

The Usability Bookshelf began as this annotated bibliography compiled between 1998 and 2001 by Chauncey Wilson and others as noted with the annotations.

## -A-

Adler, P. S. and Winograd, T. A. (Eds.) **USABILITY: Turning Technologies into Tools**. Oxford University Press: New York, 1992.

Adler and Winograd present a series of essays on designing for usability. The essays discuss the dimensions of usability, the role of usability in learning, and collaborative design.

Albers, J. **Interaction of Color**. Yale University Press: New Haven, CT, 1975.

Albers' 80 page book describes an experiential way of studying how colors interact with other colors. Albers' aim is to develop "through experience – by trial and error – an eye for color". The constant theme throughout the book is the relativity of color.

Alreck, P. L. and Settle, R. B. **The Survey Research Handbook (2<sup>nd</sup> Edition): Guidelines and Strategies for Conducting a Survey**. Irwin Publishing: Chicago, IL, 1995.

Andersson, U., **Humanware-Practical Usability Engineering**. Trafford Publishing, 1999.

Arlov, L. **GUI Design for Dummies**. IDG Books: Foster City, CA, 1997.

This book is not for "dummies". In fact, it is packed with information on how to design usable GUIs. The book covers methods for setting goals, understanding users and their work, choosing the best navigation model, deciding on the right widget for detailed designs, and evaluating usability. The book includes a CD with sample files and documents. One of the sample documents is an outline for a GUI style guide that can be used as a template for a corporate style guide.

Ashcraft, M. H. **Fundamentals of Cognition**. Addison-Wesley: New York, NY, 1998.

Mark Ashcraft's book on cognition is both readable and comprehensive. You get detailed information on perception, memory, language acquisition and comprehension, and thinking and reasoning. This book is an excellent reference for the usability specialist who wants to understand more about memory than the much cited (and not well understood) article on the "magic number 7". - CW

## -B-

Baber, C. **Beyond the Desktop: Designing and Using Interaction Devices**. North Light Books: Cincinnati, OH, 1997.

Beyond the Desktop is a clear and entertaining summary of research on various interaction devices, including: keyboards, pointing devices, speech recognizers, and gestural inputs, face recognition, and wearable computers. Baber summarizes existing research, points out flaws in some common beliefs

about interaction devices and theories, and highlights current issues for practitioners and theorist. The author's careful dissection and analysis of the QWERTY keyboard history was invigorating.

Baecker, R. M., Grudin, J. Buxton, W. A. S. and Greenberg, S. (Eds.) **Readings in Human-Computer Interaction: Toward the Year 2000 (2<sup>nd</sup> ed.)**. Morgan Kaufmann Publishers: San Francisco, CA, 1995. This book is a massive collection of articles on all aspects of human-computer interaction. Authors include: Gould, Norman, Boehm, Myers, Schneiderman, Grudin, and Lewis.

Bailey, R. W. **Human Performance Engineering: Designing High Quality Professional user Interfaces for Computer Products, Applications, and Systems (3rd Edition.)**. Prentice-Hall: Upper Saddle River, NJ, 1996.

Bain, S. and Gray, D. **Looking Good Online: The Ultimate Resource to Creating Effective Web Designs**. Ventana: Research Triangle Park, NC, 1996.

Bain and Gray provide useful guidelines on the definition and design of Web sites. The book contains advice on design themes, navigation, color schemes, graphics, and advanced design features like form, tables, frames, and animation. Chapter 7 contains a list of 13 common design mistakes (many of which reduce a Web sites usability). The final four chapters of the book focus on case studies of commercial Web sites used by USA Today, the National Football League, American Airlines, and the White House. Each case study points out Web site design hazards that should be avoided.

Bajaj, C. and Krishnamurthy, B., **Data Visualization Techniques**. Wiley Computer Books, 1999.

Bauersfeld, P. **Software by Design: Creating People Friendly Software**. M&T Books: New York, NY, 1994.

Bauersfeld's book is a concise and clear summary of design and evaluation methodologies. The author has good practical advice on techniques like scenario building, storyboards, user interviews, and task analysis. Each chapter has a hints section and some exercises.

Berk, E. and Devlin, J. (Eds.) **Hypertext/Hypermedia Handbook**. McGraw-Hill: New York, NY, 1991.

Beyer, H. and Holtzblatt, K. **Contextual Design: Defining Customer-Centered Systems**. Morgan Kaufmann: San Francisco, CA, 1998.

Beyer and Holtzblatt provide a set of practical methods for gathering data about users, tasks, and environments. Techniques for taking these data and generating system designs are explained. The book concludes with chapters on designing and evaluating prototypes and how to integrate contextual design into the software development process.

Bias, R. G. and Mayhew, D. J. (Eds.) **Cost-Justifying Usability**. Academic Press: Boston, MA, 1994. Usability specialists are being asked how their work impacts the bottom line. The chapters in this book provide insight on how to determine the worth of usability contributions in the development process.

Bickford, P. **Interface Design: The Art of Developing Easy-to-Use Software**. AP Professional: Boston, MA, 1997.

Bickford's book is a good introduction to basic GUI design issues. He starts out by discussing the difficulty of designing for a complex world then covers common design topics like error messages, toolbars, tabbed dialogs, icons, and responsiveness. Part 3 of his book deals with the emerging issues of Web computing. Part 4 deals with multimedia. Part 5 covers usability testing, prototyping, and interface fads. The book concludes with some case studies and philosophy of user-centered design.

Borenstein, N. S. **Programming as if People Mattered: Friendly Programs, Software Engineering, and Other**

**Noble Delusions**. Princeton University Press: Princeton, NJ, 1991.

Borenstein gives an entertaining and enlightening look at the complexity inherent in designing complex GUIs. His perspective is that of a developer turned user interface designer. He gives some practical (and slightly irreverent) advice on the process for designing "friendly" programs.

Brady, P. **Using Type Right: 121 Basic No-nonsense Rules for Working with Type**. 1988.

Debates about proper fonts, justification, leading, word spacing, and ways to highlight information are common among GUI designers. Brady provides well illustrated guidelines on these and other commonly debated topics. His guidelines are based on 35 years of experience. He does not cite any research to support his guidelines. The Typography Glossary at the end of his book is an excellent resource.

Brown, Judith R., Earnshaw, Rae, Jern, Mikael, Vince, John. **Visualization: Using Computer Graphics to Explore**

**Data and Present Information**, John Wiley & Sons: New York, 1995. (CD-ROM included)

This book combines an overview of the history of data visualization, examples of work in the field, and design guidelines. Although written three years ago, the information is still useful today, as visualization programs migrate down to the desktop from the workstations where they began. The chapter on the effective use of color contains excellent guidelines on color perception and domain-context meanings. The case studies include detailed examinations of the task goals and techniques as well as good color plates. All of the images are available on the accompanying CD-ROM, along with animations of some of the visualizations discussed. (Whitney Quesenbery - July 1998)

Browne, D. **STUDIO: Structured User-interface Design for Interaction Optimisation**. Prentice Hall: New York, NY, 1994.

Browne's book is a detailed practitioner's guide for developing usable interfaces. The book has detailed examples and a list of the deliverables that emerge from each stage of development. This book is similar to the one listed below by Redmon-Pyle and Moore.

**-C-**

Card, Stuart K, Mackinlay, Jock and Shneiderman, Ben, **Readings in Information Visualization: Using Vision to Think**, Morgan Kaufmann Publishers, June 1988.

Carroll, J. M. (Ed.) **Minimalism Beyond the Nurnberg Funnel**. MIT Press: Cambridge, MA, 1998.

Carroll, J. M. **The Nurnberg Funnel: Designing Minimalist Instruction for Practical Computer Skill**. MIT Press: Cambridge, MA, 1990.

Carroll's book summarizes work done at IBM on minimalist manuals - documentation that is pared down to the essentials.

Carroll, J. M. (Ed.) **Scenario-Based Design: Envisioning Work and Technology in System Development**. Wiley: New York, NY, 1995.

Carey, J. (Ed.) **Human Factors in Information Systems: The Relationship Between User Interface Design and Human Performance**. Ablex: Greenwich, CN, 1997.

Chapanis, A. **Human Factors in System Engineering**. Wiley: New York, NY, 1996.

Cleveland, W. S. **The Elements of Graphing Data (Revised Edition)**. Hobart Press: Summit, NJ, 1994. Cleveland's book describes a wide variety of graphical techniques for visualizing data. He provides principles for creating effective graphs, a detailed analysis of graphical methods (for example, scatterplots, dot plots, and time series), and factors that affect how viewers will perceive graphical data. Anyone involved in devising ways to present large amounts of technical data to users would benefit from this book.

Cohen, L. **Quality Function Deployment: How to Make QFD Work for You**. Addison-Wesley: Reading, MA, 1995.

Coe, M. **Human Factors for Technical Communicators**. Wiley: New York, NY, 1996.

Coe's book provides technical communicators with clear explanations of the impact of human factors on technical communication.

Collins, D. **Designing Object-Oriented User Interfaces**. Benjamin/Cummings Publishing: Redwood City, CA, 1995.

Constantine, L. L. & Lockwood, L. A. D. **Software for Use: A Practical Guide to the Models and Methods of Usage Centered Design**. ACM Press, NY, NY, 1999.

Cooper, A. **About Face: The Essentials of User Interface Design**. IDG Books Worldwide: Foster City, CA, 1995.

**About Face** is a provocative look at both the process and details of user interface design. Cooper starts out by discussing user goals, software models, and high-level user interface design. As the book progresses, Cooper discusses GUI objects like windows, menus, and tabbed dialog boxes. Error

prevention is a constant theme throughout the book. The book has many examples of good and bad design (including examples from Windows ® 95 applications).

Cooper, A. **The Inmates are Running the Asylum: Why High-Tech Products Drive us Crazy and How to Restore the Sanity.** SAMS, Indianapolis, IN, 1999.

Those who have read Alan Cooper's **About Face** know that he writes a readable, well-organized book, and his latest follows that model. In **The Inmates Are Running the Asylum**, Alan advocates a very different approach to developing software than is currently widely in use. He likens the process he advocates to that used for making motion pictures. In both cases, the production portion (location shooting for movies; coding for software) is extremely expensive and done by specialists. In both cases significant time, about five times the production time is spent on post-production activities. These activities include editing, scoring, advertising, and distribution, etc. for movies, functionality, performance, and usability testing, user documentation, support strategies, and training for software). However, in pre-production, such as scriptwriting, storyboarding, location selection, casting, etc. for movies; interaction design, audience analysis, environment analysis, etc. for software, there is a huge difference. A movie may spend two years in pre-production for a film that takes six weeks to shoot and six months in post-production. Software development efforts typically spend extremely little time designing, and begin coding early in the process. Cooper suggests that having a thoroughly-researched and completely documented design saves a lot of expensive production time and resource because the coders are focussed on what needs to be done and has been agreed to and don't need to guess or assume anything. If I had to find a shortcoming of this book, and it's a minor one, I would have liked to see more specifics on the techniques he describes as being successful in the Interaction Design process. Dick Miller-Usability Interface 7/99

## -D-

Del Galdo, E. M. and Nielsen, J. (Eds.) **International User Interfaces.** Wiley: New York, NY, 1996. Del Galdo and Nielsen's book is a collection of chapters on topics dealing with usability engineering, culture and design, international differences in software user training, case studies on international user interface design, and the design of multilingual documents. Examples of Arabic, Chinese, Japanese, and European designs are shown.

Dillman, Don, **Mail and Telephone Surveys: The Total Design Method.** John Wiley and Sons, New York, NY, 1978.

Dix, A., Finlay, J., Abowd, G., and Beale, R. **Human-Computer Interaction (2nd Edition).** Prentice Hall Europe: London, 1998.

Druin, Allison, ed. **The Design of Children's Technology.** Morgan Kaufmann Publishers, San Francisco, 1998.

Allison Druin's book is divided into two sections. The first section deals with usability and the design process for creating children's products. The second section focuses on examples of future technologies. Specific topics include adapting design methodologies to work with children (e.g.

contextual inquiry), user interface guidelines for children, kids as design informants, and participatory design. The authors are primarily from academia. *Chauncey Wilson*

Duffy, Thomas M., Palmer, J. E., Mehlenbacher, B., **Online Help: Design and Evaluation**, Albex Publishing, Norwood, NJ, 1992.

Dumas, J. and Redish, J. **A Practical Guide to Usability Testing**, Revised Edition, Intellect, 1999. Available in the U S from International Specialized Book Services, Portland, OR, 1-800-944-6190 or mail@isbs.com Available in Europe and elsewhere from the publisher at [www.intellectbooks.com](http://www.intellectbooks.com) or [books@intellect-net.com](mailto:books@intellect-net.com). This book provides excellent practical advice for groups who want to initiate usability testing. Highly recommended for both new and experienced usability professionals.

## -E-

Eberts, R. E. **User Interface Design**. Prentice-Hall: Englewood Cliffs, NJ, 1995.

Ehn, P. **Work-Oriented Design of Computer Artifacts**. Arbetslivscentrum: Stockholm, 1988. Ehn's book describes case studies in which users are an integral part of the design team from requirements setting to final design. Ehn also describes the theory behind the work-oriented design approach.

Ericsson, K. A. and Simon, H. A. **Protocol Analysis: Verbal Reports as Data (Revised Edition)**. The MIT Press: Cambridge, MA, 1993.

Ericsson and Simon have compiled a massive amount of research on thinking aloud methods. This book discusses theory and empirical data on verbal protocols from psychology, education, and cognitive science. The validity, predictability, and completeness of verbal reports are reviewed. This book would be useful reading for anyone who uses thinking aloud methods and verbal data for usability testing and design.

## -F-

Faulkner, C. **The Essence of Human-Computer Interaction**. Prentice Hall, London, UK, 1998.

This book has a succinct overview of HCI with self-tests, exercises, and key references at the end of each section. Topics covered in this book include: the user's physical characteristics, the user's mental characteristics, the interface, evaluation and testing, designing systems that people can use, and social implications and the future of HCI. - CW 11/99

Fernandes, T. **Global Interface Design: A Guide to Designing International User Interfaces**. AP Professional: Boston, MA, 1995.

Fernandes' book is an excellent reference for GUI designers. His book has sections on visual design, international formats, cultural issues, symbols and taboos, and cultural aesthetics. This book has the best examples of good and bad international GUI designs that I've seen.

Fisk, Arthur, D. and Rogers, Wendy, A. (Eds.) **Handbook of Human Factors and the Older Adult**. Academic Press San Diego, CA, 1997.

Fleming, J. **Web Navigation: Designing the User Experience**. O'Reilly:Sebastopol, CA, 1998.

**Web Navigation** is a good primer on how to design an efficient and enjoyable Web site. Fleming focuses on user goals (education, entertainment, shopping, forming a virtual community) and how those goals should influence the design of Web sites. The book has many examples and a companion CD. *Chauncey Wilson*

Fosythe, C., Grose, E., and Ratner, J. (Eds.) **Human Factors and Web Development**. Lawrence Erlbaum: Mahwah, NJ, 1998.

This book is divided into five sections. The first section deals with the implications of psychological theory for Web design. The second section looks at specific Web user populations, including children, disabled users, and students. Section three examines Web style guidelines and differences between Web and GUI style guidelines. Section four looks at research topics and the last section examines collaboration and visualization on the Web.

Fowler, S. **GUI Design Handbook**. McGraw-Hill: New York, NY, 1998.

The GUI Design Handbook is a superb compendium of design information about the objects used to design GUIs. This handbook contains an alphabetical list of GUI components (check box, combo box, command line, menu bar,...). For each component there are four sections:

1. when to use the component,
2. what design guidelines apply to the component,
3. how to determine "micro-usability" of the component, and
4. what other components may be used for a particular function.

There are two good appendices on how to design a good GUI and how to conduct some basic usability tests. This book is useful for anyone who does detailed GUI design or evaluation.

Fowler, S. L. and Stanwick, V. R. **The GUI Style Guide**. AP Professional: Boston, MA, 1995.

Fowler and Stanwick write about how to use widgets properly in the design of GUIs, how to write messages and online help, and how to deal with international issues, color, and graphics during design. Each chapter has a detailed list of references and resources for additional information.

## **-G-**

Galitz, W. O. **User Interface Screen Design**. QED: Boston, MA, 1993.

Galitz presents a detailed compendium of guidelines for the design of character and graphical user interfaces.

Galitz, W. O. **It's Time to Clean Your Windows: Designing GUIs That Work**. Wiley-QED: New York, NY, 1994.

Galitz, W. O. **The Essential Guide to User Interface Design**. Wiley: New York, NY, 1997.

This book provides detailed design principles for creating aesthetic and usable GUIs. Galitz begins with an exposition on how user and task characteristics affect screen design, then goes into detail on general design principles, how to choose the right windowing architecture, menu design, choosing screen objects, color, feedback, and usability testing. Galitz provides many examples of good and bad design and explains the rationale behind his design principles clearly. This is a useful reference for anyone who is involved in the actual design or evaluation of screens.

Gardner-Bonneau, D., editor, **Human Factors and Voice Interactive Systems** Kluwer Academic Publishers, 1999.

Garland, D. J., Wise, J. A., Hpokin, V. D, eds, **Handbook of Aviation Human Factors**. Lawrence Erlbaum Associates, Inc.

Garrand, T. **Writing for Multimedia: Entertainment, Education, Training, Advertising, and the World Wide Web**. Focal Press: Boston, MA, 1997.

Gause, D. C. and Weinberg, G. M. **Exploring Requirements: Quality Before Design**. Dorset House Publishing: New York, NY, 1989.

This book is a collection of ideas on how to gather requirements that meet the needs of customers and users. While not specific to usability requirements, many of the techniques would apply.

Gelertner, David. **Machine Beauty: Elegance and the Heart of Technology**, Basic Books, 1998.

Gelertner, David. **The Muse in the Machine: Computerizing the Poetry of Human Thought**, The Free Press: New York, 1994.

This book brings together computer science, cognitive psychology, philosophy and literary theory to look at how emotion could be introduced to the computer. Gelertner examines current writing on cognition and artificial intelligence to support his idea that it is the emotional element of thought that is the key to how thinking really works. Pursuing this idea, the author examines ancient literary text, religious traditions, children's writing and dreams in search of the source of intuition. He imagines a situation in which you "describe a complicated medical case to (a computer) and ask for the diagnosis. The computer might give you a serious, telling answer, but add, '... still, I'm not happy with that; it doesn't feel right.'" Gelertner's writing is dense -- The Muse in the Machine is 200 thought-provoking pages - but well worth the effort. (*Whitney Quesenbery - July 1998*)

Gershenfeld, N. **When Things Start to Think**. Henry Holt, New York, 1999.

Gloor, P. **Elements of Hypermedia Design: Techniques for Navigation & Visualization in Cyberspace**. Birkhäuser: Boston, MA, 1997.

Gloor describes navigational concepts for getting around cyberspace, tools and methods for designing large information spaces, and notes on multimedia editing and publishing. The discussion of navigational concepts is useful, but the latter chapters on multimedia editing and hypermedia publishing are a little too techie to be useful for most readers.

Goldman, A., & MacDonald. S. **The Group Depth Interview: Principles and Practice**. Prentice-Hall, Englewood Cliffs, N. J. 1987.

Greenbaum, T. **The practical handbook and guide to focus group research** Heath and Company, Lexington, MA, 1988.

Greenbaum, T. L. **The Handbook of Focus Group Research: Revised and Expanded Edition**. Lexington Books: New York, NY, 1993.

Focus groups are useful for assessing user needs, attitudes, preferences, and suggestions.

Greenbaum's handbook provide a clear explanation of how to organize and moderate focus groups and interpret the data from participants. This book contains information on how to select good moderators and avoid common mistakes.

## -H-

Hackos, J. T. and Redish, J. C. **User and Task Analysis for Interface Design**. Wiley: New York, 1998. Have you ever looked for a book that explains how to create the world's greatest user interface or write better documentation? Bookshelves overflow with books about designing user interfaces, usability testing, and writing documentation. It's difficult to choose the best book with so many choices on the market. Authors admit that task analysis is the first phase of any design process but bury the topic in the tomb of the book between pages 227 and 230. I wished for a book that thoroughly covers task analysis, and my prayers were answered.

JoAnn Hackos and Ginny Redish, renowned for their work in technical communication and usability, have written an intriguing book on the study of users. They share their knowledge and experiences about users, how to work toward the interface design, and documentation. The book begins with an introduction to prepare you for understanding the context of users and task analysis. Usually, this is the beginning of the end for most books. Instead, the authors describe how to prepare for site visits, how to conduct site visits, and how to make the transition from analysis to design. Topics are thoroughly researched, candidly written, and appropriately illustrated.

I was attracted this book because of the high praises it received from members of TECHWR-L and a popular newsgroup dedicated to usability. Having read the book and put some of the instructions into practice, I assure you that the praises are justified. This is a one of a kind book that belongs in your library. (David Dick - Usability Interface October 1998)

Hackos, J. T. and Stevens, D. M. **Standards for Online Communication: Publishing Information for The Internet/world Wide Web/Help Systems/ Corporate Intranets**. Wiley: New York, NY,1997.

Hackos and Stevens have pulled together a set of critical guidelines for developing modern information systems. These guidelines are often overlooked as companies rush to get on the Web or establish corporate intranets. The book covers three main topics: analyzing information needs (something often neglected), designing online systems, and implementing designs. This book contains a CD-ROM with a Windows Help file that has the guidelines discussed in the paper version.

Heckel, P. **The Elements of Friendly Software Design**. Sybex: Alameda, CA, 1991.

Heckel describes principles for designing "friendly" software and illustrates the principles with detailed case studies. This is an updated version of a book considered by some as a classic on user interface design.

Hall, Brandon, **Web-Based Training Cookbook** John Wiley & Sons

Harris, R. L. **Information Graphics: A Comprehensive Illustrated Reference - Visual Tools for Analyzing, Managing, and Communicating**. Management Graphics: Atlanta, GA, 1996.

This book is a veritable encyclopedia of information graphics - charts, maps, graphs, diagrams, and tables (over 4000 according to the book cover). Each entry describes the purpose of the information graphic and guidelines for drawing and using the graphic. If you want to know more about jittering, flow maps, stem and leaf charts, or patch graphs, buy the book.

Hayes, B. E. **Measuring Customer Satisfaction: Survey Design, Use, and Statistical Analysis Methods. (Second Edition)**. American Society for Quality: Milwaukee, WI, 1998.

If you are developing a product satisfaction survey, this book is a useful reference. The book covers the development of dimensions of satisfaction, reliability and validity, questionnaire construction, sampling methods, and the analysis of satisfaction data. There are a number of examples of satisfaction questionnaires that are useful for developing your own questionnaire. (*Chauncey Wilson, Usability Interface, January 1999*)

Hazemi, R, Hailes, S and Wilbur S (Eds) **The Digital University: Reinventing the Academy**. Springer-Verlag, Berlin etc. 1988.

Head, A. **Design Wise: A Guide for Evaluating the Interface Design of Information Resources**. Cyberage Books: Medford, NJ, 1999.

Alison Head's Design Wise is a short (196 pages), but useful and entertaining primer for readers who have to purchase, evaluate, or design interactive media. Part 1 of this book is an introduction to user interface design and evaluation. Part 2 analyzes CD-ROMs, Web sites, and online commercial databases. Useful checklists and interviews by notables like Don Norman and Jakob Nielsen are sprinkled through this book. CW-11/99

Helander, M. (Ed.) **Handbook of Human-Computer Interaction**. North-Holland: Amsterdam, 1988.

This is a compendium of papers on HCI topics from the late 1980s. Some papers are classics (e.g., the Whiteside, et al. paper on contextual methods and usability metrics and Gould's paper on designing usable systems). There is a very expensive hardcopy version of this book and a somewhat less expensive paperback version.

Helander, M. G., Landauer, T. K., and Prabhu, P. V. (Eds.) **Handbook of Human-Computer Interaction Second Edition**. North-Holland: Amsterdam, The Netherlands, 1997.

The Handbook of Human-Computer Interaction, Second Edition, is an update of the 1988 version listed in this bibliography. This massive compendium (1582) pages has nine sections:

## Usability Bookshelf Annotated Bibliography

1. Issues, Theories, Models, and Methods in HCI
2. Design and Development of Software Systems
3. User Interface Design
4. Evaluation of HCI
5. Individual Differences and Training
6. Multimedia, Video, and Voice
7. Programming, Intelligent Interface Design, and Knowledge-Based systems
8. Input Devices and Design of work Stations
9. CSCW and Organization Issues in HCI

The Handbook provides a mixture of practical advice and research on each topic and extensive bibliographies at the end of each chapter. This book is an excellent resource, but costly at \$390 for the hardback version.

Henderson, K., **On Line and On Paper: Visual Representations, Visual Culture, and Computer Graphics in**

**Design Engineering.** MIT Press, 1999.

Henry, P. **User-Centered Information Design for Improved Software Usability.** Artech House Computer Science Library, 1998.

Hix, D. and Hartson, H. R. **Developing User Interfaces: Ensuring Usability Through Product & Process.** Wiley: New York, NY, 1993.

Hix and Hartson's book provides excellent guidance on the entire user interface design process. The first part of the book focuses on standards and guidelines; the second part describes design, specification, and evaluation methods that designers can employ during the software development lifecycle.

Hoft, N. L. **International Technical Communication: How to Export Information About High Technology.** Wiley: New York, NY, 1995.

Hoft provides a comprehensive sourcebook on the issues associated with the design of international technical communications. She covers topics ranging from the management of internationalization groups to the criteria for selecting good translators. (International Design and Testing)

Horn, Robert E. **Mapping Hypertext: The Analysis, Organization, and Display of Knowledge for the Next**

**Generation of On-Line Text and Graphics,** The Lexington Institute: Lexington, MA 1989.

Mapping Hypertext is one of the early classics, written by the founder of Information Mapping. While many of the other early books now seem dated, and bound by the technology they described, this book remains a valuable overview of how information is organized. The issues this book raised almost ten years ago - content analysis, user task analysis, hypertext usability - are still being debated in information design today. (Whitney Quesenbery - July 1998)

Horrocks, Ian, **Constructing the User Interface with State Charts**, Addison-Wesley Pub Co. 1998.

Horton, W. **Designing and Writing Online Documentation**. Wiley: New York, NY, 1994.

Horton, W. **The Icon Book: Visual Symbols for Computer Systems and Documentation**. Wiley: New York, NY, 1994.

Everything you ever wanted to know about icon design. **The Icon Book** describes the process for designing icons, provides guidelines for icon design, and gives advice on how to design for international audiences. There is one version of the book that includes a disk with a set of 500 icons. Small companies that can't afford graphic designers might find this set of icons useful as a starting point for design.

Horton, W. **Illustrating Computer Documentation: The Art of Presenting Information Graphically on Paper and Online**. Wiley: New York, NY, 1992.

Horton presents detailed guidelines on the appropriate use of graphics for computer documentation.

Horton, William **Secrets of User-Seductive Documents (2<sup>nd</sup> Edition)** STC Press, 1997.

Howlett, V. **Visual Interface Design for Windows**. Wiley: New York, NY, 1996.

Virginia Howlett's book provides an excellent grounding in a wide range of visual design principles. The book is lavishly illustrated and deals with the design of games, consumer products, and commercial products. This is a good companion to Mullet and Sano's book **Designing Visual Interfaces**.

## -I-J-

Jacobson, R. (Ed.) **Information Design**. The MIT Press: Cambridge, MA, 1999.

Jackson, R., MacDonald, L. and Freeman, K. **Computer Generated Color: A Practical Guide to Presentation and Display**. Wiley: New York, NY, 1994.

Jensen, B. **Simplicity: The New Competitive Advantage in a World of More, Better, Faster**. Perseus Books, 2000.

Johnson, J. **GUI Bloopers: Don'ts and Do's for Software Developers and Web Designers**. Morgan Kaufmann: San Francisco, CA, 2000.

The book is an excellent compendium of the common GUI mistakes. Categories of mistakes include: GUI component bloopers, Layout and appearance bloopers, Textual bloopers, Interaction bloopers, Web bloopers, Responsiveness bloopers (CW)

Johnson, S. **Interface Culture: How New Technology Transforms the Way We Create and Communicate**. HarperEdge: New York, NY, 1997.

Steven Johnson's book discusses how art, engineering, and culture are intertwined in the design of user interfaces. This book, full of historical references to biblical mnemonics, Memex, bad predictions by famous computer scientists, Shakespeare, and Guttenberg, describes how interfaces have influenced our culture and communication patterns. There are six main chapters in the book:

1. Bitmapping: An Introduction
2. The Desktop
3. Windows
4. Links
5. Text
6. Agents

Sprinkled throughout these chapters are discussions of consistency in UI design, the limitations of hierarchical file systems, the dangers of ceding controls of tasks to agents, and the knitting together of disparate chunks of information through frames.

Jordan, P., **An Introduction to Usability** Taylor & Francis, 1999.

## -K-

Karat, J. (Ed.) **Taking Software Design Seriously: Practical Techniques for Human-Computer Interaction Design**. Academic Press: Boston, MA, 1991.

King, T. W. **Assistive Technology: Essential Human Factors**. Allyn & Bacon: Needham Heights, MA 1998.

King's book is a good survey of the human factors issues of assistive technology. His book covers principles that apply to assistive technology, switches and controls, and monitor screens. The last section of the book discusses why some assistive technologies fail. The book discusses issues that many HCI books don't. For example, the book covers assistive products that failed because they were not aesthetic or durable enough. CW-11/99

Klein, G. **Sources of Power: How People Make Decisions**. The MIT Press: Cambridge, MA 1998.

Gary Klein has received a lot of press in publications like The Wall Street Journal, The New York Times, and Science News for his work on understanding how experts make decisions under difficult conditions. His methodology is based on naturalistic observation and a detailed analysis of critical incidents. Klein's work indicates that experts under duress do not use rational decision-making techniques. The book underscores the power of stories in understanding decision-making. Each chapter ends with a list of key points. This is a highly recommended book. - CW 12/98

Krueger, Richard. **Focus Groups: A Practical Guide for Applied Research**, Sage Publications, 1988

Kukulska-Hulme, Agnes, **Language and Communication: Essential Concepts for User Interface and Documentation Design** Oxford Univ Press.

The book focuses on computer users as language learners and pulls in research from linguistics,

usability, learning, and cognitive psychology. The book has some provocative examples of how technical writers, corporations like Microsoft, and software engineers follow or promote language guidelines that are unnatural and confusing to users. There are intriguing discussions of often-discussed topics like how to use "click" in technical documentation, how menus and user guides often switch terms for the same thing ("document" and "file" for example). This is a fascinating book with a different slant on the use of text in user interfaces and documentation. - CW 4/99

Kyng, M. and Mathiassen, L. (Eds.) **Computers and Design in Context**. MIT Press: Cambridge, MA, 1997.

## -L-

Lansdale, M. W. and Ormerod, T. C. **Understanding Interfaces: A Handbook of Human-Computer Dialogue**. Academic Press: London, UK, 1994.

Landauer, T. K. **The Trouble with Computers: Usefulness, Usability, and Productivity**. The MIT Press: Cambridge, MA, 1995.

Landauer's book is a detailed study of why computers have not contributed to overall productivity. Landauer provides great detail on productivity and then focuses on the problems of usefulness and usability. This book provides many case history of problems with computers. Landauer then explains how user-centered design can have an enormous impact on productivity.

Laurel, B. (Ed.) **The Art of Human-Computer Interface Design**. Addison-Wesley: Reading, MA, 1990. This book has essays on topics ranging from the definition of user interface consistency to the development of interfaces for human-animal communication. This book provides the reader with an enjoyable tour of the diverse activities that comprise human-computer interface design.

Laurel, B. **Computers as Theatre**, Addison-Wesley: Reading, MA, 1991.

Leonard, D. and Swap, W., **When Sparks Fly: Igniting Creativity in Groups**. Harvard Business School Press, 1999.

Lie, Hakon Wium and Bos, Bert. **Cascading Style Sheets: Designing for the Web**, Addison-Wesley, Essex, England, 1997

Lindgaard, G. **Usability Testing and System Evaluation: A Guide for Designing Useful Computer Systems**. Chapman & Hall: London, UK, 1994.

Gitte Lindgaard's book covers the gamut of usability activities including: cost justifying usability work, user needs analysis, data collection and analysis, communicating usability results, inspection methods, interview and questionnaire methods, laboratory testing, and the integration of usability activities into the design process. There is a lot of practical advice in Lindgaard's book and each chapter has questions and exercises that are useful for self study or training seminars (there are answers to questions and exercises at the end of the book).

Luong, T. V., Lok, J.S. H., Taylor, D. J. and Driscoll, K. **Internationalization: Developing Software for Global Markets**. Wiley: New York, NY, 1995.

Luong and his colleagues have compiled a detailed set of the rules that developers of international software need to know. The book is clearly written, even when discusses technical programming issues. The one drawback that I found was a lack of graphics - the book is heavy on text and light on graphics.

## -M-

Macaulay, L. **Human-Computer Interaction for Software Designers**. International Thomson Computer Press, London, UK, 1995.

Macaulay's book is written for software engineers who might be designing their first user interface. The book provides a step-by-step description of various design techniques and follows this description with a case study.

Mandel, T. **The Elements of User Interface Design**. Wiley: New York, NY, 1997.

(1) Mandel's book covers four broad topics including: the foundations of user interface design, object-oriented user interfaces, the user interface design process, and advanced user interface techniques and technologies ( for example, agents, wizards, social interfaces, and Web usability). Mandel covers many topics, like object-oriented design, wizards and agents, that are hot issues for corporate UI designers. His book is rich with examples and practical information.

(2) This book is an introduction to user interface design, illustrated with plenty of real world examples and many quotations from a variety of sources. The theory and practical application of interface design is covered within the following four main parts of the book:

1. Foundations of User Interface Design
2. Object-Oriented User Interfaces
3. The User Interface Design Process
4. Advanced User Interface Techniques and Technologies

The book design is user-friendly. Each main part of the book (as mentioned above) begins with a roadmap, which provides a brief synopsis of each chapter in that section. Each chapter contains key ideas that make it easy for you to scan the text for important concepts or tips, and ends with a list of references for further reading. The chapters contain examples from well-known applications or operating systems.

While Mandel's conversational writing style is sure to appeal to many people, it might not please everyone. As a novice to user interface design, I thought the last section of the book was the most interesting. It covers interface design for online help, electronic performance support (EPS), advisors, wizards, multimedia, social user interfaces (such as Microsoft Bob), intelligent agents, and web interface design. (*Judy Blostein - Usability Interface October 1998*)

Marcus, A., Smilonich, N. and Thompson, L. **The Cross-GUI Handbook for Multiplatform User Interface Design**. Addison-Wesley: Reading, MA, 1995.

Martin, A. and Eastman, D. **The User Interface Design Book for the Applications Programmer**. Wiley: Chichester, UK, 1996.

Mayhew, D. J. **Principles and Guidelines in Software User Interface Design**. Prentice Hall: Englewood Cliffs, NJ, 1992.

Mayhew's book is highly recommended as a reference for anyone doing GUI design. The book lists user interface guidelines and provides research data to support the guidelines.

Mayhew, D. J. **The Usability Engineering Life Cycle: A Practitioner's Handbook for User Interface Design**. Morgan Kaufmann, San Francisco, CA, 1999.

McBurney, D. H. **Research Methods (4th Edition)**. Brooks/Cole: Pacific, Grove, CA, 1998.

If you want a good introduction to Research Methods or a review of methods that you haven't used since undergrad or grad school, the 4th Edition of Research Methods by Donald McBurney would be apropos. The book covers validity, control, non-experimental research, survey research, true experiments, single-subject experiments, quasi-experiments, reporting results, and ethics in research. This book, unlike other experimental psych books, is organized around the general problems of validity and how to reduce threats to validity. Statistics are covered in this book, but the bigger focus is on the concepts. McBurney is an usually clear writer and you can actually READ this book (in contrast to some of the classic stat books like Hayes). It is touted as an upper-level undergraduate book, nonetheless, it is a useful reminder for those of us who might want a quick refresher on counterbalancing, mixed-factor designs, and designs that are not based on random samples. There are really good tips in this book - for example, the tip on page 155 to consider how questionnaires are to be scored and analyzed before collecting any data. Seems like common sense, but it is rarely done. People romp out a questionnaire, send it out, get low response rates and uninterpretable data.

McCloud, Scott **Understanding Comics: The Invisible Art**, HarperPerennial: New York, 1994.

For anyone interested in visual communication, comics may be the ultimate blend of art and narrative. Told in the comic form, this book examines the art form from the basic elements of comics to what happens "between the panels". For anyone struggling with metaphors in interface design, the discussion of icons and how we translate images into perceived reality brings a fresh perspective. One of McCloud's most interesting insights is the way abstraction allows the user to bring their own imagination into play. "When you look at a photo of a realistic drawing of a face, you see it as the face of another, but when you enter the world of the cartoon, you see yourself." The chapters on narrative structure look at how the story is structured into panels, how time and motion are expressed, and the relationship between words and pictures in storytelling. (Whitney Quesenbery - July 1998)

McKay, E. N. **Developing User Interfaces for Microsoft Windows: Practical and Effective Methods for Improving the User Experience**. Microsoft Press: Redmond, WA, 1999.

This book has much of the same material contained The Windows Interface Guidelines for Software Design, but with a more personal approach. The author was a developer at Microsoft so the book is somewhat biased toward the Microsoft view of things. The book has a CD with some interesting utilities like a Resource Assistant (TM) that checks for common UI errors (field too short for allowed input for example) and "Upgrade-O-Meter" [which] monitors your PC's performance and estimates how much time you waste on an average day waiting for your computer. It then calculates the cost of this time on an annual basis to help you determine if an upgrade is justified." CW-11/99

Microsoft Corporation. **The Microsoft Manual of Style for Technical Publications**. Microsoft Press: Redmond, WA, 1996.

The Microsoft Manual of Style for Technical Publications is a comprehensive usage manual for Windows 95 software and documentation. This style guide contains lists of technical terms and examples of appropriate usage, acronyms and abbreviations, and special characters.

Microsoft Corporation. **Microsoft Windows User Experience: Official Guidelines for User Interface Developers and Designers**. Microsoft Press: Redmond, MA, 1999.

This book updates the guidelines found in The Windows Interface Guidelines for Software Design (Microsoft, 1995). There are updated or new sections on input conventions, common dialogs, new controls, Help support, multiple monitor support, and system integration. This book is recommended for any Windows developer or user interface designer. It is a good set of guidelines for traditional Windows applications, but like any set of guidelines, it is only the starting point for good design CW-11/99

Minasi, M. **Secrets of Effective GUI Design**. SYBEX: Alameda, CA, 1994.

Minnaert, M.G.J. (Translator), Seymour, L. (Translator). **Light and Color in the Outdoors**, Springer Verlag, 1993.

This is a science book for lay people. It's about observation, and could be filed under Optics, Astronomy, or Physics -- or Photography. What is it doing in a list of books for technical communicators interested in Usability? Well, for expanding your mind or helping you to open your eyes, I can think of few books that would do more. As Dr. Edward Tufte says in his well-regarded workshops, once you have read the Minnaert book, you'll never look at dappled sunlight the same again. There are also very interesting paragraphs on horizon effects (why can you see a ship upside down sometimes? what is that green flash at sunset? why does the sun sometimes seem to come apart just as it sets?), light at night reflected in raindrops or canals, and so on, with photographs illustrating many of the observed effects. Who knows, once we're better at observing nature, maybe observing humans becomes easier as well. And this is delicious mind candy. (*Alice Preston*)

Monk, A., Wright, P., Haber, J. and Davenport, L. **Improving Your Human-Computer Interface: A Practical Technique**. Prentice Hall: New York, 1993.

This slim paperback gives practical advice on "Cooperative Evaluation", a technique for uncovering potential usability problems in early prototypes. Appendix 1 is a procedural guide to Cooperative Evaluation containing checklists for preparing and conducting test sessions.

Mullet, K. and Sano, D. **Designing Visual Interfaces: Communication Oriented Techniques**. SunSoft Press: Mountain View, CA, 1995.

Mullet and Sano's book provides clear examples of some of the elusive concepts of visual layout and design of GUIs. There are good descriptions of design concepts like unity, scale, proportion, grouping, balance, and cohesiveness. The book is heavily illustrated with good and bad visual designs.

Murray, Janet H **Hamlet on the Holodeck: The Future of Narrative in Cyberspace**, The Free Press: New York, 1997.

Computer games from the interactive stories from Infocom to free-form multi-user dungeons (MUDs) are explorations in bringing storytelling into cyberspace. This book is an engaging overview and analysis of the new narrative forms. The author looks at the types of interactions, from text-based entry to virtual reality devices and the relationship between the 'interactor' and the story. She is particularly interested in the computer characters: how realistically they are portrayed, how autonomous their actions and how they relate to the human interactors. There is a long journey from the early experiments like Eliza to the characters on the Star Trek holodeck. How far is the distance from the Microsoft Office Assistant to the computer-based entity, Jane, in Orson Scott Card's **Speaker for the Dead** (TOR Books, 1986)? (WQ - July 1998)

## -N-

Newman, W. M. and Lamming, M. G. **Interactive System Design**. Addison-Wesley: Wokingham, UK. Interactive System Design is a good textbook for a general course on human-computer interaction.

Niederst, J., **Web Design in a Nutshell**. O'Reilly & Associates, 1998.

Nielsen, J. (Ed.) **Designing User Interfaces for International Use**. Elsevier: Amsterdam, The Netherlands, 1990.

Nielsen, J. **Designing Web Usability: The Practice of Simplicity**. New Riders Publishing, Indianapolis, IN. 2000.

Nielsen, J. **Hypertext and Hypermedia**. Academic Press: Boston, MA 1993.

Nielsen, J. **Multimedia and Hypertext: The Internet and Beyond**. AP Professional: Boston, MA, 1995. Nielsen has compiled a detailed reference book on hypertext and multimedia systems. The book does not focus on any one system (like the World- Wide-Web); it deals with a wide range of applications and provides guidelines for choosing the most appropriate hypertext implementation for a particular context. The chapters most relevant to usability specialists deal with hypertext architectures, techniques for navigating large navigation spaces, and hypertext usability. Chapter 10 (Hypertext Usability) describes usability attributes for both users and authors of hypertext systems.

Nielsen, J. **Usability Engineering**. Academic Press: Boston, MA, 1993.

*(Note: There is a paperback version available. The paperback version has additional references and*

*some updated material.*) Nielsen's **Usability Engineering** is highly recommended. The book describes the process by which development groups can create usable applications. The book details how usability issues must be considered throughout the development process and provides techniques for gathering usability data. There is excellent information on low-cost usability testing techniques.

Nielsen, J. and Mack, R. L. (Eds.) **Usability Inspection Methods**. Wiley: New York, NY, 1994. Nielsen and Mack describe the experiences of usability engineers who have applied inspection techniques to user interfaces. User interface inspections are conceptually similar to code inspections and are becoming a serious tool for finding "problems" with user interfaces.

Norman, D. **The Design of Everyday Things**. Doubleday: New York, NY, 1990. **The Design of Everyday Things** provides hundreds of examples of good and bad product design. This book is especially good as a catalyst for getting people to think about design. There is a paperback version of this book in many good bookstores.

Norman, D. A. **The Invisible Computer: Why Good Products Can Fail, The Personal Computer Is So Complex, and Information Appliances Are the Solution**. The MIT Press: Cambridge, MA, 1998. Don Norman is the latest industry guru to look at why computers have not lived up to their promise. As he puts it, the purpose of this book is to take a realistic look at the world of technology, the better to understand why good products can fail and inferior products succeed. Although there are some interesting points and a good summary of some of the current thinking on the subject, the book meanders somewhat repetitively as though it was collected from a series of lecture notes. In the end, it gives short shrift to a description or analysis of the information appliances promised in the title. Several chapters of this book are available online at <http://www.ind.org/> (Whitney Quesenbery)

Norman, K. L. **The Psychology of Menu Selection: Designing Cognitive Control at the Human/Computer Interface**. Ablex: Norwood, NJ, 1991. Norman's book is a compendium on menu research before 1991. He covers types of menus, cognitive issues in menu selection, formatting and phrasing in menus, learning and training, depth versus breadth, search behavior, prototyping menus, and guidelines for good menu designs. While the book is a bit dated, there is still much useful information on common questions such as: How long should a menu be? How do I organize menus? How can I test menu designs?

## -0-

Olsen, Dan R. **Developing User Interfaces**, Morgan Kaufmann Publishers, San Francisco, 1998. If you need a present for your favorite programmer (the one who goes the extra mile to make the interface actually work right), this book might be it. Olsen says "Unlike most of the other books on the market...its primary target is those who must actually program the user interface." One area where this book is particularly useful is in its discussion of the difference between a functional design specification and an implementation design, which can give interface designers and usability experts insight into the process creating the architecture of the program. In its description of how interactive behavior is handled in the interface, it identifies all of the elements that must be defined for a

complete specification. As a bridge between the worlds of user interface design and system architecture, this book can help a designer understand the issues programmers face in implementing a design. (*Whitney Quesenbery - Usability Interface October 1998*)

## -P-Q-

Pande, P. S. Neuman, R. P., & Cavanagh, R. R. **The Six Sigma Way: How GE, Motorola, and Other Top Companies are Honing Their Performance.** McGraw-Hill: New York, NY, 2000.

There are some pop-methods and fluff in the "Six Sigma Way," but the book also has some good summaries of methodologies from the quality, management, and design areas. There are some good Do's and Don'ts about how to improve quality and examples of simple charts to indicate if process improvements are really improving things. The book is one that stimulates thinking and provides some good ideas and tips that you can try out in your design process.

Parker, R. C. **Guide to Web Content and Design: Eight Steps to Web Site Success.** MIS:Press: New York, NY, 1997.

Roger Parker describes a process for designing a business Web site that attracts and keeps clients coming back. He starts out by talking about marketing on the web and different ways to use the Web. Then he outlines a process for designing and evaluating a Web site. There are practical tips on topics like choosing a Web site address, chunking content, getting visitors involved with the site, choosing colors, and promoting Web sites. Most chapters have detailed worksheets that can be used as an aid for planning, designing, and reviewing Web sites.

Parsaye, K. and Chignell, M. **Intelligent Database Tools & Applications: Hyperinformation Access, Data Quality, Visualization, Automatic Discovery.** Wiley: New York, NY, 1993.

This book is a good reference for designers working on methods for accessing large databases. The authors discuss data visualization, hypermedia, executive information systems, and architectures for designing intelligent databases.

Payne, S. L. **The Art of Asking Questions.** Princeton University Press, Princeton, N. J., 1979.

Pearrow, M. **Web Site Usability Handbook.** Charles River Media, Inc: Rockland, MA, 2000.

Pfaffenberger, B. **The Elements of Hypertext Style.** AP Professional: Boston, MA, 1997.

The goal of this book is to teach useful and usable communication strategies for Web publishing. This book provides guidelines for designing useful, aesthetic, and usable Web sites. Pfaffenberger notes that the focus of this book is on smaller Web publishers who may not have the resources of Fortune 500 companies. The book is well-written and illustrated and a good addition to the user interface designer who is being asked to design and evaluate Web pages and sites.

Picard, R. W. **Affective Computing.** The MIT Press: Cambridge, MA, 1997.

Affective Computing is a book about how to imbue computers with emotion. The author's thesis is that emotion can have a positive effect on decision-making. This book reviews the literature on

theories of emotion and the impact of emotion on decision making. Picard notes that "emoticons", those little faces made of text characters, are already used to help people understand the meaning of text and that new technologies will soon allow computers to express emotion. Picard describes work by Daniel Goleman who wrote the book *Emotional Intelligence*, Patti Maes, a strong voice for agent technology, Reeves and Nass, authors of the *Media Equation*, and other prominent psychologists delving into the importance of emotion in human-human and human-computer interactions.

Preece, J., Rogers, Y., Sharp, H., Benyon, D., Holland, S. and Carey, T. **Human-Computer Interaction**. Addison-Wesley: Reading, MA, 1994.

This is a textbook that covers many aspects of HCI. The book opens with a discussion of the goals of HCI work and goes on to cover topics in human cognition, technology, interaction design, and evaluation.

## -R-

Raman, T.V., **Auditory User Interfaces: Towards the Speaking Computer**. Kluwer Academic Publishers, 1997.

Raskin, J. **Humane Interface, The: New Directions for Designing Interactive Systems**. Addison-Wesley, 2000.

Redmond-Pyle, D. and Moore, A. **Graphical User Interface Design and Evaluation (GUIDE): A Practical Process**. Prentice Hall: London, UK, 1995.

The GUIDE process is a systematic and practical approach to user interface design. The authors have taken techniques like usability engineering, scenarios, and task analysis, and combined them into a development process. The primary audience for this book is an analyst or user interface designer who is not a human factors specialist.

Reeves, B. and Nass, C. **The Media Equation: How People Treat Computers, Television, and New Media Like Real People and Places**. CLSI Publications: Stanford, CA, 1996.

Reeves and Nass are professors of communication at Stanford University. The *Media Equation* summarizes several years of research on how humans relate to computers, television, and other types of new media. Reeves and Nass present findings that humans treat computers and other media technology as real people and places. Some of their conclusions are that people have natural social responses to computers, that people assign traits to computers, and that designers of "new media" could improve ease of use by employing rules for social and physical relationships. One design problem with this book is that it only has an author index.

Reilly, J. P. **Rapid Prototyping: Moving to Business-centric Development**. Thomson Computer Press: Boston, MA, 1996.

Reilly provides a framework for integrating the analysis of business functions, workflow, visual design, and product development into a rapid application prototyping (RAP) process. There is significant focus on defining technical requirements, business process modeling, and evolutionary prototyping. This

book seems focused toward designers working on very large systems like those used in manufacturing, retail sales, or the financial departments of large companies.

Roberts, D., Berry, D., Isensee, S., and Mullaly, J. **Designing for the User with OVID: Bridging User Interface Design and Software Engineering.** Macmillan Technical Publishing: Indianapolis, IN, 1998. OVID stands for Object, View, and Interaction Design. This book is an interface methodology that attempts to bring some structure to the often chaotic design process. The book makes the point that you can do a good job at user and task analysis, but still have a poor product if the implementation is flawed. The authors combine notation and modeling techniques used by successful coders (UML, state diagrams, class models) with the methods of user interface designers. This book includes a case study and exercises. - CW 12/98

Rosenfeld, L. & Morville, P. **Information Architecture for the World Wide Web.** O'Reilly & Associates: Cambridge, MA, 1998.

Ruble, D. A. **Practical Analysis and Design for Client/Server and GUI Systems.** Yourdon Press: Upper Saddle River, NJ, 1997.

Ruble introduces users to a variety of modeling techniques including context models, event models, information models, interface prototypes, object-oriented models, and client/server architecture models. Ruble discussed many trade-offs that can determine the success of a client/server system. There is a good chapter on GUI design principles and a detailed discussion of how to organize windows to match particular types of workflow.

Rubin, J. **Handbook of Usability Testing: How to Plan, Design, and Conduct Effective Tests.** Wiley: New York, NY, 1994.

This handbook is a step-by-step guide to effective usability testing. Rubin provides many tips that will benefit both the new and the experience usability practitioner. The book was written with the assumption that readers won't have human factors training.

## -S-

Salant, P. A. and Dillman, D. A. **How to Conduct Your Own Survey.** Wiley: New York, NY, 1994.

Salvendy, G. (Ed.). **Handbook of Human Factors and Ergonomics (Second Edition).** Wiley: New York, NY, 1997.

This is a thick, expensive, and useful handbook. The book covers human factors fundamentals, job design, equipment and workplace design, health and safety, performance modeling, evaluation (including a chapter by Jakob Nielsen on Usability Testing), and HCI.

Salzman, H. and Rosenthal, S. **Software by Design: Shaping Technology and the Workplace.** Oxford University Press: New York, 1994.

This book is not in the usability or design mainstream, but it has some valuable advice about the impact of organizational structures, strategic marketing, and workplace conditions on the design of

software. This book comes at design from a sociological perspective. There are several in-depth case studies of large-scale design projects (e.g., a banking services system) that will appeal to professionals who use contextual inquiry.

Sanders, M. S. and McCormick, E. J. **Human Factors in Engineering and Design (7th ed.)**. McGraw-Hill, NH, 1993.

This is a classic human factors textbook that explains human input and output capabilities. A careful reading of this book can provide usability specialists with research to support design decisions.

Sano, D. **Designing Large-Scale Web Sites: A Visual Design Methodology**. Wiley: New York, NY, 1996.

Sano provides a broad review of topics related to the design of web sites. He describes how to prepare for a web design project, how to build the framework for a web site, and how to apply principles of good visual design and navigation. Quite a useful book for those getting into web site design.

Scholtes, Peter R., Joiner, B. L., Streibel, B. J., **The Team Handbook Second Edition** Oriel, Inc. 1995.

Schrivers, K. A. **Dynamics in Document Design: Creating Text for Readers**. Wiley: New York, NY, 1997. Schrivers' book describes how document design has evolved, discusses how users react to different facets of documents (for example typography, illustrations, and examples). The book uses case studies extensively and draws on research from rhetoric, design, writing and cognitive science. Schrivers' work highlights how interactions among different variables (for example, justification, word spacing, and leading) affect readability and interpretation and how designers should be cautious about basing decisions on "main effects".

Schuler, D. and Namioka, A., Eds., **Participatory Design, Principles and Practices**, Lawrence Erlbaum Associates, Hillsdale, NJ, 1993.

Shneiderman, B. **Designing the User Interface: Strategies for Human-Computer Interaction (Third Edition)**. Addison-Wesley: Reading, MA, 1998.

Designing the User Interface is broad sampling of many topics in human-computer interaction. Topics include: human factors of interactive systems, managing the design process, methods for evaluating user interfaces, menu and dialog box design, virtual environments, user assistance, computer-supported cooperative work, and hypermedia. Each chapter has theory, empirical research, and design guidelines. There is a Web site with links to additional reading, examples, and HCI sites. Each chapter has an excellent reference list.

Spool, J, Scanlon, T. et.al. **Web Site Usability: A Designer's Guide**. Morgan-Kaufmann, San Francisco, CA, 1999.

Strassmann, Paul. **The Squandered Computer**, The Information Economics Press, New Canaan, CT 1997.

This book by gadfly, strategic planner, CIO and consultant Strassmann is directed primarily at the

executives in charge of making decisions about the technology infrastructure of our large corporations. It is not a comfortable book. It looks hard at the fallacies and mistakes that have been made in technology adoption and offers recommendations for making information technologies serve the business. Despite the fact that the word "usability" does not appear in the index, this work is of interest because, like Tom Landauer's *The Trouble with Computers*, it gives us a business-oriented view of the problems with computers. While it may seem self-evident that a company will get more value from its investment if software does not impede productivity, it can be hard to make the case to a CIO buried under upgrade cycles and Y2K problems. The ideas (and facts and figures) in this book could help make the case for usability as a business solution that will bring IT efforts into better alignment with business goals. (*Whitney Quesenbery Usability Interface October 1998*)

Stuart, R. **The Design of Virtual Environments**. McGraw-Hill: New York, NY, 1996.

The Design of Virtual Environments is broken into three parts. Part 1 focuses on defining requirements for virtual environments. Part 2 discusses how to design virtual systems and covers technologies like position trackers, instrumented gloves and suits, eye tracking, visual displays, and computational requirements. The final part of the book describes how to evaluate virtual environments from usability and system performance perspectives. This book explains the many facets of virtual environment design in lucid prose.

Sudman, S., Bradburn, N. M., and Schwarz, N. **Thinking About Answers: The Application of Cognitive Processes to Survey Methodology**. Jossey-Bass: San Francisco, CA, 1996.

This book pulls together research in cognitive psychology and survey design. It isn't a light read, but it has answers to some of the questions about questionnaires/survey designs that have cropped up in discussions with usability colleagues. (*Chauncey Wilson, Usability Interface October 1998*)

Sun Microsystems, Inc. **JAVA Look and Feel Design Guidelines**. Addison-Wesley, Reading, MA, 1999.

This is the first serious style guide for Java, written by designers at Sun Microsystems. The guidelines in the book are based on the Java2 SDK which include the Swing Classes. The book covers Java widgets, visual design, internationalization, accessibility and keyboard access. This is a clear and readable style guide that provides the foundation (but not the solution) for a consistent Java user interface. CW 11/99

## -T-

Tabachnick, B and Fidell, L. **Using Multivariate Statistics**, Addison-Wesley, 1996.

Tannenbaum, R. **Theoretical Foundations of Multimedia**. Computer Science Press, New York, 1998 (includes CD-ROM).

Templeton, J. F. **The Focus Group: A Strategic Guide to Organizing, Conducting, and Analyzing the Focus Group Interview**. Irwin Professional Publishing: Chicago, IL, 1994.

Thorell, L.G. and Smith, W.J. **Using Computer Color Effectively: An Illustrated Reference.** Prentice Hall: Englewood Cliffs, NJ, 1990.

Thomas, R. C. **Long Term Human-Computer Interaction: An Exploratory Perspective.** Springer-Verlag: London, UK, 1998.

This book focuses on research into long-term computer use, a topic seldom covered in most basic books on usability. However, it is quite academic and probably most useful for anyone who might be planning longitudinal research. *Chauncey Wilson*

Tognazzini, B. **Tog on Interface.** Addison-Wesley: Reading MA, 1992.

Tognazzini's book is based on a series of columns, papers, and correspondence during the development of System 7 for the Macintosh. These essays point out the complexity of GUI design. Tog offers his own set of guidelines on topics ranging from user testing to menu design. Though focused on the Macintosh, many of the guidelines would apply to any GUI platform.

Tognazzini, B. **Tog on Software Design.** Addison-Wesley: Reading, MA, 1996.

Tognazzini's new book focuses on the higher levels of design. He covers topics ranging from trends in computing to the true meaning of quality. The book is full of useful data and anecdotes for those aiming for the next generation of computing. This book is highly recommended.

Trenner, L. and Bawa, J. (Eds.) **The Politics of Usability: A Practical Guide to Designing Usable Systems in Industry.** Springer-Verlag: London, UK, 1998.

This short paperback has excellent advice for anyone who is trying to establish a usability presence. Chapters topics include making a business case for usability, overcoming inertia in large organizations, integrating usability into system development, and cultivating an effective client relationship. Each chapter ends with a list of major lessons learned. Newcomers to the field can gain some savvy from this book. Experienced practitioners may find some new methods or political ideas that will make their work easier. - *CW 12/98*

Tufte, E. R. **The Visual Display of Quantitative Information.** Graphics Press: Cheshire, CT, 1983.

This is a classic book on the minimalist approach to presenting quantitative information. Tufte provides a language for discussing statistical graphics and suggests many techniques for refining graphics and making them more usable.

Tufte, E. R. **Envisioning Information.** Graphics Press: Cheshire, CT, 1990.

**Envisioning Information** is a guide to presenting multi-dimensional data in two dimensions.

Tufte, E. R. **Visual Explanations: Images and Quantities, Evidence and Narrative.** Graphics Press: Cheshire, CT, 1997.

In his third book on graphical design, Tufte focuses on how to present data about "motion, process, mechanism, cause and effect." Tufte notes that visual explanations are often used to make critical decisions. Tufte uses some provocative case studies like the Space Shuttle Challenger hearings and esoteric examples like instructions for magic tricks to illustrate some of the problems of visual explanation. Tufte's work is beautiful, but it takes some work to draw out how his ideas can be

applied in the day-to-day bustle that confronts most user interface designers. His first book, *The Visual Display of Quantitative Information*, has concepts (for example, chartjunk), that were much easier to assimilate and apply.

## -U-V-W-

Vicente, K. J. **Cognitive Work Analysis: Toward Safe, Productive, and Healthy Computer-Based Work**. Lawrence Erlbaum: Mahwah, N.J. 1999.

The goal of this book is to "help designers of complex sociotechnical systems create computer-based information support that helps workers adapt to the unexpected and changing demands of their jobs" (p. xiv). This book is based on the work of Jens Rasmussen and his colleagues in Denmark over the last 3 decades. The book discusses methods that are similar to contextual inquiry and design, but it does so in a very complex way. This book feels like a Ph.D dissertation that was turned into a book. This might be a good resource for anyone doing serious research on task analysis or work modeling, but it is not a book for busy practitioners. (Submitted by Chauncey E. Wilson)

Wainer, H. **Visual Revelations: Graphical Tales of Fate and Deception from Napoleon Bonaparte to Ross Perot**. Copernicus: New York, NY, 1997.

Wainer's book is a good companion to Ed Tufte's three books on the visual design of information display's. Wainer provides a short history of graphical data presentation and describes how graphic representations can highlight subtle aspects of data or distort data in ways that manipulate the viewer's perception. The final four chapters in the book provide guidelines for improving graphical presentations. The last chapter in the book is "Making Readable Overhead Displays", a very practical topic.

Weinschenk, S., Jamar, P., and Yeo, S. C. **GUI Design Essentials for Windows 95, Windows 3.1, World Wide Web**. Wiley: New York, NY, 1997.

**GUI Design Essentials** presents a clear explanation of the process used to design user interfaces. This book explains how to develop user profiles, task analyses, design metaphors, use case scenarios, and low and high-fidelity prototypes. There are many checklist and tables that could prove useful in trying to integrate user interface design into the overall development process. After the chapters on process, the authors provide a set of design guidelines for user interface objects like windows, dialog boxes, menus, and individual controls. There is a useful set of guidelines for Web design. The book comes with a CD and a note on the cover that the online version of the book "...can be customized to create instant GUI standards for your company".

Weiss, E. **Making Computers People-Literate**. Jossey-Bass Publishers: San Francisco, CA, 2000.

Wickens, C. D. & Hollands, J. G. **Engineering Psychology and Human Performance (Third Edition)**. Prentice Hall: Upper Saddle River, NJ, 2000.

There is a new edition of *Engineering Psychology and Human Performance* by Chris Wickens and Justin Hollands. For people who want an excellent introduction to the research and theory that

underlies design guidelines, this is a well-written reference. The newest edition does more than earlier editions to relate theory to practical situations.

Wiklund, M.E., editor, **Medical Device and Equipment Design: Usability Engineering and Ergonomics**. Interpharm Press, 1995.

Wiklund, M. E. (Ed.) **Usability in Practice: How Companies Develop User-Friendly Products**. Academic Press: Boston, MA, 1994.

Wiklund's book describes the experience of usability engineers and user interface designers at 17 different companies. There is much information on how to create and manage a usability team as well as information on the advantages and disadvantages of various usability methods.

Wildbur, P. and Burke, M. **Information Graphics: Innovative Solutions in Contemporary Design**. Thames and Hudson: London, UK, 1998.

This lavishly illustrated book presents case studies of the design of software, signage, signaling systems, air traffic control systems, and multimedia kiosks. The book is divided into sections (color coded) entitled: Informing the Traveller, Explaining How Things Work, Controlling the Input, Interacting with the Screen, Exploring the 3-D Interface, and Mapping the Internal and External Worlds. One drawback is the lack of an index.

Williams, R. and Tollett, J. **The Non-Designer's Web Book: An Easy Guide to Creating, Designing, and Posting Your Own Web Site**. Peachpit Press: Berkeley, CA, 1998.

This book is a primer on Web design. Topics include: how Web design differs from print design, basic design principles, navigation principles, typography, color, and how to recognize good and bad design.

Winograd, T. (Ed.) **Bringing Design to Software**. ACM Press: New York, NY, 1996.

Wixon, D. and Ramey, J. (Eds.) **Field Methods Casebook for Software Design**. Wiley: New York, NY, 1996. Dennis Wixon and Judy Ramey's Casebook is replete with practical advice on field research methods for the design of both hardware and software systems. Methods like contextual inquiry, CARD, PICTIVE, usability round tables, task analysis, and participatory design are explained with authors' commentary on how to integrate the field methods into development cycles, the costs and benefits associated with each technique, how to collect and analyze data, and future trends. This book is a valuable addition to the literature on how to design useful and usable systems.

Wood, L. E. (Ed.) **User Interface Design: Bridging the Gap from User Requirements to Design**. CRC Press: Boca Raton, FL, 1998.

One of the most difficult steps in product design is the move from textual requirements to GUI (or Web) designs. The book presents a variety of techniques for modeling work, creating scenarios, developing object-oriented presentations, and designing breakthrough systems. Many of the chapters provide detailed descriptions of techniques for bridging the gap between requirements and concrete designs. - CW 12/98

This book is a collection of 10 chapters describing how "experienced designers use the results of user work/task analyses and other tools and resources to ...bridge the gap between analysis and interface design." Many books describe standards for screen layout, icon and color use and the general manipulation of the tools of the GUI design environment. But few have been able to break into the initial moments of creativity in which the basic architecture of the interface is created. The book grew out of a workshop held at the CHI '96 conference, and has retained the immediacy of a conference presentation.

There are a wide variety of techniques described in these chapters. Some, like The Bridge (a methodology from Bellcore for quickly designing object-oriented interfaces), have been widely used. Others are more personal and are an attempt to describe practices that have worked at individual companies. One, the Delta Method from Ericsson Radio Systems, includes user documentation and usability requirements as an explicit output of the work. Although the approaches and emphases vary, there are some common threads to these chapters.

- Use of group design techniques, whether they involve users or only the design team
- Methodologies which allow for rapid iteration, especially at the early stages of the design
- Low fidelity prototyping techniques to create a visual, tangible representation of the design early
- An emphasis on formulating a conceptual model

My copy is bristling with bookmarks. I have found both practical techniques to try out in my own work and new approaches to think through. (*Whitney Quesenbery, Usability Interface October 1998*)

## -X-Y-Z-

Zelanski, P. and Fisher, M. P. **Design Principles and Problems (2<sup>nd</sup> Edition)**. Harcourt Brace College Publishers: Fort Worth, TX.

This goal of this book is to enlighten readers to universal principles of visual design. The book has chapters on the awareness of design, unifying principles of design, the use of lines, textures, color, shape, and space. Each chapter has "studio problems" for reinforcing particular visual design principles.

Zetie, C. **Practical User Interface Design: Making GUIs Work**. McGraw-Hill: London, UK, 1995.

Zetie has some practical tips for designing corporate applications that are not found in other books. He discusses some of the sticky issues surrounding GUIs that are front-ends for databases.