could be. While it supports the need for user-centred design and shows that after *one* day new users were as productive as trained existing users, much of this benefit seems to accrue simply from the use of a graphical user interface allowing WYSIWYG document display. No evidence is provided to support the view that it is the structure and design of the UI *per se* which had promoted productivity.

A further discomfort with the book is that Browne criticizes, quite rightly, design principles because they offer little in the way of real guidance to designers, but then he proceeds to present STUDIO's design principles which are more of the same sort of thing. This is followed by a section on user interface options which seems strangely at odds with the highly structured layout of the rest of the book (and methodology). In this section he considers haphazardly topics such as colour, windows, tailoring, undo/redo, response times, menus, etc. This is all useful advice but lacks a unifying user-centred framework consistent with the philosophy of the method.

Another concern is the misleadingly superficial treatment of research techniques such as Keystroke Level Modelling and Semantic Differential Scaling. Rather than risk inadvertent misuse of these techniques in unskilled hands it would be better to suggest that expertise in these research skills is sought.

Finally, the most serious limitation relates to the treatment of prototyping. Browne introduces the notion of throwaway versus evolvable prototypes but does not really give any arguments for the use of one over another. User involvement in evaluating 'prototypes' in earlier STUDIO stages appears generally to be restricted to paper screen designs and various diagrammatic notations. To be genuinely user centred, PC based prototypes should be used at all stages, even the initial concept stage, as a way of extracting user requirements and exploring new ways of working. Only through 'hands-on' experience of working prototypes can users contribute their ideas fully to the development process.

Despite its shortcomings this book's real value and significance is that it succeeds in putting User Interface Design firmly on the agenda as an important area of expertise in its own right. Moreover it reveals that systematic user-centred methods for analysis and design are now well developed and have been tried and tested in real development environments. The book is a thus a welcome addition to the literature and includes many good references, unusual for a 'proprietary' methodology. The material it contains will be particularly helpful for dedicated systems where a solid task analysis can be documented as user procedures. Whether it will be as useful for generic applications is less certain.

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JAN HARDENBERGH
Building Applications with PEXlib. Prentice Hall. 1994. ISBN 0 13 012535 0 £36.50 540pp. softbound.

PEX is, as you may or may not know, a set of 3D graphics extensions to the X system. This book sets out to teach the use of PEX and to act as a basic reference to the PEX system.

Along the way is built up the 3D art package named/em PEXDRAW (a 'canonical' PEXlib application, used to test PEX servers); there are therefore plenty of examples of use of the functions presented along with their definitions, which considerably helps those beginning to use PEX.

The documented calls most strongly featured are those which are actually used in /em PEXDRAW: the others are documented but are not presented in as much detail. Since these are mostly more advanced functions, the reduced information is not so much of a problem—when one has reached the point of using them, the PEXlib concepts should be much clearer.

The render pipeline is discussed in general first, followed by the various sections of PEX stages, in (roughly) the order one needs to know them to get PEX to work, in more detail. These sections are covered very well—there are some complex topics involved in PEX and they are described clearly enough that even a newcomer to computer graphics will find them easy to understand while not being 'dumbed down' enough to irritate those with more experience.

The book also forms a reasonably good introduction to three-dimensional graphics, even if this is not its primary purpose. It is not the only book you will need, but a book which concentrates on the implementation of graphics in practice makes a great companion to some of the more academic works.

The end of the book consists of various appendices, including a very handy 'PEX lexicon' which explains the terminology used in the rest of the book, a complete list of the PEX output commands and (possibly most important for a useful reference) a good, detailed, well laid out index.

The book is much more readable than many such works, and does form an ideal introduction—while not losing the ability to form a desktop reference guide after one has really got into the subject.

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JEFFREY S. ROSENSCHEIN & GILAD ZLOTKIN
Rules of Encounter. MIT Press. 1994. ISBN 0-262-18159-2 £31.50. 229pp. hardbound.

The information age is upon us. In the minds of many, the future is filled with intelligent agents making deals on our behalf, while we relax, drink in hand, in front of the video wall. However, in *Rules of Encounter*, the authors argue that the future will not necessarily be this rosy. It is