



## Bibliography

Part 1 of the bibliography gives textbooks, readers, handbooks, and journals of interest. Part 2 is a highly select list of further readings that contribute important ideas to the field. A textbook of this scope naturally draws on the entire accumulated knowledge of the field, and it would be nigh impossible to trace the source of every idea covered.

Reviews known to this author are referenced in the textbook bibliography; Journal abbreviations are explained in the list of journals.

### PART I: TEXTBOOKS, READERS, ETC.

#### INFORMATION STUDIES IN GENERAL

*Annual Review of Information Science and Technology*. White Plains, NY: Knowledge Industry Publications; 1966- (First edited by Cuadra, Carlos, then by Williams, Martha. Various publishers through its history.)—A basic work for keeping up to date and for reference.

*Encyclopedia of library and information science*./Kent, Allen, ed.; Lancour, Harold, ed. New York: Marcel Dekker; 1968-

Machlup, Fritz 1980. *Knowledge: its creation, distribution, and economic significance*. 3 vols. Princeton, NJ: Princeton University Press; 1980-1984. v. 1. *Knowledge and knowledge production*; 1980. 264 pp.—v. 2. *The branches of learning*; 1982. 205 pp.—v. 3. *The economics of information and human capital*; 1984. 576 pp.

Machlup, Fritz, ed. 1983; Mansfield, Una, ed. *The study of information. Interdisciplinary messages*. New York: Wiley; 1983. 768 pp.

Saracevic, Tefko, ed. 1970. *Introduction to information science*. New York: Bowker; 1970. 751 pp.—A very good collection which includes many classics.

## 400 Bibliography

### INFORMATION SYSTEMS IN GENERAL

These textbooks deal with all components of an information system. They include, but are not limited to, a treatment of information storage and retrieval. They emphasize bibliographic information systems.

- Batten, W. E., ed. 1975. *Handbook of special librarianship and information work*. London: Aslib; 1975.430 pp.—Reviews: LQ 1976.10:485. SL 1976.11:550. JD 1976.3:80.
- Kochen, Manfred, ed. 1967. *The growth of knowledge: readings on organization and retrieval of information*. New York: Wiley; 1967.394 pp.—Reviews: LJ 1967.10:3651.—A classic; many of the papers are still worth reading.
- Licklidge, J. C. R. 1965. *Libraries of the future*. Cambridge, MA: MIT Press; 1965. 219 pp.
- Loosjes, T. P. 1973. *On documentation of scientific literature*. London: Butterworths; 1973. 187 pp.—Reviews of 1967 edition: CH 1968.1:1212. LJ 1968.3:965.
- Vickery, Brian C. 1973. *Information systems*. London: Butterworths; Hamden, CT: Shoe-string Press; 1973. 350 pp.—Reviews: CH 1974.11:126. SL 1973.11: 537.
- United States Commission on Federal Paperwork 1977.9; Horton, Woody, chairman. *Information resources management*. Washington, D.C.: U.S. Government Printing Office; 1977.9. 76 pp.
- Synnott, William R. 1981; Gruber, William H. *Information resource management: opportunities for the 1980s*. New York: Wiley; 1981. 356 pp.—Reviews: CR 1983.2:#40,049.

### COMPUTERIZED INFORMATION SYSTEMS IN ORGANIZATIONS

These books usually present an introduction to three interrelated topics: the function of an information system in an organization, computer technology, and the handling of data by computers. They usually do not cover the structure of index languages.

- Ahituv, Niv 1982? Neumann, Seev. *Principles of information systems for management*. Du-buque, IA: Brown; 1982. 528 pp.—Reviews: CR 1982.8: #39,591.
- Brookes, Cyril H. P. 1982; Grouse, Phillip J.; Jeffery, D. Ross; Lawrence, Michael J. *Information systems design*. Englewood Cliffs, NJ: Prentice-Hall; 1982.477 pp.—Reviews: CR 1983.6:#40,374.
- Davis, William S. 1981. *Information processing systems*. 2. ed. Reading, MA: Addison-Wesley; 1981. 504 pp.—Reviews: CR1981.7:#38,132.
- Ein-Dor, P. 1978; Segev, E. *Managing management information systems*. Lexington, MA: Lexington Books; 1978. 191 pp.—Reviews: CR 1979.1:#33,928.
- Kanter, Jerome 1984. *Management information systems*. 3. ed. Englewood Cliffs, NJ: Prentice-Hall; 1984. 448 pp.—Reviews: CR 1984.3:#8403-0151.
- Murdick, Robert G. 1980. *MIS concepts and design*. Englewood Cliffs, NJ: Prentice-Hall; 1980. 610 pp.—Reviews: CR 1980.11: #36,994.
- Taggart, William M. 1980. *Information systems*. Boston, MA: Allyn and Bacon; 1980. 602 pp.—Reviews: CR 1981.5:#37,824. CR 1981.7:#38,140.
- Hayes, Robert M. 1974.; Becker, Joseph. *Handbook of data processing for libraries*. 2.ed. New York: Wiley; 1974.688 pp.—Reviews: College and Research Libraries 1976.3:170. J. Libr. Automation 1975.6: 162.—Still a very sound analysis of information systems, especially

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libraries, from the point of view of automation. The treatment of technology is, of course, outdated.

### OFFICE INFORMATION SYSTEMS, OFFICE AUTOMATION, TEXT AND GRAPHICS INFORMATION SYSTEMS

- Lieberman, Mark A. 1982; Selig, Gad J.; Walsh, John J. *Office automation: a manager's guide for improved productivity*. New York: Wiley; 1982. 331 pp.—Reviews: CR 1983.8:#40>551.
- James, Geoffrey 1985. *Document databases*. New York: Van Nostrand Reinhold; 1985. 184 pp.—How to create and manipulate a database of text and graphics for printing and on-line viewing.

### INFORMATION STORAGE AND RETRIEVAL—GENERAL

These books concentrate on information storage and retrieval, usually in the context of bibliographic systems. They often include substantial discussion of subject access, in particular the structure of index languages. Some of them concentrate on using computers for the more or less clerical functions of file building and maintenance and comparison/match.

- Becker, Joseph 1963; Hayes, Robert M. *Information storage and retrieval: tools, elements, theories*. New York: Wiley; 1963.448 pp.—Still quite a useful book, especially Section 3 on theory is recommended for more advanced studies.
- Lancaster, F. Wilfrid 1979. *Information retrieval systems. Characteristics, testing, and evaluation*. 2. ed. New York: Wiley; 1979. 381 pp.—Reviews: IP 1980:57. JD 1982.3:47. LQ 1981.1:134.
- Meadow, Charles T. 1973. *The analysis of information systems*. 2. ed. New York: Wiley; 1973. 420 pp.—Especially chapters 1, 7, 9, 10, 12, 13, 15, 16.
- Needham, Christopher D. 1971. *Organizing knowledge in libraries. An introduction to information retrieval*. 2. ed. London: Deutsch; 1971.448 pp.—Excellent modern approach to conventional library operations.
- Vickery, Brian C. 1965. *On retrieval system theory*. 2. ed. London: Butterworths; 1965. 191 pp.—Reviews: Amer. Documentation 1967.1:50. LJ 1966.3:1205. SL 1971.3:122—Still a useful book; gives an overview.

### ONLINE SEARCHING

These books treat information storage and retrieval with emphasis on concepts and techniques for searching online data bases (usually bibliographic data bases).

- Gerrie, Brenda 1983. *Online information systems: use and operating characteristics, limitations, and design alternatives*. Arlington, VA: Information Resources Press; 1983.189 pp.

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- Fenichel, Carol H. 1984; Hogan, Thomas. *Online searching: a primer*. Marlton, NJ: Learned Information; 1984. 184 pp.
- Hoover, Ryan E., ed. 1980. *The library and information manager's guide to online services*. White Plains, NY: Knowledge Industry Publications; 1980. 270 pp.—Reviews: SL 1981.10:411.
- Lancaster, F. W. 1973; Fayen, Emily G. *Information retrieval on-line*. New York: Wiley; 1973. 497 pp.—Reviews: JD 1974.9:362.

## AUTOMATED INFORMATION STORAGE AND RETRIEVAL

These books, while often dealing also with other topics, emphasize automated methods for indexing and retrieval, drawing in particular on language analysis and probabilistic theories.

- Maron, M. E., ed. 1978.4. *Theory and foundations of information retrieval*. Drexel Library Quarterly. 1978.4; 14(2). 107 pp.
- Oddy, R. N., ed. 1981; Robertson, S. E., ed.; van Rijsbergen, C. J., ed.; Williams, P. W., ed. *Information retrieval research*. London: Butterworths; 1981. 260 pp.—Proceedings of a conference giving a good cross section of work in this area.—Reviews: IP 1983:399.
- van Rijsbergen, C. J. 1979. *Information retrieval*. 2. ed. London: Butterworths; 1979. 208 pp.—Reviews: CH 1979.9:878. JA 1979.11:374. JD 1980.9:275.
- Salton, Gerard 1975. *Dynamic information and library processing*. Englewood Cliffs, NJ: Prentice-Hall; 1975. 523 pp.—Reviews: CR 1976.1 :#29,382. JD 1975.12:310. SL 1975.11:558.
- Salton, Gerard 1983; McGill, Michael J. *Introduction to modern information retrieval*. New York: McGraw Hill; 1983. 448 pp.—Reviews: CR 1982.12:#39,910. IP 1983:402.
- Sparck Jones, Karen 1974; Kay, Martin. *Linguistics and information science*. New York: Academic Press; 1973. 244 pp.—Reviews: CR 1974.12:#27,585. SL 1975.7:347.

## ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

- Schank, Roger C. 1984. With Childers, Peter G. *The cognitive computer: On language, learning, and artificial intelligence*. Reading, MA: Addison-Wesley; 1984. 268 pp.—An informal introduction with emphasis on knowledge representation.
- Winston, Patrick Henry 1984. *Artificial intelligence*. 2. ed. Reading, MA: Addison-Wesley; 1984. 524 pp.—Comprehensive, somewhat formal treatment.
- Nilsson, Nils J. 1980. *Principles of artificial intelligence*. Palo Alto, CA: Tioga; 1980. 476 pp.—Reviews: CR 1981.6:#37,973.—A fairly formal treatment of solution searching and deduction.
- Charniak, Eugene, ed. 1976; Wilks, Yorick, ed. *Computational semantics: an introduction to artificial intelligence and natural language comprehension*. New York: North Holland; 1976. 294 pp. (Fundamental studies in computer science, v. 4).—Reviews: CR 1976.9:#30,259
- Barr, Aaron, ed. 1981; Cohen, Paul, ed.; Feigenbaum, Edward, ed. *The handbook of artificial intelligence*. Los Altos, CA: William Koffman; vol. 1, 1981.388 pp.; vol. 2,1982.428 pp.; vol. 3, 1982. 639 pp.—Reviews: CH 1983.1:131. CR 1983.9:#40,648. CR 1983.7: #40,463.—A classic reference work with clearly written articles.

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- Feigenbaum, Edward A. 1983; McCorduck, P. *The fifth generation*. Reading, MA: Addison-Wesley; 1983. 275 pp.—Reviews: LJ 1983.6.15:1247. NYT 1983.8.2:23.
- Weiss, Sholom M. 1984; Kulikowski, Casimir A. *A practical guide to designing expert systems*. Totowa, NJ: Rowman and AUanheld; 1984. 174 pp.
- Harmon, Paul 1985; King, David. *Expert systems: Artificial intelligence in business*. New York: Wiley; 1985.256 pp.
- Hayes-Roth, F., ed. 1983; Waterman, D., ed.; Lenat, D., ed. *Building expert systems*. Reading, MA: Addison-Wesley; 1983. 444 pp.
- Michie, Donald 1982. *Introductory readings in expert systems*. New York: Gordon and Breach; 1982, 235 pp.—Reviews: CR 1983.10:#40,735.
- Kowalski, Robert 1979. *Logic for problem solving*. New York: Elsevier North-Holland; 1979. 287 pp.
- Winograd, Terry 1983. *Language as a cognitive process*. Reading, MA: Addison-Wesley; 1983. 640 pp.

### DECISION SUPPORT SYSTEMS

v

- Bonczek, R. 1981; Holsapple, C.; Whinston, A. *Foundations of decision support systems*. New York: Academic Press; 1981. 393 pp.
- Keen, Peter G. W. 1978; Scott Morton, Michael S. *Decision support systems: an organizational perspective*. Reading, MA: Addison-Wesley; 1978.264 pp.—Reviews: CR 1979.2: #34,054.
- Scott Morton, Michael S. 1971. *Management decision systems—computer-based^support for decision making*. Boston, MA: Graduate School of Business Administration, Harvard University; 1971.216 pp.—Reviews: CR 1971.6: #21,367.
- Sprague, Ralph M. 1982; Carlson, Eric D. *Building effective decision support systems*. Englewood Cliffs, NJ: Prentice-Hall; 1982. 351 pp.—Reviews: IP 1983:344.

### DATA BASE MANAGEMENT SYSTEMS

These books concentrate on data schemas for formatted data and associated query languages. Many deal also with data structures and access methods that can be used to implement these schemata. Specific data base management software packages are also discussed. These books generally do not discuss the structure of index languages or rules for other entity types.

- Atre, S. 1980. *Data base: structured techniques for design, performance, and management—with case studies*. New York: Wiley; 1980. 442 pp.—Reviews: CR 1981.6:#37,978.
- Date, C. J. 1985. *An introduction to database systems, v.1. 4. ed.* Reading, MA: Addison-Wesley; 1985. 574 pp.—Reviews: CR 1981.7:#38,392 (3. ed.)—An excellent introduction.
- Date, C. J. 1983. *An introduction to database systems, v. 2.* Reading, MA: Addison-Wesley; 1983. 383 pp.—Reviews: CR 1983.8:#40,549.—A companion to the previous book, covering more advanced topics.
- Date, C. J. 1983. *Database: a primer*. Reading, MA: Addison-Wesley; 1983. 265 pp.—An elementary introduction for users in business and home.
- King, Judy M. 1981. *Evaluating data base management systems*. New York: Van Nostrand; 1981. 275 pp.—Reviews: CR 1982.1: #38,878.—Broader than title, highly recommended.

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- Maier, David 1983. *The theory of relational data bases*. Potomac, MD: Computer Science Press; London: Pitman; 1983. 637 pp.—Reviews: CR 1984.3:#8403-0149.
- Martin, James 1976. *Principles of data base management*. Englewood Cliffs, NJ: Prentice-Hall; 1976. 352 pp.—Reviews: CH 1976.9:856; CR 1976.8: #30,147 —Very introductory.
- Martin, James 1977. *Computer data-base organization*. 2. ed. Englewood Cliffs, NJ: Prentice-Hall; 1977. 560 pp.
- McNichols, Charles W. 1984. *Data base management with dBASE II* (hardback) - *dBASE II business applications: system design and software* (softcover). Reston, VA: Reston Publishing; 1984. 450 pp.—General introduction and system of dBASE II programs. dBASE 111 edition not before 1986.
- Ullman, Jeffrey D. 1982. *Principles of data base systems*. 2. ed. Potomac, MD: Computer Science Press; London: Pitman; 1982.484 pp.—Reviews: CR 1980.9:036,742 (1. ed.)
- Wiederhold, Gio 1983. *Data base design*. 2.ed. New York: McGraw Hill; 1983. 751 pp.—Reviews: CR 1983.8: #40, 550.
- Horowitz, Ellis 1983; Sahni, Sartaj. *Fundamentals of data structures*. Rockville, MD: Computer Science Press; 1983.564 pp.—Originally published 1976, reprinted often with corrections.—Reviews: CH 1977.5:412. CR 1978.4:32,817.
- Maurer, Herman H. 1977. *Data structures and programming techniques*. Englewood Cliffs, NJ: Prentice-Hall; 1977. 228 pp.—Reviews: CH 1977.7:711. CR 1977.10:#32,230.

#### THE STRUCTURE OF INDEX LANGUAGES AND THESAURI

- Bliss, Henry E. 1929. *The organization of knowledge and the system of the sciences*. New York: Holt; 1929. 433 pp.
- Coates, Eric J. 1960. *Subject catalogues. Headings and structure*. London: The Library Association; 1960. 186 pp.—A classic.
- Foskett, D. J. 1974. *Classification and indexing in the social sciences*. 2. ed. London: Butterworths; 1974. 202 pp.
- Lancaster, Wilfrid 1972. *Vocabulary control for information retrieval*. Washington, DC: Information Resources Press; 1972. 233 pp.—Reviews: CR 1974.6: #26,818. International Classification 1975:49. JD 1973.6:240. LJ 1973.3.15:848. SL 1972.12:597.
- Soergel, Dagobert 1974. *Indexing languages and thesauri: construction and maintenance*. New York: Wiley; 1974. 632 pp.—Reviews: International Classification 1975: 52. IP 1975.12:255. JD 1975.9: 229. LQ 1975.10: 435. SL 1976.3:175.
- Vickery, Brian C. 1975. *Classification and indexing in science*. 3. ed. London: Butterworths; 1975. 228 pp.—Reviews: LQ 1976.7:340—Especially the preface to the first edition and chapters 1 through 3. In some respects the second edition (1959) is better.

#### JOURNALS

- ACM Transactions on Data Base Systems*. 1976-  
*ACM Transactions on Office Information Systems*. 1983-  
*Artificial Intelligence*. 1970-  
*CH Choice*. 1963-  
*Communications of the ACM* 1958-  
*CR Computing Reviews*. 1960-  
*Computing Surveys*. The survey and tutorial journal of the ACM. 1969-  
*Drexel Library Quarterly*. 1965-

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- IP Information Processing and Management* (formerly *Information Storage and Retrieval*). 1963-  
*JA Journal of the American Society for Information Science* (J ASIS) (formerly *American Documentation*). 1950-  
*JD Journal of Documentation* (J. Doc.). 1945-  
*LJ Library Journal* 1976-  
*LQ Library Quarterly*, 1931-  
*Online*. 1977-  
*On-Line Review*. 1977-  
*SL Special Libraries*. 1910-

## PART 2

### CHAPTER 1 INFORMATION SYSTEMS FOR PROBLEM SOLVING

- Kent, Allen 1975.12. *Generation, use, and transfer of information*. *Information*. 1975.12; 7(10): 306-310.
- Moors, Calvin N. 1959.3. *The next twenty years in information retrieval.—goals and predictions*. Western Joint Computer Conference. Proceedings (AFIPS Conference Proceedings). 1959.3; 15: 81-86.—Still a valid paper giving perspectives and new ideas.
- Soergel, Dagobert 1977. *An automated encyclopedia—a solution of the information problem ?* *International Classification* 1977; 4(1): 4-10. 1977; 4(2): 81-89.
- Wiederhold, Gio 1981. *Data base technology in health care*. *J. Med. Syst.* 1981; 5(3): 175-195.
- Keen, Peter G. W. 1980.3. *Decision support systems: translating analytic techniques into useful tools*. *Sloan Management R.* 1980.Spring; 21(3): 33-44.
- Sprague, R., Jr. 1980.12. *A framework for the development of decision support systems*. *Management Information Systems Quarterly*. 1980.12; 4(4): 1-26.
- Gevarter, William B. 1983.8. *Expert systems: limited but powerful*. *IEEE Spectrum*. 1983.8; 20(8): 39-45.
- Kinnucan, Paul 1984.1. *Computers that think like experts*. *High Technology*. 1984.1; 4(1):30-42.

### Notes

Bell Labs has programmed a computer to discover the shortest route from a house to a desired store and give directions on the terminal (ASIS Bulletin 1982.10: 10).

An example of a high-speed search device is the GESCAN 2. The machine can scan 2 Mbytes/second or 1,000 pages/second (1 page = 2,000 characters). It can search for four queries simultaneously (General Electric, Military and Data Systems Operations, Arlington, VA).

### CHAPTER! THE NATURE OF INFORMATION

- Ford, N. 1980.6. *Relating \*information needs\* to learner characteristics in higher education*. *J. Doc.* 1980.6; 36(2): 99-114.—Also relevant for Chapters 7 and 17.



## 5 Bibliography

- ker, Edwin B. 1974. *Information and society*. Cuadra, C. ed. 1974. Library and information needs of the nation: Chapter 2, pp. 9-50.—(See references for Chapter 7.)
- lor, Robert S. 1982.9 *Value-added processes in the information life cycle*. JASIS. 1982.9; 33(5): 341-346.—Also relevant for Chapters 4 and 7.
- kin, Nicholas J. 1978.3. *Information concepts for information science*. J. Doc. 1978.3; 34(1): 55-85.
- ittimore, Bruce J. 1973.5; Yovits, M. C. *A generalized conceptual development for the analysis and flow of information*. JASIS. 1973.5; 24 (6): 221-231.
- >paport, Anatol 1953.7. *What is information? ETC: A review of general semantics* 1953. Summer; 10(4): 247-260.—Reprinted in Saracevic, T. ed. 1970. Introduction to information science: paper 1, pp. 5-12.

## CHAPTER 3 THE STRUCTURE OF INFORMATION

See also the textbooks on data base management and on artificial intelligence and the references given for Chapter 9. Also Jahoda 1980 listed for chapter 17.

- imons, Robert F. 1973. *Semantic networks: their computation and use for understanding English sentences*. Colby, Kenneth M., ed.; Schank, Roger, ed. Computer models of thought and language. San Francisco: Freeman; 1973: Chapter 2, pp. 63-113.
- dsay, Peter H. 1972; Norman, Donald H. *Human information processing. Introduction to psychology*. New York: Academic Press; 1972. 737 pp.—Ch. 10. *The structure of memory*, pp. 374-401. ch. 11 *Memory processes*, p. 402-434.
- Dng, Suzanne M. 1974.1. *An algorithm for generating structural surrogates of English text*. JASIS. 1974.1; 25(1): 10-24.
- »er, Naomi 1975.1. *Sublanguage grammars in science information processing*. JASIS. 1975.1; 26(1): 10-16.

## CHAPTER 4 THE INFORMATION TRANSFER NETWORK

- irdock, John W. 1967.10; Liston, David M. *A general model of information transfer: Theme paper 1968 annual A SIS convention*. American Documentation. 1967.10; 18(4): 197-208.
- >aw, Frieda B. 1969.10. *A new, generalized model for information transfer: a system approach*. American Documentation. 1969.10; 20(4): 381-384.
- en, Thomas J. 1969.3; Cohen, St. I. *Information flow in R & D laboratories*. Administrative Science Quarterly. 1969.3; 14(1): 12—19.—Introduces the idea of technological gatekeepers. An earlier version published as a report (Cambridge, MA: MIT. Sloan School of Management; 1966. 26 pp.) is a better introductory reading, particularly since it traces the origin of the idea to previous research on two-step information flow in mass communication.
- ten, Thomas J. 1977. *Managing the flow of technology*. Cambridge, MA: MIT Press; 1977. 320 pp.—Also relevant for Chapter 7.
- ;nzell, H. 1966.11. *Scientific communication: five themes from social science research*. American Psychologist. 1966.11; 21 (11): 999-1004.

## CHAPTER 5 THE STRUCTURE OF INFORMATION SYSTEMS

- Connor, Judith H. 1967.10. *Selective dissemination of information: a review of the literature and the issues*. *Library Quarterly*. 1967.10; 37(4): 373-391.
- Chafetz, Morris E. 1976.5. *Toward increased quality consciousness for alcoholism literature*. *JASIS*. 1976.5; 27(3): 162-170.
- Spaulding, F. H. 1976.9; Stanton, R. O. *Computer-aided selection in a library network*. *JASIS*. 1976.9; 27(5): 269-280.—A good example for the compilation of an information needs catalog and its use in collection development.
- Weingand, Darlene El, ed. 1983. *Marketing for libraries and information agencies: a reader*. Norwood, NJ: Ablex; 1983. 176 pp.
- Thomas, Robert J. 1982.9. *Marketing research in the scientific and technical information services industry: development and future directions*. *JASIS*. 1982.9; 33(5): 265-269.—This article contains many useful references.

## CHAPTER 6 SYSTEMS ANALYSIS

The readings listed here may also contain relevant material for Chapters 7, 8, and 18. Conversely, the readings for Chapters 7, 8, and 18 deal with specific functions in systems analysis. See also the textbooks on information systems and on computerized information systems.

## General Works on the Systems Approach and Systems Analysis

- Weinberg, G. M. 1975. *An introduction to general systems thinking*. New York: Wiley; 1975. 279 pp.—Reviews: CR 1975.12:#29,225.
- Churchman, Charles West 1972. *The design of inquiring systems: basic concepts in systems analysis*. New York: Basic Books; 1972. 288 pp.—Reviews: CH 1972.11:1147. CR 1973.5:#25,028. LJ 1972.3.1:878.
- DeMarco, Tom 1979. *Structured analysis and systems specification*. Englewood Cliffs, NJ: Prentice-Hall; 1979. 325 pp.—Reviews: CR 1980.7:#36,501.
- Bingham, John E. 1980; Davis, Garth W. *A handbook of systems analysis*. 2. ed. New York: Halstead (Wiley); 1980. 229 pp.—Reviews: CH 1973.10:1249 (first edition).
- Lundeberg, Mats 1981; Goldkuhl, Goran; Nilsson, Anders. *Information systems development, a systematic approach*. Englewood Cliffs, NJ: Prentice-Hall; 1981.336 pp.—Reviews: IP 1983:109.
- Lucas, Henry C. 1974. *Towards creative systems design*. New York: Columbia University Press; 1974. 147 pp.—Reviews: CR 1975.3:#27,907.

## Systems Analysis in Libraries

- Dougherty, Richard M. 1982; Heinritz, Fred J. *Scientific management of library operations*. 2. ed. Metuchen, NJ: Scarecrow; 1982. 286 pp.
- Warner, Edward S., ed. 1977.7; Palmour, Vernon E., ed. *Perspectives on library measurement*. *Drexel Library Quarterly*. 1977.7; 13 (3): 1-103.

## 18 Bibliography

### Methods for Collecting Data and Analyzing and Designing Procedures

- artyn, John 1981; Lancaster, F. Wilfrid. *Investigative methods in library and information science: an introduction*. Arlington, VA: Information Resources Press; 1981. 260 pp.
- Library Research Department 1970.3. *The analysis of library processes*. J. Doc. 1970.3; 26(1): 30-45.—A very good treatment.
- Line, Christ 1979; Sarson, Trish. *Structured systems analysis: tools and techniques*. Englewood Cliffs, NJ: Prentice-Hall; 1979. 250 pp.—Reviews: CH 1979.2:1632. CH 1980.1: 1477. CR 1979.9:#35,033.
- Igson, G. R. 1982; Branstein, D. N. *Decision making: an interdisciplinary inquiry*. Boston, MA: Kent; 1982. 400 pp.—Reviews: CH 1982.12:614.

### Cost-Effectiveness and Cost-Benefit Analysis

- Lancaster, F. Wilfrid 1971.1. *The cost-effectiveness analysis of information retrieval and dissemination systems*. JASIS. 1971.1; 22 (1): 12-27.
- Lyrr, Peter A. 1973. *Zero-base budgeting. A practical management tool for evaluating expenses*. New York: Wiley; 1973. 231 pp.—Reviews: CH 1973.11:1247. LJ 1974.3.1:629.
- Ammond, Thomas H. 1980; Knott, Jack H. *A zero-based look at zero-base budgeting*. New Brunswick, NJ: Transaction Books; 1980. 145 pp.

### Operations Research and Use of Models

- Lompson, Gerald E. 1976. *Management science: an introduction to modern quantitative analysis and decision making*. New York: McGraw-Hill; 1976. 453 pp.—Reviews: CR 1977.3:#31,034.
- Iss, Saul I. 1975; Sisson, Roger L. *A guide to models in governmental planning and operations*. Potomac, MD: Sauger; 1975. 415 pp.—Reviews: CR 1978.4:032,844.
- Andquist, M. G. 1978.3. *Growth dynamics of information search services*. JASIS. 1978.3; 29(2): 67-76.—A good example of simulation as applied to information systems management, wherein the use of an online service is predicted as a function of public relations and quality of service.
- Wimmer, Michael 1975.5. *Operations research in libraries: a critical assessment*. JASIS. 1975.5; 26(3): 137-139.

## CHAPTER 7 ASSESSMENT OF USERS' PROBLEMS AND NEEDS

The readings listed with Chapters 2, 4, and 6 may also contain relevant material.

### General Readings

- Libisoff, Sylvia G. 1976.9; Ely, Donald P. *Information and information needs*. Information—Reports and bibliographies. 1976.9; 5(5): 2-16.
- Irker, Edwin B. 1966.11; Paisley, William J. *Research for psychologists at the interface of the scientist and his information system*. American Psychologist. 1966.11; 21 (11): 1061—1071.—Reprinted in Saracevic, T., ed. 1970. *Introduction to information science*: paper 11, p. 85-94.—An excellent overview and introduction.
- Wilson, Thomas D. 1981.3. *On user studies and information needs*. J. Doc. 1981.3; 37(1): 3-15.

### Guides for Information Needs and Use Studies

- Sieber, H. F. 1964.10. *The methodology of the DOD Scientific and Technical Information Use Study*. American Documentation Institute. 27th Annual Meeting. Proceedings. 1964.10; 1: 235-242.
- Kunz, Werner 1977; Rittel, Horst, W. J.; Schwuchow, Werner. *Methods of analysis and evaluation of information needs*. Hamden, CT: Shoestring; 1976. 84 pp.—Reviews: LJ 1978.3.1:525.
- Lancaster, F. Wilfrid 1974. *Assessment of the technical information requirements of users*. Rees, Alan, ed. 1974. Contemporary problems in technical library and information center management: a state-of-the-art. Washington, DC: ASIS; 1974: 59-85.
- Line, Maurice B. 1982. *Library surveys*. 2. ed. London: Clive Bingley; 155 pp.

### Results of Information Needs and Use Studies

- Bates, Marcia J. 1971.3. *User studies: a review for librarians and information scientists*. 1971.3. 60 pp. (ERIC: ED 047 738)—A good guide to the literature up to 1969.
- Cuadra, Carlos A. ed. 1974; Bates, Marcia J., ed. United States National Commission on Library and Information Science. *Library and information service needs of the nation. Proceedings of a conference on the needs of occupational, ethnic, and other groups in the United States*. Washington, D.C.: GPO; 1974. 314 pp. (GPO no. 5203-00033).—Especially Chapters 2, 4-V, 4-XII, 6, and 7.
- McCarn, Davis B. 1967. See Chapter 18.

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### Catalog Use Studies

- Matthews, Joseph R., ed. 1983; Lawrence, Gary S. ed.; Ferguson, Douglas K., ed. *Using online catalogs: a nationwide survey*. New York: Neal-Schuman; 1983. 255 pp.
- Bates, Marcia J. 1977.5. *Factors affecting subject catalog search success*. JASIS. 1977.5; 28(3): 161-169.
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### Studies of Impact

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- Johnston, Ron 1975.2; Gibbon, Michael. *Characteristics of information usage in technological innovation*. IEEE Transactions in Engineering Management. 1975.2; EM-22(1): 27-34.
- Rothwell, R. 1973.10; Robertson, A. B. *The role of communication in technological innovation*. Research Policy. 1973.10; 2 (3): 204-225.—An excellent review.

### Application of User Studies to System Design

- Paisley, William 1971.11. *Improving on "ERIC-like" information systems*. JASIS. 1971.11; 22(6): 399-408.
- Meadow, Charles T. 1983.7. *User adaptation in interactive information retrieval* JASIS. 1983.7; 34(4): 289-291.

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### CHAPTER 8 OBJECTIVES AND PERFORMANCE MEASURES FOR ISAR SYSTEMS

Readings emphasizing the definition of objectives and performance measures are listed here. Readings that deal also with methods for measuring or testing are listed in Chapter 18. Further relevant readings can be found with Chapter 6.

#### Introduction

Joyce, Bruce R. 1970; Joyce, Elizabeth A. *The creation of information systems for children*. Interchange. 1970; 1(2): 1-12.—Source of the example cited.

#### Sections 8.1 and 8.2. Definition of Performance Measures

- Cooper, William S. 1973.3. *On selecting a measure of retrieval effectiveness*. Part I. *Philosophy*. JASIS. 1973.3; 24(2): 87-100. Part II. *Implementation of the philosophy*. JASIS. 1973.11; 24(6): 413-424.
- Soergel, Dagobert 1976.7. *Is user satisfaction a hobgoblin?* JASIS. 1976.7; 27(4): 256-259.—Presents a case against Cooper's philosophy. Coopers' response on pp. 263-264.
- Orr, Richard H. 1973. *Progress in documentation: measuring the goodness of library services: a general framework for considering quantitative measures*. J. Doc. 1973.9; 29(3): 315-332.
- Robertson, Stephen E. 1969.3. *The parametric description of retrieval tests*. Part I. *The basic parameters*. J. Doc. 1969.3; 25 (1): 1-27. Part II. *Overall measures*. J. Doc. 1969.6; 25 (2): 93-107.
- Pollock, Stephen M. 1968.10. *Measures for the comparison of information retrieval systems*. American Documentation. 1968.10; 19(4): 387-397.—Reprinted in Saracevic, T., ed. 1970. *Introduction to information science*. New York: Bowker; 1970: paper 56, pp. 592-602.
- Good, I. J. 1967.4. *The decision-theory approach to the evaluation of information retrieval systems*. Information Storage and Retrieval. 1967.4; 3 (2): 31-34.
- Swets, J. A. 1963.7. *Information retrieval systems*. Science. 1963.7.19; 141(3577): 245-250. Reprinted in Kochen, M., ed. 1967. *The growth of knowledge*. New York: Wiley; 1967: p. 174-184. Reprinted in Saracevic, T., ed. 1970. *Introduction to information science*. New York: Bowker; 1970: paper 54, pp. 576-583.
- Cooper, William S. 1968.1. *Expected search length: a single measure of retrieval effectiveness based on the weak ordering of retrieval systems*. American Documentation. 1968.1; 19(1): 30-41.
- Savage, T. R. 1967.10. *The interpretation of SDI data*. American Documentation. 1967.10; 18 (4): 242-261.
- DeProspro, Ernest R. 1973.11; Altman, Ellen; Beasley, Kenneth E.; Clark, Ellen C. *Performance measures for public libraries*. Chicago: ALA. Public Library Association; 1973.11. 142 pp.—Reviews: LQ 1974.7:273.
- Zwezig, Douglas 1982; Roger, Eleanor Jo. *Output measures for public libraries. A manual of standardized procedures*. Chicago: ALA. Public Library Association; 1982. 100 p.—Less sophisticated than the previous reference.

### Section 8.3 Testing versus Evaluation

“To test is not to evaluate” is a quotation from

Fairthorne, Robert A. 1965.12. *Some basic comments on retrieval testing*. J. Doc. 1965.12; 21(4): 267-270.—Reprinted in Saracevic, T., ed. 1970. *Introduction to information science*. New York: Bowker; 1970: paper 57, pp. 603-606.

### Section 8.4 Relevance and Relevance Judgments

The references given with Chapters 2, 7, and 17 may also contain relevant material.

#### General Review Articles

Saracevic, Tefko 1976. *Relevance: a review of the literature and a framework for thinking on the notion in information science*. *Advances in Librarianship*. 1976; 6:79-138.—A slightly different version was published in *JASIS*. 1975.11; 26 (6): 321-343.

#### On the Definition of Relevance

Cooper, William S. 1971.6. *A definition of relevance for information retrieval*. *Information Storage and Retrieval*. 1971.6; 7(1): 19-37.—Good background for the next article.

Wilson, Patrick 1973.8. *Situational relevance*. *Information Storage and Retrieval*. 1973.8; 9(8): 457-471.

Kemp, B. D. 1974.2. *Relevance, pertinence and information system development*. *Information Storage and Retrieval*. 1974.2; 10 (2): 37-47.—Reviews: CR 1975.3:#27,950.

#### Usefulness of Relevance as a Concept

Doyle, Lawrence B. 1963.10. *Is relevance an adequate criterion in retrieval system evaluation?* American Documentation Institute. 26th Annual Meeting. Proceedings. 1963.10:199-200.

Cuadra, Carlos A. 1967.10; Katter, Robert V. *The relevance of relevance assessment*. American Documentation Institute. 30th Annual Meeting. Proceedings. 1967.10; 4: 95-99.

#### How People Judge Relevance

Rees, Alan M. 1967.10; Schultz, Douglas G.; et al. *A field experimental approach to the study of relevance assessments in relation to document searching*. 2 vols. Cleveland, OH: Case Western Reserve University; 1967.10. 287, 185 pp.

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O'Connor, John 1967.7. *Relevance disagreements and unclear request forms*. *American Documentation*. 1967.7; 18(3): 165-177.

Cook, Kenneth H. 1975. *A threshold model of relevance decisions*. *Information Processing and Management*. 1975.10; 11(5): 125-135.—A decision-theoretic model to explain users' relevance judgments.

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### CHAPTERS 9-11 DATA SCHEMAS AND DATA STRUCTURES

See also the textbooks on data base management.

Atkinson, Malcolm P. 1979.3. *Progress in documentation: data base systems*. J. Doc. 1979.3; 35(1): 49-91.

Kim, Won 1979.9. *Relational data base systems*. Computing Surveys. 1979.9; 11(3): 185-212.—Reviews: CR 1980.2:#35,813.

### CHAPTER 9 DATA SCHEMAS AND FORMATS

#### Section 9.1 Designing a conceptual schema

Kent, William 1978. *Data and reality: basic assumptions in data processing reconsidered*. New York: Elsevier North-HoUand; 1978. 211 pp.—Reviews: CR 1980.8:#36,591.

Shave, M. J. R. 1982. *Entities, functions, and binary relations: steps to a conceptual schema*. Computer Journal. 1981.2; 24(1): 42-47.—Reviews: CR 1981.8:#38,330.

Leong-Hong, Belkis W. 1982; Plagman, Bernard K. *Data dictionary/directory systems: administration, implementation, and usage*. New York: Wiley; 1982. 328 pp.—Reviews: CR 1982.11:#39,846.

Allen, Frank W. 1982.6; Loomis, Mary E. S.; Mannino, Michael V. *The integrated dictionary/directory system*. Computing Surveys. 1982.6; 14 (2): 245-286.—Reviews: CR 1982.8:#39,657.

#### Section 9.3 Criteria for the Design and Evaluation of Data Schemas

Marcus, R. S. 1978.1; Kugel, P.; Benefeld, A. R. *Catalog information and text as indicators of relevance*. JASIS. 1978.1; 29(1): 15-30.

### CHAPTER 11 DATA STRUCTURES AND ACCESS

Chapin, Ned 1969.11. *Common file organization techniques compared*. AFIPS 1969 Fall Joint Computer Conference. 1969.11; 35: 413-422.—Reviews: CR 1970.3:# 18,580.

Shera, Jesse H. 1956; Egan, Margaret. *The classified catalog*. Chicago: American Library Association; 1956. 130 pp.

Bryant, Philip 1980.6. *Progress in documentation. The catalog*. J. Doc. 1980.6; 36(2): 133-163.

Ryans, Cynthia C., ed. 1981. *The card catalog: current issues. Readings and selected bibliography*. Metuchen, NJ: Scarecrow; 1981. 336 pp.—Reviews: LJ 1982.3.1:527. SL 1981.10:412.

Stevens, Norman D. 1980.6. *The catalogs of the future: a speculative essay*. J. of Library Automation. 1980.6; 13(2): 88-95.—Reviews: CR 1981.1:#37,311.

Fayen, Emily G. 1983. *The online catalog: improving public access to library materials*. White Plains, NY: Knowledge Industry Publications; 1983. 148 pp.

Matthews, Joseph R. 1982. *Public access to online catalogs*. Weston, CT: Online; 1982. 345 PP-

## Section 11.1 Exploration of Data Structures

*Articulated Indexes*

- Mills, J. 1955.4. *Chain indexing and the classified catalog*. Library Association Record. 1955.4; 57(4): 141-148.—See Needham 1971 (Textbooks ISAR), pp. 182-186 for a summary.
- Sharp, John R. 1966.1. *The SLIC index*. American Documentation. 1966.1; 17(1): 41-44.
- Richmond, Phyllis A. 1981. *Introduction to PRECIS for North American usage*. Littleton, CO: Libraries Unlimited; 1981. 321 pp.
- Austin, Derek 1974. *PRECIS: A manual of concept analysis and subject indexing*. London: Council of the British National Bibliography. 1974; 561 pp.—Reviews: JD 1976.3:85-96. The review itself is a brief introduction to PRECIS.
- Craven, Timothy C. 1977.3. *NEPHIS: A nested-phrase indexing system*. JASIS. 1977.3; 28(2): 107-114.

## Section 11.4 The Concept of Order

- The ALA filing rules*. Chicago: American Library Association; 1980. 50 pp.
- Wellisch, Hans H. 1983.9. *The ALA filing rules: flowcharts illustrating their application, with a critique and suggestions for improvement*. JASIS. 1983.9; 34(5): 313-330.

## CHAPTERS 12—15 INDEX LANGUAGE FUNCTIONS AND STRUCTURE

**Xs is true for all parts of the book, much material can be found in the textbooks listed in Part 1. See also Chapter 7 references on studies of catalog use, Chapters 16-18 and Chapter 18, especially Fugman 1985.3.**

- Fischer, Marguerite 1966.4. *The KWIC index concept: a retrospective view*. American Documentation. 1966.4; 17(2): 57-70.
- Gebhardt, F. 1978.7; Stellmacher, I. *Design criteria for documentation retrieval languages*. JASIS. 1978.7; 29(4): 191-199.
- Landauer, T. K. 1983.7; Galotti, K. M.; Hartwell, S. *Natural command names and initial learning: A study of text-editing terms*. Communications of the ACM. 1983.7; 26(7): 495-503.—An important study with direct implications for the debate on natural language versus controlled vocabulary in retrieval systems.
- Pejtersen, A. M. 1983.12; Austin, J. *Fiction retrieval: experimental design and evaluation of a search system based on users' value criteria*. Parts 1 and 2. J. Doc. 1983.12; 39(4):230-246/1984.3; 40(1): 25-35.—A very good experimental study of request-oriented indexing.
- Soergel, Dagobert 1974.5. *Automatic and semi-automatic methods as an aid in the construction of indexing languages and thesauri*. International Classification. 1974.5; 1(1): 35-39.
- Lytte, Richard H. 1980.1. *Intellectual access to archives. I. Provenance and content indexing methods of subject retrieval. II. Report of an experiment comparing provenance and content indexing methods of subject retrieval*. American Archivist. 1980. Winter; 43(1): 64-75 and 1980.Spring; 43(2): 191-206.



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### CHAPTER 13 INDEX LANGUAGE FUNCTIONS

#### Section 13.2 The Role of the Index Language in Indexing

- Mooers, Calvin N. 1958; Brenner, C. W. *A case history of a Zatocoding IR system*. Casey, R. S., ed. 1958. Punched cards: their application to science and industry. 2. ed. New York: Reinhold; 1958: chapter 15, p. 340-356.—This is the seminal article on request-oriented indexing, called in the article “filtering technique”; the essential pages are 346-352.
- Cooper, William S. 1978.5. *Indexing documents by Gedanken experimentation*. JASIS. 1978.5; 25 (3): 107-119.—See also the notes by Wilson and Cooper in JASIS. 1979.5; 30(3): 169-172.
- Feinman, R. D. 1973.1; Kwok, K. L. *The construction of journal-oriented classification schemes*. JASIS. 1973.1; 24(1): 71-72.

### CHAPTER 14 INDEX LANGUAGE STRUCTURE 1: CONCEPTUAL

- Fairthorne, Robert A. 1955.10. *Essentials for document retrieval*. Special Libraries. 1955.10; 46(10): 340-353.
- Austin, Derek 1969.7. *Prospects for a new general classification*. J. of Librarianship. 1969.7; 1(3): 149-169.
- Sokal, R. R. 1974.9. *Classification: purposes, principles, progress, prospects*. Science. 1974.9. 27; 485(4157): 1115-1123.
- Miehoff, R. T. 1976.1. *Development of an integrated energy vocabulary and the possibilities for online subject switching*. JASIS. 1976.1; 27(1): 3-17.—Prefer to newer articles.

#### Reports on Systems

The Semantic Code and Syntol are examples of methods for the representation of knowledge. Today's systems could capitalize on the intellectual effort invested in them.

- erry, J. W., ed. 1958; Kent, Allen, ed. *Tools for machine literature searching. Semantic code dictionary, equipment»procedures*. New York: Wiley; 1958. 972 pp.
- ardin, Jean Claude 1965. *Syntol*. New Brunswick, NJ: Rutgers University. Graduate School of Library Service; 1965. 106 pp. (Rutgers Series on Systems for the Intellectual Organization of Information, v. 2.)—Reviews: LJ 1965.4.1:1694. SL 1965.12:136.—The following book is much better.
- ros, Rene C. 1968; Gardin, Jean Claude; Levy, Francis. *Uautomatisation des recherches documentaires— Un modelegtnäräl, "le SYNTOL"*. 2. ed. Paris: Gauthier-Villars; 1968. 260 pp.
- terthelot, A. 1979.11; Clague, S.; Schiminovich, S.; Zwimer, W. *The ICSV AB international classification system for physics: its history and future*. JASIS. 1979.11; 30(6): 343-352.

#### Section 14.5 Conceptual Analysis, Facet Analysis: Elaboration

Further relevant material is listed with Chapter 3.

- ickery, Brian C. 1960. *Faceted classification. A guide to construction and use of special schemes*. London: Aslib 1960. 70 pp. (reprinted with additional material 1968).

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- Grolier, Eric de 1962. *A study of general categories applicable to classification and coding in documentation*. Paris: UNESCO; 1962. 248 pp.
- Katz, Jerrold J. 1964.12. *Semantic theory and the meaning of "good."* J. of Philosophy. 1964.12.10; 61(235): 739-766.
- Sturtevant, William C. 1964.6. *Studies in ethnoscience*. American Anthropologist. 1964.6; 66(3,pt.2): 99-131.—A study of classification in other cultures with an approach very relevant for Section 14.5.

### Section 14.7 Concept Formation in Thesaurus Building

The quotations on cross-disciplinary concepts are from

- Singer, Joel David. 1971.6. *A general systems taxonomy for political science*. Morristown, NJ: General Learning; 1971: Section Transferability of knowledge.

## CHAPTER 15 INDEX LANGUAGE STRUCTURE 2: DATA BASE ORGANIZATION

See also references for Section 11.1.

- Jonker, F. 1959. *A descriptive continuum: A "generalized" theory of indexing*. Proceedings of the International Conference on Scientific Information. 1958.11. Washington, D.C.: National Academy of Sciences/National Research Council; 1959: v. 2, p. 1291-1311.

## CHAPTERS 16-18 ISAR SYSTEM OPERATION AND DESIGN

### References on Automated Methods of Information Storage and Retrieval

These references go well beyond the text.

### Knowledge-based approaches and language analysis

See the textbooks on artificial intelligence and expert systems and references with Chapter 3.

### Probabilistic approaches

Some of these references deal with indexing, some with searching, and some with both, but they all use the same underlying ideas and it is, therefore, useful to put them together. See also the section on automated ISAR in the textbook bibliography and Salton's work on SMART.

- Salton, Gerard 1979.3. *Mathematics and information retrieval*. J. Doc. 1979.3; 35(1): 1-29.—A tight, well-written overview.
- Maron, M. E. 1960.7; Kuhns, J. L. *On relevance, probabilistic indexing and information retrieval*. Journal of the ACM. 1960.7; 7(3): 216-244.—Reprinted in Saracevic, T., ed. 1970. Introduction to information science. New York: Bowker; 1970: paper 28, p. 295-311.—A seminal paper in the area.

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Bookstein, Abraham 1975.1; Swanson, Don R. *A decision theoretic foundation for indexing*. JASIS. 1975.1; 26(1): 45-50.—Representative of a large number of similar papers by various authors.

Harter, Stephen P. 1975.7. *A probabilistic approach to automatic keyword indexing. Pt. I; On the distribution of specialty words in technical literature. Pt. II: An algorithm for probabilistic indexing*. JASIS. 1975.7; 26(4): 197-206 and 1975.9; 26(5): 280-289.—A very well-written exposition of the probabilistic, cost-based approach to indexing and searching.

The following references describe a particular method of indexing and searching: human experts provide indexing using a controlled vocabulary or relevance judgments with respect to a query, respectively, for a training set. Analysis of these data yields associations between document terms (or other easily ascertained entity characteristics) and descriptors from a controlled vocabulary or between entity characteristics and queries. A program then uses these associations to infer from entity characteristics the appropriate controlled vocabulary descriptors or relevance judgments with respect to queries.

Maron, M. E. 1961.7. *Automatic indexing: an experimental inquiry*. J. of the ACM. 1961.7; 8(3): 404-417.—The seminal paper on the subject.

Kar, Gautam 1978; White, Lee J. *A distance measure for automatic document classification by sequential analysis*. Information Processing and Management. 1978; 14(2): 57-69.

Hamill, Karen A. 1980.11; Zamora, Antonio. *The use of titles for automatic document classification*. JASIS. 1980.11; 31(6): 396-402.

Miller, William L. 1971.12. *A probabilistic search strategy for MEDLARS*. J. Doc. 1971.12; 27(4): 254-266 —Reviews: CR 1972.7:#23,497.

Robertson, Stephen E. 1976.5; Sparck Jones, K. *Relevance weighting of search terms*. JASIS. 1976.5; 27(3): 129-146.—A good summary of this area of research.

Robson, Allen 1976.7; Longman, Janet S. *Automatic aids to profile construction*. JASIS. 1976.7; 27(4): 213-223.

## The SMART System

The SMART system is amply covered in books written or edited by Gerard Salton, some of them cited in the textbook bibliography. The following early references give a good idea of the conception and genesis of the system.

Salton\* Gerard 1962. *The identification of document content: a problem in automatic information retrieval*. Proceedings of the Harvard Symposium on Computers. 1962: 273-304.

Salton, Gerard 1963.7. *Some hierarchical models for automatic document retrieval*. American Documentation. 1963.7; 14(3): 213-222.

Salton, Gerard 1964.1. *A flexible automatic system for the organization, storage and retrieval of language data (SMART)*. Information Storage and Retrieval. Scientific Report to NSF No. ISR-5. Cambridge, MA: Harvard Univ.; 1964.1: 1-1-1-42.

Salton, Gerard 1964.6. *The SMART system.—An introduction*. Information Storage and Retrieval. Scientific Report to NSF no. ISR-7. Cambridge, MA: Harvard Univ.; 1964.6: 1-1-1-II.

## CHAPTER 16 INDEXING AND SYSTEM PERFORMANCE

- Maizell, R. E. 1971; Smith, J. F.; Singer, T. E. *Abstracting scientific and technical literature. An introductory guide and text for scientists, abstractors, and management.* New York: Wiley; 1971. 313 pp.
- Borko, Harold 1978; Bernier, Charles L. *Indexing concepts and methods.* New York: Academic Press; 1978. 256 pp.—Reviews: JA 1980.3:126.
- Rolling, L. 1981.3. *Indexing consistency, quality and efficiency.* Information Processing and Management. 1981.3; 17(2): 69-76.
- Landau, Herbert B. 1969.10. *The cost analysis of document surrogation: a literature review.* American Documentation. 1969.10; 20(4): 302-310.—Very good.
- Borko, Harold 1963.4; Chapman, Seymour. *Criteria for acceptable abstracts: survey of abstractor's instructions.* American Documentation. 1963.4; 14(2): 149-160.—Reprinted in Saracevic, T., ed. 1970. Introduction to information science. New York: Bowker; 1970: paper 33, p. 364-376.—A very good review.
- Weil, Ben H. 1970.9. *Standards for writing abstracts.* JASIS. 1970.9; 21(5): 351-357.
- Leonov, Valery P. 1974.10; Soergel, Dagobert. *Compressing and abstracting information for information utilities.* American Society for Information Science. 37th annual meeting. Proceedings. 1974.10; 11: 46-49.
- Vernimb, C. 1969. *Indexing rules for the EUR A TOM Nuclear Documentation System (ENDS).* Luxembourg: EURATOM Center for Information and Documentation; 1969. 25 pp.—Just given as an example without quality judgment.
- Schultz, Claire K. 1970.10. *Cost-effectiveness as a guide in developing indexing rules.* Information Storage and Retrieval. 1970.10; 6(4): 335-340.
- Atherton, Pauline 1963.9. *Aid-to-indexing forms: a progress report.* New York: American Institute of Physics; 1963.9. (AIP/DRP 63-2)

## Machine-Assisted Indexing

- Hunt, Bernard L. 1975.7; Synderman, Martin; Payne, William. *Machine-assisted indexing of scientific research studies.* JASIS. 1975.7; 26(4): 230-236.

## Automatic Abstracting

- Edmundson, Harold P. 1961.5; Wyllys, R. E. *Automatic abstracting and indexing—survey and recommendations.* Communications of the ACM. 1961.5; 4(5): 226-234.
- Edmundson, Harold P. 1969.4. *New methods in automatic extracting.* J. of the ACM. 1969.4; 16(2): 264-285Reprinted in Saracevic, T., ed. 1970. Introduction to information science. New York: Bowker; 1970: paper 34, p. 377-392.
- Rush, James E. 1971.7; Salvadore, R.; Zamora, A. *Automatic abstracting and indexing II. Production of indicative abstracts by application of contextual inference and syntactic coherence criteria.* JASIS. 1971.7; 22(4): 260-274.
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- Borkowski, Casimir 1975.3; Martin, J. Sperleng. *Structure, effectiveness, and benefits of LEX tractor, an operational computer program for automatic extraction of case summaries and dispositions from court decisions.* JASIS. 1975.3; 26(2): 94-102.

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### Automatic Indexing: Syntactic Approaches

See also references given under automated information storage and retrieval earlier.

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Borkowski, Casimir 1970.1; Capanec, Louis; Martin, J. Sperling; Saiko, Virginia; Treu, Siegfried. *Structure and effectiveness of the citation identifier, an operational computer program for automatic identification of case citations in legal literature*. *JASIS*. 1970.1; 21 (1): 8-15.

Dunham, G. S. 1978.3; Pacak, M. G.; Pratt, A. W. *Automatic indexing of pathology data*. *JASIS*. 1978.3; 29(2): 81-90.—Uses SNOP, a faceted classification of pathology, as the target index language.

## CHAPTER 17 SEARCHING

### Textbooks

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Thomas, Diana M. 1981; Eisenbach, Elizabeth R.; Hinckley, Ann T. *The effective reference librarian*. New York: Academic Press; 1981. 224 pp.

### Articles on the Entire Scope of Chapter 17

Bates, Marcia J. 1979.7. *Information search tactics*. *JASIS*. 1979.7; 30 (4): 205-214.

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Fidel, Raya 1984.7. *Online searching styles: A case-study-based model of searching behavior*. *JASIS*. 1984.7; 35(4): 211-221.

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Scheffler, F. 1972.1; March, Jacquelin; Bernados, John. *An experiment to study the use of Boolean NOT logic to improve the precision of selective dissemination of information*. *JASIS*. 1972.1; 23(1): 58-65.—Much broader than title indicates. Many good points on formulating queries for SDL.

### Costs of Searching

Cooper, Michael D, 1976.9; DeWath, Nancy A. *The cost of on-line bibliographic searching*. *J. of Library Automation*. 1976.9; 9 (3): 195-208.

Elchesen, D. R. 1978.3. *Cost-effectiveness comparison of manual and on-line retrospective bibliographic searching*. *JASIS*. 1978.3; 29(2): 56-66.—A good study.

### Section 17.1.2 Develop the Query Statement

The references listed here deal with the reference interview.

### Basic Works on the Reference Interview

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- White, Marilyn D. 1982. *The reference encounter model*. Dusha, C., ed. 1982. Theories in library and information science. New York: Bowker; 1982: 38-55.
- Carmon, J. L. 1975.5. *Model the user interface for a multidisciplinary bibliographic information network*. Athens, GA: University of Georgia. Office of Computing Activities; 1975.5. 101 pp. + ca. 200 pp. appendices. (NTIS no. PB-242 964/56A)

### Interviewing in General

- Cannell, C. F. 1968; Kahn, R. L. *Interviewing*. In Lindzey, G., ed, 1968; Aronson, E., ed. *The handbook of social psychology*. 2. ed. Reading, MA: Addison-Wesley; 1968. vol.2: Chapter 15, pp. 526-595.
- Stewart, Charles J. 1978; Cash, William B. *Interviewing: principles and practices*. 2. ed. Dubuque, I A: W. C. Brown; 1978.286 pp.—Particularly chapter 2, The interviewing process and chapter 4, Questions and their use.
- Brill, N. I. 1973. *Working with people: principles of the helping process*. Philadelphia, PA: Lippincott; 1973. 202 pp.

### Additional References

- Crouch, Wayne W. 1979. *The information interview: a comprehensive bibliography and an analysis of the literature*. Syracuse, NY: Syracuse University. ERIC Clearinghouse on Information Resources; 1979. 49 pp. (ERIC: ED 180 501).
- White, Marilyn D. 1981.7. *The dimensions of the reference interview*. RQ. 1981.Summer; 20(4): 373-381.

### Section 17.2 Develop the Search Strategy

- Jahoda, Gerald 1974.5. *Reference question analysis and search strategy development by men and machine*. JASIS. 1974.5; 25(3): 139-144.—A good analysis.
- Marcus, Richard S. 1979.4; Reintjes, J. Francis. *Experiments and analysis on the computer interface to an information retrieval network*. Cambridge, MA: Massachusetts Institute of Technology. Laboratory for Information and Decision Systems; 1979.4.133 pp. (ERIC: ED 190 104).

### Section 17.2.4 Free-Text Searching

See also Chapter 18, other studies, Blair 1985.3.

- Evans, Lynn 1975.4. *Search strategy variations in SOI profiles*. London: Institution of Electrical Engineers; 1975.4.129 pp. (OSTI Report 5229. Available from British Library, Lending Division).
- O'Connor, John 1973.11. *Text searching retrieval of answer-sentences and other answer-passages*. JASIS. 1973.11; 24(6): 445-460.
- O'Connor, John 1980.7. *Answer-passage retrieval by text searching\** JASIS. 1980.7; 31(4): 227-239.—Presents a fairly sophisticated algorithm.

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## Design Characteristics of Information Systems

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## Subject Index

*This subject index serves also as a key to abbreviations. It should be used in conjunction with the table of contents, which serves as a classified index. Cross-references are introduced only as space permits; crossreferences that can be inferred from the term itself are not given (for example, there is no cross-reference Polyhierarchy to Hierarchy). Page numbers 399 and above refer to the bibliography.*

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