Carcinogen-in-a-Can

Charlotte Gray's article "Secondhand-smoke story goes up in flames" (*CMAJ* 1998;158[9]:1178-80) demonstrated how entirely debased the pro-smoking lobby can be, and it also outlined the problems that can arise when scientific reasoning is applied to what is primarily an ethical problem. To demonstrate just how unsound arguments in favour of smoking in public can be, complete the following simple thought experiment.

Imagine finding a novel carcinogen that at modest levels clearly, in the words of the tobacco industry, is only "associated" with lung cancer in animals and humans when inhaled as an aerosol. Reduce the concentration down a notch or two, and then package the carcinogen in an inert and harmless base in an aerosol container. This new product can be marketed as Carcinogen-in-a-Can (CIAC).

It is simple to use the product. When people near you light up, simply whip out your CIAC and spray it liberally in their direction, providing the necessary reassurance that although the agent has been associated with lung cancer in rats and humans, studies to date have not conclusively demonstrated that the agent causes cancer when inhaled at low levels. In the event that low levels are shown to be harmful, you can simply reduce the concentration of the product, arguing once again that it is now safe.

It is possible that the smokers near you will be upset by your apparently thoughtless and self-centred behaviour, but they will undoubtedly be relieved to hear that this senseless and ill-mannered act gives you substantial enjoyment. (The more individuals who use CIAC, the more acceptable its use will become.)

To argue that smokers should have a "right" to expose others to a known carcinogen simply to satisfy their desire for a cigarette defies any system of ethical reasoning. In a civilized society, the ability of any individual to interfere with the well-being of another stops at the skin — which is why there never has been and never will be a rational argument in favour of smokers having a widespread right to smoke in public.

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Secondhand smoke and cancer: Where's the proof?

In her desire to refute a *Daily Telegraph* article that claimed secondhand smoke was noncarcinogenic, Charlotte Gray resorted to hyperbole in her own article, "Secondhand-smoke story goes up in flames" (*CMAJ* 1998;158[9]:1178-80). Some of the inferences that Victoria MacDonald drew from a World Health Organization (WHO) study were unjustified, but to say that she has "no understanding of scientific practices" appears manifestly untrue, if the subsequent rebuttal that appeared in the Mar. 15, 1998, issue of the *Sunday Telegraph* is any indication.

Gray describes the WHO study as a small, run-of-the-mill study involving exposure to secondhand smoke that consisted mostly of tobacco-lobby spin and a lot of egregious mistakes. To our knowledge, the study has not been published. How does Gray know about the egregious mistakes? Has she checked the statistics? [On Mar. 9, the WHO released the following statement: "In February 1998, in accordance with usual scientific practice, a paper reporting the main study results was sent to a reputable scientific journal for consideration and peer review. That is why the full report is not yet publicly available. Under the circumstances, however, the authors have agreed to make an abstract available to the media." WHO also said that the media — the *Daily Telegraph* — had "completely misrepresented" the study and its results. —Ed.]

Our impression of the WHO and its published studies and statements is that they are carefully considered and contain sound science, although they sometimes lapse into "bureaucratese." In the study, the relative risk (RR) of a nonsmoker who lives in a house with a smoker was given as 1.16, with confidence intervals of 0.093 to 1.44. Thus, it is entirely possible that the RR would be less than that expected — below 1.0 — but it also could be appreciably higher than

1.16. This suggests that the figure is not statistically significant, but the statistical and epidemiologic fraternities prefer to give their results with the appropriate confidence intervals rather than tests of significance.

Gray also quotes Neil Collishaw of WHO's Tobacco or Health Unit, who points out that a major meta-analysis of 40 studies of passive smoking in lung cancer was published in the *British Medical Journal* in 1997. Unfortunately, positive studies are much more likely to be included in meta-analyses than negative ones. Meta-analyses need to concern themselves not only with published studies but also with other studies that for one reason or another have not been published. Much more importantly, meta-analyses need to review and check the raw data of all published investigations to ascertain whether the data have been analysed appropriately or manipulated to support a particular point of view.

In the hospital where we work, we see 5 or 6 new lung cancer patients each week, or about 250 a year. Yet over the past 20 years or more we have seen only 3 definite cases of primary lung cancer in life-long nonsmokers. It also needs to be emphasized that many smokers, especially those seeking compensation for work-related conditions, are economical with the truth when it comes to their smoking habits. One study indicated that 25% of the smoking histories obtained from subjects exposed to asbestos who were dying of lung cancer were completely incorrect.[1] Many of the men denied smoking when applying for benefits, but an about-turn took place once histories were taken from relatives after the subjects died. It is highly probable that some such alleged nonsmokers are included in most epidemiologic studies.

We loathe and detest tobacco companies for their evasion, lies and attempts to trick adolescents and others into taking up smoking. However, the rejection of truth and the acceptance of unproven hypotheses to further one's concept of ethics or social justice is wrong too. Many studies involving secondhand smoke are not convincing, and answers about whether it causes lung cancer are far from established. Unfortunately, it has become customary to torture the data until they confess. We need more science, less hyperbole and less enthusiasm for unproven points of view. We support regulations banning smoking in airplanes, hospitals and public places, not because secondhand smoke causes lung cancer but because many nonsmokers suffer discomfort as a result of the habit.

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Reference

1. Berry G, Newhouse ML, Antonis P. Combined effects of asbestos and smoking on mortality from lung cancer and mesothelioma in factory workers. *Br J Ind Med* 1985;42:12-8.

[The author responds]:

I quite agree with the concern that any report of a scientific study should stick as close to the given facts as possible. However, in this instance I was reporting not on the WHO study itself, which had not yet completed the peer-review process, but on the way the popular press had already handled it. My reference to "egregious mistakes" was therefore referring to the *Daily Telegraph* reporter's interpretation of the WHO study. I was particularly concerned that the *Daily Telegraph* story did not contain either any comments from an objective scientific source or any reactions from antismoking advocates. Why was that? Nor did any of the subsequent reports in Canadian newspapers include such comments, although in both Ottawa and Vancouver, experts were consulted. These are the points I made in the article. They are also the points that have been made in separate complaints to the press councils of both Ontario and BC. There was indeed hyperbole surrounding this story, but it was found in the pages of the *Daily Telegraph* and its Canadian cousins, not in *CMAJ*.

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Evidence for effectiveness of home care

We agree with Dr. Aidan Byrne, who indicated in his letter "Where's the evidence for home care?" (*CMAJ* 1998;159[2]:135-6) that health care services should be provided on the basis of evidence for their effectiveness and their costs. However, the evidence (or lack thereof) on the cost-effectiveness of home care is not as clearcut as Byrne suggests.

In 1996, the Saskatchewan Health Services Utilization and Research Commission conducted a comprehensive and rigorous review of the literature on the cost-effectiveness of home care.[1] This study was cited by Dr. Peter Coyte of the Institute for Clinical Evaluative Sciences, to whom Dr. Byrne refers for support for his position. We found that for institutional care (i.e., long-term or nursing home care), there was indeed a lack of evidence that home care is a cost-effective alternative. However, with reference to hospital care, we found that for specific services such as intravenous antibiotic therapy, there is no doubt: home care *is* a cost-effective alternative. For palliative care, intravenous therapy for pain management and intravenous rehydration therapy, the research indicates that