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*Sarada Ranganathan Endowment for Library Science Series. 5*

*Sarada Ranganathan Lectures. 6, 1970*

PUTTING KNOWLEDGE TO WORK



SARADA RANGANATHAN ENDOWMENT FOR  
LIBRARY SCIENCE SERIES 2

(Continuation of SI 23 of Ranganathan Series in Library Science)

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- 6 Teaching of Library Classification, by D W Langridge. (Sarada Ranganathan Lectures. 5, 1969.)
- 7 Reference Service: The Penultimate Purpose of Library Work, by Suseela Kumar. (Sarada Ranganathan Lectures. 7, 1971.) *VP*

# PUTTING KNOWLEDGE TO WORK

An American View of Ranganathan's  
Five Laws of Library Science

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Lib. Sci.

PAULINE A ATHERTON

*Professor, School of Library Science,  
Syracuse University, Syracuse, New York*



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Pauline A Atherton (1929)

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## RANGANATHAN'S FIVE LAWS OF LIBRARY SCIENCE

- 1 Books are for use
- 2 Every Reader his/her book
- 3 Every book its reader
- 4 Save the time of the reader
- 5 A library is a growing organism

Learning from one's teacher constitutes a fourth part of knowledge. Another fourth part comes from associating with one's fellow students. The rest comes by his imparting the subject to his own pupils, or by expounding it in a public assembly.

—NAN NUL

The Good Book, A Thirteenth Century  
Classic of Tamil Nadu, South India

A                    PUTTING KNOWLEDGE TO WORK

published. They are based on the courses of lectures delivered by the respective authors at the invitation of the Endowment.

It is hoped that the books in this series will be of help in advancing library science and in improving library service.

*Sarada Ranganathan Lectures*

- 1;1965: From Little Acorns by B I Palmer
- 2;1966: United Nations Family of Libraries by P K Garde
- 3;1967: Sociological Foundations of Librarianship by J H Shera
- 4;1968: Development of the Theory of Library Classification by R S Parkhi
- 6;1970: Putting Knowledge to Work: An American View of Ranganathan's Five Laws of Library Science by Pauline Atherton

IN PREPARATION

- 5;1969; Teaching of Library Classification by D W Langridge
- 7;1971: Reference Service: The Penultimate Purpose of Library Work by Suseela Kumar

## CHAPTER A

### **PREFACE TO THE SERIES**

The SARADA RANGANATHAN ENDOWMENT FOR LIBRARY SCIENCE was founded in 1963 by Dr S R Ranganathan and Mrs Sarada Ranganathan. Its funds are vested in the Treasurer of Charitable Endowments for India in accordance with Sections 4 and 5 of the Charitable Endowments Act, 1890 (6 of 1890). The Endowment is administered by a self-perpetuating Committee of five.

The objects of the Endowment are:

- 1 Furthering the cause of library science;
- 2 Organising periodically a course of lectures based on the latest ideas and research on library science and called, the SARADA RANGANATHAN LECTURES IN LIBRARY SCIENCE; and
- 3 Assisting in the publication of these lectures and of nascent ideas in library science.

The lectures can be delivered under the auspices of any university or any library association or any other body having similar interest and the funds can be spent in any part of India.

In fulfilment of the third objective, this series of books called Sarada Ranganathan Lectures is being

SPEECHES AT THE  
INAUGURAL FUNCTION

## CHAPTER B

### WELCOME ADDRESS

**A Neelameghan**, *Professor and Head, Documentation Research and Training Centre, Bangalore 560003, and Secretary, Sarada Ranganathan Endowment for Library Science.*

#### 1 Introduction

On behalf of the Trustees of the Sarada Ranganathan Endowment for Library Science, I extend to you all a warm welcome, to this inaugural function and first lecture of the Sixth Series of the Sarada Ranganathan Lectures in Library Science. This evening, we are privileged to have two distinguished personalities on the dais — Shri K Guru Dutt, President of this evening's function, and Prof Pauline Atherton, the Sarada Ranganathan Lecturer for 1970.

#### 2 K Guru Dutt

Shri Guru Dutt needs no introduction to the learned world of Bangalore. We all know him as a distinguished citizen and a scholar. There is hardly any cultural or learned body in Bangalore with

which he is not connected in some way or other. And wherever he is, he adds grace to the occasion.

## 21 BRIGHT CAREER

After a bright academic career, Shri Guru Dutt graduated in Mathematics from the Central College, Bangalore, in 1918. In his professional career, he started as a teacher in the Baldwin Girls' School, and then joined the Mysore Civil Service. He held successfully many different positions — such as, Assistant Commissioner in several of the districts of the Mysore State, City Magistrate, Secretary to the Mysore Constitutional Reforms Committee, Deputy Commissioner, Secretary on the Staff of the Maharaja of Mysore, Director of Food Supplies, and retiring as Director of Public Instruction in 1952 after being taken into the Indian Administrative Services retrospectively. He was also the first Chairman of the Mysore State Electricity Board from 1957 to 1960.

## 22 ACADEMIC INTERESTS

Shri Guru Dutt loves books. He is a voracious reader and could speak with knowledge, spiced with humour, on almost any subject you can think of. His interests and scholarship are wide-ranging. He has been the Secretary of the Public Library of Bangalore for over six years, President of the

Mythic Society, and President of the Mysore Sanskrit Academy and similar learned bodies for several years. He has written a large number of articles and reviews to a variety of periodicals and newspapers. He has to his credit several books, such as *Hindu culture*; *Existentialism and Indian thought*; and *Pratibha*.

It was so kind and gracious of you, Sir, to have responded to our invitation to inaugurate the Sixth Sarada Ranganathan Lectures.

### **3 Prof Pauline Atherton**

#### 31 FRIEND OF INDIA

Prof Atherton was introduced to most of you this morning when she inaugurated the Eighth DRTC Seminar. Prof Atherton came to be known to Indian librarians as early as 1960 through her scholarly review of Dr Ranganathan's *Classified catalogue code* in the American periodical *Library resources and technical services*, and through her contribution to the first DRTC Seminar (1963). Since then she has generally been keeping up with the important contributions to library science from India, and making serious attempts to disseminate and interpret these ideas in the United States. Now that she is the President of the American Society for Information Science, she hopes to hold a balance between

gadgetry on the one hand and the intellectual and social aspects of library science and service on the other.

### 32 SPECIALIST LIBRARY INTERESTS

Prof Atherton majored in the Social Sciences and took the M L S from the Rosary College in 1954. Her post-Masters Degree work in Library Science was done in the University of Chicago from 1955-61. Beginning in 1951, for over 15 years now, she has been working in specialist libraries and documentation centres of one kind or other. First, the Chemical Research Division of Corn Products Company from 1951-53, then the Art Department of the Chicago Public Library, followed by the Reference Department of the Chicago Teachers' College Library, from 1955-59. Documentalists are familiar with her work as the Director, Documentation Research Project of the American Institute of Physics, from 1961-66. Over the past decade, she has been a consultant to various specialist libraries, the *World book encyclopedia*, and research centres.

On the teaching side, she has been Associate Professor in the Chicago Teachers' College (1957-61), and Associate Professor, Syracuse University, since 1966. Currently she is a Visiting Professor in several

American universities. Prof Atherton's research interests include Mechanised Information Systems, the U D C, abstracting and indexing services, and computer-based laboratory facilities for education in library science.

### 33 ON PROFESSIONAL BODIES

Among the many important positions she holds in professional organisations, mention may be made of her Vice-chairmanship of F I D / C R, A L A Committee on Accreditation, Sub-Committee to Revise Standards for Graduate Library Education, and the Advisory Council to U S Committee on Education for Library Research and Training.

### 34 WIDELY TRAVELLED

Prof Atherton has travelled widely in U S A and in Europe to participate in seminars and conferences and to deliver lectures. She has to her credit several important papers and technical reports in the field of library science and documentation. The excellent editorial work she did on the proceedings of the Elsinore Conference is well known to documentalists.

I say it again that we are privileged to have such a distinguished personality as the Sarada Ranganathan Lecturer for 1970. A hearty welcome to you,

Madam, and we appreciate your gracious acceptance of our invitation to deliver this year's lectures.

#### **4 Sarada Ranganathan Endowment for Library Science**

The Sarada Ranganathan Endowment for Library Science, which sponsors these lectures, was founded by Dr Ranganathan and his family and was incorporated with the Treasurer of Charitable Endowments for India in 1963. Dr Ranganathan has turned into the funds of the Endowment the royalty accruing on his books, besides various donations he makes from time to time. Small donations are also received from other sources, such as the students and admirers of Dr Ranganathan and his works. The objectives of the Endowment are:

- 1 To further the cause of library science;
- 2 To organise periodically a course of lectures based on the latest ideas and research in library science and called the Sarada Ranganathan Lectures in Library Science; and
- 3 To assist in the publication of these lectures and of nascent ideas in library science.

The funds of the Endowment now stand at about Rs 2 lakhs. When it grows to a satisfactory level,

we hope to have a chair or readership in library science established. In 1969, the Endowment gifted some 175 copies of Dr Ranganathan's *CC* and *CCC* to students in library schools in sixteen Indian universities. Award of scholarships for research in library science is also envisaged.

Since 1964 the Endowment has been publishing, in collaboration with the Documentation Research and Training Centre, the quarterly *Library science with a slant to documentation*.

## **5 Conclusion**

Let me again extend to you all a hearty welcome. I now request Shri Guru Dutt, the President, to conduct the proceedings of this evening.

Thank you.

## CHAPTER C

### INAUGURAL ADDRESS

#### A LAYMAN'S REFLECTIONS ON LIBRARY SCIENCE

**K Guru Dutt**, *Director of Public Instruction*  
(Retired), Mysore.

#### 1 Introduction

In the past, these lectures used to be inaugurated each time by a V I P. This year, I suppose by way of a change, a V U P has been asked to do so. I know I owe this invitation to the affection and generosity of Dr S R Ranganathan, and to the partiality of my friends in the DRTC, rather than to any merits of my own. Let me at the outset express my gratitude to them, and assure them how greatly I appreciate the honour. It is undoubtedly my *Adrishta*, a piece of good luck for me; but for you I am afraid it may be your *Prarabdha* or fate. If I fail to come up to the expectations, I would submit, the blame is not all mine.

#### 2 Topic of the Address

On an occasion like this, I suppose I have to say a few words on some topic relevant to your major

interests. Casting about for a theme, I decided on the title "A Layman's Reflections on Library Science." But it would be truer to say that my reflections are not so much on the contents of the science, as on the human predicament today as reflected in the outlook laymen associate with Library Science. Forgive me if I am frank at times, a bit too frank. You may interpret the word "reflections" in any sense you please.

### 3 Library Science

I am aware that almost overnight, Library Science has sprung forth fully armed like Minerva from the forehead of Jove. It has developed into a highly technical subject with a formidable literature of its own, which, let me confess, is *terra incognita* to me. Then why rush in where angels might fear to tread? My excuse is that a stranger touring a country may perchance notice things which the native misses. Possibly I may be able to view things from an unfamiliar angle, and say things not looked for.

### 4 Dangers of Extreme Specialisation

Let me start with a general observation. That extreme specialisation is the price to be paid for the advancement of science is a commonplace. But such specialisation necessarily narrows the vision

and obstructs larger perspectives. So an expert has been facetiously defined as one who comes to know more and more about less and less, until in the limit, he knows everything about nothing! Ortega y Gasset has gone to the length of dubbing a specialist as "a trained barbarian." Although Library Science also entails specialisation, yet its distinction is that the more you progress, the more general becomes your range and perspective. A true librarian is, or ought to be, primarily a purveyor of perspectives. But his knowledge has inevitably a skeletal and diagrammatic quality. It is mainly a knowledge of sign-posts and name-boards rather than of the country itself. The iron law of nature is that nothing can be had without paying its due price, although the day of reckoning may be postponed or forgotten. Your knowledge in its devotion to form runs the risk of loss of substance, to use the Aristotelian categories.

### 5 Ranganathan's Five Laws

I looked for inspiration to Dr Ranganathan's Five Laws of Library Science, which constitute, as it were, its *Panchasheela*. Their boldness and clarity is striking. They remind me of our ancient *Sutras*; but like them, they invite comment, and can stand a variety of interpretations. There is scope for a *prima facie* view (*Purvapaksha*), for

doubts (*Samsaya*), and for arguments (*Sama-dhana*) leading up to conclusions (*Siddhanta*) which are perhaps immanent in the unspoken assumptions on which the line of reasoning is based. I am here venturing on an unorthodox, but brief commentary.

#### 51 LAW: 1: BOOKS ARE FOR USE

But in the orthodox way, I will first look at the commencement (*Upakrama*) and then at the close (*Upasamhara*) and enclose the other three laws within these limits. According to the first law, books are meant for use. Most certainly. Surely here at least there could be no room for difference of opinion. But the very next moment doubts raise their ugly head. What exactly do we mean by books? Surely not a mere collection of printed pages held together between covers, hard or paperback, irrespective of the nature and quality of their contents.

#### 511 *Significance of the Term 'Use'*

Can we be certain that they will all be of use? What does "use" signify? It may mean different things in different contexts. I once knew a student who used Webster's big dictionary to supplement the height of his pillow; was he not using it? Commonly "use" suggests something basely utilitarian, a word which has a deprecatory and apologetic

sound. It makes me uncomfortable, as marking something secondary, a servile means to some ulterior end. It is the goal or end which really interests us. Here, I recall the distinction drawn by John Dewey between instrumental and consummatory uses. It looks as if the modern world, in confusing the two, is more concerned with the means than with ends: means leading to further means and so on *ad infinitum*, without pausing to think of the significance of human existence — *Purushartha* — as we call it. The consequence of this headlong quest of means is the overlooking of meaning. That is our main trouble. Life has become a meaningless scramble. The revolt of youth, which is in evidence all the world over, has at its base this question: To what end is all this elaborate paraphernalia of a machine civilisation?

It is my deep-seated conviction that science has only instrumental value, except perhaps for its few genuine practitioners. My fear is that Library Science, as envisaged now, is mainly serving as the handmaiden of Science and Technology spelt with capitals. It seems to be pre-occupied with providing grist and facilities to the Information Industry. I do not wish to underestimate this need. But can that be the be-all and end-all of living?

Struggling for and with the amenities of life, we are forgetting to live. A lover of books all my life,

still I honestly feel that the bulk of books are among the amenities which we could well spare without loss. Even the better type of books can easily become a distraction and even a vice. We could certainly do with fewer books from the standpoint of a happy life. But who cares for happiness in these days? It is excitement that we seek, and "divine discontent" that we worship.

### 6 Law 5: Library is a Growing Organism

I have done with the first law (*Upakrama*). Let us go to the last (*Upasamhara*). A library is a growing organism. I am afraid so. I have a sneaking sympathy with the outlook of the redoubtable Khalif Omar who said of the Koran: "Burn the libraries, for their value is in this book!"; and he straightaway proceeded to destroy the great library of Alexandria.

The point is that all growth is not necessarily good; it may be malignant and cancerous. Or from another standpoint, a virulent form of Parkinson's Law seems to dominate the world of books; and the mathematics of the situation makes me despair of Library Science being ever able to keep up with the tempo of growth. You will retort that that is no ground for giving up. I heartily agree and say "Cheerio!"

## 61 PROLIFERATION OF IDEAS

You will permit me to digress a little. The Fourth Gospel commences with the glorious lines: "In the beginning was the Word, and the Word was with God." Since then, words have proliferated beyond measure and beyond all control. The result of this inflation has been catastrophic devaluation of the Word (Logos) itself. It is a lost concept, a loss which nothing can make good. Can it be a measure of our progress from the beginning, that we are already nearing the end of the world?

Of late, we are hearing a great deal about the world crisis brewing due to the fast pollution of the environment: the geosphere, the hydrosphere, and the atmosphere. But it appears to me that the root cause lies in neither of these tangible spheres, but solely in the pollution of the *noosphere* — to use a term coined by Teilhard de Chardin — the sphere of knowledge and ideas, in other words, of books.

No doubt, with the phenomenal growth of knowledge, this is inevitable to some extent. Yet we cannot ignore the destructive potentialities of knowledge. That is the significance of the Biblical legend of the forbidden fruit.

## 7 Maintaining a Balance

### 71 PRINCIPLE OF YOGA

Our own ancestors had always realised the need for a principle of control over the trend towards endless expansion, a doctrine of balance and limit if the ship of humanity is to be kept on an even keel. In upto-date terminology, a "negative feedback" is essential if the "homeostasis" necessary for a healthy life is to be maintained. In India, such a principle formed the core of the discipline known as *Yoga*. It aimed at the elimination of distractions, especially in the shape of words, and the achievement of a creative silence. But in the world of today, we see on the contrary, the operation of a deadly sort of "positive feedback," a centrifugal force unchecked by a counterpart centripetal energy to keep us in orbit.

### 72 ABSORB A FEW GOOD BOOKS

To return to our main topic, I remember that as a boy I was greatly impressed by an essay entitled *The man of one book* by Isaac Disraeli, father of the famous Benjamin Disraeli. The essay dilated on the benefits of character and expression accruing to a reader who stuck to one sole book. The practice has its points. The Bible and Shakespeare read in this way contributed to what is best in British life. Similarly, it is impossible to estimate how much

India owes to the *parayana* of the *Ramayana* or the *Mahabharata*. They comprehend the whole of our culture. As the latter claims proudly but not without justice: "In regard to the four-fold goal of human life, what is found here may be found elsewhere but what is not here is nowhere."

### 73 SPEED IS NOT ALWAYS GOOD

But what about ourselves? We seem to be more impatient than the princess in the Arabian Nights who demanded a new husband every night. We hanker for change, the more the better. We have no time to spare. That is what the fourth law suggests to me, when it adjures us to save the time of the reader and of the staff. The computer has become our model, and will perhaps displace man one day. Speed is our ideal and our principal bane. My doubt is: Save time for what? For, when we have saved the time, we do not know what to do with it, unless we reinvest it, like capital, to launch more enterprises to save more time. Such is our predicament.

So far as the reader is concerned, I feel that the value of a book is inversely proportional to the speed with which he tackles it. The right thing to do is, as in the case of the heart patient, to go slow. If the book is worthwhile, the reader would be well advised to go as slow as he can, tasting each word and sentiment and enjoying the whole.

But if it is not worthwhile, the sooner it is cast aside, the better. There are other ways of spending time. In any case, we should be more heedful that time be well spent, rather than merely saved.

### 8 Law 2 and Law 3

Finally I come to the twin laws: Every book its reader; and every reader his book. The democratic fervour breathing through these two laws leaves me speechless. Their implication (*Dhvani*) is that a book and its reader have each equal rights. But in reality, they are by no means on a par. I am old-fashioned enough to share Bacon's opinion that some books are to be tasted, others to be swallowed, and only a few to be chewed and digested. Bacon leaves out a large class which Dr Ranganathan includes: those which do not deserve to be read and should forthwith be liquidated. But who is to decide? Of course, the reader for himself, and the library expert for the library; although no such decision can pretend to be final.

### 81 READER-BOOK RELATIONSHIP

In truth, the relationship between a book and its reader is highly complex. Except in a purely physical sense, a book is no unit. As Pascal said three centuries ago, and thinkers like Ortega and Aldous Huxley in our time, thoughts are as it were atomic.

The common experience also confirms that ideas and words are the actually viable units. The *Vakya-padiya* of the great Bhartrihari, a fifth century treatise on the philosophy of language, is so named because it maintains that sentences and words are the basic quanta of communication. Their being strung together in a book (*grantha*) is adventitious. Books are indeed of very unequal texture. As Emerson has rightly said, "Even from Plato I can at best extract a dozen sentences of lasting value."

## 82 VALUE OF A BOOK

The notion of value is however a notorious variable depending on the reader's calibre and sensibilities, as well as on his temperament and even the passing mood. No reader is the same at all times, and his reaction to books, even to one and the same book, is changeable. Of course I am speaking of true books and not of compendia of information masquerading as books. The relation between a book and a reader is by no means constant; and it is no use trying to simplify it. For, as Whitehead has observed: "Every simplification is an over-simplification."

## 9 Conclusion

I have finished, and I can see you heaving a sigh of relief. Have I been controversial? Yes, deliber-

ately. I have voiced grave misgivings. They are not only mine. But remember that they are only *Purvapakshas*, which invite refutation at the hands of experts. I am sure Dr Ranganathan's Five Laws can fully meet the challenge. It is for you to find the correct interpretation: Experts, like books, are also meant for use, the layman's use.

Now for the inauguration. The word itself, as you know, goes back to an ancient Roman religious ceremony. The Augur was a priest who foretold future events by omens indicated by the flight of birds. The word 'auspice' also has an identical meaning. An Augur was also believed to be a soothsayer. "Sooth" meant truth, and the uttering of it was held to be auspicious.

Here now I am officiating as an augur. I see before me a wise and gracious bird who has flown all the way across the oceans for our sake. The signs are altogether propitious. I foresee that we are in for a highly interesting and profitable session. All that is needed to perfect the occasion is responsive attention on our part. Let me repeat the sacred traditional formula: *Sumuhūrtah Sāvadhānah!*

On behalf of the Trustees of the Sarada Ranganathan Endowment for Library Science and on behalf of Dr Ranganathan and Mrs Ranganathan, Prof P N Kaula, a member of the Board of Trustees, proposed a hearty vote of thanks to Shri Guru Dutt for his scintillating inaugural address, full of wisdom, delivered with humour. He also thanked the audience for gracing the occasion by their presence.

LECTURES BY  
PAULINE ATHERTON

## CHAPTER D

### INTRODUCTION

#### 1 Attracted by Dr Ranganathan's Work

It is indeed an honour for me to be here with Dr Ranganathan and his students in his home-land. I have introduced myself to many groups in the United States as an apostle of Ranganathan. Now I have the opportunity to tell a group in his own land why I have given myself such a title.

#### 11 FIRST IMPRESSION

More years ago than I care to remember, even at my age, I heard of Ranganathan. It was in a course on the History and Theory of Cataloguing at the University of Chicago, I had already received my Master's Degree in Library Science, and was working as a librarian. It was in this advanced course that I first learned of the "Father of library science in India." Let me recall for you what my first impressions were when I pursued the request that Mrs Ruth French Strout made of me in a seminar to find out something about Ranganathan's catalogue code and report back to the class. I remember them quite well because my immediate im-

pression upon reading the five statements called "The Five Laws of Library Science" in the first book by Dr Ranganathan that I found, was one of amusement. Yes, I smiled, and thought to myself, "how simple he makes it all sound, when really it is much more complicated!"

## **2 Depth of the Five Laws**

After that, I thought about these five short statements and decided that no more really needed to be said to force me to think seriously about the most important areas of library service, evaluation, and management. Ever since that day fifteen years ago, I have been guided by those words when I pursued advanced technological developments and applied them to library and information work, or when I would begin a class on the organisation of information, cataloguing, or library in society. I have written these five statements on every blackboard in every classroom where I have taught and I will continue to do so, because they offer me (and my students) the guidance and the rationale we need when we critically review how we follow the cataloguing practices which prevail, how we evaluate the libraries we use, visit, or work in, and how we work to improve the practices we follow and the library services we manage. Because these five statements have served as my guiding star through-

out my professional library career, I would like to use them as the framework for my Sarada Ranganathan Lectures, being delivered at the Documentation Research and Training Centre which Dr Ranganathan helped to found.

### **3 An Opportunity to Review**

I appreciate the invitation to deliver these lectures in Bangalore. This has served as my needed opportunity to pull together my thoughts on the topics which mean a great deal to me; namely, library education, library use, system evaluation, and improvements in the principles and practices of cataloguing and classification based on assistance from computers and empirical research. Because I am so deeply touched by this opportunity, I may tend to be overly personal in my remarks rather than purely scientific and scholarly. Hopefully, this will not detract from my presentation too much. I hope that my review of several studies on these topics recently completed by my colleagues in the United States (some of them former students) will add the substance needed to make these lectures as beneficial to the listener (or reader) as they are to the writer.

The information on the emergence of the Five Laws (*See Chapter K*) has been provided by Prof A Neelameghan.

## CHAPTER E

### **LAW 1: BOOKS ARE FOR USE: HOW TO SEE TO IT!**

#### **1 Improvising the Usability of Documents**

During the 1960's in the United States, a great many developments have taken place in trying to improve the usability of documents (all printed forms of messages and data, that is, recorded knowledge). More often than not, the headlines are made when a bigger or better computing system is used, but we should not confuse ourselves: the improvements came because a competent staff investigated the problems presently faced by users trying to get documents to use, investigated the user himself, and his channels of communication, and the media he selects to find information. Only when they were sure that he values the use of documents above other media have they tried to improve his access by the use of computers or other mechanical devices. Many studies and efforts could be cited and their findings quoted, but let one study of physicists serve as an example.

#### **2 Media for Information and Communication**

Twelve different media were cited by the physi-

cists surveyed as best performing seven information functions:

- \*1 Articles in periodicals read in *own, or library copy*;
- 2 Reprints they collect;
- \*3 Manuscripts (including drafts) they receive from author;
- 4 Technical reports distributed within own institution;
- 5 Technical reports distributed by other than own institution;
- 6 Telephone conversation;
- \*7 Face-to-face discussions with persons working in their institution;
- 8 Face-to-face discussions with persons not currently working in their institution (e g, at scientific meeting, etc);
- 9 Oral presentations made at scientific meetings or conferences;
- 10 Copies of oral presentations (including lecture notes and conference proceedings);
- 11 Private correspondence; and
- 12 Other.

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\*Found to be most important.

### 3. Needs of Readers, or Information Dissemination Function

The following were considered to be the main objectives of use of the different media mentioned in Section 2.

- 1 General awareness of current state of physics;
- 2 Find out who is working in what area or on what problems;
- 3 Source of specific ideas for work *in progress*;
- 4 Source of specific ideas for *new* work;
- 5 Inform others of my research activities;
- 6 Getting up-to-date in a new area; and
- 7 Browsing stimulation.

The study showed the high value of articles in periodicals and manuscripts in respect of all the seven of the information functions. With this knowledge, the American Institute of Physics proceeded with their plans for a computer-based information system to publish and disseminate information in the field of Physics in printed form. Because face-to-face discussions with persons were the second most important media with respect to meeting the

information needs (3) and (4) above, the American Institute of Physics expanded its responsibility for organising meetings for the members of its member societies. They have sought new and better ways of performing these important information dissemination functions because they recognise that "books are for use."

#### 4 CICIN Conference

##### 41 LIBRARY NETWORK

A recent conference in USA at Airlie, near Warrenton, Virginia, brought one hundred leaders in the American library and communications world together to discuss and make recommendations for national policy regarding library and information networks. Without the dedication that *books are for use*, it would have been difficult for some to agree to certain recommendations because they conflict with their institutional objectives. For the greater good, then, the group established certain goals for *library network services*. I cite them here to indicate how far Dr Ranganathan's first law can be pursued.

At the CICIN meeting sponsored by ALA, we agreed that *it is a legitimate need of every library or information centre to call upon information networks to identify, locate and make available all*

*forms of materials and services and to provide efficient and dependable information delivery services to the ultimate seeker of information.* This implies a freer interinstitutional communication structure.

#### 42 MAKING READERS AWARE OF INFORMATION

We agreed at the Airlie Conference that the major goal in the provision of information services through a library network should be to facilitate *learning* in its broadest sense. Libraries and other information centres at the present time are able to provide the storage, retrieval, and display systems for information that can be utilised by a *limited* number of patrons with a fairly well defined need and clearly articulated demand for services. Use of these services is conditioned by the perceived expectation of satisfaction on the part of the user. Success reinforces usage and disappointment leads the patron to seek elsewhere or to let his needs go unfulfilled. To have continued use of our libraries and information centres, initiative must be taken by the service agency to make their services known to potential users. They must develop the means and take a more active role in identifying and defining a patron's need for information. Let us call these *awareness* services — one of our first tasks.

#### 43 BIBLIOGRAPHICAL SERVICE: MEDIATION

To use information for learning, the perceived

need for information must be translated into the provision of information to meet that need. This *mediation function* depends on the interpretation of the need, and on the availability and use of *directory systems* and *consulting services* that lead to the eventual delivery of the information and information services needed. Thus, the second function to be performed by a service network of libraries and information centres is the provision of information *about* information and information systems. We call this *bibliographic* or *intellectual* access.

#### 44 PHYSICAL ACCESS TO DOCUMENTS

In addition to this intellectual access, provision for physical access by *delivery* systems will make information available in the place, time, and form that is best suited to the user. It is recognised that the problems of resource management and control in a network will be exceedingly complex, but that these problems must be solved with a primary view towards the more expeditious delivery of informational media to meet service demands.

#### 45 EVALUATION OF SERVICE

Even with a network with objectives to provide awareness, mediatory access, and delivery service,

we still agreed at the CICIN Conference that the network must provide an *evaluation* service both to aid the user in guiding his behaviour, and sensing his opinion. We need the necessary feedback mechanisms at all levels which will make such a network adaptive to changing patterns of need and use. In this sense, the network is itself a learning mechanism which is aware of both its parts and the environment in which it operates and is able to modify its behaviour accordingly.

### 5 Change of Pattern of Service

These five services — awareness, mediation, access, delivery, and evaluation — describe the user-system interface in terms of the benefits to be provided by an information network. This delineation of services at Airlie seems to be a natural extension of the First Law if we put it into a larger context of library and information networks. There should be no mistake that, what is being contemplated under the term library and information, something quite new and different from conventional library systems is envisioned. It is a new medium for the dissemination of knowledge. Are we librarians prepared for such a change in our professional lives?

Such developments as information networks, and system evaluation studies in the US have brought

about a general awareness that either books are for use or libraries should not be supported and stay in business. Many people have strongly criticised "traditional library service" in the United States and have questioned whether the established methods are the ones to perpetuate.

## 6 Impact on Library Education

Such reports as *Libraries at Large*, *Library Response to Social Change*, and the new A L A Policy on Education and Manpower force us in library education in the United States to engage in some self-evaluation and reassessment of our curriculum. We have to ask ourselves: how do we teach the new version of the First Law of Library Science? I am not sure library education in India is undergoing such upheaval, but reflections on developments in one country may quite possibly have some relevance for our colleagues elsewhere. The following remarks are offered in that spirit.

Students in American library schools are asking for a new curriculum and for class activities which are relevant to today's and tomorrow's libraries. Should we admit that library education goals need to be revamped? Can we stem the tide of increasing irrelevancy of many of our libraries today? One possibility I suggested in a talk I delivered in Texas in the Spring of 1970 was to "put knowledge to

work" in today's library schools. Knowledge about librarianship, I contended, exists in the form of library research and development efforts which are available but not always integrated quickly into a library school curriculum. D W MacKinnon (8). said this about the word *knowledge*:

"Knowledge is the result of playing with what we know, that is, with our facts. *Ledge*, the second element in the word *knowledge*, means apart. A knowledgeable person in science is not, as we are often wont to think, merely one who has an accumulation of facts, but rather one who has the capacity to have sport with what he knows, giving creative rein to his fancy in changing his world of phenomenal appearances into a world of scientific constructs."

A knowledgeable person in librarianship, then, would be someone who has the facts as well as the experience of using these facts, taking them apart as a young boy might examine a clock. If the object of library science education would be to develop creative and knowledgeable librarians, then the stage must be set for this. Passive learners do not make creative librarians. Passing an examination or series of examinations is not the best criterion for judging professional promise, or certifying that someone is a knowledgeable person.

Instead of the usual array of admission tests, lectures, class work, term papers, reading lists, and oral reports, I ask you to imagine a library school which would operate as follows.

#### 61 ADMISSION TO LIBRARY COURSE

The object of the *admission procedure* would be to determine if the student has the potential to develop in professional competence and take his full responsibility as a librarian. To ascertain this potential, he would be interviewed by "library school representatives" (professional librarians in the field near the student's home who know the library school's objectives). This new student would also be interviewed by faculty and students currently enrolled in the school. These interviews would be designed to determine the candidate's capacity for independent thinking, intelligence, and potential competence as a professional librarian.

#### 62 INITIAL ORIENTATION

As for curriculum content and method of presentation, the transmission of basic facts, skills and techniques would be by means of an independent study programme. Faculty would be on call for special classes or meetings on certain topics but would not have regular classes as such covering these basic skills. Some faculty might run labora-

tories where exercises in basic skills could be performed or they might operate experimental libraries as part of their teaching/research load. This activity might require anywhere from one to three months of the student's time, depending on his rate of development and on a consensus of what we consider to be *the* basic skills or knowledge.

### 63 RESEARCH ON SPECIFIC LIBRARY PROBLEMS

After this initial orientation and basic learning period, the student would be placed in direct contact with various research problems associated with library developments. Either formal courses or directed field work would be arranged for this portion of his education. The faculty would approach this phase of library education as colleagues rather than as teachers of the students. The students would help choose the subject matter and possible projects which would have relevance for their own purposes and development. Real problems in libraries could form the basis for projects; sometimes the work would be brought to the school's laboratory and at other times, the *students* and *faculty* would study and work at the library in the field. Any problem deemed manageable could be pursued with the guidance of the faculty and the librarians in charge. In this way, the necessary theories and principles, methods and advanced knowledge could

be introduced and assimilated. The students could play with the basic knowledge they acquired during the first phase of their library education. This type of educational experience would approximate the clinical and laboratory experience in many other graduate programmes such as the biosciences, social work, forestry, dentistry, etc. The faculty's research interests and the student's objectives in learning would be blended during this phase.

#### 64 ASSESSMENT OF STUDENT WORK AND EVALUATION OF PROGRAMME

The evaluation of students and of such an innovative library science programme would take some careful rethinking of our present evaluation procedures. They say creativity of thought is facilitated when self-criticism and self-evaluation are basic. If the student has had a chance to select learning experiences considered relevant to him, then he will willingly choose direction, participate responsibly in the learning process and live with the consequences of his choices. The faculty must be prepared for him to evaluate his own exercises because this will be much more important than the evaluation of others. When the time eventually comes for the quality of his completed students and research and the other products of his learning to be certified, this evaluation could be done by the fac-

ulty and by representatives of librarianship as a whole.

### 65 IN DRTC

It is interesting that in the Documentation Research and Training Centre, the programme for education in documentation has already been implementing some of the ideas I have just mentioned. For instance, even though the Centre admits to the documentation course only either professionally qualified librarians or persons with a Master's Degree in a subject and at least two years' library experience, an initial two months orientation programme is gone through. This, I understand, helps the students who have come with varied educational background and library experiences, to accustom themselves to the habit of systematic thinking, deriving the theory and practice of library service from the Laws of Library Science, express ideas clearly using the appropriate technical terminology of the subject.

Close contact between student and teacher is emphasised in maintaining a student-teacher ratio conforming to the prescriptions of a sound theory of education, and by making the course a residential one.

The student's interest and abilities are stimulated by minimising the number of lectures and using

more of class discussions, tutorials, colloquia, seminars, and project work. The lectures are mainly for raising the curtain, as it were, to point to some areas of research in the field. That some of the students are able to turn out pieces of research in library science even while they are undergoing the course, is an indication of the effectiveness of the methods used.

It is also noteworthy that evaluation of student work and of the effectiveness of the programme is based on project work—individual and cooperative—in each of the subjects rather than on answering a two-hour or three-hour question paper.

## 7 The Challenge

### 71 CHANGE OF PROGRAMME NEEDED

Will faculty in library schools be willing to admit that a series of courses, no matter what their content, is not sufficient preparation for the responsibilities the student should assume upon graduating? It is difficult to see a working alternative if we are to implement in the United States the proposed A L A statement of the objective of the master's programmes in librarianship. The A L A statement says, "the objective . . . should be to prepare librarians capable of participating and engineering

the change and improvement required to move the profession constantly forward." Concentrating on the tasks and routines in today's libraries will not do this nor will a purely academic library education. We need to relate the library school student to the library profession's present problems and future needs.

## 72 TWO PHASES OF LIBRARY EDUCATION

If knowledge in librarianship is to be seriously pursued, we must find the capacity to have sport with what we know. No longer can we assume that knowledge in librarianship is merely the accumulation of brick-upon-brick of content and information — that is something to be taught in a basic set of courses or learned on the job. Instead, we should look at library education as a two phase operation; first we will have to master certain skills and facts, and secondly we will have to approach some of the problems of librarianship as researchers and scholars. Library schools should be where this happens, where fledgling librarians sprout their wings under the guidance of experienced professionals.

## 73 CHANGE OF ATTITUDE CALLED FOR

If this approach sounds interesting to you, there is a crucial question for students, library educators

and librarians alike: can we abandon some of the assumptions we now have about library education? Students quite often assume that courses and experiences in library school will be like their other classes; faculty expect to teach course by course and assume it is difficult to innovate; librarians would find it difficult to fit both library school faculty and students into their work-a-day world. Everyone will need to be re-oriented if we are to develop a programme whose graduates will be tomorrow's decision-makers in libraries. We will all have to work to find ways for the students to demonstrate that they are able to make original, significant contributions to professional practice.

#### 74 RELATE LIBRARY EDUCATION TO LIBRARY PROBLEMS

Such a school, as I envision, would include direct experimental confrontation with research problems and other practical, ethical and philosophical problems. The students would relate their educational experiences to the real problems being faced today and those likely to come up in the near future. Before such a school could open its doors, several librarians would have to agree to have their libraries designated as "library education experimental stations"; library educators would have to accept their role as researchers and field workers;

and students would have to assume their role as colleagues working on more than studying library problems.

## **8 Library Education Experimental Project**

### **81 A PERSONAL NOTE**

This past year, we tried to put part of this plan to work for such a library school at the Syracuse University. We established something called the LEEP Laboratory. Before I can begin to describe it, I would like to tell you some personal history to put it all into some context.

More than ten years stretch between my library school days as a student and my being a member of the faculty at Syracuse University School of Library Science. During much of that time, I was engaged in documentation research (later called information storage and retrieval systems) in the field of scientific information. Libraries and librarians were not the stars of the drama I witnessed during those years, although I thought we had a lot to contribute as well as a lot to learn from the whole endeavour. When I returned to library education and tried to relate some of the excitement I felt about the developments in information systems, I met the same looks and attitudes that you do when you show your slides of Europe to a group that has never been there. Gradually, I realised that what I

had witnessed could only come alive if the audience was given first-hand experiences; if, in other words, they were able to play with their knowledge and have sport with what they knew. The problem was: How to bring information storage and retrieval concepts into a traditional library school with no strong resources or faculty in special librarianship or computers.

## 82 PROVIDING REAL EXPERIENCE OF AUTOMATION

The United States Office of Education and the Library of Congress came to my rescue with financial and technical resources to help us transform some of the class discussion of library automation and information storage and retrieval systems. We created LEEP, the Library Education Experimental Project. It is a laboratory environment where the students and faculty have experience with a computer-based catalogue, developed from the MARC Pilot Project data from the Library of Congress. We have learned to use the MARC records in the computer as a library user now uses the cards in a card catalogue. Students and faculty began to evaluate the bibliographic control system within a library by contrasting it with this new tool. Some students are taking the initiative and are engaged in independent projects where they

work with a librarian in the field to study and suggest improvements in existing systems. The impact of MARC in libraries has been brought home to every student regardless of his orientation to school, public, academic, or special libraries because every student in the school experiences some use of MARC when he takes courses in cataloguing, reference service or bibliography. All of these courses have assignments of one kind or another which bring the student to the LEEP Laboratory.

### 83 A COOPERATIVE EFFORT

LEEP had as consultants the two librarians in the Syracuse area most directly involved with advanced library automation projects — Ron Miller of the Five Associated University Libraries and Irwin Pizer of the Biomedical Communications Network. They advised us as we developed the LEEP Laboratory. Some of our students in turn contributed something to their research efforts. More than three hundred students at Syracuse during 1969-70 had at least a brush with the computer-based MARC catalogue. The students say they went away feeling less fearful about the "machine." Some of the faculty were glad that LEEP existed because they were able to demonstrate certain concepts and new developments instead of merely talking about them.

## 84 LEEP-BY-MAIL SERVICE

At an institute in the Adirondack Mountains in October 1969, faculty from twenty library schools came to see what we had done. At that time, we implemented a LEEP-by-Mail service. Now students in other library schools, where computing facilities and the MARC data base are not as accessible, can perform MARC searches in our LEEP laboratory and they too can put this knowledge to work, testing the potential of MARC, etc! As of this date, some fifty or more students in two library schools in New York and Philadelphia are using LEEP.

## 9 Faith in Collective Effort

I have great faith in the combined efforts of librarians, students and faculty in library schools today. Together we will find a way to insure that books are used and that this will be our first goal. The absolute essential for success will depend, of course, on our willingness to have sport with what we know. Librarianship is a practical world but it is on the edge of a new existence. If we look at ourselves in a playful way and use the knowledge we gain, we could make our education more relevant and our graduate librarians more professional. If we make an effort to establish a *quid pro quo* relationship between the field of library work and

library education, we can insure the implementation of the First Law of Library Science.

Philip H Rhinelanders said, "Education ought to be ultimately not a matter of systems, nor of organisations, or of structures, or of theories, but of individuals who *encounter* one another, who respect one another, who can speak to one another, despite disagreements, and who can *listen*" (18). Such an opportunity as this is my education, my encounter, and my chance to listen as well as speak.

## CHAPTER F

### **LAW 2: EVERY READER HIS BOOK : HOW TO KNOW THE READER IN SEARCH OF HIS BOOK**

There are some things which cannot be learned quickly, and time, which is all we have, must be paid heavily for their acquiring.

—Ernest Hemingway

#### **1 Need for “Use Studies”**

Most libraries appear committed to the doctrine of service to patrons, to facilitating the reader's search for his book. Oftentimes, however, doubts have arisen in our minds as to whether or not we are providing those facilities which, in fact, best meet the needs of patrons. Out of these doubts have come numerous “use studies” in the United States and elsewhere which contribute to our knowledge of the reader (or user) and sometimes provide us with the information needed to redesign our libraries to give better performance.

#### **2 Catalogue Use Studies**

The 1960's have seen a great many surveys of

use studies, accompanied with justifiable criticism of the research methodologies used and the unreliability of the findings. Two studies in the United States have recently been reported, which rise above these criticisms and serve as fine examples of how to investigate the following questions:

- 1 Who uses the library?
- 2 For what purpose is the card catalogue consulted?
- 3 With what success is the catalogue consulted?
- 4 How was the catalogue card utilised? Which items on the card were used? Do different classes of users make different use of the items on the catalogue card?
- 5 Would a hypothetical reduced catalogue meet the needs of most users of the card catalogue (that is, would a catalogue, consisting of author, title, subject headings, call number, and date of publication, suffice)?

Because this area of library research is so important, I would like to concentrate on these two studies of the user at the card catalogue, explaining the methodology used in some detail, the most interesting findings, and the implications of their work for improvement of library services in general.

Consider this information exchange with me serving as the catalyst, since neither Richard Palmer (10) nor Ben-Ami Lipetz (6) can be here to discuss their work first hand. I will leave behind, in India, however, their reports, with the compliments of the authors. They gave me permission to discuss their work in detail with you. For this, I am grateful.

## 21 POPULATION STUDIED

The Palmer study consisted of the users of the University of Michigan General Library card catalogue. The sample, obtained by means of a two-stage probability sampling model, consisted of 5,067 users of the card catalogue who completed questionnaires during an eight-week survey during the Fall Term of 1967.

The Lipetz study was conducted in the Sterling Memorial Library of Yale University. The pattern of traffic flow in the catalogue area was determined by means of frequent traffic counts that were continued for more than a year. The observed traffic flow was used as the basis for designing the interview schedule that would encompass a thoroughly representative sample of catalogue users.

The Lipetz study at Yale went beyond catalogue use and traced the users' starting clues at

the catalogue through to use of books and the front matter from these books and their representation on catalogue cards.

Palmer reviewed over eighteen card catalogue use studies and found all but five lacking in their definition of population studied. This is a basic concern in research design and the connection between knowledge of our population and our stated goals of service is very straightforward. One cannot create an ideal tool of any sort on a rational basis (whether that tool be a conventional catalogue, a computerised catalogue, or any other device for any other application) without knowing a good deal about the purpose or purposes for which the tool is to be used, and about the manner in which the users interact with the tool (11).

The careful way in which Palmer and Lipetz established the population for their user surveys deserves repeating.

### **3 Methodology**

#### **31 POPULATION STUDIED: UNIVERSITY OF MICHIGAN LIBRARY**

Palmer chose the actual users of the University of Michigan General Library card catalogue as the survey population. In the process of establishing the population for the user survey at Michigan, he

rejected as the survey population such possible populations as all individuals officially connected with the University of Michigan or all users of the University of Michigan General Library because it was not possible to establish from available data that the characteristic of these potential populations matched the population of the users of the card catalogue.

In order, however, to provide some background on the general environment in which the survey was conducted, it is noted that the study was conducted at the University of Michigan General Library card catalogue room during the Fall Term, 1967, at which time the student enrolment at the University of Michigan totalled 37,283. Of those enrolled, 21,087 were undergraduates, 9,729 were graduates, and 3,698 were graduate-professionals. Included in the 37,283 students were 2,769 who were enrolled in credit extension (mostly graduate). The faculty numbered more than 3,800; other academic staff, about 2,500; and non-academic staff, including part-time employees, totalled about 13,700. As indicated above, these categories of potential patrons were not selected as the survey population because the configuration of their use of the card catalogue could not be predicted from available data and because users other than those officially connected with the University

of Michigan would be likely to use the card catalogue during the eight-week survey period.

During the survey period (September 11 to November 5, 1967), 186,768 persons passed through the turnstiles at the entrances to the University of Michigan General Library. Thus, an average of 23,346 persons per week patronised the General Library during the eight weeks of the survey. These patrons were not, however, selected as the survey population because the configuration of their use of the card catalogue could not be predicted from available data.

It was therefore the decision of this study that actual users of the University of Michigan General Library card catalogue during the survey period would comprise the survey population. It was further decided that no attempt would be made to ascertain the exact number of such users. Rather, a team of students conducted a physical head count of patrons using the card catalogue during one week, February 20-26, 1967, during the 101 hours that the library was open. The count came to a total of 5,778 persons. On the basis of this count, it was estimated that approximately 48,000 persons would use the card catalogue during the survey period. This estimated number of persons constituted the survey population. The survey was then

designed to sample not less than ten per cent of this estimated population, or not less than 4,800 patrons. It was determined that a ten per cent sample, clustered and systematically randomized, should provide findings of statistical reliability at the .05 level of significance, for which a reasonable confidence interval could be computed, and from which useful predictions regarding the total user population could be made.

### 32 POPULATION STUDIED: YALE UNIVERSITY

Lipetz chose a similar survey population (7), namely, the actual users of the card catalogue at the Yale University Library, but his technique for sampling this population involved a careful observation over a total of 62 weeks of the traffic flow at the card catalogue.

#### 321 *Traffic Flow Management*

Lipetz thought that the determination of the pattern of people entering the catalogue area was a key factor in the later design of an interviewing schedule which would yield a clearly representative sample of catalogue users. The pattern of entry to the catalogue was determined by having observers assigned to count the number of people entering the catalogue area through different entryways during different times of day and days of the week. Ob-

servers were stationed where they could observe simultaneously either the front three aisles into the catalogue or the rear two aisles into the catalogue. For a period of five minutes' duration, they would count the number of persons entering each of the aisles being observed. Timing periods were rigidly predetermined to cover different hours of the day, different days of the week, and even different tenths of each hour. Observation assignments were rigidly scheduled; the schedule repeated every seven weeks. Observations were continued over a total of 62 weeks so as to provide a ten-week overlap period for determination of any annual variation in traffic which might occur. (During this 62-week period, there was a 5-week interruption in observations, during the late summer, while shifting of catalogue drawers was going on; the abnormal shifting activity tended to interfere with traffic flow).

The total amount of time during which traffic was counted was somewhat over 4 per cent of the time that the library was open during the total time span involved. For practical reasons, the coverage was more intense during weekday working hours (6 per cent) and lower during evening hours and weekends (about 2.5 per cent). However, observed traffic was also lower (by about one-fourth) during evening hours and weekends. Tallies of traffic

counts by hour, day and entryway for the first ten weeks of observation were used as the basis for designing the interviewing schedule. Traffic counts were continued during the interviewing period to check on the continuing validity of the pattern observed during those first ten weeks and to provide a rational basis for weighting of interview results if the interview schedule should prove to be biased with respect to observed traffic.

Several other traffic measurements were made in addition to the counts of persons entering the catalogue area: At precise preassigned times, observers would follow anyone entering the catalogue to observe where he went (which catalogue drawer), how long he stayed at the catalogue, and how many call-number notations he wrote down. Intervals for conducting these observations were scheduled in exactly the same pattern as intervals for gross traffic counts so as to cover all times of catalogue availability.

Observers of catalogue traffic were instructed to avoid counting those library staff members who regularly work in the catalogue area (filers, verifiers, reference librarians). The intent of the measurements was to count, as far as possible, only the "consumers" of the catalogue service, rather than the suppliers and interpreters.

Methods for the collection of data differed in the two studies, but both appear to have been rigorous applications of the statistically reliable methods they chose to employ. They are explained here to illustrate how two different methods can be employed for achieving the same objective. The survey periods were at first approximately the same — eight weeks at Michigan and ten weeks at Yale, but Yale continued their interviewing over a full year. The questions asked and techniques used varied as the following excerpts from the two reports show.

### 33 SAMPLING: MICHIGAN UNIVERSITY LIBRARY

At Michigan, the population was defined as the users of the card catalogue during the survey period, September 11 to November 5, 1967 (12). The sample size was established as ten per cent of the population. A one-page questionnaire, including an illustrative catalogue card, with items on the card identified by means of red exponential numbers and a list of items on the catalogue card numbered in red placed immediately below the illustrative card, was selected as the survey instrument. Questionnaires were distributed to selected patrons as they entered the catalogue room and were collected as they left.

A two-stage probability sample using systematic selection was chosen for the survey. (*See* Sec 31).

The estimated figure of 48,000 patrons was based, as mentioned earlier, on a physical head count of users conducted during the week ending 26 February 1967. In this two-stage probability sample, the frame of the sample was taken to be all users of the General Library card catalogue during the eight-week period, September 11 to November 5, 1967. The hours of the week in which the library was open were the first-stage sample units, and the users in each of the selected hours were the second-stage sample units. The outline of the sample design is as follows:

- 1 Measures of size were assigned to hours (clusters) according to the probable number of users in each of them. As it was expected that there would be some random fluctuation in the number of users, the measures of size were corrected to the nearest unit of twenty to simplify the operation.

- 2 Under-sized clusters (hours when few users were expected) were linked or combined to insure that each selected cluster would yield a reasonable number of users.

- 3 The method of selection used was probability proportional to size in the first-stage and probability inversely proportional to size in the second stage in order to give an overall equal probability of selection to each user.

4 Systematic selection was employed in both the first-stage and second-stage selections.

### 331 *Questionnaire*

A survey team composed of eleven students enrolled in the Department of Library Science conducted the survey. During systematically selected hours, questionnaires were handed to a random sample of about twenty patrons as they entered the catalogue room, were completed by the patrons while in the catalogue room, and were collected by the survey team as the patrons left. The survey team was available throughout the 240 survey hours to answer any questions that the patrons surveyed might have about the questionnaire.

The survey team found that such outside factors as weather, football games, or major campus events, occasionally caused the actual number of patrons who utilised the catalogue room during a survey hour to drop below the estimated number of patrons who would use the card catalogue as listed in the sampling procedure. To obtain the desired twenty completed questionnaires per hour on these few occasions, the survey team reduced the interval between sampling units, or patrons, by one. Questionnaires were given to each  $(a-1)$ th patron, so that, for example, in an hour when every fifth patron was to have been given a questionnaire, one

was given to every fourth patron. Since this procedure modified the basic sampling pattern, it increased the chance for selection of the patrons using the catalogue during these hours. As these changes were made rarely, they are unlikely to have any noticeable effect on the findings of the survey.

Of the 5,073 patrons who were given questionnaires, 4,456 completed them, giving a completion rate of 88 per cent. The rejection level was, therefore, 12 per cent. The total of usable survey units was 5,067.

The questionnaire used at Michigan sought information on a variety of aspects of catalogue use (See Sec 35). A question was also asked as to whether or not a hypothetical computer catalogue consisting of five items per entry, namely, name of author, title, subject headings, call number (including location), and date of publication, would meet their needs, and if not, what additional catalogue card items of information would be required.

Patrons were instructed to answer questions in accordance with their specific use of the catalogue on this particular occasion. Answers were not to reflect previous recollected use of the catalogue.

Since the clustering of hours and thus of samples taken in this survey introduced a higher level of

probability that the sample population may not represent the total population as nearly as a simple random sample would, the design effect and related statistical measures were computed.

#### 34 INTERVIEW SCHEDULE

The schedule for conducting interviews with the Yale catalogue users was based on observed traffic flow into the catalogue during an initial *10-week observation period*. Projection of observed traffic for this period suggested that the annual traffic into the catalogue would be of the order of 300,000. (Full-year traffic observations later showed this estimate to be low.) When one adjusted this count to omit individuals who were found to be entering the catalogue area merely to use it as a shortcut between the front entrance and the main reading room, the indicated annual total of real catalogue users was closer to 250,000. It was decided that about 2,500 interviews or more (that is, at least something approaching one per cent) should be attempted.

The interview schedule adopted at Yale (8) called for an interviewer to be at a particular entryway to the catalogue area at a specified time on a specified day of the week. The first individual other than library staff to enter the catalogue through that entryway during the next six minutes

and to begin to use the catalogue would be the person to be interviewed. (If no one entered during that interval, no one was interviewed until the next assigned time and place.) Interview assignments were set up on a revolving schedule much like the schedule for traffic measurements. As with traffic measurements, the schedule for interviewing during the evening and weekend periods was made lighter than during the regular weekday periods; this was done with the knowledge that compensations could be made later by weighting the results of actual evening and weekend interviews somewhat more heavily than the results of weekday interviews in compiling final statistics.

Interview content and technique were designed to elicit quite specific information from catalogue users, with a minimum amount of bias due to prompting or leading by the interviewer. The method adopted made use of an interview guide in the form of a multiple-part questionnaire which interviewers were required to follow uniformly. Interviews would begin with very vague, nondirective questions ("Please tell me precisely what you were about to do at the catalogue the moment I interrupted you."), in order to give the user full opportunity to state whatever he happened to regard as important or significant.

The underlying pattern of the interview identifying rather quickly the basic type of search which the user was about to make in the catalogue (for example, a search for the purpose of borrowing a specific known document; a search for finding documents on a specific subject; a search for the identity of documents from a specific source, as by a particular author or by a particular organisation; a search for descriptive bibliographic information regarding a known document without any intent of borrowing the actual document). Identification of this basic type of search would then determine which of several possible lines of questioning to follow in the remainder of the interview.

When it appeared that no more useful information could be gathered regarding the immediate search being conducted by the user, the interview would be terminated with a series of questions on the user and his personal background (but not his name). Background questions related to the user's status at Yale, his field of specialisation, the length of his residence in the Yale community, and the general level of his use of the Sterling Memorial Library and other libraries at Yale.

### 35 ITEMS OF INFORMATION COLLECTED

Questions asked during the main portion of the interview were intended to bring out everything of

possible document-finding value that the user knew about the material he desired at the time of starting his search. This would include, as appropriate, the type of document (whether an ordinary book, or periodical, report, etc), descriptive data (author, title, date, publisher, etc), physical characteristics of a document (size, colour), contents (index, illustrations, bibliography), terms in the name of subject, translation specification, edition specification, and so forth. The questions also established whether or not the user was already familiar with the material he wanted, how he had first learned of the existence of the material, the connection in which he wanted to make use of the material, and the particular clue which he intended to use to begin his search of the catalogue. Particular pains were taken to record descriptive data elements exactly as they were known to the user, taking nothing for granted: If the data came only from his memory, he was asked to spell out the name of the author and the longer title words; if the data came from class notes or duplicated lists which he had brought to the library, these were photocopied by the interviewer.

Both the Michigan and the Yale studies uncovered a great deal of information about the user of a card catalogue in search of his book. From the selected catalogue users, the following information

was obtained:

1 The user's status: undergraduate, graduate, special student, library science student, faculty, teaching fellow, university staff (except Library), university library staff, or other.

2 The user's school, department, or field of interest.

3 Whether the language of the work or information which the user was seeking was in English or a foreign language.

4 The subject on which the user desired a work or information.

5 The purpose for which the user came to the catalogue: class assignment, personal use, teaching, research, or other purpose.

6 The approximate date of publication of the desired work or information.

7 The object of this specific catalogue use: a specific work, information on a subject, bibliographic information, or other.

8 Which items on the catalogue card were used.

### 36 FOLLOW-UP

At Yale, at the conclusion of the interview, the user was left alone to complete his catalogue search.

However, he was observed discretely from a distance. The amount of time spent at the catalogue and the number of catalogue drawers searched were noted on the interview record. As the user was leaving the catalogue area, he was stopped again and asked whether his search had been successful. If the answer was affirmative, he was asked to let the interviewer copy any call numbers that he had found in the catalogue that satisfied his search needs. Users who were not certain whether their searches had been successful, but who were going elsewhere in the library to find out (usually these were people who had identified a potentially useful stack area by finding some representative class numbers in the catalogue and who intended to browse the stack for known and/or unknown documents) were given a self-mailing follow-up form on which they could conveniently note any call numbers that were subsequently found to satisfy their needs.

#### **4 Objectivity in Study**

Several months were spent at Yale in developing and testing the interview outline and technique before starting the full year's run of data collection for the project. Only very minor changes were made as the year progressed. Five individuals performed practically all of the interviews. A comparison of the results of interviews conducted by different interviewers was made about four months after the

start of the interviewing year; no serious biasing of results could be associated with the interviewers compared. Therefore the interviewing technique was judged to be quite objective, as had been hoped.

The interviewing schedule that was adopted at Yale provided for a maximum of some 2,700 interviews during the full year studied. Because of various random factors (for example, no user at the catalogue at the scheduled time and place, unexpected library closings, or illness of the interviewer), the number of interviews actually completed in the year was 2,134.

## 5 Findings

The numerous tables and charts in the two studies document the findings from their work. I have a series of slides which highlight these findings which it would be appropriate to show at this time.

### 51 TRAFFIC PATTERN

The traffic studies in the Lipetz study are unique and deserve special attention. Both the figures for catalogue use *and* borrowing are remarkably similar. They both show only two significant seasons: the regular academic year, and the summer vacation period. The activity pattern of the regular academic

year is punctuated by irregular declines that are associated with holidays and recesses, but the mean and median for the academic year appear to be very close. Even so, Dr Lipetz felt that the complexity of the traffic pattern strongly justified the original decision to conduct interviews throughout an entire year, with representative coverage of different days of the week, hours of the day, periods within the hour, and portals of entry to the catalogue area.

A clear pattern of the catalogue traffic variation with day of the week was observed, however. It can be seen that the rate of use of the catalogue is heaviest during the early part of the week, especially on Tuesdays, and that it is lowest on Saturdays and Sundays, as one would expect.

## 52 USER STATUS

Both studies found that more use is made of the library card catalogue by graduate students than by other classes of users.

Faculty rank below undergraduates and graduate students in terms of absolute use of the catalogue.

## 53 OBJECTIVES OF USE OF CATALOGUE

Most of the users seek a known item at the card catalogue. The Yale study differentiated between

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Putting Knowledge to Work: An American View of the Five Laws of Library Science, 1970. By  
Pauline Atherton.

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four basic types of objectives in using the catalogue:

1 In a *document search* (often called a "known item" search), the catalogue user is aware of the existence of some particular book or other publication that he wants to locate;

2 In a *subject search*, the catalogue user is interested in both identifying and locating one or more documents pertaining to some known topic;

3 In an *author search*, the catalogue user is aware of the name of some author, publisher's series, or other source of literature and is interested in identifying and possibly selecting specific documents from that source; and

4 In a *bibliographic search*, the catalogue user is interested in using the catalogue itself to supply or verify bibliographic information regarding a known document; he is not interested in locating and using the document.

The distribution of searches among these four basic types is given in Table 1. The distribution was determined in two different ways, yielding two different results. The first column is based on the *immediate* objective of the catalogue user at the moment of his approach to the catalogue. Most of the questions asked during an interview pertained

to this immediate objective. The distribution of *underlying* objectives is given in the second column of Table 1.

531 Table 1. *Distribution of Search Objectives*

Search Type	Immediate, %	Underlying, %
Document	73	56
Subject	16	33
Author	6	6
Bibliographic	5	5
	100	100

About a third of the catalogue users are basically interested in subject or topical information, but that half of these users attempt to use a document search to make do for a subject search. In terms of underlying interest, document searches account for only 56 per cent (not 73 per cent) of catalogue use.

It is interesting to note that no significant variations in the distribution of search objectives with respect to season of the year, academic status of user, departmental affiliation, or newness to the Yale library were detected in this study.

#### 54 OTHER FINDINGS AT MICHIGAN

The group at Michigan analysed their data a

little differently and came up with the following findings: The card catalogue is used primarily for academic purposes.

1 The catalogue is used most heavily for preparing class assignments.

2 Few patrons use the catalogue as a source of bibliographical data.

3 Few users seek foreign language materials; the proportion of users seeking them increases as the educational level increases.

#### 55 FAILURE OF SEARCH

Both studies found that most users are successful in using the card catalogue. Only approximately 15 per cent of the searches turned up nothing at all or could be counted as unsuccessful. Yale analysed the 256 unsuccessful searches to learn more about the reasons for failure. Some 31 per cent apparently failed because of faulty search techniques or because of failure to persevere. The desired document was catalogued under entries known to the user at the time of the interview, but unfortunately he missed the clue! A table from the report shows this analysis of follow-up document searches.

#### 56 USE OF THE ITEMS OF INFORMATION IN AN ENTRY

The use of different items of information on the

catalogue card was carefully analysed in both studies. The Michigan study by Palmer meticulously analysed the use of over twenty items and found that many items appearing on the catalogue card are seldom used. A hypothetical reduced computer catalogue would appear to meet the needs of most users of the card catalogue. Few users, they found at Michigan, would require more than a five-item catalogue, and the number of additional catalogue items desired increases slightly as the educational level of the patron increases.

#### 57 MAIN ENTRY: LEADING SECTION

The Yale study found something very interesting for anyone who has considered challenging the right of main entry to be all important in library cataloguing. Their results would seem to show that neither the name of author nor the title of document has an overwhelming advantage as candidate for the leading section of the main entry and for preferred search approach. There seems to be an advantage to the title approach, but only a slight one. One can question why there is such a strong tendency for library users to approach the catalogue by name of author if the title approach is just about as good if not better.

#### 6 Computer-Based Catalogue

The analysis of failures in searching the cata-

logue could not be compensated for in computerised catalogue, unless a near-human facility compensating for inadequacies in search clues were built in. The computer will fail to select unless it is given some definite programme that will cause it to ignore particular kinds of mismatches. Until such methods are available, Dr Lipetz concluded that it seems highly unlikely that computer methods of document finding will seriously rival document finding capacity of human beings. He recommended further intensive research work on the user of our catalogues and the relative-odds in usefulness and cost of including additional data elements in a computerized record. If, as Dr Palmer at Michigan found, a five-item catalogue record suffices, then we need to study the interface between the user and such a new catalogue before we proceed much further toward library automation.

### **7 Improving Catalogue Use**

Having learned so much about the reader in search of his book, one of the most important conclusions seems to be that user-education or self-education methods need to be improved before our libraries can give efficient service. Increasing the complexity and accessibility of the catalogue offers comparatively little potential for improvement of

the success rate of searches currently attempted. Improving the convenience of the catalogue use might attract heavier use of the catalogue and the library collection. Providing access through a greater variety of title-like entries is a promising approach to helping document search. Filing by date within subject headings is a promising approach to helping search by name of subject. Data elements other than name of author, title, and subject are of most value in resolving many searches in which the entry clues are ambiguous or inaccurate.

With this much new information about the user, it is well to turn our attention to the next law of library science, and consider our techniques for every book finding its reader.

## CHAPTER G

### **LAW 3: EVERY BOOK ITS READER — HOW EVERY BOOK BE FOUND BY ITS READER**

#### **1. Catalogue and Readers' Requirements**

##### 11 STRUCTURE OF CATALOGUE

Cataloguers have a view of library service which in many ways is most distorted and at the same time most central. Without their efforts at bibliographic control where would library service be? Without some form of listing the items in a library, how could anyone ever find anything? Nevertheless, some people are now asking — even with the help of the cataloguer's effort, we do not seem to find what is available? Has the time come for us to carefully analyse what happens when a cataloguer performs the present ritual of describing books for readers? Many of us have embarked upon such a study only recently because the availability of MARC (Machine Readable Cataloguing) has given us access to current catalogue information in a form easy to manipulate for study. The accessibility of all the information on a catalogue card as access points instead of only three or four elements (main entry, title, subject, call number) makes it pos-







































KEYWORDS IN DATA FIELD	MIDDLE EAST			LATIN AMERICA		
	RELE- VANT	QUES- TION- ABLE	NON-RE- LEVANT	RELE- VANT	QUES- TION- ABLE	NON-RE- LEVANT
<i>Single field hits:</i>						
T10 (author)	0	0	9	0	0	11
T20 (title)	8	1	12	9	5	15
T30 (imprint)	0	3	11	0	1	10
T60 (notes)	2	2	3	3	2	16
T70 (subject heading)	19	1	7	16	5	5
<i>Hits in more than one field:</i>						
T20/T70 (title and subject heading)	70	0	7	49	4	15
T20/T60/T70 (title, noter and subject heading)	9	0	0	7	0	1

Table 4: Keyword Hits by MARC Data Field





































































































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