

Institutional addiction to tobacco

Introduction

As the health toll from tobacco use mounts worldwide,^{1,2} policy makers, programme personnel, and researchers are focusing more on the tobacco industry as the “underlying cause” of the tobacco epidemic.^{3,4} To mitigate growing public opposition, the tobacco industry attempts to buy respectability and social legitimacy.⁵⁻⁸ In the process, not only does it addict consumers to its lethal product, but it addicts institutions to a portion of its profits. Outcomes of institutional addiction to tobacco may include delayed decision making, distortion of the research agenda, and silence or inaction on tobacco control issues.⁹⁻¹¹

Institutional addiction to tobacco is widespread. In Canada and the United States, individual legislators and political parties have benefited from tobacco industry campaign contributions.^{12,13} Many governments garner tax revenues generated from the sale of tobacco—for example, refs^{14,15}. In addition, the organisers of major sporting and cultural events on both sides of the Atlantic have come to depend on tobacco funds, and are now fighting along with the industry against restrictions on sponsorship.^{16,17}

Universities and healthcare institutions also may be dependent on tobacco industry funding and connections. Their relationships with the industry pose a direct conflict of interest, particularly for those with health mandates, since these institutions are implicitly entrusted with researching and publicising the harmful effects of tobacco and the role of the tobacco industry. In this commentary, we examine the ways in which these institutions become dependent on the tobacco industry, that is, “institutionally addicted to tobacco”, and discuss what can be done to break this addiction.

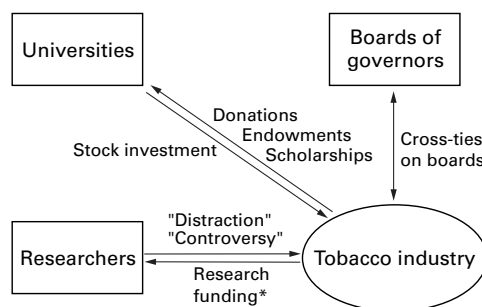
Research funding

The tobacco industry’s involvement in health research funding is controversial for institutions and their researchers.¹⁸⁻²³ Proponents argue that such funding is necessary as other sources of support diminish.²³ They contend that disclosure of funding sources, the integrity of researchers, and the peer review process are sufficient to ensure scientific impartiality,²⁴⁻²⁶ and that industry profits are better spent on research than on marketing or shareholder dividends.²⁷ Opponents argue that by supporting research, the tobacco industry can claim it is acting responsibly and in good faith, while generating good publicity, deflecting attention away from tobacco’s adverse health effects, and influencing policy makers.^{28,29}

The industry has used scientists and institutions for its own purposes. It has tried to gain prestige, and win the approval of juries, by pointing to the reputable institutions it has funded.^{30,31} Researchers and institutions also can be used by the industry to justify continued investigations of established research findings in order to portray them as controversial—for example, the health effects of environmental tobacco smoke (ETS).^{11,28,32-35} Tobacco company documents indicate that Philip Morris paid scientists, through “Project White-coat”, to cast doubt on the risks of ETS,^{36,37} even though other internal documents reveal the industry knew about these adverse health effects of its products.⁴ The tobacco industry engages well-respected consulting firms (such as Wharton Applied Research Center, Chase Econometrics, and Price Waterhouse) to study the contribution of tobacco to the economy, and then misrepresents their findings in its public relations campaigns.³⁸

In addition, the tobacco-sponsored funding agencies tend to support “distracting” research—studies that deflect attention from the health impact of tobacco use or ETS—despite their missions to the contrary (for example, research on indoor air that does not include ETS).^{31,32} Recent revelations demonstrate that many grants from industry “research” councils were controlled not by scientific advisory boards but by industry lawyers, and were specifically awarded to promote these research “controversies”.²⁸ Industry documents also confirm “special projects designed to find scientists and medical doctors who might serve as industry witnesses in lawsuits or in a legislative forum”.⁴

A recent multinational survey of researchers in the addictions field found that a majority (57%) believed that researchers should not accept backing from tobacco companies.³⁹ Berridge⁴⁰ offers several hypotheses as to why opposition to tobacco industry research funding is building. Nonetheless, many institutions and researchers continue to accept tobacco industry funding. Further, some university-based researchers continue to act for the industry as paid consultants.^{41,42} A survey of institutions of higher learning in Australia found that 30% accepted tobacco industry research funds in 1991 or 1992.⁴³ An analysis of tobacco industry health research funding in the United Kingdom showed that only one medical school (Glasgow) did not receive industry support between 1988 and 1994.²² Recently, but not without controversy, the British Medical Research Council accepted £147 000 from the British American Tobacco



*Relationships between universities and the tobacco industry.
The tobacco industry also "attacks" researchers who publish research antithetical to the industry's financial interests.

Company (BAT) for research on the beneficial effects of nicotine on Alzheimer's disease.¹⁸⁻²⁰ In a survey of American medical schools in the early 1990s, over half acknowledged research funding from the tobacco industry and its subsidiaries.⁴⁴ In North Carolina, Duke University's medical school recently received US\$1 million from the RJ Reynolds Tobacco Company to evaluate Eclipse, its low-smoke cigarette.⁴⁵

Donations and endowments

In addition to funding research, the tobacco industry positions itself among philanthropic organisations by providing donations and endowments to universities and healthcare institutions. For example, Cambridge University recently accepted £1.5 million from BAT for a chair in international relations.^{20 21} Endowed chairs also have been established in several academic institutions in the United States.^{46 47} In Canada, Imasco Ltd (the holding company for Imperial Tobacco, the largest Canadian tobacco company), donated C\$1.2 million to educational initiatives in 1997.⁴⁸ Also, the fully affiliated hospitals of the University of Toronto, Canada's largest educational institution, accepted C\$225 000 from Imasco Ltd in 1996, up from C\$191 000 in 1995.^{48 49}

The tobacco industry also has sponsored symposia, for example on ETS.^{50 51} It has been found that proceedings from tobacco industry sponsored meetings are not balanced and tend to be of poor quality, but the industry funds, disseminates, and cites these symposia to support its interests.^{28 50 52} The tobacco industry has used its donor status to attempt to buy influence and suppress anti-tobacco activities in academic settings. Cunningham⁵³ documented an instance when Imperial Tobacco, a regular contributor to the annual conference of the Faculty of Law at the University of Toronto, withheld its funding at the time law students were instrumental in having charges laid against Shoppers Drug Mart (another holding of Imasco) for selling tobacco to a minor. A spokesperson for Imperial Tobacco noted that the students "were biting the hand that feeds them".⁵³ Recently, in the United States, the industry unsuccessfully attempted to suppress a major tobacco control conference sponsored by the University of North Carolina, citing its historical largess to that institution.⁵⁴

Institutional investments

Institutional policies involving universities, healthcare facilities, professional organisations, and non-governmental organisations that permit investment of pension funds and other assets in tobacco company stocks, indirectly confer respectability on the industry, by implying that tobacco is like other consumer products and that the industry is a trustworthy corporate entity. By holding such stocks, these institutions also have a vested interest in the industry's ongoing stability and profitability, which could inhibit implementation of tobacco control activities, such as policies prohibiting industry donations and endowments.

Acquiring respectability by association

Through strategic appointments to boards, the tobacco industry uses people in key positions to lend respectability to its activities by association. For example, Robert Prichard, current president and former dean of law at the University of Toronto, is a director of Imasco.⁵³ Robert Parker, president and chief spokesperson for the Canadian Tobacco Manufacturers' Council sits on the Board of the (research) Foundation of Women's College Hospital, a fully affiliated teaching hospital of the University of Toronto.⁵⁵ In 1997, the president and chief executive officer of Imasco, Brian Levitt, was appointed to the campaign cabinet of the University of Toronto's fund raising campaign.⁴⁸ The United States Tobacco Company recently appointed two new directors, one the former chief executive officer of a major pharmaceutical company and one a current board member of Rider University.⁵⁶ RJ Reynolds appointed a new board member who also sits on Syracuse University's engineering advisory board⁵⁷, and the current chairman of the University of North Carolina board of governors is a vice president of RJ Reynolds.⁵⁸ The full extent of such relationships has not been documented but appears to be widespread.

Potential for relationships is multifaceted

From the foregoing, it is clear that universities and the health research community can enter into relationships with the tobacco industry at several levels (figure). The industry can give grants to researchers, which in turn can justify continued research into "controversies" surrounding tobacco-related health issues, or research that distracts attention from the harmful effects of tobacco. It may donate directly or provide scholarships or endowed professorships to universities. Universities may invest their pension plans and endowment funds in tobacco industry stocks. In addition, officials of universities and health-related institutions may sit on boards of tobacco companies and vice versa.

Actions needed and taken

Explicit policies to counteract these tobacco industry strategies are needed. Some academic institutions and health research enterprises already have such policies. Institutions in the United States and Australia have banned tobacco industry support.²³ The University of

Toronto's School of Social Work, and the University of Hong Kong, recently refused donations from the tobacco industry.^{59, 60} Leading organisations, such as the American Public Health Association,⁶¹ have gone on record urging organisations that work on public health issues to neither solicit nor accept tobacco industry support.

Some academic institutions, health research agencies, and health professional groups have advocated or implemented policies and procedures to divest themselves of financial holdings in tobacco companies. In 1990, the Robert Wood Johnson Foundation, a major non-governmental organisation with a predominant health focus, adopted policies prohibiting such investment. Several American universities, including Johns Hopkins, Harvard, City University of New York, Wayne State, and Tufts have divested their tobacco stocks.⁶² Recently, former United States Surgeon General C Everett Koop urged faculty members of American universities and colleges to divest.^{63, 64} The World Health Organisation recently divested its pension fund of tobacco investments.⁶⁵ With continuing disclosure about industry practices, pressure within universities to divest may increase.

Some research funding agencies also have taken a stand. The Cancer Research Campaign in the United Kingdom, the Norwegian Cancer Society, and some members of the Union Internationale Contre le Cancer—European Cancer League, will no longer fund research in institutions that accept tobacco money.^{9, 66-68} Although the United States National Institutes of Health do not currently have such a policy, a subcommittee of the National Cancer Advisory Board recommended in 1994 that the federal government “withdraw funding from cancer research organisations that accept tobacco industry support”.²³ The American Cancer Research Foundation turned down a donation from the foundation organising a worldwide tour of Princess Diana's dresses, because Philip Morris is a sponsor of the tour.⁶⁹

Though not without controversy, the medical section of the American Lung Association, through the American Thoracic Society, has implemented a policy for its two journals not to review papers reporting research funded by the tobacco industry.^{23, 24, 70-75} The *Journal of Health Psychology* also will not accept articles arising from industry-sponsored research.⁷² The appropriateness of membership of tobacco industry scientists in scientific societies has also been examined recently in a series of articles in the journal *Addiction* (1997;92:517-29).

The American Medical Association, which has a policy of not investing in tobacco stocks, has produced lists of mutual funds that do and do not invest in tobacco companies, asking physicians, medical schools, and “all people vested in the health and welfare of Americans to divest of tobacco holdings”.^{62, 76} The Canadian Medical Association also has urged physicians not to invest in tobacco stocks.⁷⁷

Is tobacco industry support different from other special interest funding?

Like the tobacco industry, the pharmaceutical industry has a financial and political interest in the research it supports. Some of the studies it sponsors are funded and overseen by marketing departments rather than medical or scientific ones.⁷⁸ There have been instances in which drug companies have “bought” journal editorials.⁷⁹ Research has shown that there is a strong association between financial relationships with the pharmaceutical industry and having published positions that are favourable to the industry⁸⁰, and that proceedings from symposia sponsored by the pharmaceutical industry tend to have misleading titles, to use brand names, and not to be peer reviewed.⁸¹ These activities suggest questionable conduct by the drug companies. However, many believe that medical researchers should continue to interact with the pharmaceutical industry.^{79, 82, 83}

Should the health research community take a different stand with regard to interactions with the tobacco industry? We would argue that researchers and their institutions should not interact with the tobacco industry. Independent research, as well as the tobacco companies' own internal documents, point to an industry that has systematically “suppress[ed], manipul[at]ed and distort[ed] the scientific record”,⁸⁴ and continues to do so.⁸⁵ Although some tobacco industry-funded research is of high quality,³² the work it sponsors on the risks of active and passive smoking tends not to be^{32, 50, 52}; the higher quality research focuses on substances other than tobacco as a cause of adverse health outcomes, thereby continuing to downplay the effects of tobacco on health. In addition, the tobacco industry attacks researchers who publish findings that are antithetical to the industry's financial interests.^{86, 87} Moreover, tobacco products are not ordinary consumer commodities in that they are addictive, toxic, and lethal to half their long-term users when used as intended by their manufacturers^{1, 5, 88-91}; unlike other companies faced with information about health risks of their products, the tobacco industry has not withdrawn its products from the market.⁹²

Today we know enough about the unethical activities of the tobacco industry to advocate severing all ties between the tobacco companies and the academic and health research enterprise. Although guidelines have been advanced for industry-sponsored research—for example, refs⁹³⁻⁹⁷, they are not sufficient when dealing with the tobacco industry; for example, they do not address the *topics* of research funded by private interests, nor many of the other relationships between universities and the tobacco industry (figure).

Some may say that restricting a source of funding stifles academic freedom; however, we would argue that this limitation on academic freedom is warranted. It is the scientist's “obligation to . . . identify real health problems and promote their resolution”⁹⁸ and the institution's obligation “to fulfill its legal and ethical responsibilities to the community of scholars

and society at large".⁹⁹ The evidence shows that the tobacco industry deliberately works to obstruct these obligations.

Research and its potential impact

The extent of institutional dependence on the tobacco industry should be documented and monitored over time. The explicit policies of medical schools, schools of public health, and universities regarding research funding and donations from the tobacco industry, and investment in tobacco stocks have not been systematically investigated, nor have the policies and practices of professional associations and non-governmental health funding agencies with tobacco control mandates been studied. Further, the extent to which tobacco industry officials and board members sit on the boards of health-related institutions, and vice versa, has not been documented.

With explicit information, health research funding agencies and organisations might be in a better position to develop and implement policies that account for and discourage such conflicts. For example, previous research on lobbyists who were employed by both the tobacco industry and health organisations led to widespread discussions in many health organisations and in the media about severing such relationships, with the clear potential for advancing tobacco control efforts.^{100 101}

Conclusion

There are a number of policy options for severing links between the tobacco industry and the academic and health research enterprise. Now is an opportune time to consider these options and address the addiction of this enterprise to all forms of tobacco industry ties. There can no longer be any doubt that this is a dishonest and unethical industry, whether by rational design or otherwise.¹⁰² The academic and health research enterprise must consider its role in this unfolding public health drama. In an analysis of the ethical issues in tobacco industry research funding, Bolinder concluded that "every medical researcher or physician who uses funding from the tobacco companies cannot escape the fact of lending his or her name to the manufacture of a lethal product."²⁷ We would extend this conclusion to academic and health-related institutions and organisations. We urge colleagues in these settings to demand that the issue of dependence on the tobacco industry in all its forms be explicitly put on policy agendas of their institutions and organisations.

We thank the peer reviewers for their comments and helpful suggestions. None of the authors has accepted any form of financial support from the tobacco industry.

JOANNA E COHEN
MARY JANE ASHLEY
ROBERTA FERRENCE
JOAN M BREWSTER

*Ontario Tobacco Research Unit, 33 Russell Street,
Toronto, Ontario, M5S 2S1, Canada;
jcohen@arf.org*

ADAM O GOLDSTEIN
*Department of Family Medicine and the Cecil G Sheps
Center for Health Services Research,*

*University of North Carolina at Chapel Hill,
Chapel Hill, North Carolina, USA*

Correspondence to: J Cohen

- 1 Peto R, Lopez A, Boreham J, et al. *Mortality from smoking in developed countries, 1950–2000*. Oxford: Oxford University Press, 1994.
- 2 Murray CJL, Lopez AD. Evidence-based health policy—lessons from the Global Burden of Disease Study. *Science* 1996;274:740–3.
- 3 Fielding JE. Revealing and reversing tobacco industry strategies. *Am J Public Health* 1996;86:1073–5.
- 4 Glantz SA, Barnes DE, Bero L, et al. Looking through a keyhole at the tobacco industry. The Brown and Williamson documents. *JAMA* 1995;274:219–24.
- 5 West R. Withdrawing respect from the tobacco trade. *Addiction* 1997;92:133–5.
- 6 Hurt RD. Buying credibility. *Addiction* 1997;92:521–2.
- 7 Slama K. What would be too high a price to pay? *Addiction* 1997;92:522–3.
- 8 Chapman S. Buying respectability. *BMJ* 1996;312:1098–9.
- 9 Cancer Research Campaign. *Breaking addiction to tobacco funding. Code of practice on tobacco industry funding of research*. London: Cancer Research Campaign, 1997.
- 10 Anon. Taking money from the devil (editorial). *BMJ* 1985;291:1743–4.
- 11 Gibson B. An introduction to the controversy over tobacco. *J Soc Issues* 1997;53:3–11.
- 12 Wayne L. Business is biggest campaign spender, study says. *New York Times* 1996 Oct 18:A1, A26.
- 13 Evenson B, Wills T. Banks biggest of party backers: tobacco companies also high on list. *Montreal Gazette*, 1997 Jul 8:A10.
- 14 Canadian Department of Finance. *Tobacco taxes and consumption*. Ottawa: Department of Finance, 1993.
- 15 Greising D, Himelstein L, Carey J, et al. Does tobacco pay its way? *Business Week*, 1996 Feb 19:89–90.
- 16 McKenna B. Cigarette companies buy their allies. (*Toronto Globe and Mail* 1996 Aug 19:A6).
- 17 Warden J. UK adheres to Formula One exemption. *BMJ* 1997;315:1397.
- 18 Carnell D. Medical Research Council unit takes tobacco cash. *BMJ* 1996;313:577.
- 19 Masood E. Scientists split over tobacco industry research funding. *Nature* 1996;383:5.
- 20 Williams N. Tobacco funding debate smolders. *Science* 1996;274:28.
- 21 Anon. Tobacco funding for academics. *BMJ* 1996;312:721–2.
- 22 Lewison G, Dawson G, Anderson J. Support for UK biomedical research from tobacco industry. *Lancet* 1997;349:778.
- 23 Cohen J. Tobacco money lights up a debate. *Science* 1996;272:488–94.
- 24 Engelhardt Jr HT. Pro: the search for untainted money. *Am J Respir Crit Care Med* 1995;151:271–2.
- 25 Proctor C. Support for UK biomedical research from tobacco industry. *Lancet* 1997;349:1329.
- 26 Smith R. Beyond conflict of interest: transparency is the key. *BMJ* 1998;317:291–2.
- 27 Bolinder G. Tobacco research funded by the tobacco industry—an ethical conflict. *Addiction* 1997;92:1071–5.
- 28 Bero L, Barnes DE, Hanauer P, et al. Lawyer control of the tobacco industry's external research program. The Brown and Williamson Documents. *JAMA* 1995;274:241–7.
- 29 Wolinsky H. When researchers accept funding from the tobacco industry, do ethics go up in smoke? *NY State J Med* 1985;85:451–4.
- 30 Warner KE. Tobacco industry scientific advisors: serving society or selling cigarettes? *Am J Public Health* 1991;81:839–42.
- 31 Bloch M. Tobacco industry funding of biomedical research. *Tobacco Control* 1994;3:297–8.
- 32 Barnes DE, Bero L. Industry-funded research and conflict of interest: an analysis of research sponsored by the tobacco industry through the Center for Indoor Air Research. *J Health Politics Policy Law* 1996;21:515–42.
- 33 Motluk A. The dirtiest dilemma of all. *New Scientist* 1996;151:12–13.
- 34 Turner C, Spilich GJ. Research into smoking or nicotine and human cognitive performance: does the source of funding make a difference? *Addiction* 1997;92:1423–6.
- 35 Barnes DE, Bero LA. Why review articles on the health effects of passive smoking reach different conclusions. *JAMA* 1998;279:1566–70.
- 36 Dyer C. Tobacco company set up network of sympathetic scientists. *BMJ* 1998;316:1555.
- 37 Concar D, Day M. Undercover operation: a tobacco industry memo describes a network of influential moles. *New Scientist* 1998 May 16:4.
- 38 Davis RM. The ledger of tobacco control: Is the cup half empty or half full? *JAMA* 1996;275:1281–4.
- 39 West R. Addiction, ethics and public policy. *Addiction* 1997;92:1061–70.
- 40 Berridge V. Why have attitudes to industry funding of research changed? *Addiction* 1997;92:965–8.
- 41 Vainio H, Sasco AJ. A smoke screen to keep the controversy alive. *Scand J Work Environ Health* 1997;23:401–2.
- 42 Smith GD, Phillips AN. Passive smoking and health: should we believe Philip Morris's "experts"? *BMJ* 1996;313:929–33.

- 43 Walsh RA, Sanson-Fisher RW. What universities do about tobacco industry research funding. *Tobacco Control* 1994; 3:308-15.
- 44 Blum A. Ethics of tobacco-funded research in US medical schools. *Tobacco Control* 1992;1:244-5.
- 45 Associated Press. Scientists defend RJR \$1 million for study of cigarettes. *Charlotte (North Carolina) Observer* 1997 Feb 9:B3.
- 46 Associated Press. Reynolds endows chair at NCCU. *Raleigh (North Carolina) News and Observer* 1995 Oct 15:B3.
- 47 RJ Reynolds. <http://www.asms.org/emp_1_30_98_rjr.html> 1998.
- 48 Schmidt S. Tobacco ties haunt U of T. *University of Toronto Varsity* 1998 Jan 15:1-2.
- 49 Muscati S. U of T builds on ties with tobacco giant. *University of Toronto Varsity* 1996 Sep 3:1-2.
- 50 Bero LA, Galbraith A, Rennie D. Sponsored symposia on environmental tobacco smoke. *JAMA* 1994;271:612-7.
- 51 Ecobichon DJ, Wu JM, eds. *Environmental tobacco smoke: proceedings of the international symposium at McGill University 1989*. Lexington, Kentucky: Lexington Books, 1990.
- 52 Barnes DE, Bero LA. Scientific quality of original research articles on environmental tobacco smoke. *Tobacco Control* 1997;6:19-26.
- 53 Cunningham R. *Smoke and mirrors. The Canadian tobacco war*. Ottawa: International Development Research Centre, 1996.
- 54 Rice D. UNC holds seminars on tobacco control. *Winston-Salem (North Carolina) Journal* 1995 Jul 15:A1.
- 55 Valpy M. Misbegotten values times three. (*Toronto Globe and Mail* 1997 Feb 25:A15).
- 56 United States Tobacco Company. <<http://www/shareholder.com/ust/news/121197g.htm>>, 1997.
- 57 RJ Reynolds. <<http://www.rjrnabisco.com>>, 1997.
- 58 Stancill J. UNC board picks new chairman. *Raleigh (North Carolina) News and Observer* 1998 Jul 11:A1.
- 59 Schmidt S. Faculty turns down tobacco cash. *University of Toronto Varsity* 1998 Mar 26:1-2.
- 60 Mayor S. Hong Kong University turns down tobacco money. *BMJ* 1997;314:169.
- 61 American Public Health Association. Discouraging the Solicitation and Acceptance of Funds from Alcohol and Tobacco Producers. Resolution 9411. *Am J Public Health* 1995;85:446.
- 62 Investor Responsibility Research Center. Who's divested tobacco stocks? *Investor's Tobacco Reporter* 1997;1:1-4.
- 63 Anon. Campaign carried to CREF's annual meeting in New York. Newsletter No 1. Ann Arbor, Michigan: Educators for Tobacco-Free Investments by TIAA-CREF, 1997:1.
- 64 PR Newswire. C Everett Koop and INFACCT urge TIAA-CREF shareholders to vote for tobacco divestment. 3 November 1997.
- 65 Deithelm PA. WHO pension fund goes tobacco free. GLOBALink communication, 29 June 1998.
- 66 Wise J. Cancer charity takes stand against tobacco industry. *BMJ* 1997;315:967.
- 67 Lund KE. No money to researchers funded by tobacco. GLOBALink communication, 15 June 1998.
- 68 GLOBALink. <<http://www.globalink.org/gt/eu-docs/9807hayes.html>>, 1998.
- 69 Anon. Cancer group is upset over gift because of link to Philip Morris. *New York Times* 1998 Jun 10:A22.
- 70 Roberts J, Smith R. Publishing research supported by the tobacco industry. *BMJ* 1996;312:133-4.
- 71 Scally G. BMJ should come off the fence. *BMJ* 1996; 312:773.
- 72 Marks DF. A higher principle is at stake than simply freedom of speech. *BMJ* 1996;312:773-4.
- 73 Connolly MJ. It's folly to allow the enemy access to your camp. *BMJ* 1996;312:774.
- 74 Wright DS. Not to publish research is a slur on those who work for the industry. *BMJ* 1996;312:774.
- 75 Caplan AL. Con: the smoking lamp should not be lit in ATS/ALA publications. *Am J Respir Crit Care Med* 1995;151:273-4.
- 76 Anon. AMA bearish on tobacco stocks. *Can Med Assoc J* 1996;155:1721.
- 77 Canadian Medical Association. Tobacco and health. Policy summary. *Can Med Assoc J* 1997;156:240A-C.
- 78 Hillman AL, Eisenberg JM, Pauly MV, et al. Avoiding bias in the conduct and reporting of cost-effectiveness research sponsored by pharmaceutical companies. *N Engl J Med* 1991;324:1362-5.
- 79 Brennan TA. Buying editorials. *N Engl J Med* 1994; 331:673-5.
- 80 Stelfox HT, Chua G, O'Rourke K, et al. Conflict of interest in the debate over calcium-channel antagonists. *N Engl J Med* 1998;338:101-6.
- 81 Bero LA, Galbraith A, Rennie D. The publication of sponsored symposia in medical journals. *N Engl J Med* 1992;327:1135-40.
- 82 Miller K, Gouveia WA, Barza M, et al. Undesirable marketing practices in the pharmaceutical industry. *N Engl J Med* 1985;313:54.
- 83 Peart WS. The pharmaceutical industry: research and responsibility. *Lancet* 1980 Aug 30:465-6.
- 84 Todd JS, Rennie D, McAfee RE, et al. The Brown and Williamson documents: where do we go from here? *JAMA* 1995;274:256-8.
- 85 Bero LA, Glantz SA. Tobacco industry response to a risk assessment of environmental tobacco smoke. *Tobacco Control* 1993;2:103-13.
- 86 DiFranza JR. If the science is irrefutable, attack the scientist. *Tobacco Control* 1992;1:237-9.
- 87 Fischer P. Science and subpoenas: when do the courts become instruments of manipulation? *Law and Contemporary Problems* 1996;59:159-67.
- 88 US Department of Health and Human Services. *The health consequences of smoking: nicotine addiction. A report of the Surgeon General, 1988*. Rockville, Maryland: Public Health Service, Centers for Disease Control, Office on Smoking and Health, 1988. (DHHS Publication No (CDC) 88-8406.)
- 89 Slade J, Connolly GN, Davis RM, et al. Report of the tobacco policy research study group on tobacco products. *Tobacco Control* 1992;1(suppl):S4-9.
- 90 Daynard RA, Aurejarvi E, Barrett D, et al. Report of the tobacco policy research study group on tobacco litigation. *Tobacco Control* 1992;1(suppl):S37-40.
- 91 Moore MC, Mikhail CJ. A new attack on smoking using an old-time remedy. *Public Health Rep* 1996;111:192-203.
- 92 Pollock D. Forty years on: a war to recognize and win. How the tobacco industry has survived the revelations on smoking and health. *Br Med Bull* 1996;52:174-82.
- 93 Varrin RD, Kukich DS. Guidelines for industry-sponsored research at universities. *Science* 1985;227:385-8.
- 94 Witt MD, Gostin LO. Conflict of interest dilemmas in biomedical research. *JAMA* 1994;271:547-51.
- 95 Chren MM. Independent investigators and for-profit companies: guidelines for biomedical scientists considering funding by industry. *Arch Dermatol* 1994;130:432-7.
- 96 Council on Scientific Affairs and Council on Ethical and Judicial Affairs. Conflicts of interest in medical center/industry research relationships. *JAMA* 1990;263:2790-3.
- 97 International Committee of Medical Journal Editors. Conflict of interest. *Lancet* 1993;341:742-3.
- 98 Bond GG. Ethical issues relating to the conduct and interpretation of epidemiologic research in private industry. *J Clin Epidemiol* 1991;44(suppl 1):29S-34S.
- 99 Nobel JJ. Comparison of research quality guidelines in academic and nonacademic environments. *JAMA* 1990; 263:1435-7.
- 100 Goldstein AO, Bearman NS. State tobacco lobbyists and organizations in the United States: crossed lines. *Am J Public Health* 1996;86:1137-42.
- 101 Becker C. In some lobbies, smoking allowed. (*Trenton, New Jersey) Home News Tribune* 1998 Feb 18:A1.
- 102 Bella DA. Organized complexity in human affairs: the tobacco industry. *J Business Ethics* 1997;16:977-99.