JAMES WALLACE and JIM ERICKSON
Hard Drive: Bill Gates and the Making of the Microsoft Empire. John Wiley & Sons. 1993, £8.99, 464 pp. paperback, ISBN 0 471 94081 X

With the typical first-page caveat '[this book] was undertaken without the help or co-operation of...', authors Wallace and Erickson subtly forewarn the reader that the pages they are about to read will contain innumerable anonymous quotes from the likes of 'a senior Microsoft manager' and 'an industry spokesman from a rival company'. While it is perhaps necessary that some of these individuals remain nameless, I fear that in some cases the authors have taken the exercise too far; many of the quotes lose impact when disassociated from their source.

The book is for the most part chronologically ordered, and does not make the mistake of repeating information needlessly and tediously, as in Ichbiah and Knepper's *The Making of Microsoft*. The early chapters describe Gates' youth and how he met his partner, Paul Allen. The book goes on to describe the early beginnings of their company, Microsoft (*nee* Micro-Soft) which was started to develop a version of BASIC for the Altair. Later on, the book centres on the development of Microsoft and Gates becomes an incidental character rather than the main subject of the narrative. We are given an unrivalled account of the company's growth, with a detailed description of how Microsoft burned all of their bridges as they 'date-raped' their way through the software industry. No punches are pulled as Wallace and Erickson describe the perhaps dubious business practices which have lead to the ongoing investigation by the Federal Trade Commission.

Throughout the book, there is a discernible underlying thesis that Bill Gates' success has been wholly of his own design, with no element of luck involved. Often the authors go to extraordinary lengths to back up their claims; however, to my mind these tenuous links tended to reduce the credibility of their arguments. For example, in comparing Gates' personal discovery of the marvel of computers with Einstein's wonderment when being presented with a compass, there is more than a touch of poetic license. In fact, the book abounds with such unjustified comparisons.

Wallace and Erickson are investigative reporters with the *Seattle Post-Intelligencer* and the language used in the book reflects this. We read of the Altair '...which shone like a Christmas star in the night sky' and the surfing metaphor treatment of one Gates' strategies; '... Microsoft was surfing the curl of the breaking GUI groundswell, not languishing in the backwash'. The book is easily accessible, but also holds a wealth of information hidden away amid the prose. A number of computer folk-tales are authoritatively laid to rest, e.g. Gates could never have crashed Cybernet because the computer he used around the time that happened was not connected to it. Unfortunately, the authors do not appear to have a technical background; FORTRAN is described as FORmula TRANsition (*sic*), we are told that transistors replaced vacuum tubes because they have no moving parts to go wrong and that a 16-bit computer can handle packages of up to a million characters at a time, while an eight-bit chip can only handle packages of 64 000 characters.

In preparation for this paperback edition, Wallace and Erickson have written an extra chapter, which brings the story up to date with Gates becoming the richest man in America, the conclusion of the Apple *v* Microsoft legal actions and Gates' engagement to Melinda French. Of course, the story is not yet complete, and I cannot help but wonder if the second paperback edition, no doubt to be released when the sales of this edition begin to flag, will contain another extra chapter...

In conclusion, this book should appeal to anyone with an interest in Gates, Microsoft or the early origins of the microcomputer industry. Even readers well versed in the history of Microsoft will probably uncover a few new insights.

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S. MAUK and G.J. VELTINK (Eds)
Algebraic Specification of Communication Protocols. Cambridge University Press. 1993, £25.00, 197 pp. hardbound, ISBN 0 521 41883 6

This book contains a collection of programs for some representative, abstracted, communications protocols. The programs are written in PSF, an executable language based on process algebra, which was constructed by the authors at the University of Amsterdam in the late 1980s. It is close in style to the ACP process-algebra notation of Bergstra, Klop and Baeten, and similar to Hoare's CSP and Milner's CCS. Readers familiar with any of those notations should have no difficulty following the text. For others, PSF is introduced in Chapter 2.

Chapter 1 briefly surveys the use of formal methods, computer networks and the ISO OSI reference model for the description of communications protocols.

Chapter 2 introduces the PSF language informally, with simple examples. A library of data types is given (for subsequent use in describing protocols) and the PSF toolkit explained. The chapter is easy to read and very informal. References are given to ACP which underlies PSF (in the same way that CSP underlies occam). Almost no semantics is offered: a transition system for an operational semantics is very briefly indicated and there are references for the bisimulation relationship between processes. Thus from the start the authors make plain their desire, in the present text, to use PSF to state designs but not to reason about them.

[Aside: the introduction of alternative choice on p. 15 is misleading. Whilst $x+y$ is claimed to be the non-