

Book Reviews

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Breast Cancer Screening. International Agency for Research on Cancer (IARC) Handbooks of Cancer Prevention. Vol. 7. Harri Vainio and Franca Bianchini (eds). Lyon: IARC Press, 2002, pp. 229, Euro 40.00. ISBN: 92-832-3007-8

This book is written by a working group convened by The International Agency for Research on Cancer. The agency tasked the group to ascertain that all appropriate data had been retrieved; to select the data relevant for evaluation on the basis of scientific merit; to prepare accurate reviews of data to allow the reader to follow the reasoning of the working group; to evaluate the efficacy and effectiveness of the screening procedure; to summarize the potential adverse consequences of screening; to prepare recommendations for research and for public health action; and to prepare an overall evaluation of the screening procedure at the population level.

By and large, the authors have lived up to their objectives and have discussed carefully the basis for their reasoning, backed up by relevant references. The book is comprehensive, very well written, and highly relevant for everyone with an interest in cancer screening. The authors make the important point on p. 91 that 'observational studies based on individual screening history, no matter how well designed and conducted, should not be regarded as providing evidence of an effect of screening.' There is no index in the book that allows the readers to find quickly what they are looking for.

My book review could have ended here were it not for some essential issues and data that the authors have left out.

The authors note that overdiagnosis and overtreatment is an inevitable consequence of screening, but they omit to mention the data in a recent systematic review of the randomized trials of screening that documented a considerably increased use of radiotherapy, tumourectomy, and mastectomy. It is strange that the authors discuss the level of overdiagnosis but not the level of overtreatment, which is more interesting. I also missed a reference to the recent systematic review by the Early Breast Cancer Trialists' Collaborative Group that showed that radiotherapy in women who have their cancers identified by screening is likely to increase overall mortality, but since these women die from heart problems, they are not counted as breast cancer deaths.

There are other mechanisms for misclassification of cause of death that could bias the results in the screening trials in favour of screening. The authors acknowledge this problem, but do not mention or discuss the finding that overall cancer mortality—including breast cancer mortality—is the same in the screened groups as in the control groups in the screening trials, contrary to what one would expect, given the claimed mortality reductions in breast cancer.

There are also important omissions in the working group's presentation of the screening trials. Curiously, for example, the authors state that there were no differences at baseline for four prognostic factors in the New York study, but fail to mention that three other baseline characteristics were reported, and that

there were significant differences for those (which would not be expected if the randomization had been adequate and post-randomization exclusions were unbiased). The working group concludes that the New York trial is valid and argues that prior breast cancers (existing before the randomization date) were adequately excluded from both the study group and the control group. However, the primary investigator of the New York study admitted in a published conference proceeding more than 20 years after the study started that some prior breast cancer cases among the controls were unknown to the investigators and should have been excluded. This fact, together with the poor mammographic technique in this old trial, explains why the number of cancers identified, contrary to what one would expect, was very similar in the screened group and in the control group.

What I miss most in this book is a discussion of ethical issues. Nowhere have the authors dealt with ethics, although such issues are very important for cancer screening. There is a difference between what we can do (science) and what we should do (ethics). And what information should be presented to women who contemplate whether or not to attend a screening programme, and how? Should the women be told that, most optimistically, invitation to screening reduces breast cancer mortality by 30%, or saves the life of one woman out of 1000 after 10 years, or prolongs life by an average of 2 days among those invited? These are all scientifically equivalent statements, but studies have shown that they will lead to very different perceptions of the benefit of screening. Or should women be told that the survival benefit is questionable and has not been proved, whereas overdiagnosis and overtreatment have? At present, the attitude is paternalistic and women are not given a fair chance of balancing possible benefits and harms before deciding what they wish to do. This lack of truly informed consent is perhaps the biggest problem of all with breast cancer screening.

PETER C GÖTZSCHE

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Interpreting and addressing inequalities in health: from Black to Acheson to Blair to ...? Professor Robert Evans. London: Office of Health Economics, May 2002, pp. 92, ISBN: 1-899040-32-3.

When I was a left-wing medical student in the 1970s, Thomas McKeown's thesis that increasing life expectancy over the previous century owed more to improved social conditions than to medical intervention was a key theme in the radical critique of the contemporary medical profession. The social class gradient in mortality and other health indicators, exposed by Richard Wilkinson, Peter Townsend, and others, was another issue eagerly taken up by radical students. At a time when the medical profession was inclined towards a conservative approach, both in terms of biomedical theory and practice, and in its wider political outlook, these subversive views were generally ignored or marginalized.

How times change! Now that I have become a middle-aged general practitioner (GP), from every side I hear echoes of the radical themes of my youth. McKeown would surely turn in his grave to discover that he is now quoted by every anti-immunization zealot and his critical insights used to justify reactionary prejudices. The rhetoric of health inequalities is now mobilized to justify a wide range of government social policies, from Sure Start to initiatives against teenage pregnancy. In his lecture to the Faculty of Public Health last November, Health Secretary Alan Milburn declared his intention to tackle inequalities in access to health services, invoking the 'inverse care law' formulated by the communist GP Julian Tudor Hart some 30 years earlier. Controversies around health inequalities are now a prominent feature of the general medical press as well as of specialist epidemiological journals.

In his (expanded and updated) June 2000 lecture to the Office of Health Economics, the Canadian economist and health policy advisor Robert Evans traces the evolution of the debate about health inequalities. Professor Evans provides a useful survey of attempts to discover the mediating links between social hierarchies and health outcomes—and of the problems of formulating policies to reduce inequalities. Yet he neglects the key contextual factor: the transformation in the salience of class in Society over the past two decades.

Between 1848 and 1989 class was the critical cleavage of capitalist society. For upholders of the established order, the working class was the major threat to stability and prosperity; hence it was an object of fear and hatred, and of increasingly sophisticated study and statistical analysis. For opponents of the capitalist system, the working class was the most powerful countervailing social force; for many, it was the agency that offered the promise of social transformation. The tension between Capital and labour, usually contained through a complex system of social institutions and practices, occasionally erupting in industrial and political conflict, provided the organizing principle of social and political life. In the Cold War era, it also structured international relations and the polarization between West and East.

Mrs Thatcher's censure of the Black Report in 1980 confirmed her recognition that any exposure of the socially oppressive character of capitalist society had an inherently subversive character. After the defeat of the miners and the trade union movement in the mid-1980s and the collapse of the Soviet Union and the Eastern Bloc in 1989–1990, the British government could begin to take a more relaxed approach to matters of class, and even of its health consequences. Yet, when launching the Health of the Nation policy in 1992, Conservative ministers still could not utter the word 'inequalities', preferring the anodyne 'variations'.

The collapse of socialism as an alternative to capitalism at home and abroad meant that class conflict no longer took a political form (the subsequent transformation of the Labour Party and the collapse of the Conservative Party were consequences of this). Class could now safely become the object of academic study and even medical intervention. However, it was not until the advent of New Labour in 1997 that health inequalities became a prominent feature of government policy. Though some radicals celebrated the fact that the government seemed to be taking up a cause that had been pursued by left wing academics and activists in the long years in opposition, the old rhetoric concealed the substance of the new policy. It was

striking that Tony Blair's enthusiasm for tackling inequalities in the sphere of health followed his insistence that New Labour abandon its historic constitutional commitment to equality (Clause IV) and any suggestion of a redistributionist tax and benefit policy. As Evans notes, this was the dog that failed to bark in response to Donald Acheson's independent inquiry into inequalities in 1998. This failure was all the more conspicuous given that disparities of income had increased substantially through the 1980s and 1990s.

Evans appraises the New Labour approach to health inequalities as 'rhetorically powerful, but politically very cautious'. Not only has Blair ducked income redistribution, he has also ignored Acheson's recommendations in relation to transport and has even stalled on his proposals on water fluoridation. But there are sins of commission as well as of omission. Whilst the menace of the working class may have receded, it has been replaced by a perception of a more diffuse threat arising from trends towards social disintegration. The government's focus on issues such as crime and drugs, anti-social behaviour, teenage pregnancy, and child poverty reflects its preoccupation with problems that appear to be the consequence of the breakdown of the family and of traditional communities. Under the banner of tackling health inequalities, the government is promoting a range of initiatives—such as Sure Start, neighbourhood renewal, and remedial education programmes—that have an intrusive and authoritarian character.

If hearing the old radical rhetoric now makes me queasy, the policies it seeks to legitimize are likely to make life worse—and less healthy—for those on the receiving end.

MICHAEL FITZPATRICK

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The Contextual Determinants of Malaria. *Casman EA, Dowlatabadi H (eds). Washington, DC: Resources for the Future, 2002, pp. 382, US\$75.00. ISBN: 1-891853-19-8.*

As the physicist Niels Bohr put it, 'prediction is very difficult ... especially about the future'. This book takes the only logical approach and begins by analysing the history of malaria around the globe and attempting to identify the current determinants of malaria risk. The authors identify determinants far beyond the purely biomedical to include climate, population movement, demography, and economic and social development. The lessons drawn from the past and from current thinking form the basis for the development of a systematic integrated assessment framework to aid in the prediction of malaria risk. The major premise of the book is that while climate and subsequent changes in climate will affect a region's potential for malaria, it is the actions of humans that determine whether the risk of malaria is realized. As a social scientist working in the public health field, this recognition of economic and social factors as determinants in the spread and severity of diseases is a sight for sore eyes.

The editors identify one of the main aims of the book as providing advances in understanding of the malaria and climate linkages. The regional assessments go a long way toward meeting this aim and provide a useful overview of the malarial and environmental contexts of the various regions as well as some analysis of the causes of the failures, and all too rarely, the successes

of malaria control. According to the assessments, biomedical responses have had a very patchy history of reducing malaria risk, particularly in the long term. However, this assertion does not go uncontested; Roberts, in his assessment of the Americas, highlights DDT spraying as the key determinant in malaria risk. This argument is juxtaposed with the experience of Brazil where strategies focusing on treatment of high-risk populations have proved more effective. Such open debate adds value to the book as a whole and highlights the complexities of identifying determinants.

Given that the book aims to identify a range of contextual determinants, there are several areas that are not dealt with within any section of the book, but would appear to warrant discussion. For example, as Cox, Mouchet, and Bradley (Ch. 10) point out, the extremely efficient vectors active in sub-Saharan Africa have created a heavily infected population, who have in turn developed high levels of immunity. In such stable, holo-endemic areas, the authors argue, this high level of acquired immunity will mean that environmental and other changes have less impact. One issue that does not receive much attention in this discussion, but might be of interest to many readers, is the role of human immunodeficiency virus (HIV)/AIDS. Recent evidence demonstrates interactions between malaria and HIV infection, most notably that people living with HIV are more likely to experience clinical malaria.¹ Given high prevalence rates in sub-Saharan Africa, the role of HIV/AIDS as a determinant would also seem to deserve a mention.

Another issue that could have been useful for debate within the public health chapter is the ascendance of the sector-wide approach (SWAp). This new approach to aid where donors pool their funds within either central government or sector budget pots, aims to increase national ownership and sustainability of programmes within the health sector. Given the concern raised by several authors in this book that vertical malaria programmes with little local ownership are doomed to failure in the long-term, SWAp would appear to warrant further discussion. Furthermore, there has been criticism from those addressing specific diseases such as malaria, that while SWAp may not always be the most appropriate channel for aid, donors are proving inflexible in considering any other mechanism of funding.² Such a topical and controversial issue would have provided an interesting dimension to the discussions on the role of different approaches to public health in malaria control.

The framework presented in the final section of the book is a clear attempt to bring together the varied dimensions that are addressed throughout the chapters. By including changes in the public health, economic, social, and political spheres, it is hoped that projections for future malaria risk will be more accurate. The concept is admirable, however, including these determinants within one framework is clearly a considerable challenge. The danger lies in the condensing of highly complex political, economic, and social issues into computable variables. It is telling that within the examples given to illustrate how the framework could work in practice, political, economic, and social issues are dealt with in much less depth than throughout the rest of the book. This is also apparent within the synergy chapter, which aims to bring together the broad range of ideas and perspectives raised throughout the book. For example, poverty is continually cited as a key determinant of malaria risk. However, the word 'poverty' covers a wealth of ills—what types of poverty are

particularly risky and how does poverty interact with age, caste, gender etc. to increase or decrease malaria risk? These concepts need to be further analysed and unpacked before being usefully integrated within the framework. The authors do recognize that 'a model misses the point if it achieves computability at the price of ignoring difficult issues because they are difficult to estimate or integrate with other factors' (Ch. 18 p. 331). Let us hope that the added value of multiple perspectives is not lost and that any future developments of the framework build on the findings of this volume and recognize the true breadth and depth of the contextual determinants of malaria.

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HELEN ELSEY

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Biostatistical Genetics and Genetic Epidemiology. *Elston R, Olson J, Palmer L (eds). Chichester: Wiley, 2002, pp. 831, £195.00. ISBN: 0-47148631-0.*

This is a heavy weight—coming in at 1.9 kg—but it is worth its weight in gold. If you are attempting to get to grips with genetic epidemiology a bit late in the day, you have a lot of ground to cover. One of the most confusing aspects is learning the language of modern genetics—which differs in subtle ways from that used in animal and plant genetics. This book is based on Wiley's earlier publication, *Encyclopedia of Biostatistics*, but much of the basic statistical material has been excluded leaving the material likely to be of use in genetic epidemiology. The new material comprises 47 sections on genetics. The topics are arranged in alphabetical order and, to aid its use as a reference work, all indexed words are printed in bold which means finding what you are looking for is much easier. Perhaps the most useful chapter for an epidemiologist to read immediately is 'Disease-Marker Association' (pp. 206–17) which covers definitions of genetic markers, linkage disequilibrium, population stratification, and an excellent review of the pros and cons of different study designs. If you are uncertain what is meant by an allele, a haplotype, a polymorphism, or a genotype fear not. Clear definitions are provided, and unlike the many review articles, authors have the space to give sufficient detail and most entries give citations to relevant literature. Unusually, contributors range across the globe with contributions from authors based in India, Europe, and North America. This book should help ensure that both geneticists and epidemiologists learn to speak the same language—it is now my main source of reference for all matters statistical and seldom leaves my desk.

SHAH EBRAHIM

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Long Term Effects of Stroke. *Bogousslavsky J (ed.). New York: Marcel Dekker, 2002, pp. 344, US\$165.00. ISBN: 0-8247-0624-2.*

Epidemiologists seldom study the natural history of common diseases yet it is the consequences of disease that most concern patients and their doctors. This book covers much of the ground with chapters on assessing outcome, quality of life, recurrence, mortality, motor function, cognition and dementia, mood, therapeutics, sphincter disturbances, and economic issues. The ordering of chapters is rather idiosyncratic and their content is markedly variable, suggesting a rather too light touch in editing the authors' contributions. The opening chapter on outcomes is pedestrian and would have been better conceived with examples of the use and mis-use of the various scales and indexes that are used in stroke research. Choice of outcomes is critical and depends on what purpose they are to be put to, but despite including 112 citations in a chapter on assessing disability, no mention is made of the two simple questions used to assess outcome in the landmark International Stroke Trial of aspirin and heparin. The chapter titled 'Prognosis after Stroke' is concerned both with predictors of recurrence and with prevention of recurrence but this content is not highlighted for the causal reader. The chapters dealing with specific problems do not always deal explicitly with treatment or prevention; those concerned with mood, vascular dementia, and sphincter disturbances do, but for motor dysfunction and cognition nothing is said. It seems an odd choice to commission a chapter on pharmacological and cell-based therapies for stroke recovery covering such rarefied topics as basic fibroblast growth factor and neural stem cells and not have a chapter devoted to the single most effective intervention in stroke medicine—stroke units! This was an editorial decision as the topic 'could fill an entire book'. A chapter on cost-benefit issues does make passing reference to stroke units but discussion of the use of outpatient and home rehabilitation is missing. Most of the chapters represent the dying art of non-systematic review of their topic areas and, with the growth of the Cochrane Collaboration, one wonders for how much longer a market for such books will exist.

SHAH EBRAHIM

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Heart to Heart. The Twentieth Century Battle against Cardiac Disease. An Oral History. *Allen B Weisse. N.J. USA and London: Rutgers University Press, 2002, pp. 415, US\$35.00. ISBN: 0-8135-3157.*

'Lives of great men remind us
We can make our lives sublime,
And, departing, leave behind us
Footprints on the sands of time.'

It is not easy to define greatness but Allen Weisse, academic cardiologist and medical historian at the New Jersey Medical School, USA, has carried out a series of interviews over the past two decades with 15 men and 1 woman whom he considers to have contributed significantly to the diagnosis, treatment, and

prevention of heart disease. Those who did not achieve an interview but 'also ran', are listed separately with mini-biographies. All those interviewed are either American or spent their formative years in the US, one each originating from France, Germany, Austria, Argentina, and Holland. Non-Americans more familiar with their own cardiovascular 'greats' may feel somewhat deprived of attention.

Dr Weisse looks back over the 20th century with considerable pride in the achievements in cardiology and muted pride is a feature of many of the interviews recalling pioneering work in cardiac catheterization, cineangiography, ultrasound, and nuclear medicine. Those who broke new ground in open heart surgery, coronary artery bypass grafts, balloon angioplasty, and the use of stents tell us how they did it, often against considerable opposition or competition, and there is interesting argument about priorities in achievement. 'Off-pump' bypass procedures, ventricular assist devices, and the total artificial heart all make one wonder about the limits of technology, yet few of those interviewed ever seem to have entertained the possibility of failure. Perhaps that is one of the personal characteristics that leads to one becoming 'great'. Molecular cardiology and the introduction of genetically engineered substances into the coronary circulation and into the myocardium continue this cardiocentric paean to technology which concludes with some brief and very faint murmurs about the social and political aspects of medicine and the organization of the US health care system.

For those readers of this journal who might wonder about 20th century progress in the epidemiology and prevention of cardiovascular disease, there is an interview with Jeremiah Stamler, who brings a breath of fresh air to this collection with his wide-ranging experience and his frank discussion of issues political as well as epidemiological. He pays generous tribute to several who deserve inclusion in this book, among them Paul Dudley White, a major figure in international preventive cardiology, Ancel Keys—renowned for his Seven Countries Study, and his late wife Rose Stamler, whom many fellows in the international teaching seminars on cardiovascular epidemiology and prevention will remember with respect and affection. This international teaching programme almost certainly ranks in greatness of achievement with many of the individuals interviewed. It is a pity that at the end of this book, Dr Weisse, in attempting to place medicine in a larger, world context states that 'Coronary atherosclerosis is not a world problem; AIDS is'. Would that he were right, but few readers of this journal would agree with him. Also, aware of new developments in the atherosclerosis story such as inflammation, infection, and homocysteine metabolism, he considers that 'perhaps we have barely scratched the aetiological surface (of atherosclerosis)'. Many in the field of public health believe that the application of what we already know about atherosclerosis, coronary heart disease, and stroke would rid us of the current epidemic even without knowing anything further about its extremely complex mechanisms. I do not decry the search for knowledge, but I do decry our failure to accept and implement what we already know.

I must plead guilty to being an avid reader of obituaries, as they often reveal fascinating personal aspects of individuals, both of those who are 'great' as well as of those who are relatively unknown. Their deaths appear to release the writers of obituaries from the constraints they might have felt during the lifetime of

the individuals. What I enjoyed most in this book, despite the narrowness of the focus, was the wealth of self-revelation about ambition, motivation, competitiveness, envy, and anger, all the more remarkable because those interviewed were allowed to edit and approve the final versions! There is a great deal to be said for writing one's own obituary for post-mortem publication and this book is an interesting testimony to that view.

A G SHAPER

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You've Been Had! How the Media and Environmentalists Turned America into a Nation of Hypochondriacs.

Melvin A Bernarde. New Brunswick: Rutgers University Press, 2002. US\$ 28.00, pp. 304. ISBN: 0-8135-3050-4.

This book is written by an American academic to reassure and inform America's apprehensive general public. Melvin Bernarde has taught epidemiology at Rutgers University, and has held senior positions at Temple University and Drexel University in environmental studies. His central argument is that the nation's anxiety over presumed environmental hazards during the past quarter-century, from chemicals and radiation and the like, has been exaggerated—sometimes to the detriment of rational social policy choices.

The health of Americans, he argues, has never been better. Life expectancy keeps creeping up. Yet there remains a widespread illusion that local environments are polluted, toxic, and deadly. Has this baseless fear of the environment, he wonders, been contrived by environmentalists to keep environmental issues high on the political agenda. Maybe—anyway, 'it is also evident that our lifestyles, not the environment, are responsible for most illnesses'.

The clear distinction Bernarde draws between 'environment' and 'lifestyle' is significant. It reflects the American view that individuals are free agents, free-range consumers, responsible for all their actions. On this view, the decline in physical activity is attributed to individual sloth—even though fundamental changes in the domestic, occupational, and urban environments over recent decades have systematically reduced the need for personal exertion. Similarly, Bernarde overlooks how commercial and other social-environmental circumstances have increasingly nurtured the over-consumption of energy-dense foods: in a culture of super-size servings, restraint is difficult.

As an attempt to get environmental health risks in better perspective, the book is moderately successful. However, to read it comfortably requires some immunity to a folksy style and to a rather promiscuous use of metaphors. This, from the opening paragraph, will give a taste:

A quarter century of chaff passing for wisdom has been time enough. The new millennium need not be saddled with the baggage of the twentieth century. A modicum of reason is needed to level an inordinately uneven playing field.

Bernarde surveys a broad landscape of environmental hazards. There are chapters on the microbial world (are there really 'coming plagues' and armies of illness-causing germs on surfaces in public places?), food safety (why not irradiate

potentially microbe-contaminated foods, and where is the evidence that genetic modification poses hazards to human consumers?), diet and cancer (have supplement-popping Americans been hoodwinked into believing their diets are deficient in anti-oxidants?), global warming (a well-informed recognition that this is a much more serious problem than conventional air pollution), ionizing radiation (why did we get so upset by Three Mile Island, given its triviality by comparison to Chernobyl—and since there is no clear evidence of persistent health problems from the atom bombs dropped in Japan?), and industrial chemical hazards in local environments (the myths of serious hazards from Love Canal and Times Beach).

There is much interesting factual content in these chapters. (However, on pages 5–6, he confuses Types I and II diabetes. The rapid ongoing increase is in the latter type, whereas Bernarde's description of an autoimmune disease refers to Type I diabetes.) His general position is clear enough. He dislikes public concern in advance of hard evidence, and his recurring gripe is that the media, which he presumes to be incited by environmentalists, have repeatedly distorted research findings, thereby fomenting public anxiety over any new hint that chemical X or radiation Y poses a serious health risk. It is intriguing that, in contrast, he takes global climate change entirely seriously. Even though he does not say it, I like to imagine that he recognizes that climate change poses a qualitatively different sort of environmental hazard from other run-of-the-mill environmental scares. That is, it reflects the beginnings of systemic changes in the conditions of life on Earth because humankind is now operating the planet at an increasing level of ecological debt.

Curiously, given that much of Bernarde's criticism of media-led environmental anxiety hinges on the misinterpretation or over-interpretation of epidemiological studies, he does not provide a clear exposition of the difficulties of observational epidemiology until page 244. His several examples of confounding are ill-judged. He points out, for example, that families owning cappuccino-makers have healthier babies. He could have nominated a thousand other accoutrements of upper-class living standards—but none of them would be true confounders, since none are independent risk factors in their own right. (I am also disappointed to see, again, 'confounding' treated as a subset of 'bias'—this confuses two distinct types of problems in epidemiology. The former correctly represents, within the study population, the inter-mixing of causal effects in the real world; whereas the latter, in selecting or classifying study subjects, misrepresents the real world.)

His final chapter is entitled 'The Sleeping Giant'. He envisages that the good and positive news—about how well America is doing, how environmental management can be rational, and how citizens can learn to appraise relative risks for themselves—can all be mobilized by activating the nation's educational infrastructure. Well, that is a good idea, but I suspect that it will take more than turning the crank-handles. About half the American public still rejects the theory of Darwinian biological evolution.

I do not much like the title of this book. It reminds me of the American airport-book style, with strident, second-person singular, book titles that relate personally to prospective readers: 'You, Too, Can Be Very Rich', 'Bonding Better With Your Dog' and 'How You Can Achieve Internet Fame'. However, this book should not be judged by its title. It challenges

some conventional environmental wisdoms—and does so in a way that differs positively from Bjorn Lomborg's recent travesty of scepticism.

TONY MCMICHAEL

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Multiple Sclerosis. Warren S, Warren KG. Geneva: World Health Organization, 2001, pp. 123, SFr 35.00. ISBN: 92-4-156203-X.

This excellent small monograph published by the World Health Organization provides a comprehensive review of the epidemiology of multiple sclerosis. The book covers conventional aetiological epidemiology such as prevalence, incidence, secular trends, and environmental risk factors, as well as clinical epidemiology, with sections on diagnostic criteria and prognostic factors. I found it particularly good in its coverage of the descriptive studies. The authors carefully discuss issues around diagnostic criteria and methods of case ascertainment. The comprehensive and systematic tabulation of these descriptive studies in the tables are particularly valuable. In addition, I was very impressed with the clarity of explanation the authors provided concerning general epidemiological and methodological issues. Without realizing it, the epidemiological naïve reader would learn a fair amount of theory simply by reading this text. The problems they highlight in studying multiple sclerosis are clearly generalizable to other chronic neurological diseases. The overview of the analytical studies is rather thin in comparison to the space given to the descriptive studies. It would have been nice to have seen a similar systematic tabulation of the reported associations, so that both the size of association as well as design issues e.g. case and control ascertainment, could be seen. This would enable a more careful critique of the frequently contradictory results found in case-control studies. However, the authors may have been limited in the permitted length of this monograph thus restricting this section.

The concluding chapter is both balanced and thoughtful, considering both genetic and environmental risk factors. The authors highlight the importance of a life course approach¹ by testing for windows of exposure at different periods of life even including the intra-uterine period. The layout of the book is good and the both the tables and figures are well designed and clear, especially the neuroimaging. I had only a few minor criticisms that hopefully could be incorporated in any future edition. Firstly, the authors appear to favour the use of matched case-control studies (p. 40). Whilst matching clearly has a role for some studies, most epidemiologists would favour frequency matching rather than individual matching. Similarly, they suggest future research studies should undertake case-control studies with relative controls (p. 81). This design would usually overmatch cases and controls for early life factors as discordant siblings are likely to share very similar home environments and hence important exposures may remain undetected. The late Prof. Geoffrey Rose highlighted the importance of designing studies that maximized heterogeneity of exposure,² such as the INTERSALT study, to detect small but potentially important associations that might explain large population differences in risk. My only other quibble was the lack of an index or glossary for non-clinical readers.

Overall I can highly recommend this publication and would suggest that this book was the first port of call for any reader interested in learning about the epidemiology of multiple sclerosis.

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YOAV BEN-SHLOMO

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Teaching Epidemiology; A Guide for Teachers in Epidemiology, Public Health and Clinical Medicine.

Olsen J, Saracci R, Trichopoulos D. Oxford: Oxford University Press, 2001, pp. 394, £65.00 (HB), £32.50 (PB). ISBN: (HB) 0-19-850969-3, (PB) 0-19-263066-0.

There is an ever growing market in text books of epidemiology and biostatistics, yet, to my knowledge, this remains the only book that tries to teach 'how to teach' epidemiology. As such it carries a large responsibility on its spine. A quick glance, however, through the contributors list is impressive, both in terms of international coverage and the collection of highly respected epidemiologists. As a reviewer, I found myself rather intimidated to criticize such a 'cluster' of eminent epidemiologists, but as every student will tell you, a good researcher is not necessarily a good teacher. So does this book live up to its expectations?

Firstly, I must confess that I never read the first edition. In comparison the second edition has expanded the number of chapters and dropped some topics in favour of others. It has taken on board new developments in epidemiology and now includes chapters on genetic epidemiology and disease clustering. The new book has 29 chapters divided into four sections: context, exposure oriented epidemiology, outcome oriented epidemiology, and pedagogies. These sub-divisions are a sensible improvement over the first edition but at times seemed a little strained. For example, a chapter on routine registries seemed rather out of place in the section on exposures, and I did wonder whether the generic chapters on clinical and genetic epidemiology would be better either in the context section or a new section entitled methodological approaches. However, these are minor issues. The great strength of this book is its breadth. The editors have clearly put in much thought as to which areas should be covered. This approach is particularly valuable for any modular teaching programme, such as a Masters degree, where certain components are compulsory but other modules can be chosen at the students' discretion. This book covers many topics I would not have even thought about and I was particularly pleased and enjoyed reading the thoughtful chapter by Tony McMichael on lifestyle and life course. I also greatly enjoyed the first chapter by Rodolfo Saracci, which not only provides a brief history of epidemiology but also bravely attempts to cover the future of epidemiology, a topic I myself have tried to teach. Yet rather surprisingly, the book did not have a chapter dedicated to social

epidemiology, despite a renowned course in this topic run at Harvard. I hope that any third edition would consider the addition of such a chapter.

Each contributor has followed a standardized format of sub-headings, which greatly helps consistency. Inevitably there is a fair amount of repetition across chapters, however, rather than finding this irritating, I actually enjoyed reading how different teachers tackled the same conceptual problem. This is particularly important as other than the excellent chapter by JH Abramson on 'Epidemiology inside and outside the classroom', which cited relevant educational research, almost all the suggestions espoused in each chapter were 'opinion' rather than 'evidence-based'. This is inevitable as it is relatively difficult to undertake high-quality educational research and anyway we are generally far too busy doing epidemiology to worry about empirically assessing our own teaching. As such what works for one teacher in one educational setting may simply be inappropriate for another. We therefore find Kenneth Rothman stating 'computers are best left out of this teaching' (Methods of epidemiology) juxtaposed with Charles Florey's chapter on computer-assisted learning. Whether you agree with Rothman or not, his comments on the dangers of epidemiology lectures cannot fail to stir strong resonances of recognition and in my case an overt smile:

... it is difficult to avoid the prototypical lecture scene, a classroom engagement in which the instructor spews abstruse and airy concepts at the audience. This approach can have the same effect as spraying the audience with tear gas: the recipients disperse, enraged at the interaction and hardened in clinging to their former ideas.

In fact, I found the Rothman chapter one of the most enjoyable and stimulating, not only for his rather challenging opinions but more for his careful and considered examples. He elegantly explains how, using toxic shock syndrome, epidemiology can either refute or support two different hypotheses (toxic or bacteriological) by examining the pattern of risk with exposure either as number of tampons used or duration of use, as each hypothesis would predict a different pattern. In this respect some of the chapters were slightly disappointing. I would say all the authors provided very good and sensible guidelines on what concepts for their topics should be covered. Some suggested

interesting and innovative approaches to teaching these concepts. For example, I enjoyed the different strategy employed by Jorn Olsen and Olga Basso (Chapter 4) in how to teach study designs. Rather than explicitly cover the different types of design, they advocate teaching the students the fundamental principles governing study designs, such as unit of observation, definition of study base etc., which then results in choosing one design rather than another. I liked this very much but know I would not attempt this approach in our 11-session medical undergraduate course. However, most teachers are familiar with the concepts and principles for their areas. What they really want to know, from those who are more experienced, is what works and equally importantly what does not work. This not only covers how to explain the theoretical issues but also what examples teachers use to crystallize relatively abstract concepts.

Some authors usefully provided their favourite examples or key teaching papers but I could have done with more of this. For example, most of us would teach the principles of confounding in a similar fashion but have very different exemplars that may be more or less effective and memorable. For example, George Davey Smith highlighted to me a lovely paper reporting the marked association between birthweight and the size of the box of chocolates given to the midwives. Similarly, we find examples such as cannabis smoking and schizophrenia grab the attention of our medical students more than salt consumption and hypertension.

One slight limitation with this book is that it is essentially aimed at the Masters or PhD level and fails to address what, if any, components of a topic should be covered at an undergraduate level? Only Chapter 26 seemed to explicitly discuss this area. For example, what, if any of the principles covered in Paul Elliott's chapter 'Study of clustering and outbreaks' should you teach a medical student?

There are many different ways to teach and assess learning. In the absence of empirical evidence, we are reliant on individual 'Trial-and-error experience' (Chapter 6). The authors are to be congratulated on bringing together this invaluable volume, which synthesizes the vast 'teacher years' of many of our leading epidemiologists. I hope the editors continue to update their book and look forward to reviewing the third edition.

YOAV BEN-SHLOMO