ranges, there was considerable within- and between-sponsor variation across media markets in advertising exposures.

Public health-sponsored advertising

Mean advertising exposures to state tobacco control campaigns for households and adolescents increased from 1999 to 2003, consistent with increased investment by states in state-based campaigns (Campaign for Tobacco Free Kids *et al.* 2003). Advertising by Legacy, commencing in early 2000, was higher than state campaigns in 2000 and 2002, but evidenced lower mean exposures in 2001, due to fine-tuning of marketing strategies and withdrawal of media for several months after the events of 11 September 2001. Although Legacy's primary audience is 14–17 years old, exposure was similar between households and adolescents. Over the entire period, among adolescents, Legacy yielded a greater amount of exposure to antitobacco advertising than the average state campaign. However, annual range data show some DMAs remained at zero for state exposure for all years for households, and at or very close to zero for adolescents. Similar patterns were seen for Legacy, where not until 2002 were all DMAs reporting mean monthly exposures of at least half an advertisement.

Tobacco company-sponsored advertising

Tobacco companies were responsible for considerable advertising exposures. Tobacco company advertising by

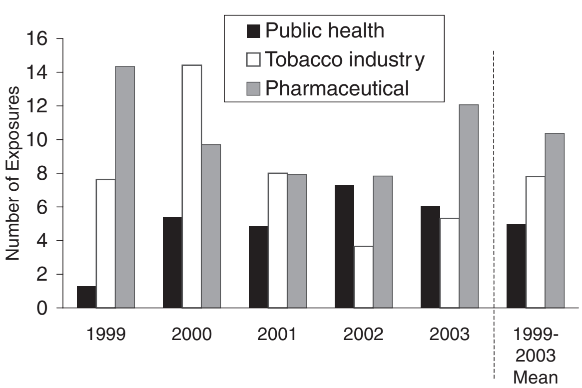

Figure 1 Mean monthly exposures per year to tobacco-related television advertising for US households

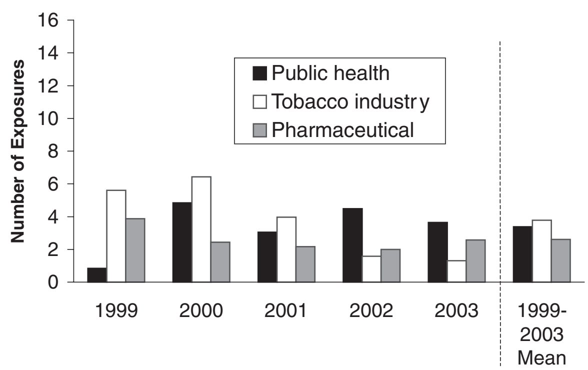

Figure 2 Mean monthly exposures per year to tobacco-related television advertising for adolescents aged 12–17 years

Table 1 Mean monthly exposures per year to tobacco-related television advertising for television households and adolescents aged 12–17 years, based on the top 75 DMAs in the United States.

	1999			2000			2001			2002			2003			1999–2003
	Mean	*SE*	*Range*[1]	*Mean*	*SE*	*Range*	*Mean*	*SE*	*Range*	*Mean*	*SE*	*Range*	*Mean*	*SE*	*Range*	*Mean*
Household exposures, by sponsor																
Legacy	–	–	–	4.24	0.10	0.0–15.1	1.83	0.05	0.0–8.6	3.67	0.09	0.5–14.5	2.83	0.06	0.4–12.4	2.51
State tobacco control programs	1.30	0.10	0.0–27.8	1.14	0.09	0.0–22.7	3.03	0.18	0.0–38.2	3.63	0.15	0.0–29.8	3.20	0.17	0.0–46.4	2.46
Tobacco parent	1.74	0.09	0.0–10.6	1.69	0.04	0.0–5.2	1.96	0.05	0.0–7.6	3.34	0.03	0.8–8.5	3.17	0.01	0.3–15.3	2.38
Tobacco youth	4.32	0.06	0.6–11.7	3.70	0.06	0.9–11.0	2.23	0.03	0.5–5.6	0.31	0.01	0.0–2.1	0.32	0.01	0.0–1.4	2.18
Tobacco corporate[2]	1.57	0.10	0.0–18.8	9.03	0.19	0.2–34.8	3.81	0.06	0.2–10.9	–	–	–	1.83	0.09	0.0–14.3	3.25
Pharmaceutical	14.34	0.29	1.4–51.8	9.70	0.21	0.0–29.9	7.92	0.13	1.5–19.8	7.83	0.17	2.6–27.2	12.07	0.23	1.3–34.6	10.37
Other	0.10	0.01	0.0–2.6	0.07	0.02	0.0–8.8	0.03	0.01	0.0–6.8	0.14	0.01	0.0–1.6	0.06	0.01	0.0–3.0	0.08
Total public health-sponsored[3]	1.30			5.38			4.86			7.30			6.03			4.97
Total tobacco youth + parent	6.06			5.39			4.19			3.65			3.49			4.56
Total tobacco sponsored[4]	7.63			14.42			8.00			3.65			5.32			7.81
Teen exposures, by sponsor																
Legacy	–	–	–	4.20	0.10	0.0–17.5	1.73	0.05	0.0–7.3	3.05	0.06	0.5–10.3	2.52	0.05	0.3–8.3	2.30
State	0.84	0.07	0.0–16.1	0.65	0.05	0.1–13.8	1.32	0.07	0.0–14.7	1.44	0.06	0.0–13.9	1.13	0.06	0.0–18.3	1.08
Tobacco parent	0.73	0.04	0.0–4.5	0.66	0.02	0.0–2.7	0.73	0.02	0.0–6.5	1.26	0.02	0.3–4.8	0.76	0.02	0.1–2.9	0.83
Tobacco youth	4.43	0.07	0.5–12.5	3.69	0.06	0.6–13.8	2.37	0.04	0.6–8.7	0.32	0.02	0.0–3.1	0.29	0.01	0.0–1.3	2.22
Tobacco corporate	0.45	0.03	0.0–5.7	2.08	0.04	0.1–7.0	0.87	0.01	0.1–1.9	–	–	–	0.26	0.01	0.0–2.4	0.73
Pharmaceutical	3.88	0.08	0.4–13.5	2.44	0.05	0.0–8.3	2.17	0.03	0.6–4.8	2.00	0.04	0.7–7.2	2.58	0.05	0.2–8.6	2.61
Other	0.02	0.00	0.0–1.0	0.04	0.02	0.0–4.2	0.01	0.00	0.0–2.8	0.04	0.00	0.0–0.5	0.02	0.00	0.0–0.4	0.03
Total public health-sponsored	0.84			4.85			3.05			4.49			3.65			3.38
Total tobacco youth + parent	5.16			4.35			3.10			1.58			1.05			3.05
Total tobacco sponsored	5.61			6.43			3.97			1.58			1.31			3.78

[1]Range of actual monthly means for 75 markets. [2]Includes advertisements publicizing the company website which commenced in 2003. [3]Includes all state and Legacy advertising. [4]Includes all tobacco company advertising.

Philip Morris and Lorillard portraying youth smoking as 'not cool' was observed in all years, declining sharply in 2002, consistent with Philip Morris's withdrawal of their youth campaign in January of that year. Generally, exposures for households were as high as those observed among adolescents. Parent-focused advertising by Philip Morris was evident in all years, peaking in 2002 among households and adolescents. Together, combined tobacco company parent and youth advertising exposures matched combined Legacy and state tobacco exposures among households and adolescents for the overall period of study, with relatively less public health-sponsored advertising in 1999 and relatively more such advertising in 2002 and 2003.

Philip Morris's corporate advertising peaked sharply in 2000 among both households and adolescents, but was withdrawn in 2002, coincident with the increase in parent advertising. Over the period, all combined tobacco company advertising exceeded public health-sponsored advertising among households by a factor of 1.57–1, and among youth by 1.11–1.

Pharmaceutical company-sponsored advertising

Pharmaceutical company advertising for NRT and Zyban® was consistently the largest antitobacco advertiser among households and also provided significant exposure for adolescents. In fact, exposure to pharmaceutical company advertising among adolescents exceeded the individual advertising exposures for state campaigns for every year, and even exceeded those for Legacy in 2001. Over the period, pharmaceutical company-sponsored advertising exceeded public health-sponsored advertising among households by a factor of 2.09–1. Among youth, pharmaceutical company-sponsored advertising did not reach that of public health-sponsored advertising, with a ratio of 0.77–1.

DISCUSSION

The findings of this study are subject to several limitations. First, although NMR tracks national cable advertising, it does not track spot cable television where advertisers can purchase additional advertising to target audiences in specific markets on cable networks. Exposures for households and adolescents aged 12–17 may therefore be underestimated, although available media plans indicate very infrequent use of spot cable television by state and other national campaigns such as Legacy. Secondly, as noted previously, ratings measure the average availability of an audience and do not guarantee actual viewing, nor are they measures of advertising recall. These data provide estimates of relative exposure across markets and over time for different advertisers. None the less, using Monitoring the Future survey data from American schoolchildren, we have previously found a dose–response relationship between increasing TRPs for 12–17-year-olds for state antismoking advertising and recall of televised antitobacco advertising (Emery *et al.* in press), lending support to the notion that these data have validity as measures of potential exposure. Thirdly, it should be noted that this study did not consider portrayal of tobacco in television programs, some of which provide messages about tobacco to audiences that may compete or conflict with public health-sponsored television advertising. Finally, the study was not able to weight mean GRP and TRPs by the population in each media market due to the inclusion of national cable ratings. Thus, although the absolute amount of GRPs/TRPs might be subject to some inaccuracy, the relative amount of exposure of the population to these different advertisers is accurate.

Notwithstanding these caveats, this study demonstrates that public health-sponsored antitobacco media campaigns on US television are competing with a substantial amount of advertising from tobacco companies. The withdrawal of funding from many state tobacco control programs during 2003 (Giantasio 2002; Campaign for Tobacco Free Kids *et al.* 2004) resulted in a slight overall reduction in potential exposure to state media campaigns in 2003. Data for more recent years is likely to show even greater reductions as the effects of funding withdrawal eventuate.

There is concern that the parent and youth advertising campaigns from tobacco companies may serve to divert attention from effective tobacco control campaigns, or worse, undermine effective campaigns. Previous research has suggested that corporate-sponsored social marketing campaigns may not be as effective as those undertaken by traditional non-profit agencies or government, partly because viewers suspect ulterior motives (Szykman, Bloom & Blazing 2004). The tobacco industry's youth smoking prevention programs do not implement the strategies that have been demonstrated to influence youth smoking: their campaigns consistently fail to address the serious health consequences of smoking or the issue of addiction. Rather, they focus on stressing to youth that it is not cool to smoke and emphasizing to parents that they have prime responsibility in influencing their children's risk of smoking.

Advertisement exposure studies under controlled conditions have indicated that these advertisements are less likely than those from state tobacco control programs to make youth stop and think about smoking (Teenage Research Unlimited 1999), are of less interest to youth (Wakefield *et al.* in press) and fail to contain message executions that are most likely to influence youth (Terry-McElrath *et al.* 2005). In studies of exposure under naturalistic conditions, Philip Morris youth smoking prevention advertisements have performed poorly, compared with state and national antitobacco advertisements. For example, Legacy's 'truth' advertisements that stress tobacco industry deception were more memorable and convincing to more adolescents than the Philip Morris's 'Think. Don't smoke' campaign (Farrelly *et al*. 2002). 'Think. Don't smoke' advertisements have also been associated with an increase in intention to smoke in the next year and more favourable feelings towards the tobacco industry (Farrelly *et al*. 2002). In a Massachusetts population survey, youth aged 14–17 years who recalled seeing Philip Morris's 'Think. Don't Smoke' advertisements perceived them to be less effective than television advertisements they recalled that featured the serious consequences of smoking (Biener 2002). Although the Philip Morris youth campaign has been withdrawn from US television, these advertisements are continuing to be broadcast in other countries, including Europe, Latin America, in cinemas in Australia and more recently, in Malaysia, Laos, Bangladesh, the Philippines, Vietnam and Thailand (World Health Organization 2004).

Despite Philip Morris having sophisticated methods at its disposal for assessing relevance, imagery and intent to change behavior, the company itself chooses to promote only understanding of the main message of the advertisement as the prime measure of effectiveness (Landman *et al*. 2002; Wakefield, McLeod & Perry in press).

In a review of the tobacco industry's own documents, Landman *et al.* (2002) showed that most smoking prevention programs it has supported are designed to promote industry public relations and marketing aims rather than to reduce smoking. Documentary evidence indicates that Philip Morris considered the success of 'youth initiatives' to be determined by 'whether they led to a reduction in legislation introduced and passed restricting or banning our sales and marketing activities' as well as 'passage of legislation favorable to the industry' (Landman *et al.* 2002). Similarly, published documents show that Lorillard Tobacco's youth smoking prevention program has as a stated objective to 'build as much third party credibility as possible' (Landman *et al.* 2002).

Thus, one purpose of these programs appears to be to create the appearance of an industry cooperating with or even promoting widely held societal goals about preventing youth from smoking, further motivated by the industry's desire to avoid potential future liability in lawsuits or cost-recovery actions. A specific focus of tobacco company public relations efforts since October 1999 has been on the social benefits of their philanthropic activities. For example, Philip Morris donated $60 million to homeless shelters for adolescents and battered women, meals on wheels, and food banks in the fiscal year 1999 (Rosenfield 2001). However, $102 million was spent on advertising to inform the public about the philanthropic activities of the company (Rosenfield 2001). Advertising expenditures promoting the company's corporate image outstripped advertising for Marlboro, its top selling brand, in 1999 and 2000 (Anonymous 2000; Anonymous 2001). Considerable concern has been expressed about this campaign in terms of potential influence on the jury pool in softening attitudes toward the tobacco industry, and the views of policy makers in enacting tobacco control legislation (Czaplewski & Olson 2003).

Direct-to-consumer advertising of pharmaceutical products has generally increased in recent years and is also not without controversy (Rosenthal *et al*. 2002). Pharmaceutical company advertising exposure for NRT and Zyban® was relatively high across all years, including for 12–17-year-olds. Although these advertisements are not targeted specifically at youth, this direct-to-consumer advertising approach *ipso facto* exposes the whole population to persuasive messages about these products. One recently articulated concern is whether smokers not yet ready to quit, or adolescents exposed to NRT and Zyban® advertising, might underestimate addictiveness or perceive an unintended message that it is easy to quit smoking (Wakefield & Durrant in press). For youth, this is of concern, because optimism about quitting, already overestimated by young people (Romer & Jamieson 2001), is a predictor of trial and progression to heavier smoking among youth (Romer, Jamieson & Ahern 2001). Furthermore, such advertising may lead smokers who are not yet ready to quit to rely too much upon the product, reducing the likelihood of successful cessation, with an unknown influence on future quitting attempts (Bolton *et al*. 2004). To date, there has been mixed empirical support for these suggestions from experimental studies, but future research on this subject in a field setting seems warranted.

In conclusion, these findings provide evidence that public health-sponsored antitobacco advertising exists in a highly cluttered tobacco-related television advertising environment, and underline the importance of commercially realistic funding for government-sponsored antitobacco media campaigns. There may be good cause for concern about the extent to which public health sponsored advertising may be being diluted or otherwise undermined by other tobacco-related television advertisers. We have a poor understanding of how people respond to advertising messages from tobacco companies about youth smoking prevention and corporate image campaigns. In addition, further research on unintended and potentially adverse effects of messages about quitting from pharmaceutical companies may be needed.

Use of this methodology for measuring share of advertising voice for other public health issues may be informative. For example, it would be interesting to examine the share of voice for televised alcohol advertising compared with public health advertising about responsible alcohol drinking, or the share of voice for advertising that promotes or discourages healthy eating behavior and link these to attitudinal and behavioral changes.

Acknowledgements

The study was funded by the National Cancer Institute State and Community Tobacco Control Initiative (grant no. RO1 CA86273-01). Melanie Wakefield was supported by a VicHealth Senior Research Fellowship.

References

Anonymous (2000) The 100 Leaders: 3 Philip Morris Cos. *Advertising Age*, **71**, s48.

Anonymous (2001) Alphabetical order listing of top advertisers, from PepsiCo to Sara Lee Corp. *Advertising Age*, **72**, s18.

Biener, L. (2002) Antitobacco advertisements by Massachusetts and Philip Morris: what teenagers think. *Tobacco Control*, **11** (Supplement 2), ii43–ii46.

Bolton, L. E., Cohen, J. B. & Bloom, P. N. (2004) *The Marketing of 'Get Out of Jail Free Cards': How Remedies Encourage Risky Consumption*. Philadelphia: Department of Marketing. University of Pennsylvania. Available at: http://knowledge.wharton.upenn.edu/index.cfm?fa=viewPaper&id=1286. Accessed 11 May 2005.

Campaign for Tobacco Free Kids, American Lung Association, American Cancer Society, American Heart Association & Smokeless States National Tobacco Policy Initiative (2003) *Show Us the Money. A Report on the States' Allocation of the Tobacco Settlement Dollars*. Available at: http://www.tobaccofreekids.org/reports/settlements/2003/fullreport.pdf [Accessed 26 September 2005].

Campaign for Tobacco Free Kids, American Lung Association, American Cancer Society & American Heart Association (2004) *A Broken Promise to Our Children: the 1998 State Tobacco Settlement Five Years Later*. Available at: http://www.tobaccofreekids.org/reports/settlements/2004/fullreport.pdf [Accessed 26 September 2005].

Czaplewski, A. J. & Olson, E. M. (2003) Adaptive strategies of tobacco firms subsequent to the 1998 Master Settlement Agreement: an examination of emergent tobacco promotional mix efforts. *Social Marketing Quarterly*, **9**, 3–17.

Dalton, M. A., Sargent, J. D., Beach, M. L., Titus-Ernstoff, L., Gibson, J. J., Ahrens, M. B. *et al.* (2003) Effect of viewing smoking in movies on adolescent smoking initiation: a cohort study. *Lancet*, **362**, 281–285.

Daynard, R. A. (2000) The Engle verdicts and tobacco litigation. *BMJ*, **321**, 312–313.

Emery, S., Wakefield, M., Terry-McElrath, Y., Saffer, H., Szczypka, G., O'Malley, P. *et al.* (in press) Televised state-sponsored antitobacco advertising and youth smoking beliefs and behavior in the United States, 1999–2000. *Archives of Pediatrics and Adolescent Medicine*, **159**, 639–645.

Fairclough, G. (2002) Study slams Philip Morris ads telling teens not to smoke: how a market researcher who dedicated years to cigarette sales came to create antismoking ads. *Wall Street Journal*, 29 May, pp. B1, 2P, 1C.

Farrelly, M. C., Healton, C. G., Davis, K. C., Messeri, P. & Haviland, M. H. (2002) Getting to the truth: evaluating national tobacco countermarketing campaigns. *American Journal of Public Health*, **92**, 901–907.

Farrelly, M. C., Niederdeppe, J. & Yarsevich, J. (2003) Youth tobacco prevention mass media campaigns: past, present, and future directions. *Tobacco Control*, **12** (Suppl 1), i35–i47.

Giantasio, D. (2002) Anti-smoking ads are history as funding dries up: suspension of Massachusetts effort due to budget cuts part of a growing trend. *Adweek East*, **43**, 5.

Glantz, S. A., Kacirk, K. W. & McCulloch, C. (2004) Back to the future: smoking in movies in 2002 compared with 1950 levels. *American Journal of Public Health*, **94**, 261–263.

Kotler, P. (2003) *Marketing Management*. Upper Saddle River, NJ: Pearson Education, Inc.

Kubey, R. W. & Csikszentmihalyi, M. (1990) Television as escape: subjective experience before an evening of heavy viewing. *Communication Reports*, **3**, 92–100.

Landman, A., Ling, P. M. & Glantz, S. A. (2002) Tobacco industry youth smoking prevention programs: protecting the industry and hurting tobacco control. *American Journal of Public Health*, **92**, 917–930.

Magzamen, S., Charlesworth, A. & Glantz, S. (2001) Print media coverage of California's smokefree bar law. *Tobacco Control*, **10**, 154–160.

McVey, D. & Stapleton, J. (2000) Can anti-smoking television advertising affect smoking behavior? Controlled trial of the health education authority for England's anti-smoking TV campaign. *Tobacco Control*, **9**, 273–282.

Menashe, C. L. & Siegel, M. (1998) The power of a frame: an analysis of newspaper coverage of tobacco issues—United States, 1985–96. *Journal of Health Communication*, **3**, 307–325.

Parmet, W. E. & Daynard, R. A. (2000) The new public health litigation. *Annual Review of Public Health*, **21**, 437–454.

Pechmann, C. (1997) Does antismoking advertising combat underage smoking? A review of past practices and research. In: Goldberg, M. E., Fishbein, M. & Middlestadt, S. E., eds. *Social Marketing: Theoretical and Practical Perspectives*, pp. 189–216. Mahwah, NJ: Lawrence Erlbaum Associates.

Pierce, J. P., Macaskill, P. & Hill, D. (1990) Long-term effectiveness of mass media led antismoking campaigns in Australia. *American Journal of Public Health*, **80**, 565–569.

Ribisl, K. M. (2003) The potential of the internet as a medium to encourage and discourage youth tobacco use. *Tobacco Control*, **12** (Suppl 1), i48–i59.

Romer, D. & Jamieson, P. (2001) The role of perceived risk in starting and stopping smoking. In: Slovic, P., ed. *Smoking: Risk, Perception, and Policy*, pp. 64–80. Thousand Oaks: Sage Publications.

Romer, D., Jamieson, P. & Ahern, R. K. (2001) The catch-22 of smoking and quitting. In: Slovic, P., ed. *Smoking: Risk, Perception, and Policy*, pp. 97–123. Thousand Oaks: Sage Publications.

Rosenfield, J. R. (2001) US cigarette marketing: the lowest ring in the inferno. *Direct Marketing*, **64**, 52–55.

Rosenthal, M. B., Berndt, E. R., Donohue, J. M., Frank, R. G. & Epstein, A. M. (2002) Promotion of prescription drugs to consumers. *New England Journal of Medicine*, **346**, 498–505.

Schroeder, S. (2004) Tobacco control in the wake of the 1998 Master Settlement Agreement. *New England Journal of Medicine*, **350**, 293–301.

Scollo, M. (2003) *Tobacco Control: a Blue Chip Investment in Public Health*. Melbourne, Australia: VicHealth Center for Tobacco

Control. Available at: http://www.vctc.org.au. Accessed 11 May 2005.

Sepe, E., Ling, P. M. & Glantz, S. A. (2002) Smooth moves: bar and nightclub tobacco promotions that target young adults. *American Journal of Public Health*, **92**, 414–419.

Siegel, M. & Biener, L. (2000) The impact of an antismoking media campaign on progression to established smoking: results of a longitudinal youth study. *American Journal of Public Health*, **90**, 380–386.

Sussman, S. (2002) Tobacco industry youth tobacco prevention programming: a review. *Prevention Science*, **3**, 57–67.

Szczypka, G., Emery, S., Wakefield, M. & Chaloupka, F. (2003) *The Adaption and Use of Nielsen Media Research Commercial Ratings Data to Measure Potential Exposure to Televised Smoking-Related Advertisements*. Chicago, USA: University of Illinois at Chicago. Available at: http://www.impacteen.org/ab_RPNo29_2003.htm [Accessed 26 September 2005].

Szykman, L. R., Bloom, P. N. & Blazing, J. (2004) Does corporate sponsorship of a socially-oriented message make a difference? An investigation of the effects of sponsorship identity on responses to an anti-drinking and driving message. *Journal of Consumer Psychology*, **14**, 13–20.

Teenage Research Unlimited (1999) *Counter-tobacco Advertising Exploratory Summary Report January–March 1999*. Prepared for the States of Arizona, California and Massachusetts. Northbrook, IL: Teenage Research Unlimited.

Terry-McElrath, Y. M., Wakefield, M. A., Giovino, G., Hyland, A., Barker, D., Chaloupka, F. J. *et al.* (2002) Point-of-purchase tobacco environments and variation by store type—United States, 1999. *Morbidity and Mortality Weekly Report*, **51**, 184–187.

Terry-McElrath, Y., Wakefield, M., Ruel, E., Balch, G. I., Emery, S., Szczypka, G. *et al.* (2005) The effect of anti-smoking advertisement executional characteristics on youth appraisal and engagement. *Journal of Health Communication*, **10**, 127–143.

United States Federal Trade Commision (USFTC) (2004) Federal Trade Commision Cigarette Report for 2002. Washington, USA: USFTC. Available at: http://www.ftc.gov/reports/cigarette/041022cigaretterpt.pdf. Accessed 11 May 2005.

Wakefield, M., Balch, G. I., Ruel, E. E., Terry-McElrath, Y., Szczypka, G., Flay, B. *et al.* (in press) Youth responses to anti-smoking advertisements from tobacco control agencies, tobacco companies and pharmaceutical companies. *Journal of Applied Social Psychology*, in press.

Wakefield, M. & Chaloupka, F. (2000) Effectiveness of comprehensive tobacco control programmes in reducing teenage smoking in the USA. *Tobacco Control*, **9**, 177–186.

Wakefield, M. & Durrant, R. (in press) Effects of exposure of youth risk for smoking to television advertising for nicotine replacement therapy and Zyban: an experimental study. *Health Communication*.

Wakefield, M., Flay, B., Nichter, M. & Giovino, G. (2003) Effects of anti-smoking advertising on youth smoking: a review. *Journal of Health Communication*, **8**, 229–247.

Wakefield, M., McLeod, K. & Perry, C. (in press) 'Stay away from them until you're old enough to make a decision': tobacco company testimony about youth smoking initiation. *Tobacco Control*.

World Health Organization (WHO) (2004) *Youth Smoking Prevention Activities: Results of Regional Situation Analysis*. Manila, Philippines: WHO Western Pacific Regional Office.