

archaeologists in the UK and USA. Beyond archaeologists, the book is surely of interest to all humanities scholars. This is ensured not only by its central concerns, but by Gardin's ability to move knowledgeably, insightfully and stylishly amongst the many worlds of the humanities and the information sciences.

Finally, a word about the translation. This reader found it unobtrusive and seemingly accurate. What more could one ask? But I began to notice the typos. . . .

Artificial intelligence—A handbook of professionalism by Blay Whitby, Ellis Horwood, Chichester, 1988, pp 194, £29.95, ISBN 0-7458-0350-4.

Artificial Intelligence has reached the level of maturity where issues of professional ethics are being considered. For some, this can be a useful smokescreen to protect the individual from considering the ethical aspects of his own actions, and from accepting personal responsibility. Others see the responsibilities of the professional as being in addition to those of the normal citizen.

These two camps were formed in the United Kingdom in 1985 when AI professionals were faced with the question of participation in the American Strategic Defense Initiative, accepting money to work on a project which was widely, if not universally, seen as technically infeasible, at least in the terms in which it was described by President Reagan. In December 1985 the British Computer Society held a meeting to discuss the professional aspects of participation in SDI, chaired by Professor Margaret Boden and with speakers including the present writer and Professor Bernard Williams, philosopher and at the time Provost of King's College Cambridge. The proceedings were reported in the IEE Software Engineering Review of March 1986. A series of similar meetings were held jointly by the British Computer Society and Institute of Physics, and later by the British Society for the Philosophy of Science.

Organizations have been established to support concerned AI professionals in these difficult issues. In the United States Computer Professionals for Social Responsibility has published bulletins and now a Journal. In the United Kingdom chapters of Computing and Social Responsibility have been founded, starting in Edinburgh in 1984, and then at Imperial College and Sussex University in 1985. The Journal of Artificial Intelligence and Society springs partly from these concerns, with the recently established Artificial Intelligence For Society Club as a visible focus for practical and socially useful activities.

Blay Whitby has made a valuable contribution to this field with his book "Artificial Intelligence: A Handbook of Professionalism". Whereas my own book "Star Wars: A Question of Initiative" (Ennals, 1986) was polemical and partisan, published during and as part of the controversy over participation in the Strategic Defence Initiative, and Allen Din's collection "Arms and Artificial Intelligence" (1987) focused on technical issues, Whitby's work is more detached, tentative and philosophical. His perspective derives from his own experience in the RAF, in industry and as a student of philosophy, and in research and research management in the SEAKE Centre at Brighton Polytechnic.

The strength of the book is that it sets out a range of questions to be addressed by the concerned AI professional. It is somewhat misleadingly described as a handbook, but cannot really be said to prepare the professional for the catalogue of complex moral and professional decisions that can face him, even within weeks of graduation. This is unsurprising, given the complexity of the issues which must be addressed.

Is Artificial Intelligence a coherent profession, or a chance collection of individuals sharing a common technology for different purposes? Do we define it in terms of the commercial exploitation of IT, seen as a set of products, or as a humane approach to the study of problems, making using of computer technology?

Is current accepted practice in industry compatible with the academic freedom and intellectual environment to which researchers have become accustomed? How should we regard the restrictions on our freedom imposed through industrial contracts, including restrictions on publication and disclosure? Are these commercial restrictions any different in kind from those imposed by military contracts? How can we distinguish between military and civil funding when most British electronics companies derive their profits from work for the Ministry of Defence? Do AI researchers participate in a form of intellectual prostitution if their thoughts are purchased by a client, and are no longer their own to develop and expound at will? How do we regard security classification in this context, whether in advance, as in the United Kingdom, or retrospectively, as in the United States? What is our professional position regarding the deliberate disabling of a system so that it will no longer explain its workings to a user?

The position of the British government is that it does not wish to explain its own workings and activities to the citizens who are its users. Economy with the truth is a civil service tradition which dates from at least the seventeenth century. How should AI professionals, whose expertise is in knowledge engineering, respond when their own research efforts are discarded, funding is withdrawn, and official secrecy is preferred to freedom of information? Given that our business is asking difficult questions, is it professionally acceptable to be given no answers? Can we be other than dissidents in such circumstances?

One problem for those who adopt a dissident position is the need to provide a professionally acceptable alternative, at least in prototype form, to which concerned professionals can adhere. Given that funding is largely controlled by those against whom dissent is expressed, this is far from straightforward. Yet, if the baby of valid AI research and practice is not to be discarded with the bathwater of commercial hype and intellectual prostitution, that alternative must at least be outlined with practical examples. Whitby does not attempt to do this, and the case studies so far reported (for example in Gill, 1986; Goranzon and Josefson, 1988; Florin and Goranzon, 1989; Ennals and Gardin, 1989) do not as yet offer an alternative synthesis.

Whitby's calm and measured analysis of the thorny philosophical issues draws on an extensive literature which is well referenced. His detached style, which provides strength in the way that different viewpoints can be considered, suffers from a certain lack of direct involvement in clearly documented problematic cases. While it would be inappropriate to seek an "ethical cookbook", a future "handbook" must follow through some hard cases. Examples might be the dilemma of an AI professional who becomes aware of financial malpractice in a defence contractor; the misuse of official secrecy to disguise government mistakes; issues of blame in defective medical expert systems; deskilling through inappropriate introduction by management of intelligent automation systems; the creation of vast profits for financial institutions by the simple expedient of disabling the full explanation system for the ordinary user; the uncovering of institutional discrimination through building decision support systems; the extension of the extraterritorial power of a foreign country through the development of commercial applications dependent on foreign hardware components; the implications for family life of the automation of modern divorce law. Readers may recognize these cases as the stuff of ethics: there are no easy answers, but in order to reach a mature decision the individual needs to be aware of the alternatives. As AI is applied in ever more contexts, it becomes the technology of difficult cases.

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