

Junking Science to Promote Tobacco

Despite the tobacco industry's claims that it has changed its practices, the toll of tobacco-related disease and death continues to grow worldwide, and the industry continues to use a vast array of strategies to promote its products and increase profits. This commentary discusses the ways the tobacco industry has created controversy about risk assessment and about the scientific evidence of the health hazards of secondhand smoke.

The authors recommend that policymakers be more vigilant and that they demand transparency about affiliations and linkages between allegedly independent scientists and tobacco companies. They also urge policymakers to be prepared for new and continuing challenges posed by the tobacco industry, because, despite the industry's claims, there is little evidence of fundamental change in its objectives.

Derek Yach, MBChB, MPH, and Stella Aguinaga Bialous, DrPH, MScN, RN

TOBACCO COMPANIES CLAIM that they have changed. They assert that their efforts to undermine global tobacco control policy are a product of a past era and that now they seek to engage in constructive dialogue with the World Health Organization (WHO) and national governments.¹ Unfortunately, the reality is that the consequences of their actions continue. Four million deaths per year, 1.2 billion smokers in the world today, and high rates of youth smoking are in part the result of the failure of governments to implement tobacco control policies that are known to work. And governments' inaction is largely a result of decades of tobacco companies' untoward influence.

Among the lingering effects of tobacco companies' actions are the insidious ways in which the public health policy agenda and the media debate about tobacco have been influenced. In this issue of the *Journal*, Ong and Glantz highlight one aspect of industry influence with respect to epidemiologic standards of causality.² The authors show that tobacco companies carefully planned to undermine accepted epidemiologic practices and hoped that by partnering with a broad range of academic and private commercial interests, they could create confusion about the role of epidemiology and risk assessment in public policy development. The ultimate goal of the industry was to promote the trivialization of the risk of tobacco use, stating that nearly every-

thing from eating Twinkies to crossing the street was harmful, and that tobacco was just one more "risky pleasure."

Ong and Glantz's work needs to be considered within the broader concerted efforts of the tobacco companies to influence public policy in a manner detrimental to public health. The release of tobacco industry documents following US litigation provides us with access to a snapshot of the truth. These documents show a nearly 50-year effort to improve public relations, rather than public health.

One example, from 1977, is Operation Berkshire,³ which shows how 7 of the world's largest tobacco companies colluded to promote doubt about tobacco and health. These companies created the International Committee on Smoking Issues (later the International Tobacco Information Center) to internationally coordinate a network of national manufacturers' associations to block tobacco control measures. In another example, Philip Morris convened a meeting of its top executives in 1988 in Boca Raton, Fla, to develop an action plan aimed at attacking WHO's tobacco control programs at the national level and targeting the structure, management, and resources of the WHO.⁴

These documents show the lengths the tobacco industry went to in its attempt to thwart the International Agency for Research on Cancer's epidemiologic research on secondhand smoke and lung cancer in Europe.⁵

They show how linkages were created between tobacco companies and the chemical, food, pesticide, and utility industries, as well as how the tobacco industry developed its "scientific" strategy.

The industry documents, described in *The Cigarette Papers*⁶ and most recently summarized in *A Question of Intent: A Great American Battle With a Deadly Industry*,⁷ tell about the scope and depth of the tobacco companies' ability to recruit scientists from the ranks of the most prestigious academic institutions. Tobacco companies sought to create doubt where scientific consensus existed. To do so, they enlisted scientists in their cause. This way, the industry voice would be heard but the industry would not be directly involved, as tobacco industry funding often remained undisclosed in publications and participation in public forums.

The consultants, grantees, and speakers who were willing to work for the industry came from some of the best academic centers in the United States and abroad. For example, the US Tobacco Institute had a team of academics and scientists, "faculty members of prestigious universities and medical schools," to assist in responding to the US Environmental Protection Agency's risk assessment methodologies, among other things.⁸ Although the US Tobacco Institute was forced to close as a condition of the 1998 Master Settlement Agreement,⁹ equivalent agencies still operate in major tobacco markets around the world, where

the degree of intimacy between certain scientists and tobacco companies is not widely known.

As discussed by Ong and Glantz, the use of front groups and consultants is a well-established tobacco industry practice to avoid dealing with its lack of public credibility. Scientists were constantly at hand to assist in maintaining the industry-created controversy on the tobacco and health issue.

BUYING SCIENTISTS

The tobacco industry continues to fund, directly or indirectly, prestigious academic centers and scientists in its effort to achieve scientific credibility.¹⁰ Among the notable academics enlisted by the industry are professors such as A.R. Feinstein of Yale University, editor of the *Journal of Clinical Epidemiology*, who on many occasions has presented the argument that the epidemiologic methods used to assess the risk of passive smoking are inadequate. In a 1992 article, Feinstein supported the tobacco industry's right to defend itself against the label of "bad guy" and criticized the "current atmosphere [in which a tobacco industry] consultant's stature, credibility, and integrity become instantly impugned and tarnished by the depravity of associating with the tobacco 'bad guy.'"¹¹ He did not mention, however, that he was a tobacco industry consultant and the recipient of highly secret "special project" awards.^{6,12-14}

One prestigious US institution that has received funds from Philip Morris and its subsidiaries is the Harvard Center for Risk Analysis, whose former director, John Graham, has assisted Philip Morris with risk communication about environmental tobacco

smoke and has on many occasions requested funds for the center.¹⁵⁻¹⁸ Among several other sources of corporate support, the center currently has an unrestricted grant from the Philip Morris subsidiary Kraft Foods

"The debate over conflict of interest between academia and private commercial interests is gaining visibility."

and a restricted grant from the Risk Science Institute of the International Life Sciences Institute (ILSI).¹⁹ In March 2001 President Bush nominated John Graham to be administrator of the Office of Information and Regulatory Affairs of the Office of Management and Budget.²⁰ This office reviews and approves—or blocks—all major federal regulations. The consumer advocacy group Public Citizen criticized the nomination on the basis of the links between Graham and corporate funding.^{21,22}

The above cases exemplify the tobacco industry's reach into the scientific community and have to be considered within a broader discussion about the influence of private corporate funding on academic research and policies addressing funding disclosure. The debate over conflict of interest between academia and private commercial interests is gaining visibility. In a recent article in the *Journal of the American Medical Association*, the dean of the Harvard medical school stated that more safeguards against conflict of interest are necessary.²³ Nils Hasselmo, president of the Association of American Universities, was quoted as saying that "it's the responsibility of the university to serve the public good. The public relies on universities for the greatest degree of objec-

tivity, rather than for information that may be slanted by financial interests."²⁴

How this debate will influence future tobacco industry funding of academia remains to be seen. Even more important is how ac-

ademia is going to respond to offers from the tobacco industry. The debate is not yet over. The March 2001 newsletter of California's Tobacco-Related Diseases Research Program was entirely dedicated to the discussion of the implications of tobacco industry funding of science.²⁵ Recently, despite much criticism and the resignation of faculty members, Nottingham University in England accepted £3.8 million from British American Tobacco to create an International Centre for Corporate Social Responsibility.²⁶⁻³⁰

DISTORTING RISK

There are many groups and consultants who were funded by the industry, both directly and through subsidiary companies, and who provided the tobacco industry with ample material, in the form of testimony, reports, and other publications, to fight tobacco policy and regulations. For example, ILSI and its Risk Science Institute—a nonprofit worldwide scientific research foundation focusing on the areas of nutrition, food safety, toxicology, risk assessment, and the environment³¹—gave the tobacco industry an opportunity to blend secondhand smoking risks with other low-dose risks and continue to create doubt and contro-

versy about the harms of secondhand smoke.³² ILSI is a particularly relevant example, given that it has a formal relationship with WHO and IARC and thus offered the tobacco industry the potential for additional access to these institutions.^{33,34} (Note: Since the writing of this commentary, ILSI executives have agreed to review all aspects of their affiliations with commercial interests.)

In addition to creating front groups and contributing funds to groups that have a mission broad enough to carry some of the tobacco industry's goals, the tobacco companies also use publications by allegedly independent think tanks, such as the Virginia-based Alexis de Tocqueville Institution. This group's 1994 report "Science, Economics, and Environmental Policy: A Critical Examination"³⁵ criticizes the US Environmental Protection Agency's risk assessment methods in 4 areas: environmental tobacco smoke, radon, pesticides, and hazardous cleanup. It dismisses in its first chapter the agency's risk assessment of environmental tobacco smoke, using arguments similar to the tobacco industry's "junk science" arguments described by Ong and Glantz.

This report has been widely used by the tobacco industry in its quest to dismiss the hazards of environmental tobacco smoke. And although no direct financial link has been established, several members of the report's academic advisory board have been involved with different tobacco companies' activities.³⁶ The report's principal reviewer, Dr Fred Singer, was involved with the International Center for a Scientific Ecology, a group that was considered important in Philip Morris' plans to create a

group in Europe similar to The Advancement for Sound Science Coalition (TASSC), as discussed by Ong and Glantz.^{37,38} He was also on a tobacco industry list of people who could write op-ed pieces on “junk science,” defending the industry’s views.³⁹

The junk science saga continues. In February 2001, on the Web site JunkScience.com, Martha Perske provided a critique of studies linking passive smoking and lung cancer.⁴⁰ In the article, she grossly misstates the WHO’s work in this field. Perske has no formal scientific training and her one publication in the peer-reviewed literature is a letter to the editor—which appeared, incidentally, in the journal edited by Alvan Feinstein.⁴¹ She describes herself as a “smokers’ advocate,” but industry documents show that she stayed in close contact with Philip Morris, asking for their review of and comments on her activities.⁴²

The goal of the tobacco industry’s “scientific strategy” was not to reveal the truth but to protect the industry from loss of revenue and to prevent governments from establishing effective tobacco control measures. The industry’s goals of creating doubt and controversy and placing the burden of proof on the public health community in policy forums have, therefore, met with a certain degree of success. Tobacco control policies are not being implemented worldwide at the rate that current scientific knowledge about the dangers of tobacco warrants. But this scenario is changing as the negotiations for the Framework Convention on Tobacco Control continue to advance. The Framework Convention on Tobacco Control marks the first time the WHO has used its treaty-making right to support

member states in developing a legally binding instrument in the service of public health. Negotiations are progressing well, and it is likely that member states will vote on ratification of the convention in mid-2003.

What do the revelations about tobacco company actions mean for public health policy? In general terms, they call for policymakers to demand complete transparency about affiliations and linkages between allegedly independent scientists and tobacco companies. Academic naïveté about tobacco companies’ intentions is no longer excusable. The extent of the tobacco companies’ manipulation needs to be thoroughly exposed, and students of many disciplines (public health, public policy, ethics, and law, to name a few) should be provided with the evidence that is increasingly available through the tobacco industry documents.

Initiatives such as the American Legacy Foundation’s \$15 million grant to the University of California, San Francisco, to establish the Legacy National Documents Library and the Center for Tobacco Control Research and Education⁴³ must be lauded. The foundation’s example should be followed by other donor institutions that want to address international public health issues seriously. After all, every gain in tobacco control in the United States is an incentive for tobacco companies to globalize their operations.

Strict codes of conduct are needed to protect the integrity of the public health policy process from undue influence, especially from the likes of the secret and deleterious influences that were brought to bear over decades by the tobacco industry. Ethics committees need to consider conflict

of interest as important as patient confidentiality.^{26,44}

NEW AND CONTINUING CHALLENGES

For tobacco control research, the challenges are not over, but they have changed. No longer will tobacco companies dispute the scientific evidence that active smoking of traditional cigarettes causes harm. However, they continue to deny the scientific evidence about the harm caused by exposure to secondhand smoke and continue to suggest ventilation as an alternative to smoking bans in public places.^{45,46} Added to the debate is the issue of determining whether and how newly developed tobacco products confer reduced harm. The tobacco companies’ investment, statements, and research in this field make it clear that they regard new “reduced harm” products as an important strategic and financial priority. But what standards of proof will be used to measure reduced harm?

In anticipation of this shift in focus, WHO has established a scientific advisory committee on tobacco product regulation to address these very issues. This committee has met with certain tobacco company scientists. On February 22, 2001, the Institute of Medicine released a report calling for strict scientific analysis and regulatory policy of tobacco products that claim to be “less harmful” than products currently available on the market.⁴⁷ On the same day, Philip Morris announced that it is following other tobacco companies and intends to launch a “safer” cigarette in 2 years.⁴⁸ It is noteworthy that recent reports on these “safer” cigarettes address only the carcinogenic properties of tobacco and

largely ignore the fact that cancer is but one in a long list of diseases caused by passive and active smoking.

Whereas in the past it was public health scientists who raised the alarm and called for solutions, it is now predominantly industry scientists who claim to have found solutions. The burden of proof of reduced harm must rest on the tobacco industry, and the public health community must take the proactive step of developing internationally accepted means of verifying whether any tobacco product can truly be labeled safer than another. Tobacco companies will find that the epidemiologic standards they so vigorously opposed (for example, dismissal of studies with odds ratios of less than 2) are the very standards they will need to use to demonstrate whether their new products are indeed safer.

About the Authors

Derek Yach is with the World Health Organization, Geneva, Switzerland. Stella Aguinaga Bialous is a public health policy consultant in San Francisco, Calif.

Requests for reprints should be sent to Derek Yach, MBChB, MPH, Executive Director, Noncommunicable Diseases and Mental Health, World Health Organization, 1211 Geneva 27, Switzerland (e-mail: yachd@who.int).

This commentary was accepted July 5, 2001.

Note. The opinions expressed in this commentary are those of the authors and do not necessarily reflect the position of the World Health Organization.

Contributors

D. Yach developed the concept of the paper and the first draft. Both D. Yach and S. A. Bialous performed the document research and prepared and revised the final manuscript.

References

1. Brundtland GH. *WHO Director General's Response to the Tobacco Hearings*. Geneva, Switzerland: World Health Organization; October 13, 2000. Statement WHO/6.

2. Ong EK, Glantz SA. Constructing "sound science" and "good epidemiology": tobacco, lawyers and public relations firms. *Am J Public Health*. 2001; 91:1749–1757.
3. Francey N, Chapman S. "Operation Berkshire": the international tobacco companies' conspiracy. *BMJ*. 2000; 321:371–374.
4. *Tobacco Company Strategies to Undermine Tobacco Control Activities at the World Health Organisation. Report of the Committee of Experts on Tobacco Industry Documents*. Geneva, Switzerland: World Health Organization; July 2000.
5. Ong EK, Glantz SA. Tobacco industry efforts subverting International Agency for Research on Cancer's second-hand smoke study. *Lancet*. 2000; 355:1253–1259.
6. Glantz SA, Slade J, Bero LA, Hanauer P, Barnes DE. *The Cigarette Papers*. Berkeley: University of California Press; 1996. Also available at: <http://www.library.ucsf.edu/tobacco/cigpapers/book/contents.html>. Accessed September 14, 2001.
7. Kessler DA. *A Question of Intent: A Great American Battle With a Deadly Industry*. New York, NY: PublicAffairs; 2001.
8. Tobacco Institute. Public smoking programs of the Tobacco Institute. Document no. TIDN 0008739/8748. Available at: <http://www.tobacco documents.org>. Accessed March 16, 2000.
9. Master Settlement Agreement. Available at: <http://www.naag.org/tobac/cigmsa.rtf>. Accessed February 26, 2001.
10. Hirschhorn N, Bialous SA, Shatenstein S. Philip Morris' new scientific initiative: an analysis. *Tob Control*. 2001; 10:247–252.
11. Feinstein AR. Justice, science, and the "bad guys." *Toxicol Pathol*. 1992; 20:303–305.
12. British American Tobacco Company. Note for the Tobacco Strategy Group—Scientific Research Group Meeting, New York, NY, October 28–30, 1993. Available at: <http://www.ncth.ca/Guildford.nsf>. Document no. 502620669/0673. Accessed February 26, 2001.
13. Council for Tobacco Research. Letter from R.F. Gertenbach to Alvan R. Feinstein. Re: Special project 135R1 & R2. May 5, 1988. Available at: <http://www.ctr-usa.org/ctr>. Document no. 025224. Accessed February 22, 2001.
14. Yale University. Letter from A.R. Feinstein to Robert Gertenbach. Re: CTR grant 135R1 (special project) final progress report. December 20, 1991. Available at: <http://www.ctr-usa.org/ctr>. Document no. 025092–093. Accessed February 22, 2001.
15. Harvard Center for Risk Analysis. Letter from J.D. Graham to David L. Greenberg, vice president, government affairs, Philip Morris Companies, Inc. October 21, 1991. Available at: <http://www.pmdocs.com>. Document no. 2023545705/5706. Accessed March 16, 2000.
16. Philip Morris. Memorandum from R.A. Pages to Steve Parrish. Subject: Comment on letter from John Graham. October 29, 1991. Available at: <http://www.pmdocs.com>. Document no. 2023545707. Accessed March 16, 2000.
17. Kraft General Foods. Letter from E.J. Guardia to John D. Graham. August 12, 1992. Available at: <http://www.pmdocs.com>. Document no. 2025534554. Accessed March 16, 2000.
18. Philip Morris Management Corp. Memorandum from M. Logue to Steve Parrish. Re: John Graham/Harvard Center for Risk Analysis. August 31, 1992. Available at: <http://www.pmdocs.com>. Document no. 2025534553. Accessed March 16, 2000.
19. Harvard Center for Risk Analysis. Available at: <http://www.hcra.harvard.edu/description.html>. Accessed February 26, 2001.
20. President George W. Bush today announced his intent to nominate three individuals to serve in his administration [press release]. Washington, DC: White House Office of the Press Secretary; March 6, 2001.
21. Public Citizen. Safeguards at risk: John Graham and corporate America's back door to the Bush White House. March 12, 2001. Available (in PDF format) at: <http://www.citizen.org/congress/regulations/graham.html>. Accessed September 14, 2001.
22. Skrzycki C. Regulatory nominee assailed in report: consumer group alleges corporate ties. *Washington Post*. March 14, 2001:E1.
23. Moses H III, Martin JB. Academic relationships with industry: a new model for biomedical research. *JAMA*. 2001;285:933–935.
24. Kowalczyk L. New steps urged on university research bias. *Boston Globe*. February 21, 2001:A1.
25. Tobacco-Related Disease Research Program. *Burning Issues: TRDRP Newsletter*. March 2001. Available (in PDF format) at: <http://www.ucop.edu/srphome/trdrp/archives.html>. Accessed September 14, 2001.
26. Chapman S, Shatenstein S. The ethics of the cash register: taking tobacco research dollars. *Tobacco Control*. 2001;10:1–2.
27. Cancer professor on the move. *Times*. March 17, 2001. Available at: <http://www.thetimes.co.uk>. Accessed September 14, 2001.
28. Meikle J. Professor quits over tobacco firm's £3.8m gift to university. *Guardian*. May 18, 2001. Available at: <http://www.guardian.co.uk>. Accessed September 14, 2001.
29. Smith R. A tainted university. *Guardian*. May 21, 2001. Available at: <http://www.guardian.co.uk>. Accessed September 14, 2001.
30. BBC News. MEP boycotts "tobacco cash" university. June 14, 2001. Available at: http://news.bbc.co.uk/hi/english/education/newsid_1388000/1388697.stm. Accessed September 14, 2001.
31. International Life Sciences Institute. Available at: <http://www.ilsa.org>. Accessed June 26, 2001.
32. Tobacco Free Initiative, WHO. The Tobacco Industry and Scientific Groups. ILSI: A Case Study. February 2001. Available (in PDF format) at: <http://tobacco.who.int/en/industry/ilsa.pdf>. Accessed June 26, 2001.
33. Philip Morris USA. Memorandum from T. Borelli to Matt Winokur. Subject: independent research institutes. May 2, 1989. Available at: <http://www.pmdocs.com>. Document no. 2021595960. Accessed February 26, 2001.
34. Reif HE. Monthly activities HER, S&T, FTR/PM Neuchatel. June 24, 1993. Available at: <http://www.pmdocs.com>. Document no. 2028372583/2596. Accessed February 26, 2001.
35. Jeffreys K. Science, economics, and environmental policy: a critical examination. a research report conducted by the Alexis de Tocqueville Institution. August 11, 1994. Available at: <http://www.pmdocs.com>. Document no. 2048901932/2008. Accessed February 20, 2001.
36. The Tobacco Institute. Inventory of comments received by the Tobacco Institute on the costs and benefits of smoking restrictions: an assessment of the Smoke-Free Environment Act of 1993 (HR 3434). Available at: <http://www.pmdocs.com>. Document no. 2047232462. Accessed February 26, 2001.
37. APCO Associates Inc. Memorandum from T. Hockaday and N. Cohen to Matt Winokur. Re: thoughts on TASSC Europe. March 25, 1994. Available at: <http://www.pmdocs.com>. Document no. 2024233595/3602. Accessed February 26, 2001.
38. International Center for a Scientific Ecology. Guidelines for the seminar on linear relationship for risk assessment of low doses of carcinogens. January 1993. Available at: <http://www.pmdocs.com>. Document no. 2501013825. Accessed February 26, 2001.
39. APCO Associates Inc. Memorandum from T. Hockaday to Ellen Merlo et al. Re: opinion editorials on indoor air quality and junk science. March 8, 1993. Available at: <http://www.pmdocs.com>. Document no. 2021178205. Accessed February 26, 2001.
40. Perske M. On misreported ETS studies. Available at: <http://www.junkscience.com/aug01/perske-ets.htm>. Accessed September 27, 2001.
41. Perske M. Effects of passive smoking [letter]. *J Clin Epidemiol*. 1993;46: 408–409, discussion 410–411.
42. Letter from M. Perske to Thomas J. Borelli, PhD, Director, Scientific Affairs, Philip Morris Management Corp. May 28, 1993. Available at: <http://www.pmdocs.com>. Document no. 2023584018/4024. Accessed February 26, 2001.
43. Schevitz T. UCSF to establish tobacco documents archive. *San Francisco Chronicle*. January 31, 2001:A1.
44. Vastag B. Experts wrestle with social, ethical implications of human genome research. *JAMA*. 2001;285: 721–722.
45. Americans for Non-Smokers' Rights. Don't buy the ventilation lie. April 16, 2001. Available at: <http://www.no-smoke.org/ventlie.html>. Accessed June 26, 2001.
46. National Center for Tobacco Free Kids. Ventilation technology does not protect people from secondhand tobacco smoke. April 10, 2001. Available at: <http://tobaccofreekids.org/research/factsheets/pdf/0145.pdf>. Accessed June 26, 2001.
47. Stratton K, Shetty P, Wallace R, Bondurant S, eds. *Clearing the Smoke: The Science Base for Tobacco Harm Reduction*. Washington, DC: Institute of Medicine; February 2001.
48. Bloomberg News. Philip Morris to unveil "reduced-risk" cigarette within 2 years. February 22, 2001. Available at: <http://quote.bloomberg.com/newsarchive/>. Accessed September 1, 2001.