New Jersey Institute of Technology
Department of Industrial and Manufacturing Engineering

BIBLIOGRAPHY FOR IE 662
Cognitive Engineering, Fall 2003

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General Recommended Reading

D. A. Norman (2002). *The Design of Everyday Things.* Basic Books. ISBN: 0465067107. Originally published as *The Psychology of Everyday Things* in 1988 → Excellent book for understanding and absorbing the attitude of designing for users, a quick read; one of the most widely cited books in the field. Other Don Norman mass-appeal books (e.g. *Things that Make Us Smart*) cover pretty much the same ground, but are redundant.

Petroski, H. (1982). *To Engineer is Human: The Role of Failure in Successful Design.* St. Martin's. Republished in facsimile by Barnes & Noble in 1994 as ISBN 1-56619-502-0 → A <u>must</u> read for any engineer of any stripe. (Note: no specific content concerning human factors.) Maybe you can find it in B&N's bargain rack up front, if the original is not in the library.

D. Gentner and A. L. Stevens (Eds.) (1983). *Mental Models.* Englewood Cliffs: Lawrence Erlbaum Associates, Inc.

A. Chapanis (1965). *Man-Machine Engineering.* Wadsworth Publishing Co., Inc. → A brief and authoritative survey of 'knobs and dials' human factors, a good book to read for background to an HCI course such as this one – if you lack classic HF background -- it gives you just enough in a brief and highly readable format. Unfortunately, it is somewhat dated (particularly the title) and out of print, however, copies can be found at libraries and on alibris.com. Otherwise, there is Sanders & McCormick.

B. Laurel (Ed.) (1990). *The Art of Human-Computer Interface Design.* Addison-Wesley. ISBN: 0201517973 → HCI design is more than just engineering and psychology.

J. Nielsen (1994). *Usability Engineering.* Morgan Kaufman. ISBN 0-12-518406-9

J. Nielsen (2000). *Designing Web Usability.* New Riders. ISBN 1-56205-810-X.

D. A. Norman (1999). *The Invisible Computer*. MIT Press. ISBN: 0262640414. → The material about marketing and design is at least as good as the information appliance content.

S. Krug (2000). *Don't Make Me Think: A Common Sense Approach to Web Usability*. New Riders. ISBN**:** 0789723107 → Short and readable, pithy practical advice, but, most of all, great title.

S. Draper & D. A. Norman (1986). *User Centered System Design.* Erlbaum ISBN**:** 0898598729 → Old moldy classic. The title gave name to a movement.

S. K. Card, T. P. Moran, and A. Newell (1983). *The Psychology of Human-Computer Interaction*. Hillsdale, NJ: Erlbaum → Basic, classic, one of the original threads that really started HCI going, contains early GOMS material.

H. Petroski (2003). *Small Things Considered: Why There Is No Perfect Design*. Knopf. ISBN 1-4000-4050-7. → Everything Petroski writes is golden and reads like a novel. This book just came out a month or two ago and is a wonderful compliment to the content of his first book, cited above. Unlike the earlier book, here Petroski does discuss human factors. His several books between 1982 & 2003 are also highly recommended.

Cooper (1999). *The Inmates Are Running the Asylum.* ISBN**:** 0672316498 → Something of a diatribe by the author of Visual Basic, which argues that programmers have too much control over software design, an interesting read, but also perhaps not the whole story.

L. A. Suchman (1987). *Plans and Situated Actions: The Problem of Human-Machine Communication.* Cambridge ISBN: 0521337399. → An important idea, difficult reading

Sources and Further Readings for the Lectures

Lecture 1 – Introduction, Significance, Cost Justification

N. Leveson & C. S. Turner (1993). An investigation of the Therac-25 accidents. *IEEE Computer*, vol. 26, no. 7 pp. 18-41
http://courses.cs.vt.edu/~cs3604/lib/Therac_25/Therac_1.html

S. Casey (1993). *Set Phasers on Stun*. Aegean. ISBN 0-9636178-7-7.

K. Vicente (2002). Professional ethics as a systems problem: A case study for teaching. *Cognitia*, Vol. 6, No.1, Summer.
http://web.mit.edu/afs/athena.mit.edu/activity/h/hfes/www/Cognitia.pdf

K. Vicente (2000). Human Factors researcher alarmed by deaths during PCA. *Anesthesia Patient Safety Foundation Newsletter*. Vol 15, No. 3. http://www.apsf.org/newsletter/

A. D. Andre (2000). Human Factors consultant rebuts PCA pump danger charges. *Anesthesia Patient Safety Foundation Newsletter*. Vol 15, No. 3.
http://www.apsf.org/newsletter/index.php

D. Woods & P. Hancock (2000). *Dumb votes or bad design at root of ballot confusion?*
http://www.decadeofbehavior.org/policyseminars/er_voters-or-design.pdf

D. Woods & P. Hancock (2000). *Ballot disaster reveals machines do not accurately recognize and tabulate out votes.*
http://www.decadeofbehavior.org/policyseminars/er_ballot_disaster.pdf

S. K. Roth (1998) Disenfranchised by design: Voting systems and the election process. *Information Design Journal.* Vol. 9, No. 1.
http://www.decadeofbehavior.org/policyseminars/er_roth1998.pdf or
http://informationdesign.org/pubs/roth1998.html

J. O'Hara (2002) Improving Voting Systems. *HFES Bulletin*. Vol. 45. No. 11.
http://www.hfes.org/news/bulletin1102.pdf

M. Wittenburg (2003) A better ballot? *Christian Science Monitor*, November 3.
http://www.csmonitor.com/2003/1103/p11s02-uspo.html

R. G. Bias & D. J. Mayhew (1994). *Cost-Justifying Usability*. Academic. ISBN: 0-12-095810-4.

C. L. Mauro (1994). Cost-Justifying usability in a contractor company. In Bias & Mayhew *op cit.*

A. M. Lund (1997). The cost of usability. *Interactions*. May-June.

J. Nielsen (2003) *Usability 101*. Alertbox, August 25.
http://www.useit.com/alertbox/20030825.html

Lecture 2 -- Applying Psychology to Design, Human Memory

R. Lachman, J. L. Lachman, & E. C. Butterfield (1979). *Cognitive Psychology and Information Processing: An Introduction*. Erlbaum. ISBN: 0 470-26649-X.

M. M. Gardiner & B. Christie (Eds.) (1987). *Applying cognitive psychology to user-interface design*. Wiley. → Out of print, promising title but only moderately successful.

Lecture 3 -- Perception, Attention, Mental Models

S. Coren, L. M. Ward, & J. T. Enns (1984). *Sensation and Perception.* Academic. ISBN: 0-471-27255-8.

J. J. Gibson (1979). *The Ecological Approach to Visual Perception*. Houghton Mifflin.

G. Torenvliet (2003). We can't afford it: The devaluation of a usability term. *Interactions*. Vol. 10, No. 4, pp. 13-17. → Discussion of term affordance in UI design

Gentner, D. and D. R. Gentner (1983). Flowing waters or teeming crowds: mental models of electricity. In D. Gentner and A. L. Stevens (Eds.) *Mental Models* Englewood Cliffs: Lawrence Erlbaum Associates, Inc.

Lecture 4 -- Design Process, Requirements, Task Analysis

J. D. Gould & C. Lewis (1985). Designing for usability: Key principles and what designers think. *Communications of the ACM.* Vol. 28, No.3. http://portal.acm.org/dl.cfm

J. Nielsen (2001). *Are users stupid?* Alertbox. January 21. http://useit.com/alertbox/20010204.html

J. Karat (Ed.) (1991). *Taking Software Design Seriously: Practical Techniques for Human-Computer Interaction Design*. Academic. ISBN: 0-12-397710-X → For example, see chapter 4 for more on design scenarios.

M. B. Rosson & J. M. Carroll (2002). *Usability Engineering: Scenario-Based Development of Human-Computer Interaction.* Morgan-Kaufmann ISBN: 1-55860-712-9. → Alternative textbook for a course like this; emphasizes usability methods to the near exclusion of other topics. Good source for learning more about methods.

Lecture 5 -- Heuristic Analysis

J. Nielsen (1994). Enhancing the explanatory power of usability heuristics. *CHI '94 Conference Proceedings.* http://portal.acm.org/dl.cfm

J. Nielsen (2004). *Ten Usability Heuristics.* http://www.useit.com/papers/heuristic/heuristic_list.html

J. Gerhardt-Powals (1996). Cognitive engineering principles for enhancing human-computer performance. *International Journal of Human-Computer Interaction*, *8*(2), 189-211.

R. W. Bailey, R. W. Allan, & P. Raiello (1992). Usability testing vs. heuristic evaluation: A head-to-head comparison. *Proceedings of the Human Factors Society 36th Annual Meeting.* pp. 409-413.

R. Jeffries, J. R. Miller, C. Wharton, & K. M Uyeda (1991). User interface evaluation in the real world: A comparison of four techniques. *CHI '91 Conference Proceedings*.

H. Desurvire, D. Lawrence, & M. Atwood (1991). Empiricism versus judgment: Comparing user interface evaluation methods on a new telephone-based interface. *SIGCHI Bulletin*, Vol.23, No. 4.

M. B. Catani & D. W. Biers (1998). Usability evaluation and prototype fidelity: Users and usability professionals. *Proceedings of the Human Factors and Ergonomics Society 42nd Annual Meeting.* Pp. 1331-1335.

L. Fu, G. Salvendy, & L.Turley (1998). Who finds what in usability evaluation? *Proceedings of the Human Factors and Ergonomics Society 42nd Annual Meeting.* pp. 1341-1345.

Z. Zhang, V. Basili, and B. Shneiderman (1998) An empirical study of perspective-based usability inspection., *Proceedings of the Human Factors and Ergonomics society 42nd Annual Meeting.*

N. E. Jacobsen, M. Hertzum, and B. E. John (1998). The evaluator effect in usability studies: problem detection and severity judgments, *Proceedings of the Human Factors and Ergonomics Society 42nd Annual Meeting,* pp. 1336-1340.

M. J. Rooden, W. S. Green, & H. Kanis (1999). Difficulties in the use of a coffeemaker predicted on the basis of design models. *Proceedings of the Human Factors and Ergonomics society 43rd Annual Meeting.* pp. 476-480.

D. Wixon (2003). Evaluating usability methods: Why the current literature fails the practitioner. *Interactions*. Vol. 10, No. 4, pp. 29-34. → Argues the studies are irrelevant.

Lecture 6 – Standards, Guidelines, Style Guides; Prototyping

M. B. Catani & D. W. Biers (1998). Usability evaluation and prototype fidelity: Users and usability professionals. *Proceedings of the Human Factors and Ergonomics Society 42nd Annual Meeting.* Pp. 1331-1335.

F. A. Uceta, M. A. Dixon, and M. L. Resnick (1998). Adding Interactivity to Paper Prototypes, *Proceedings of the Human Factors and Ergonomics Society 42nd Annual Meeting*, 506-511.

J. Nielsen (1994) *Guerrilla HCI: Using Discount Usability Engineering to Penetrate the Intimidation Barrier.* http://www.useit.com/papers/guerrilla_hci.html

C. Snyder (2003) *Paper Prototyping: The Fast and Easy Way to Design and Refine User Interfaces.* Morgan Kaufman. ISBN: 1558608702

J. Nielsen (2003). *Paper Prototyping: Getting User Data Before You Code.* Alertbox. April 14. http://www.useit.com/alertbox/20030414.html

Lecture 7 -- Usability Testing, Experiments

J. Nielsen (1993). *Usability Engineering*. Academic Press.

J. Nielsen (2001). *Success rate: The simplest usability metric*. Alertbox. February 19.
http://www.useit.com/alertbox/20010218.html

J. Nielsen (2001) *Usability metrics*. Alertbox. January 21.
http://www.useit.com/alertbox/20010121.html

J. Nielsen (2000). *Why you only need to test with 5 users*. Alertbox. March 19.
http://www.useit.com/alertbox/20000319.html

C. Perfetti & L. Landesman (2002) *Eight is not enough*.
http://www.uie.com/Articles/eight_is_not_enough.htm

Lecture 8 -- Human-Computer Interaction

D. N. Edwards (1995) The rise of the graphical user interface. *Information Technology and Disabilities*, Vol. 2, No. 4. http://www.rit.edu/~easi/itd/itdv02n4/article3.html

R. Perkins, D. Smith Keller, & F. Ludolph (1997). Inventing the Lisa user interface. *Interactions*, Vol. 4, No 1, pp 40-53. http://portal.acm.org/dl.cfm

D. K. Smith & R. C. Alexander (1999) *Fumbling the Future: How Xerox Invented, Then Ignored, the First Personal Computer* iUniverse.com   ISBN: 1583482660 → A greater lesson in this book other than a trivial note in the history of GUIs is this: innovation does not fare too well in big corporations, even in the wonderful environment of Xerox PARC, whose existence was modeled after the original Bell Labs.

D. J. Mayhew (1992) *Principles and Guidelines in Software User Interface Design*. Prentice-Hall. ISBN 0-13-721929-6.

B. Shneiderman (1998). *Designing the User Interface*. 3rd ed. Addison-Wesley.

K. Norman (1991). *The Psychology of Menu Selection.* Ablex. ISBN: 0-89391-553-X
→ Available in its entirety at http://lap.umd.edu/pomsFolder/pomsHome.html

K. R. Paap, & R. Roske-Hofstrand (1988). Design of menus. In M. Helander (Ed.) *Handbook of Human Computer Interaction.* Amsterdam: Elsevier, pp. 205-235. → Also, updated chapter by Paap & Cooke in the 1997 edition of the *Handbook*.
http://www.elsevier.com/inca/publications/store/5/2/4/9/8/8/524988.pub.htt

K. Straub & S. Weinschenk (2003) *Depth vs. Breath*. HFI Newsletter.
http://www.humanfactors.com/downloads/apr03.asp

Lecture 9 -- Internet and World Wide Web Applications and Design

J. Nielsen (2000). *Designing Web Usability*. New Riders. ISBN 1-56205-810-X. http://www.useit.com/jakob/webusability/

J. Nielsen (1996) *Top Ten Mistakes in Web Design.* Alertbox. May. http://www.useit.com/alertbox/9605.html

J. Nielsen (1997). *Web TV Usability Review.* Alertbox. February 1. http://www.useit.com/alertbox/9702a.html

J. Nielsen (1997) *The Difference Between Web Design and GUI Design.* Alertbox. May 1. http://www.useit.com/alertbox/9705a.html

J. Nielsen (1999). *The Top Ten New Mistakes of Web Design.* Alertbox. May 30. http://www.useit.com/alertbox/990530.html

J. Nielsen (2002) *Top Ten Web-Design Mistakes of 2002.* Alertbox. December 23. http://www.useit.com/alertbox/20021223.html

W. Schroeder (2002) *Usability Myths Need Reality Checks.* http://www.uie.com/Articles/usability_myths.htm

J. Porter (2002) *Testing the Three-Click Rule.* http://www.uie.com/Articles/three_click_rule.htm

S. J. Koyani & R. W. Bailey (2002) Searching vs. linking on the web: A summary of the research. Report to Communication Technologies Branch, Office of Communications, National Cancer Institute. http://usability.gov/

M. Bernard, R. Baker, B. Chaparro, & M. Fernandez (2002). Paging vs. scrolling: Examining ways to present search results. Proceedings of the Human Factors and Ergonomics Society 46th Annual Meeting. pp. 1296-1299.

J. Nielsen (2001). *Search: Visible and Simple*. Alertbox, May 13. http://www.useit.com/alertbox/20010513.html

J. Karlgren and K. Franzén (1997). *Verbosity and interface design*. http://www.sics.se/~franzen/Artiklar/Verbosity/irinterface.html

P. G. Zaphiris (2000) Depth vs. breath in the arrangement of web links *Proceedings of the 44th Annual Meeting of the Human Factors and Ergonomics*, pp. 139-144. http://agrino.org/pzaphiri/Papers/hfes.pdf

Lecture 10 -- Intelligent Agents and Intelligent Systems

D. R. Millen, A. E. Milewski, T. M. Smith, D. M. Weimer, and P. D. Wellner (1999). The corner office: An exploration of an informal teleconferencing service. *Proceedings of the 17th International Symposium on Human Factors in Telecommunications.* Copenhagen, Denmark, pp. 103-112. http://amilewski.home.att.net/corner_office.pdf

A. E. Milewski and S. H. Lewis (1999). *When people delegate.* Manuscript. http://amilewski.home.att.net/Delegating-final.pdf

A. E. Milewski and T. Smith (1998). *The role of credibility on the WWW*. Columbia University address. http://amilewski.home.att.net/cred.pdf

Lecture 11 -- Telecommunications, Speech Technology, & Information Appliances

Gardner-Bonneau, D. (Ed.) (1999). *Human Factors and Voice Interactive System*s. Kluwer. ISBN: 0-7923-8467-9.

J. D. Gould, J. Conti, & T. Hovanyecz (1983). Composing letters with a simulated listening typewriter. *Communications of the ACM*. Vol. 15, No. 4. pp. 295-308. → Classic - started the 'Wizard of Oz' technique. http://portal.acm.org/dl.cfm

M. Marics and G. Englebeck (1998). Designing voice menu applications for telephone systems. In M. G. Helander, T. K. Landauer, & P. Prabhu (Eds.) *Handbook of Human-Computer Interaction*. 2nd Edition. Elsevier. → Comprehensive guidelines for IVRs.

D. J. Brems, M. D. Rabin, & J. L Waggett (1995). Using natural language conventions in the user interface design of automatic speech recognition systems. *Human Factors*, Vol. 37, No. 2, pp. 265-282.

R. A. Virzi & J. S. Huitema (1997). Telephone-based menus: Evidence that broader is better than deeper. *Proceedings of the Human Factors and Ergonomics Society 41st Annual Meeting.* pp. 315-319.

S. M. Witt & J. D. Williams (2003). *Two studies of open vs. directed dialog strategies in spoken dialog systems*. EUROSPEECH 2003- Geneva.

B. Reeves & C. Nass (1996*). The Media Equation: How People Treat Computers, Television, and New Media Like Real People and Places*. Cambridge. ISBN: 1-57586-052-X.

K. E. Finn, A. J. Sellen, & S. B. Wilbur (Eds.) (1997). *Video-Mediated Communication*. Erlbaum. ISBN: 0-8058-2288-7.