of informed consent as 'the cutting edge of the patient autonomy movement'. He attempts to reconcile the views of its opponents and proponents by offering a clinically realistic and operational model of informed consent, in which it is treated not merely as a ritual but as a useful tool for medical management.

The first part of the book prepares the ground for the model presented in the second. It discusses the insufficiency of the legal approach to the doctrine of informed consent, analyzes the arguments of the 'paternalists' and of their critics, who defend the autonomy of patients, examines empirical studies concerning informed consent, and reflects on values that are at stake here.

The operational model provided in the second part of the book is treated as a practical application of the major theoretical work, *A History and Theory of Informed Consent*, by R Faden and T Beauchamp, which also provides 'a standard by which the model can be judged' (page 72).

Wear's model comprises three stages. During the first rather complex and long stage, called Comprehensive Disclosure – which serves primarily as an insurance against a malpractice suit – the patient is provided with a lot of information (such as the diagnosis, prognosis without the treatment, recommended treatment where appropriate, identification of risks and benefits, and alternative treatments) recognizing that the patient may be unable to understand it all.

The aim of the second stage, called The Core Disclosure, 'is to present [to the patient] the essentials of the choice at hand in an approachable and palatable fashion' (page 99). So the doctor needs to focus on the basic reasons for recommending a given treatment.

Unlike the first two stages, in which the doctor may do all the talking (if the patient chooses not to interact), during the third stage (called Assessment, Clarification, and Patient's Choice) it is the patient who is asked to speak and provide a summary of what he or she has been told. The aim of this stage is to correct and clarify the patient's actual level of understanding which will be followed by the patient's choice.

The book is written in a clear, simple and very practically oriented style. It provides dozens of helpful recommendations to practitioners regarding how to proceed in different situations (for example, when and how to talk about risks, or how to pre-

sent alternative treatments), so in this respect it fulfils its promise to explain what the doctrine of informed consent amounts to at the bedside. Whether the whole model will satisfy the paternalists as well as the 'autonomists' and whether practitioners will find it attractive enough to treat it as 'a useful tool for medical management' remains to be seen.

JOANNA PASEK
CSERGE, *University Collete,*
London

Medical ethics today: its practice and philosophy

BMA's Ethics, Science and Information Division, London, BMJ Publishing Group, 1993, xxvii + 373 pages, £12.95 pb

This is the fifth in a series of handbooks on medical ethics produced by the BMA. It is an invaluable first work of reference to which everyone concerned with health care ethics should have access. Certainly every medical and nursing library should have a copy and I would recommend it to practitioners and students, as well as to those in other fields, for example, philosophy and law, who have relevant interests. It is comprehensive in scope, analytical in structure and realistic in its aims, which it pursues effectively.

While seeking to inform the reader about a wide range of issues and arguments its primary concern is practical, in effect to advise practitioners how to proceed in the face of old and new problems. That advice refers to more general moral principles but draws primarily upon law and established professional values. Significantly, the book includes as appendices the Hippocratic Oath, the International Code of Medical Ethics, the amended (1983) Declaration of Helsinki on human experimentation, and the Declaration of Tokyo on torture and punishment. A fifth appendix offers 'Useful addresses' (British Medical Association, General Medical Council, World Medical Association, etc); this would have been yet more helpful had the listing been considerably longer and included a range of centres, institutes and publications specifically concerned with medical ethics. (There is, however, a bibliography of publications by organisations and individuals; though this too could be extended, and

improved by brief notes on the nature and level of at least the main works.)

Twelve broad areas are covered in as many chapters: consent and refusal; confidentiality and medical records; children and young people; reproduction and genetic technology; caring for the dying; cessation of treatment, non-resuscitation, aiding suicide and euthanasia; treatment and prescribing; research; dual obligations; relations between doctors; inter-professional relations; and rationing and allocating resources. An additional concluding chapter examines the general issue of how one arrives at answers to ethical questions in medicine and identifies various component concerns such as professional standards and harm to others.

Each chapter is subdivided into numbered and headed sections and subsections, many of the latter being less than a page in length, for example, chapter 4 is on reproduction and genetic technology; 4.3 concerns abortion; 4.3.2.1 describes legal views of doctors' obligations. At the end of each chapter there is a summary, usually in the form of a series of numbered points. The analytical table of contents and a detailed index make it an easy matter to find things and also encourage further foraging.

Clearly this is not a work to be read progressively chapter by chapter; but equally one should not confine one's reading to individual sections. A better technique would be to start with the short concluding chapter 'Aims and Philosophy' and then proceed to some particular issue, and having read about that to move on to one or two related issues. Thereafter one may dip in as time and need determine. Any reflective reader will find themselves disagreeing with some points and wondering about others. That is to be expected and welcomed, and it suggests a further role for this work, ie, as a source book for student seminars and discussions.

JOHN HALDANE
Department of Moral Philosophy,
University of St Andrews

Disease, diagnosis and decisions

Graham W Bradley, Chichester, John Wiley and Sons, 1993, 169 pages, £14.95, \$23.95

What is a disease? Bradley's primer on how to make a medical decision.

explores the concept of disease and concludes that the word means different things to different people at different times. To illustrate the changes in medical thought, we begin an historical tour in ancient Egypt where we find that the first recorded doctor, Imhotep, fulfilled twin roles as priest and physician. After perilously few words we find that the medical profession has adopted a modern, empirical philosophy and a science-based practice.

Having dealt with 30 centuries of medical history we now consider the history of philosophy and how it affects medicine. We are introduced to the strengths and weaknesses of inductive logic as proposed by John Locke and John Stuart Mill and then to the weaknesses of deductive reasoning as proposed by the ancients such as Aristotle, and in more modern times by Leibniz. The conclusion is that both inductive and deductive logic are defective as a basis for scientific discovery. What is preferred is a Popperian hypothetico-deductive model: here the hypothesis, and not the slavish collection of facts, is the goal of the scientifically minded doctor. Starting with the hypothesis, deductive logic allows the formulation of predictions which, if the theory is a good one, must be amenable to falsification by scientific means.

Bradley now points out that, for all our ingenious hypotheses and well constructed experiments, there is a limit to knowledge. Heisenberg showed that there is a fundamental limit to the amount we can know about the world, similarly, Gödel's incompleteness theorem proved that whatever the basis of a formal system, there are false propositions which cannot be proved to be false. These theoretical limits to our knowledge of the world, and the models we construct, are well known but they have not discouraged biological and medical investigation. Of greater significance is the concept of the organism as a non-linear, chaotic system. It is a pity that more is not said about the implications of chaos theory for our understanding of disease and epidemiology.

Bradley suggests in chapter three that there is a hypocrisy in the teaching of medical students. The teacher advocates 'think how I say I think, not how I actually think'. A distinction is drawn between the intuitive practice of the consultant, and the painstaking analytical approach of the houseman on his first day.

Bradley goes on to describe how the analytical doctor can best use clinical

investigations to help in diagnosis. Bayesian notation is introduced as a convenient way of calculating the probability of a disease, provided that the sensitivity and false-positive rate of the test is known. To complete the calculation, the doctor must estimate the prevalence of the disease in her given population; it is clear that these estimated probabilities must vary radically between a GP's surgery and a specialist clinic. Despite this subjective element at the heart of the system, Bradley states that 'even imperfect data is infinitely preferable to no data'. This is a bold statement, especially when considering the work which shows that a physician's accuracy at assessing prior probability is very poor.

Chapter five takes formal probability estimation one step further and asks whether computers can diagnose disease. The section entitled 'Can computers think?' gives short shrift to proponents of artificial intelligence and favours the sceptics such as Searle and the Dreyfus brothers. Nevertheless, Bradley finds the prospect of 'computer assisted' diagnosis exciting; De Dombal's acute abdomen system is of special interest, not least because it has significantly increased diagnostic accuracy in his unit.

Having made a diagnosis the next question is how rationally to proceed with management. A brief discussion of QALYs, utility and life-expectancy analyses suggests that formalised decision-making need not be dehumanising but may, in certain instances, empower the patient to control the course of her treatment. Considering the philosophical content of other sections of the book, the ethical implications of decision analysis deserved more attention.

In summary, this book is about doubt but not about confusion. If Bradley's protégés need a motto it could well be '*Doctor sum, ergo dubito*'.

DAMIAN C CROWTHER
Medical Student,
Oxford

The ethical dimensions of the biological sciences

Edited by R E Bulger, E Heitman
and S J Reiser, Cambridge,
Cambridge University Press, 1993,
294 pages, £35.00 hb, \$54.95,
£12.95 pb, \$18.95

Experimental science is hard work, time-consuming and absorbing. It is characteristic that scientists consider the ethical aspects of their work only during coffee-time, until a problem arises concerning, say, authorship or scientific fraud. But the essence of ethics in science is to anticipate the problems, to lay down a suitable framework for the ethical treatment of people in science and of scientific problems. This book is not an attempt to make a coherent moral philosophy of the biological sciences, but rather an anthology of thirty-five short chapters, each by a different author, on aspects of ethics in biology. The aim of many of these chapters is to make explicit codes of practice that have long been implicit in good science. These range from the 1949 Nuremberg Code (chapter 16), via canons of gentlemanly behaviour, to recommendations for good house-keeping of data in the lab. There are also sections on research using animals, research on humans, human genome research, fraud and self-deception in science, and conflict of interest in collaboration between scientists and industry.

In his introduction, Reiser distinguishes four phases in the growth of importance of ethics in biological research and medicine since World War II. The last of these is the acceptance that 'training' in ethical issues should no longer go by default, but must be made explicit, because of the greater power of science, the greater public awareness of the good and bad in science, and the new ethical problems raised by new discoveries. The growing interest in ethics in the biological sciences is reflected in the dates when these chapters were first published: of the 35 chapters, 25 were published in the last ten years.

Not all of the chapters directly concern ethics. The first section of the book contains two fascinating pieces, one by Arieti on creativity in science, and one by Comroe and Dripps on the analysis of publications in cardiology. Although these pieces are interesting, their relation to the ethical issues in the rest of the book is not obvious. Glass (chapter 3) has one of the few chapters that considers the broad ethical basis of science. He follows Bronowski in arguing from the premise that aspects of science are inescapably subjective because science is done by humans, to the axiom that 'We ought to act in such a way that what is true can be verified to be so'. He does not stray into