LETTERS TO THE EDITOR

Letters intended for publication should be a maximum of 400 words and 10 references and should be sent to Simon Chapman, deputy editor, at the address given on the inside front cover. Those responding to articles or correspondence published in the journal should be received within six weeks of publication.

Passive smoking and the tobacco industry

To the Editor – Repace and Lowrey's article on passive smoking in the workplace[1] claims to provide a rebuttal to arguments on the subject of environmental tobacco smoke (ETS) used by the tobacco industry. The authors imply or, in cases, specifically state that the industry takes quotations, examples and studies totally out of context in formulating its arguments. I would argue that the industry does not do so, but that in fact it is Repace and Lowrey who could be accused of doing so in this article, in the enthusiasm of their attempt to discredit the scientific acumen of the tobacco industry.

The paper is riddled with statements that simply cannot be justified by the current scientific data. They claim, for example, that "Epidemiological studies of passive smoking show that smoking by the spouse is a cause of lung cancer in nonsmoking women." They refer to a study (much criticised in the scientific press) by Fontham and colleagues[2] that, at the time of writing, was the largest case-control study ever done and that reported a small, but statistically significant increase in risk. However, at the time a study had been carried out by Wu-Williams *et al.*,[3] which differed in size from the Fontham study by only three cases, and reported a statistically significant *reduction* in risk for those exposed to ETS! Both studies have since been superceded by a larger case-control study by Brownson *et al.*, who report no statistically significant increase in risk for exposure to ETS during adulthood, by the spouse or at the workplace, or in childhood. This situation of conflicting data is typical of the ETS story; of the more than 30 studies currently published on this topic, the vast majority (around 80%) do not report a statistically significant association between spousal ETS exposure and lung cancer. Why do Repace and Lowrey fail to disclose these facts, unless it is because they can be accused of exactly the same bias that they assign to the tobacco industry?

Similarly, it is difficult to see how Repace and Lowrey can use this evidence to justify the claim that exposure to ETS other than by spousal smoking, for example in the workplace, must therefore also result in an increase in risk. Of the 12 studies that have investigated exposure to ETS in the workplace and an increased risk of lung cancer, again, 80% do not report a statistically significant increase in risk.

Looking at this evidence, it is difficult to see how the authors can criticise either the tobacco industry – or, for that matter, the many independent scientists (whether or not they consult for the tobacco industry) who have also questioned the evidence – for holding to the opinion that the case has not been proven. If this evidence applied to anything other than tobacco smoke, it would never have become a major public issue.

SHARON BOYSE
British-American Tobacco Company Ltd., Staines, United Kingdom

1 Repace JL, Lowrey AH. Issues and answers concerning passive smoking in the workplace: rebutting tobacco industry arguments. *Tobacco Control* 1992; 1: 208–219.
2 Fontham ETH, Correa P, Wu-Williams A, *et al.* Lung cancer in nonsmoking women: a multicenter case-control study. *Cancer Epidemiology Biomarkers and Prevention* 1991; 1: 35–43.
3 Wu-Williams AH, Dai XD, Blot W, *et al.* Lung cancer among women in north-east China. *Br J Cancer* 1990; **62**: 982–7.

In reply – In her letter to the editor protesting our indictment[1] of the tobacco industry's highly deceptive practices, we are grateful to Dr. Sharon Boyse of the British-American Tobacco Company (BAT) for providing us with several textbook illustrations of how the tobacco industry quotes scientific studies and methods out of context and ignores contradictory studies in formulating its arguments on the subject of environmental tobacco smoke (ETS).

The tobacco industry would have the public believe that statistical significance of epidemiologic studies is the gold standard to be used in judging the potency of suspected environmental carcinogens. Such a cavalier attitude toward public health is common among the tobacco industry and its consultants, and perhaps is a prerequisite for those who would successfully market tobacco products. However, standard scientific criteria employed by public health authorities for judging carcinogenicity employ the *total weight of evidence*, of which statistical significance is only one of many factors. One of the most important of these factors is biological plausibility: e.g., intentional exposure to tobacco smoke has been known for many decades to be a massive cause of lung cancer.[2,3] Moreover, there is plenty of statistical significance in passive smoking epidemiologic studies if one only looks for it. If only the highest ETS exposure categories are considered, for the 17 epidemiological studies of passive smoking and lung cancer (in Greece, Hong Kong, Japan, USA, Sweden, and China) where this information is reported, the odds ratio is 1.81 (90% confidence interval = 1.60–2.05), ($p < 0.000001$.[3] Perhaps such a p-value is not considered significant enough by the tobacco industry?

Boyse makes similar complaints about lack of statistical significance in workplace studies of passive smoking. However, in studies of passive smoking and lung cancer, the comparison of more-exposed non-smokers to less-exposed non-smokers, rather than to *unexposed* non-smokers, due to the pandemic pollution of buildings with tobacco smoke, decreases statistical significance and systematically depresses odds ratios.

To support the tobacco industry's argument that passive smoking does not cause lung cancer, Dr. Boyse cites a large case-control study of passive smoking and lung cancer among women in two industrial cities in north-east China by Wu-Williams *et al.*[4] which she correctly says reported a statistically significant reduction in lung cancer risk associated with exposure to ETS. However, in BAT's shameless quote-out-of-context, Boyse omits all mention of Wu-Williams' conclusion that "Perhaps in this study population the effect of environmental tobacco smoke was obscured by the rather heavy exposures to pollutants from coal-burning Kang, other indoor heating sources, and high levels of neighbourhood air pollution...." Boyse also conveniently ignores Wu-Williams'[4] *primary* finding that two-thirds of all cases of lung cancer in the study group resulted from heavy indoor air pollution from unvented coal-burning cooking and heating devices.

In further support of BAT's claim, Dr. Boyse cites a second large case-control study by Brownson *et al.*,[5] which she asserts found "no statistically significant increase in risk for exposure to ETS during adulthood, by the spouse or at the workplace, or in childhood." True. However, Boyse omits to say that Brownson *et al.*[5] *did* report statistically significant increases in risk for all subjects (lifelong non-smokers plus ex-smokers), and for lifelong non-smokers with heavy ETS exposure. Further, Boyse ignores all mention of the primary conclusion by Brownson that "Ours and other recent studies suggest a small but consistent increased risk of lung cancer from passive smoking. Comprehensive actions to limit smoking in public places and worksites are well-advised." Dr. Boyse also excludes two other new studies on passive smoking and lung cancer[7,8] (published earlier than the Brownson study[5]), which found statistically significant increases in lung cancer associated with passive smoking.

Thus, even while vehemently denying the practice of the selective citation and the out-of-context quote, the tobacco industry cannot refrain from their use. Perhaps for those who market tobacco, such practices have become as addictive as nicotine.

JAMES L REPACE
Bowie, MD 20720, USA
ALFRED H LOWREY
Seabrook, MD 20706, USA

1 Repace JL, Lowrey AH. Issues and answers concerning passive smoking in the workplace: rebutting tobacco industry arguments. *Tobacco Control* 1992; 1: 208–19.
2 International Agency for Research on Cancer (1979). Chemicals and industrial processes associated with cancer in humans, *IARC monographs* 5, 1–20, suppl. I.
3 US Environmental Protection Agency. *Health Effects of Passive Smoking: Assessment of Lung Cancer in Adults and Respiratory Disorders in Children, 1992.* Final Report. Washington, DC.
4 Wu-Williams AH, Dai XD, Blot W, *et al.* Lung cancer among women in north-east China. *Br J Cancer* 1990; **62**: 982–7.
5 Brownson RC, Alavanja CR, Hock ET, Loy TS. Passive smoking and lung cancer in nonsmoking women. *Am J Publ Health* 1992; **82**: 1525–30.
6 Stockwell HG, Goldman AL, Lyman GH, *et al.* Environmental tobacco smoke and lung cancer risk in nonsmoking women. *J Natl Cancer Inst* 1992; **84**: 1417–22.
7 Trichopoulos D, Mollo F, Tomatis L, *et al.* *JAMA* 1992; **268**: 1697–701.

Smoke Screen award

To the editor – In your editorial entitled "Tobacco sales in pharmacies: mixing good drugs and bad drugs,"[1] you suggested a number of useful ways to encourage pharmacies to stop selling tobacco. The Association for Nonsmokers–Minnesota (ANSR) in St. Paul, Minnesota, recently tried another tactic.

ANSR presented its first annual Smoke Screen award to Walgreen Drug, the domi-