

Current Comments®

A Tribute to S. R. Ranganathan, the Father of Indian Library Science. Part 1. Life and Works

Number 6

February 6, 1984

Not long ago, I was invited to deliver the sixth series of Ranganathan Memorial Lectures at the Documentation Research and Training Centre, Bangalore, India. These lectures are sponsored by the Sarada Ranganathan Endowment for Library Science, a trust founded by the late Shiyali Ramamrita Ranganathan in honor of his wife. The purpose of the endowment is to promote and publish research in library science.

My lectures covered three basic topics—the use of citation indexes, co-citation analysis and clustering, and Third World research. I covered the same subjects again at Madras University. However, there I presented a fourth talk that related my work to Ranganathan's. The occasion of the Madras talks was the unveiling of a new portrait of Ranganathan, who was the librarian at Madras University for more than 20 years.

These original invitations quickly evolved into a full-scale lecture tour of academic and governmental institutions in several major cities of India. Many invitations to speak were generated by my recent article on Third World research, published in *Science & Public Policy* and reprinted in *Current Contents*®.^{1,2} Ultimately, my itinerary included New Delhi, Hyderabad, and Bombay. I'm deeply indebted to Subbiyah Arunachalam, editor of the *Indian Journal of Technology*, for his prodigious efforts in arranging this itinerary. He made it possible for me to meet personally with

many leading Indian scientists and media representatives.

The entire tour proved very rewarding. But it was particularly gratifying to help honor Ranganathan, who is, without question, one of the luminaries of library science and library classification. Not only did he do more than any other single individual to modernize and professionalize library science in India, he also had a revolutionary impact on international classification theory.

I had the pleasure of meeting Ranganathan only once, in Dorking, England, at the International Study Conference on Classification for Information Retrieval in 1957.³ Ranganathan gave the opening address, and I contributed my views on citation indexing. We shared many conversations during the conference. At the time, Ranganathan was riding the crest of a career that spanned almost 50 years (from 1924 to 1972), and from which he never really retired.

Ranganathan was born in 1892 in Shiyali in the Tanjur district of Madras state. His family belonged to the Brahman community. Ranganathan's father died when the boy was only six. He was brought up under the influence of his grandfather, who was a schoolteacher, and two of his elementary schoolteachers. These men, who were steeped in Hindu religious lore, invested Ranganathan with a lifelong love of Hindu sacred literature that is plainly evident in his writings.⁴ Most of his library science



Shiyali Ramamrita Ranganathan

works are liberally sprinkled with allusions to the Hindu scriptures.

In 1909, Ranganathan managed to secure one of the few seats available at Madras Christian College. He received his BA in 1913, and an MA in mathematics in 1916. In 1917, he received a professional teaching certificate from Teacher's College, Saidapet, Madras. He then taught physics and mathematics at Government College, Mangalore; Government College, Coimbatore; and Presidency College, Madras. But his teaching positions paid poorly. When his attempts to get higher pay for teachers failed, Ranganathan was reluctantly persuaded by a friend to apply for the well-paid post of Madras University librarian.⁵ To his surprise, he won the appointment, although he lacked any library training. Ranganathan, however, found the library's quiet atmosphere stultifying after the liveliness of the classroom. Within a week he was back at Presidency College, begging to be reinstated. The college principal urged Ranganathan to return to the library, but agreed to hold his teaching position open until his library training in London

was completed. It's ironic that this man, who later became so single-mindedly devoted to library science, was practically forced into the field against his will.

His reluctance to embrace librarianship was understandable considering the ill-organized, poorly attended, and understaffed institution he inherited. In fact, his first days at the library were passed in tedious inactivity. Yet he slowly began to perceive that his library's backwardness constituted a monumental challenge. Indeed, upon his return from London in 1925, he launched a full-scale reform program to implement his ideas for staffing and furnishing the library as well as classifying and cataloging its contents.

He gleaned many of these ideas from his nine-month stay in London. There he studied at the School of Librarianship, University College, London, under W.C. Berwick Sayers, the chief librarian of the Croydon Public Library. Ranganathan received an honors certificate from the school at the end of his stay. In addition, he visited over a hundred libraries to observe their operation. He was profoundly impressed by the community orientation of these libraries. Unlike those in India, British libraries made every effort to serve all strata of society equally. But positively impressed as he was in many ways, he was dismayed by the welter of different services, techniques, buildings, and equipment that he observed in the libraries he visited. He felt that each library was developing in its own independent direction, rather than all developing according to common principles. So Ranganathan set himself the task of defining some unifying principles.

These were published in 1931 in a seminal work, *The Five Laws of Library Science*.⁶ Ranganathan himself considered this to be the wellspring of the 50 books he produced over his long career.⁶ (p. 382) The five laws are the following deceptively simple statements: 1) books

are for use, 2) every reader his book, 3) every book its reader, 4) save the time of the reader, and 5) a library is a growing organism.

Although these statements might seem self-evident today, they certainly were not to librarians in the early part of this century. After all, the democratic library tradition we currently enjoy had arisen in America and England only in the latter part of the nineteenth century.⁷ Previously, many libraries restricted their services to paying subscribers from the moneyed classes. Often libraries served primarily a custodial function. The libraries of India, as a colony and a developing country, were hardly among the most progressive. In Ranganathan's day, they were usually associated only with universities and other academic institutions.⁸ There was no public library system as such. But even given a well-established public library system, the tendency toward bureaucratic entrenchment must always be guarded against. The five laws help ensure that libraries are service-oriented.

For Ranganathan and his followers, the five laws were a first step toward putting library work on a scientific basis. These laws provided general principles from which all library practices could be deduced. Thus, the first law—books are for use—leads naturally to a library system in which libraries are centrally located, open long hours, hospitably furnished, and staffed by trained, service-oriented, and adequately compensated workers. (Of course, the term "books" here stands for all information items.) The second law—every reader his book—dictates that libraries serve all readers, regardless of social class, sex, age, or any other factor. The third law—every book its reader—stipulates that a book exists for every reader, and that books should be well described in the catalog, displayed in an attractive manner, and made readily available to readers. This law leads naturally to such

practices as open access rather than closed stacks, a coherent shelf arrangement, an adequate catalog, and a reference service. The fourth law—save the time of the reader—emphasizes efficient service, which implies an expeditious book-charging system and easy-to-understand guides to the stacks. This law has a corollary—save the time of the staff—which requires the use of those techniques and technology that enable the staff to perform most efficiently. The fifth law—a library is a growing organism—recognizes that growth will undoubtedly occur and must be planned for systematically. From the physical facilities to administrative practices, the library must be open-ended, always ready to expand.

Besides encouraging formulation of the five laws, Ranganathan's visit to England stimulated another important line of thought. The more he learned about the orthodox Anglo-American library classification systems, the more convinced he became that they were seriously flawed. Library classification is the systematic arrangement of documents by subject.⁹ As such, it may determine the arrangement of books on library shelves or of documents in an information retrieval system. However, in many libraries, particularly in Europe, classification determines only the order of the catalog cards describing information items, rather than the physical arrangement of the items themselves.

Ranganathan's objection to the prevailing classification systems, such as Dewey Decimal Classification and Library of Congress Classification, was that they tried to enumerate all possible subjects and provide preconceived pigeonholes to accommodate all documents.¹⁰ But this enumerative approach made little allowance for the addition of new topics. Thus, these systems couldn't easily accommodate the explosion of knowledge occurring in the twentieth century. Of course, any new enumera-

tive scheme that simply incorporated contemporary topics would itself be quickly outmoded. Rather, what Ranganathan sought was an entirely novel, more flexible, approach.

As so often happens in scientific discovery, this vague notion was fully conceptualized only with the help of an unlikely catalyst. For Isaac Newton, according to legend, the catalyst was a falling apple. For Friedrich Kekulé, discoverer of the benzene ring, it was a snake with its tail in its mouth that appeared to him in a dream. For Ranganathan, it was a toy erector set at Selfridge's, the London department store.¹¹ There he saw a salesperson create an entirely new toy with each new combination of metal strips, nuts, and bolts. This experience made Ranganathan realize that his classification scheme should likewise consist of elements that could be freely combined to meet the needs of each specific subject.

But this eureka experience in 1924 would require many years' gestation before it came to fruition. Not until 1933 did Ranganathan publish his first major work on his new classification system, *The Colon Classification*.¹² Since then, Colon Classification has undergone several revisions. Its basic principles, however, require the *analysis* of a subject to determine its various aspects, called *facets*, and the *synthesis* of a class number (call number) from the numbers assigned in published schedules to different facets. Thus, Colon Classification is known as an *analytico-synthetic* classification system. Part 2 of this essay will include an appendix with a detailed discussion of Colon Classification.

According to Bernard I. Palmer, formerly of the Library Association, London, England, the major distinction between enumerative and analytico-synthetic classification is that "enumerative classification lists composite subjects, built up from a number of basic ideas. Facet classification lists the basic terms

and leaves the building of derived composite terms to the classifier."¹³ (p. 37) This frees the deviser of the classification scheme from the burden of specifying all conceivable subjects. By stringing together the appropriate facets, the classifier using Colon Classification can precisely specify new subjects as they arise. Therefore, in Colon Classification, a subject category with a ready-made class number never preexists without a document to occupy it.¹⁴

Actually, this feature, known as "literary warrant," is not unique to Colon Classification. Colon Classification shares this characteristic with the Library of Congress Classification system. Also, certain aspects of facet analysis and synthesis had been anticipated to some degree in Dewey Decimal Classification¹⁵ and even more so in other classification systems, such as Universal Decimal Classification.⁹ Furthermore, as Phyllis Richmond, Baxter School of Information and Library Science, Case Western Reserve University, Cleveland, Ohio, pointed out in reviewing this essay, the ideas of W. C. Berwick Sayers, Henry Evelyn Bliss, and Ernest Richardson further strengthened the foundation for facet theory.¹⁶ But Ranganathan was the first to fully explicate facet theory, and his work has had a major impact on modern classification schemes.⁹

In 1934, just a year after *The Colon Classification* came out, Ranganathan published another important work, the *Classified Catalogue Code*.¹⁷ This book grew out of Ranganathan's strong objection to the commonly used dictionary-type catalog. In the dictionary catalog, subjects, authors, and titles are merely listed in alphabetic order. Ranganathan maintained, however, that a catalog should consist of two components. One part should be classified by subject, reflecting the library's classification system, with class number entries. The other should be a dictionary catalog, including author, title, series, and similar

identifiers, as well as alphabetized subject entries.

The function of a catalog is to itemize works so they can be found by author, title, series, and so forth. It must also allow readers to review the selection of works on a given subject. Traditionally, as a practical matter, the alphabetical catalog was considered easiest for the ordinary reader to use. But Ranganathan thought that, although most readers are unfamiliar with classified systems, the alphabetized dictionary catalog could be used to guide readers to the correct location in the classified catalog. Once in the classified system, the reader would be exposed to the depth and breadth of material on the subject of interest. This would help pinpoint the most relevant material.

To determine subject entries for the dictionary catalog, Ranganathan devised an ingeniously simple method called *chain indexing*.¹⁸ This method simply uses each facet of a subject, together with its immediately preceding facets, as an index entry. Thus, all important aspects of the subject, from the most general to the most specific, are automatically covered. Chain indexing can be adapted to other classification systems as well. The British National Bibliography used it in conjunction with its version of the Dewey Decimal Classification, from 1950 until 1971, when the preserved context index system (PRECIS) was substituted.^{19,20}

Although Ranganathan's works on classification and cataloging are his best-recognized contributions, he published over 50 books and 1,000 papers on all aspects of library science.²¹ In addition, he founded and edited three periodicals: *Abgila*, the Indian Library Association *Annals*, *Bulletin*, and *Granthalaya* (the Hindi component of the journal); the *Annals of Library Science*; and *Library Science with a Slant to Documentation*. He also involved himself in every aspect of library work in India. In the course of

his career, he was a member or chairman of more than 25 committees which addressed such issues as library administration, education of librarians, and library legislation.

In 1935, he published the first edition of his influential book, *Library Administration*,²² in which he broke down library work into approximately 1,000 component jobs. By precisely identifying many different library functions, he was able to simplify and streamline library routine. He also wrote extensively on the physical layout and furnishings of libraries.^{23,24}

Ranganathan worked tirelessly to professionalize library education in India. One of his first achievements, in 1929, was to found a library school that was later incorporated into the University of Madras. He also instituted a master of library science degree in 1948 and a doctoral program in 1950, both at the University of Delhi. These were the first higher degree programs in library science offered in India, and probably in any of the Commonwealth countries.²⁵ Ranganathan greatly influenced the curricula and textbooks for such courses. In fact, a student of Ranganathan's, Asha Kaula, has stated, "In India, the advanced professional education is nothing but an interpretation of Dr. Ranganathan's ideas."²⁶ (p. 556) Ranganathan's crowning accomplishment in library education was to found the Documentation Research and Training Centre at Bangalore, under the auspices of the Indian Statistical Institute. The center, where I presented the Ranganathan lectures, is devoted solely to research and advanced training in documentation and information science.

Ever since his return from England, Ranganathan had hoped to establish a Western-style network of public libraries throughout India. His first step toward achieving this end was to form the Madras Library Association in 1928, to promote development of public li-

braries in the state of Madras. He also drafted specific legislation to extend the public library system beyond the state of Madras into other areas of India. In 1950, he published an influential work detailing plans for a system of national, state, university, public, and school libraries for the entire country.²⁷ As he told Pauline Atherton Cochrane, School of Information Studies, Syracuse University, New York, this plan was brought forward at the request of Indian government leaders whom Ranganathan helped during the struggle for independence from the UK. He brought these men books while they were in prison. Later, when they assumed responsible positions in the new Indian government, they came to him for advice on developing the nation's library system.²⁸

Ranganathan held several important offices in India during his long career. He served as president of the Indian Library Association from 1944 to 1953 and as president of the Madras Library Association from 1958 to 1967. He also served as vice president of the Governing Council of the Indian Standards Institute from 1965 to 1972.

Although Ranganathan is widely acknowledged as the father of library science in India, his activities extended well beyond his country's borders. In addition to attending many international library and information science conferences, he traveled extensively on lecture tours to library science schools throughout the US and Europe. He also participated in the activities of such international organizations as UNESCO, the International Federation of Library Associations, and the International Standards Organization. He played a key role in setting policy for the United Nations Library and he devoted much effort to international standardization of documentation. He was particularly active in the International Federation for Documentation (FID).²⁹ He founded the FID committee on classification theory,

served as vice president of the FID council, and was elected an honorary member of FID. He also became honorary chairman of the FID committee on classification research.

Ranganathan's contributions were acknowledged many times over, both in India and abroad, by similar honorary offices and fellowships. For example, in 1964, he was named honorary president of the Second International Conference on Classification Research, held in Elsinore, Denmark. He also received a number of other high honors. In 1935 and 1957, respectively, the Indian government bestowed on him the honorific title Rao Sahib and the public service award Padmashri. In 1948, he received an honorary doctorate of literature from the University of Delhi. In 1964, he received the same degree from the University of Pittsburgh. In 1965, he was made a national research professor by the Indian government, and in 1970, he received the Margaret Mann Citation in Cataloging and Classification of the American Library Association (ALA). In 1965, and in 1967, in honor of his seventy-first birthday, his colleagues published two volumes of a *festschrift* dedicated to him.^{30,31} After his death, the FID, in 1976, established the Ranganathan award in his memory. This certificate of merit is awarded biennially for a recent outstanding contribution in the field of classification.

Ranganathan's activity level throughout his lifetime reflects a total, selfless commitment to library science. P.N. Kaula, Banaras Hindu University, Varanasi, India, a fellow library scientist and a close associate of Ranganathan, observed that Ranganathan lived and breathed library science, talking of nothing else from when he arose until late at night.³² Co-workers testify to Ranganathan's long working hours, which averaged 16 hours a day, seven days a week.³³ During his 20 years of service as librarian of the University of

Madras, he took no leave. He worked even on his wedding day, returning to the library shortly after the ceremony.³⁴ When he retired from the Madras University library, it was only to accept a series of appointments at other Indian universities and to step up his involvement in international activities. He remained actively engaged in research until his death in 1972 at the age of 80.

Again, Cochrane provides a salient anecdote.²⁸ When she visited him at his bedside one Sunday in 1970, there were ten or more Indian librarians present who had traveled more than 250 miles to spend the afternoon discussing library developments with him. This was a weekly occurrence until his death.

Besides his great capacity for work, Ranganathan was renowned for his abstemious life-style. In spite of the good salary he earned, he adopted a Ghandi-like simplicity in diet and dress. He ate only lightly, shunned coffee and tea, and wore plain homespun garments. He usually walked barefoot to the library and worked there barefoot, saying that the library was his home, and no one wears shoes in his own home.³³ As for his real home, it was sparsely furnished and lacked electricity, although he could have easily afforded these amenities. The money he saved through years of

frugal living, he gave away twice: once in 1925 to endow a mathematics fellowship at Madras Christian College in honor of his mathematics professor, Edward B. Ross, and again in 1956 to endow the Sarada Ranganathan chair of library science at the University of Madras in honor of his wife.

This self-abnegation and devotion to work were grounded in a deep spirituality. As T.R. Seshadri, an associate of Ranganathan, writes, "Ranganathan was born and brought up at a time when spirituality and religion still continued to be the mainsprings of life."³⁵ Some of his followers viewed him as a yogi.^{35,36} He concentrated his whole body, mind, and soul on the discipline of library science, so they felt he had embraced it as a path to spiritual perfection.

Part 2 of this essay will examine Ranganathan's impact both on Indian and international library science, draw some parallels between Ranganathan's work and co-citation clustering, and discuss colon classification.

* * * * *

My thanks to Terri Freedman and Patricia Lawson for their help in the preparation of this essay.

©1984 ISI

REFERENCES

1. **Garfield E.** Third World research. Part 1. Where it is published and how often it is cited. *Current Contents* (33):5-15, 15 August 1983.
2. -----, Third World research. Part 2. High impact journals, most-cited articles, and most active areas of research. *Current Contents* (34):5-16, 22 August 1983. (Reprints of **Garfield E.** Mapping science in the Third World. *Sci. Public Policy* 10(3):112-27, 1983, are included in Parts 1 & 2.)
3. **Aslib.** *Proceedings of the International Study Conference on Classification for Information Retrieval*, 13-17 May 1957, Dorking, UK. New York: Pergamon Press, 1957. 151 p.
4. **Gopinath M A.** Ranganathan. Shiyali Ramamrita. (Kent A. Lancour H & Daily J E, eds.) *Encyclopedia of library and information science*. New York: Dekker, 1978. Vol. 25. p. 58-86.
5. **Ranganathan S R.** A librarian looks back. *Herald Libr. Sci.* 2:1-7; 127-30, 1963.
6. -----, *The five laws of library science*. London: Blunt, 1957. 456 p.
7. **Sayers W C B.** Introduction to the first edition. (Ranganathan S R.) *The five laws of library science*. London: Blunt, 1957. p. 13-7.
8. **Saksena R S.** India's contribution to library science. (Kaula P N, ed.) *Library science today: Ranganathan festschrift*. New York: Asia Publishing House, 1965. Vol. 1. p. 625-31.
9. **Wellisch H H.** Classification. (Wedgeworth R, ed.) *ALA world encyclopedia of library and information services*. Chicago: American Library Association, 1980. p. 146-50.

10. **Ranganathan S R.** Impact of growth in the universe of subjects on classification. (International Federation for Documentation, Committee on Classification Research.) *Ranganathan memorial issue*. Copenhagen: Danish Centre for Documentation, 1972. FID/CR Report No. 12. p. 1-20.
11. -----, Introduction to the Colon Classification. *The Colon Classification*. New Brunswick, NJ: Rutgers Graduate School of Library Service, 1965. Vol. 4. p. 9-23.
12. -----, *The Colon Classification*. New Brunswick, NJ: Rutgers Graduate School of Library Service, 1965. Vol. 4.
13. **Palmer B I & Wells A J.** The process of division. *The fundamentals of library classification*. London: George Allen & Unwin, 1961. p. 35-41.
14. **Palmer B I.** A short introduction to Colon. *Libr. World* 51:123-5, 1949.
15. **Chan L M.** Colon Classification by Shiyali Ramamrita Ranganathan. *Cataloging and classification: an introduction*. New York: McGraw-Hill, 1981. p. 312-5.
16. **Matthews G O.** *The influence of Ranganathan on faceted classification*. PhD dissertation. Cleveland: Case Western Reserve University, 1980. p. 100-2.
17. **Ranganathan S R.** *Classified catalogue code*. New York: Asia Publishing House, 1964. 644 p.
18. **Palmer B I & Wells A J.** The chain procedure for subject indexing and featuring. *The fundamentals of library classification*. London: George Allen & Unwin, 1961. p. 101-7.
19. **Wells A J.** Ranganathan's influence on bibliographical services. (Dudley E, ed.) *S.R. Ranganathan, 1892-1972*. London: Library Association, 1974. p. 13-5.
20. **Sørensen J.** Austin, Derek William. (Wedgeworth R, ed.) *ALA world encyclopedia of library and information services*. Chicago: American Library Association, 1980. p. 64.
21. **Kaula P N.** A new era of library science. *Herald Libr. Sci.* 1:160-6, 1962.
22. **Ranganathan S R.** *Library administration*. Bombay: Asia Publishing House, 1959. 678 p.
23. -----, Library buildings and furniture. *Mod. Libr.* 14:121-4, 1944.
24. -----, Style and character in library buildings. *Mod. Libr.* 15:87-9, 1945.
25. **Singh M.** Progress in librarianship in India, 1911-1978. *Libri* 29:158-68, 1969.
26. **Kaula A.** Dr. Ranganathan and library education. (Kaula P N, ed.) *Library science today: Ranganathan festschrift*. New York: Asia Publishing House, 1965. Vol. 1. p. 553-7.
27. **Ranganathan S R.** *Library development plan: thirty-year programme for India*. Delhi: University of Delhi, 1950. 464 p.
28. **Cochrane P A.** Personal communication. 3 January 1984.
29. **Mølgaard H R.** Editorial. (International Federation for Documentation, Committee on Classification Research.) *Ranganathan memorial issue*. Copenhagen: Danish Centre for Documentation, 1972. FID/CR Report No. 12.
30. **Kaula P N,** ed. *Library science today: Ranganathan festschrift*. New York: Asia Publishing House, 1965. Vol. 1.
31. **Das Gupta A K.** *An essay in personal bibliography: Ranganathan festschrift*. London: Asia Publishing House, 1967. Vol. 2.
32. **Kaula P N,** Ranganathan: a study. (Kaula P N, ed.) *Library science today: Ranganathan festschrift*. New York: Asia Publishing House, 1965. Vol. 1. p. 649-76.
33. **Ghatak B N.** Dr. Ranganathan in Banaras. (Kaula P N, ed.) *Library science today: Ranganathan festschrift*. New York: Asia Publishing House, 1965. Vol. 1. p. 725-8.
34. **Kaula P N.** Back from my mind: anecdotes from Dr. Ranganathan's life. *Herald Libr. Sci.* 1:179-90, 1962.
35. **Seshadri T R.** Dr. Ranganathan: a karmayogin. (Kaula P N, ed.) *Library science today: Ranganathan festschrift*. New York: Asia Publishing House, 1965. Vol. 1. p. 737-8.
36. **Thakore A V.** Ranganathan: the magic man. (Kaula P N, ed.) *Library science today: Ranganathan festschrift*. New York: Asia Publishing House, 1965. Vol. 1. p. 764-5.