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Editorial

It gives us a pleasure to bring out this fourth volume (1999) of the Vidyasagar University Journal of Library and Information Science (VUJLIS) after one year of the publication of its third volume. While editing the fourth volume, the Editorial Board of the VUJLIS became convinced of the fact that the papers included in this volume will provide the readers with the best package of information needed to gain understanding in some important arenas of Library and Information Science. We the members of the Editorial Board of the VUJLIS express our sincere thanks to the authors who have accepted our invitation to contribute in this volume. We gratefully acknowledge the encouragement and financial support received from the University authorities for the publication of the VUJLIS at regular intervals.

Juran Krishna Sarkhel
Editor-in-Chief

Role of Classification in an Electronic Era

*S. Seetharama**

Abstract

For years librarians brought some discipline and order to information management with their classification schemes and cataloguing codes. In recent times, it has been argued that with automation of information retrieval, it is possible to dispense with traditional methodologies or techniques for organising information, in particular classification. This paper has tried to make an counterargument by highlighting the usefulness of classification in modern automated information management. Demonstrates that the postulates and principles proposed by Ranganathan in the framework of the General Theory of Classification are relevant for user needs assessment, creation of databases, online systems, OPAC and for generation of information services. Concludes that the classification has a distinct role to play in the information transfer process in an electronic era, and the teaching of the subject " Classification" is imperative in the LISc education programme.

1 INTRODUCTION

"Classification for the sake of classification" is a myth. To the Information Scientist, classification has always been and will continue to be a specific purpose-oriented activity in the future, the purpose being to organise the documents in a collection, assist users in browsing, formulating search expressions, presenting information to users in a helpful sequence, etc. Essentially, classification is an intellectual process of organising information and / or sources of information to provide subject access supporting information retrieval and dissemination. In this context, the contribution of Ranganathan to the General Theory of Classification is worth recalling.

In discussing Ranganathan's analytical approach to the design, development and use of information systems and services, it is useful to bear in mind his holistic approach. With a view to securing consistency and integrity in designing and developing information systems, he formulated a number of postulates and principles for analysing and organising

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concepts embodied in documents as a basis for the effective processing, storage, retrieval and dissemination of the concepts / information. For convenience, he proposed their grouping into categories and a hierarchy among categories namely, **Basic Laws** (of symmetry, impartiality, context / local variation, interpretation, parsimony applicable to intellectual work in all areas of the Universe of knowledge); **Fundamental Laws** (of physics, biology, library science) applicable to a discipline as a whole; **Canons** (of classification in library science) applicable to a branch of a discipline; **and Principles** (of facet sequence in classification) applicable to a sub-division of a branch of a discipline.

Thus, it may not be out of place to mention that librarians were the first to bring some discipline and order to information management with their classification and cataloguing schemes / codes. (Cronin, 1985). However, in recent times, it has been argued that with automation of information retrieval, it is possible to dispense with traditional methodologies / techniques for organising information, in particular classification. The strongest counter argument to this is that classification underlies all thinking ; thus it would be prime facie surprising if it found no place in information systems of the future.

1.1 SCOPE OF THE PAPER

In this paper, an attempt has been made to highlight the usefulness of Classification in Modern Information Management.

2. DEFINITIONAL ANALYSIS

In attempting to discuss the subject of Classification in Electronic Era, it would be useful and helpful to define and delimit the use of the terms and consider some of the resulting implications. This is especially true because the meaning of terms depend on the context in which they are used. Therefore, for any purposeful discussion that will ensure some degree of success, defining of terms becomes desirable, if not essential.

2.1 INFORMATION

Some meaningful message recorded in conventional or non-conventional media and stored and processed by systems and services with a view to providing a more or less permanent memory of the messages and their discussion to users.

BS 3527, Part 1, 1976 defines information as "The meaning that a human assigns to data by means of conventions used in their presentation". In other words, information is data that has been given shape. It may be considered as processed data. Thus, information is data plus the meaning, which has to be a result of human action.

An unconventional definition, however, states that information is :

- What we take in from outside to feed our knowledge so that we can function successfully and achieve our aims.
- What is necessary and what is available in a given situation for this purpose?

2.2 INFORMATION MANAGEMENT

While the terms 'Information' and 'Management' have been defined, there does not seem to be one view in regard to the couplet "Information Management" both in academic and professional circles. Consequently, it has been described as chameleonic in character or nature or to be more charitable as McGee and Prusat (1996) put it "Information Management (IM) is an emergent field of interest". Whatever it is, IM is one of the buzz terms of the present age of librarianship / information science / archives and record management. It is a term that has come to significance as consequence of the greatly increased interest in Information Technology (IT).

According to Tom Wilson (1987), "IM has no standard definition, but the basis of the idea can be found in one of Peter Drucker's works : "The systematic and purposeful acquisition of information and its systematic and purposeful application are emerging as the new foundations of work, productivity and effort throughout the world". Wilson then goes on to comment that notion that the economics of the future world depend upon the 'purposeful acquisition' of information is at the root of the IM idea. Also at root is the idea that the systematic and purposeful application of information will depend increasingly upon the application of IT. Two ideas, therefore, come together in the concept of IM : information as an important economic resource and IT as a tool for its effective management.

On the other hand, Lynda Woodman comments that "IM is all about getting the right information, in the right form, to the right person, at the right cost, at the right time, in the right place, to take the right action". This sounds quite familiar -- a re-enunciation or implication of Ranganathan's Five Laws of Library Science. Based on the Touche Ross survey (1994), Best (1996) defines IM "as the effective production, storage, retrieval and dissemination of information in any format and on any medium to support (institutional) business objectives".

From the above, one can infer that IM covers the whole spectrum of information handling activities, technology and its role in information handling as well as various management activities practices in institutions.

2.3 CLASSIFICATION

Classification, expressed in its most elementary terms, is placing like things together. It has been described as a process of division / sorting the entities of a universe

into sub-aggregates on the basis of a preferred characteristics or putting like entities into the same sub-aggregate and unlike entities into different sub-aggregates. It has also been described as the process of division of a universe into groups *plus* that of arranging the groups into a definite sequence i.e., Ranking. In other words, classification would involve the process representation of the thought content by a Class Number with the sole objectives of facilitating storage, retrieval and dissemination of information.

3 USEFULNESS OF NORMATIVE PRINCIPLES

Ranganathan's Principles and Postulates of classification are helpful in :

- Organising concepts in knowledge bases
- Recognising the type and strength of inter-relationships among concepts/data entities in a knowledge base / database and linking them accordingly
- Preparing fast-access files, e.g., concept-based indexes
- Preparing search expressions, especially to minimise ambiguity in complex search expression
- Preparing vocabulary tools, e.g., thesaurus, classification schemes, classaurus, etc.
- Assisting user to browse / navigate more conveniently in a database, to zero in on a specific topic of interest to his / her at the moment.
- Presenting ideas / information retrieved in a sequence helpful to the users.

Thus, classification is an aid in information transfer.

4 CLASSIFICATION FOR ORGANISING CONCEPTS IN KNOWLEDGE BASES

Concept categorisation and knowledge organisation are used in one form or the other in knowledge bases (e.g., specialised and object databases). Such organisation of concepts also helps in recognising the types of interrelationships that may exist among concepts in the particular domain, and in linking them accordingly with a view to assisting users browse and navigate more conveniently (Neelameghan, 1997)

5 CLASSIFICATION AND USERS NEEDS ASSESSMENT

In studying the information needs of the potential users, classification is of great help in the case of specialists belonging to a particular discipline. But, in case of planners

and decision-makers, it is rendered difficult as the information needs are not structures according to subjects in the usual sense of the term, but are essentially function or task-oriented. Therefore, an alternative approach -- a Model or Reference framework according to which planning and decision-making programmes are conceptually analysed into different phases, sub-tasks, activities, etc. and the information support needed for each are identified. When this is done (which is nothing but classification in one sense), it would be possible to select / extract relevant data and information from different sources / databases and repackage them into relevant subjects for convenient use at the different stages of planning work.

6 CLASSIFICATORY TECHNIQUES AND INDEXES

Information storage and retrieval systems find it useful to provide alphabetic indexes as a means of fast access to the information contained in the databases. The subject indexes may be part of an inverted file (author, title, subject, etc.) or a separate file. The helpfulness of the subject index entries to users depends in a large measure on how adequately the subject content (ideas) of each document (if a bibliographical database) or the data about the entity described (if an issue or object-oriented database) has been analysed and represented precisely and comprehensively in the index structures / expressions. In this work, the analytico-synthetic procedure can be useful as already indicated above. Chain Procedure is one such technique based on the analytico-synthetic methodology (Ranganathan, 1997). Further, POPSI or Postulate-based Permuted Subject Indexing explicitly uses facet-analysed subject strings based on the General Theory of Classification, to derive precoordinated index entries.

7 CLASSIFICATION AND DATABASE CREATION

Neelameghan (1997) has shown how Normative Principles of classification are useful in designing of a database. According to him, they are useful in all the three planes of work.

Idea Plane :

1. Identifying data entities (object about which information is to be collected for use).
2. Selecting attributes of data entities of interest to users.
3. Selecting data model (scheme to map entities and relationship).
4. Dividing data entities by common attributes into smaller units.
5. Grouping, organising, arranging the units derived in 1.

Verbal Plane :

6. Naming fields, data elements.

Notational Plane :

7. Assigning tags.

In other words, in the preparation of the Field Definition Table (FDT), a pre-requisite for database creation, classificatory principles have a role to play.

Neelameghan (1997) has presented several examples of databases in which the theories, principles and techniques of concept categorisation, classification and knowledge organisation, and of the analytico-synthetic approach, as well as those of methods of vocabulary control and natural language indexing developed for organising and retrieving are also helpful in designing non-bibliographic object databases (ODBs). Each database forms a component of a group of databases serving the needs of an institution or user group. Such a group of databases include bibliographical data bases, referral data bases (e.g. profiles of institutions, experts, projects, etc., often integrated into a single data base) and other non-bibliographical data bases. All the data bases were developed using Micro-CDS-ISIS software. The specialised ODSs developed include :

- Hospital Patients records databases (3 databases)
- Database of Medical syndromes
- Forest Resources Database
- National Parks description
- Databases for Technology evaluation
- Databases on Chemistry and Toxicology of selected chemicals
- Biogas equipment database
- Databases for energy Resources Planning
- Database of Land records
- Urban Planning Information Support
- Automobile Production Engineering
- Gene databank
- Museum Objects
- Software Packages, etc.

8 CLASSIFICATION AND ONLINE SYSTEMS

Svenonius (1983, 1991) has identified some uses of classification in online retrieval systems :

- Classification can be used to improve recall and precision and to save the time of the user in keying in search terms.
- Perspective classification can be used to contextualise the meaning of vague search terms, enabling the computer to simulate in part the negotiation of a search request carried on by reference librarians.
- An important use of traditional classification in online systems is to provide a structure for meaningful browsing.
- Classification can be used to provide a framework for representation and retrieval of non-bibliographic information.
- Automatic classification can be used to collocate citations in ways not possible in manual systems, e.g., by similarity of linguistic features.
- Classification can be used to achieve compatibility of retrieval languages by serving as a mediating or switching language.

In brief, classification has such an important place in online systems, that we should prepare for a resurgence of interest in both its theory and practice.

9 CLASSIFICATION AND OPAC

A similar line of thinking can be seen in the work of Stephen Walker (1991), Liu and Svenonius (1991), Nohr (1991), Watanabe (1994) who have used classification techniques in the context of OPAC searching. Similarly, Library of Congress Subject Headings List, Rules for Subject Cataloging (RSWK), Thesaurus Keyword Indexing have been used for subject search and retrieval in OPACs.

10 ROLE OF CLASSIFICATION IN THE GENERATION OF INFORMATION SERVICES

To state that Classification has a role in the generation of information services would be to state the obvious. If we analyse the different steps involved in the generation of information services / products, we can see that classification has several roles to play.

It may be in relation to the Users Interests Profile construction, Document Profile construction, Arrangement and presentation of information, etc.

10.1 USERS NEEDS STUDY

In the design of information services / products, one of the initial steps is to determine the subject scope of the product. For this purpose, information needs of the potential users must be studied. This is easier in the case of specialists belonging to a particular discipline or disciplines. But, in the case of planners and decision-makers, it is difficult as the information needs are not structured according to "subjects" in the usual sense of the term, but are essentially function or task-oriented. Therefore, the usual Users-needs-study approach may be difficult, if not impracticable to implement and / or may not yield the desired results. An alternative approach is to use a Model or Reference Framework according to which planning and decision making programmes, can conceptually be analysed into different phases, sub-tasks, activities, etc. and the information support needed identified for each of these. When this analysis is done (which is essentially based on classification in one sense), it would be possible to select / extract relevant data and information from different sources / databases and repackage them into relevant subsets for convenient use at the different stages of planning work.

10.1.1 Uses of Reference framework

The designing of such a reference framework is a cooperative effort between information users and information scientists. The main uses the framework can be put to may be categorised as follows :

i) Facilitates identification / determination of the total view of the interest of the target group as well as the specific components of the interest area and their inter-relationships (mapping).

ii) Helpful in Information Needs analysis, especially in non-discipline oriented situations.

iii) Useful in the precise definition of the information consolidation product and its contents ; determination of priority areas and weighting ; and division of areas of work - literature search, extracting, abstracting, etc. - among members of a team. Cooperation made possible since the framework can define precisely the work areas.

iv) Useful in information organisation, that is, in the actual production of the text (with the necessary headings and sub-headings) which would match with the information needs of the users.

v) Helpful in information repackaging, that is, orientation of the information to the needs of a particular group of users.

Some other uses that the framework can be put to fruitfully are

a) Preparation of profiles of users

b) Generation of anticipatory services

- Selective Dissemination of Information (SDI)
- Repackaging Services

c) Facet analysis of reader's questions for providing reference service.

d) Designing of databases -- determining the contents of files of the database, determining the contents of records in the files, etc.

e) For assessing the availability of data / information by identification of strengths and weakness and thus initiating action to fill the gaps.

f) Helpful in resource-sharing, acquisition and production of information products among a group of libraries / information centres, etc.

g) Useful in Comparative studies.

10.2 GUIDING PRINCIPLES FOR ARRANGEMENTS OF IDEAS

Guiding principles for arrangement of ideas have already been formulated. These include :

IDEA PLANE

a) Principle of Unity of Ideas ;

b) Principles for sequence of Ideas ;

1) Principle of Filiatory Sequence

2) Principle of Decreasing Extension ; or, if more appropriate to the context ;

3) Principle of Increasing Extension ;

4) Principle of Time Sequence ;

41) Principle of Later-in-Time ; or if more appropriate to the context ;

42) principle of Earlier-in-Time ;

5) Principle of Development Sequence ;

6) Principle of Evolutionary Sequence ;

61) Principle of Later-in-Evolution ; or if more appropriate to the context ;

62) Principle of Earlier-in-Evaluation ;

7) Poorva-Paksha Siddhanta Principle ; statement of a principle and the establishment of a more suitable one ;

8) Principle of spatial contiguity (any one of the following six principles, most appropriate to the contest) ;

For entities in Vertical sequence ;

For entities in Horizontal sequence ;

For entities along Circular line ;

Principle of away-from-position ;

Principle of Geographical contiguity ;

9) Principle of Quantitative measure ;

10) Principle of Concreteness Vs Abstractness ;

12) Principle of Traditional Sequence ;

13) Principle of Literary Warrant ; and

14) Principle of Alphabetical Sequence.

VERBAL PLANE

Guiding principles for the verbal plane have already been formulated. These include.

1) Respecting Unity of Ideas ;

2) Principle of Simple Sentence ;

3) Principle of Transparency ;

4) Avoidance of Tautology ;

5) One-one correspondence between 'Term' and 'Idea'

51 Avoidance of Homonym ;

52 Avoidance of Synonym ;

6) Principle of Technical Terminology ;

7) Consistency in Punctuation ;

8) Principle of Use of New Term, and

9) Principle of Elegance.

NOTATIONAL SYSTEM

The Helpfulness of a well-designed numbering system to mark the structural elements of a text is now being slowly realised to be of help to the author of a document and the readers. A well-designed of level of unity of ideas and the flow of ideas down the structural elements.

10.3 APPLICATION OF RANGANATHAN'S POSTULATES AND PRINCIPLES OF CLASSIFICATION : A DEMONSTRATION

At the Tata Energy Research Institute, Bombay, in the 1980's, Ranganathan's postulates and principles as enunciated in the General Theory of Classification have been applied in the preparation of the following handbooks / information packages :

Biogas Technology : An Information Package
Cookstove Technology : An Information Package
Wind Pump Handbook

The following is an extract of the contents page of the "Cookstove Technology : An Information Package" indicating the application of Ranganathan's postulates and principles in organising the text of the documents. (Annexure 1)

11 CONCLUSION

From the foregoing account, it is clear that classification has a distinct role in an electronic era. It may be considered as one of the mechanisms in the Information Transfer Process. It is also clear that Postulates and Principles proposed by Ranganathan in the framework of the General Theory of Classification are relevant for users needs assessment, creation of databases, Online Systems, OPAC and for generation of information services. Hence, teaching of the subject "Classification" is imperative in Information Science Education programmes. However, the subject should be taught emphasising on the useful (application) role it plays in the information transfer process.

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Annexure - 1

COOKSTOVE TECHNOLOGY
AN INFORMATION PACKAGE

Chapter 1 INTRODUCTION

Chapter 2 EVOLUTION OF COOKSTOVES

* Historical Perspective
* Open fire cooking
  - Features
  - Advantages
  - Limitations
  - Solution

Mnemonics

Principle of Later-in-time / evolution

Postulate of Fundamental Categories

* Fuel Efficient Stove

Chapter 3 Postulates of Level (IPI, IP2, ...) STOVE COMPONENTS AND STOVE DESIGNING ---> Postulate of Fundamental Categories (P) and (E)

* Stove components
  - Firebox
  - Air inlet
  - Grate
  - Baffles
  - Dampers
  - Chimney
  - Gowl

Postulate of Fundamental Categories

Principle of Spatial Contiguity

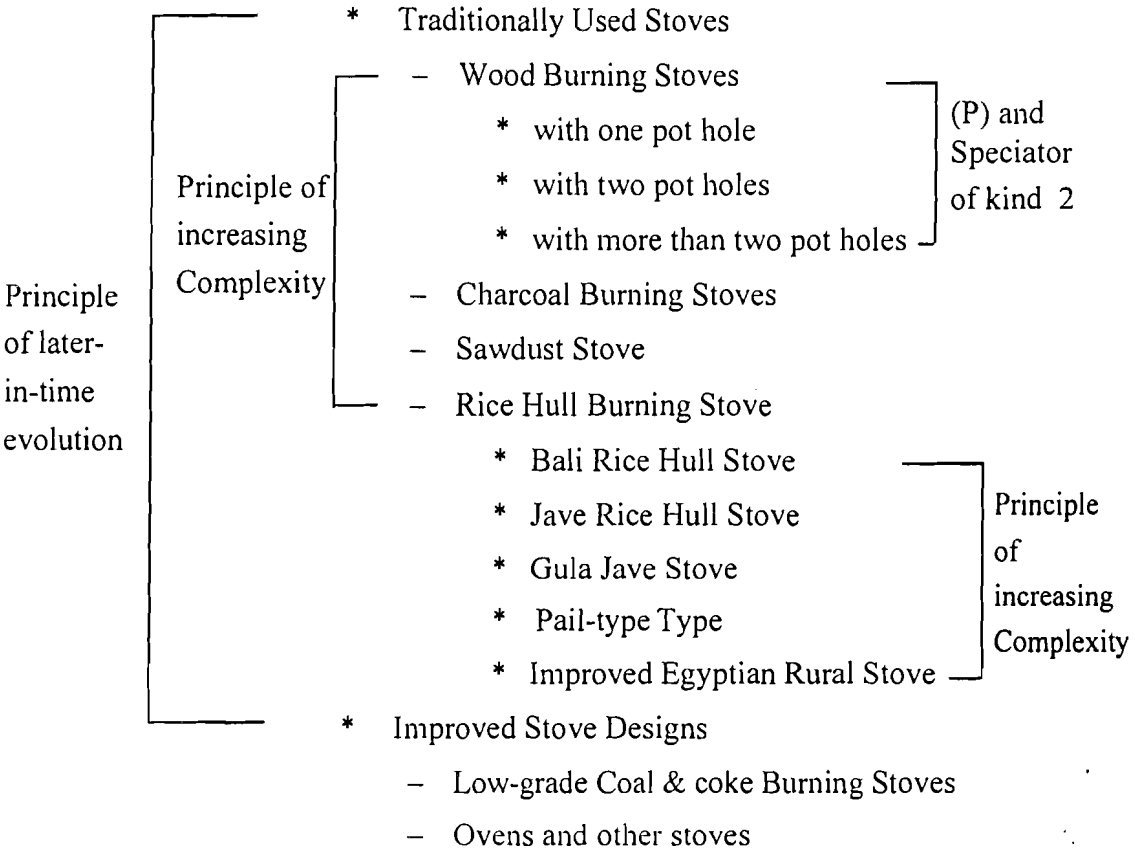
* Designing Inproved Stoves
  - Factors Influencing Design
    * Combustion
    * Modes of Heat Transfer
    * Stove Materials

Wall-Picture Principle

Group Strategy

Wall-Picture Principle

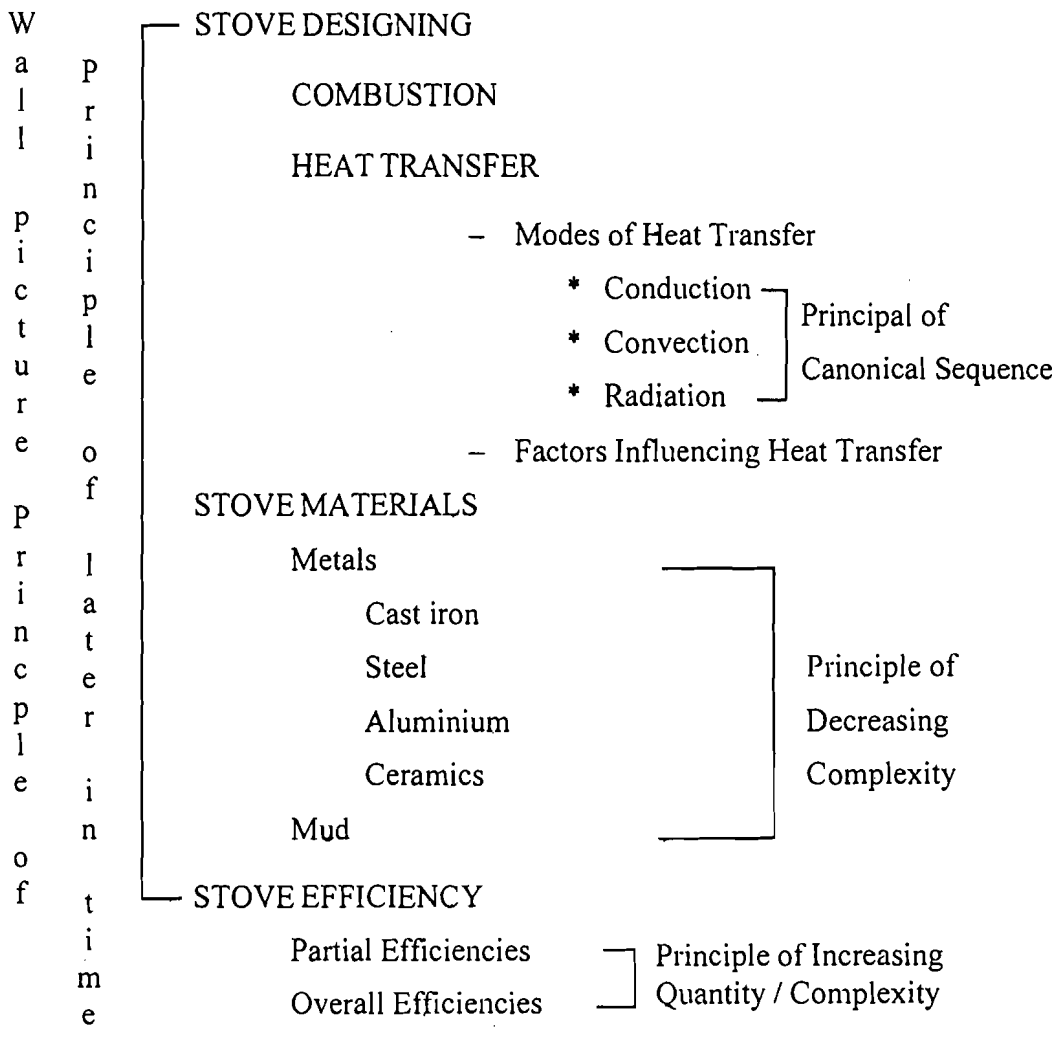
Chapter 4 TRADITIONLALLY USED AND IMPROVED STOVE DESIGNS



irt each Stove, information on the following is given :

Name of Stove
Fuel used
Stove materials
Features
Operation, etc.

Concepts of Isolates, Speciators, and facets have been used in consolidation and presentation of information


Wall picture Principle of
Principle of later in time
STOVE DESIGNING
COMBUSTION
HEAT TRANSFER
– Modes of Heat Transfer
* Conduction
* Convection
* Radiation
Principal of Canonical Sequence
– Factors Influencing Heat Transfer
STOVE MATERIALS
Metals
Cast iron
Steel
Aluminium
Ceramics
Mud
Principle of Decreasing Complexity
STOVE EFFICIENCY
Partial Efficiencies
Overall Efficiencies
Principle of Increasing Quantity / Complexity

Universal Forms and Subject Representation

*Subal Chandra Biswas**

Abstract

In their quest for general principles of organization and arrangement of recorded knowledge, information scientists have ventured into as diverse areas of knowledge as linguistics and biological taxonomy. This paper describes the works of the Indian School of Classification (headed by Ranganathan) and the Classification Research Group (UK) towards formulation of a generic framework for subject representation in their proposed classification schemes and indexing languages. Besides, it also highlights two other subsidiary methods of finding universal features of information languages, viz., the comparative method and the switching language method. Concludes that the quest is still inconclusive despite innovative works of several information scientists.

1 Introduction

Parallel to the search for universal linguistic forms such as those expounded by Chomsky, Fillmore, and others, and recognition of similar universal traits in human memory and process of knowledge acquisition (for a review see ref. 12), steps towards the formulation of a generic framework for structuing the representation of the name of a subject for the development of classification schemes and indexing languages were also investigated. Such universals are being arrived at and used in various other areas dealing with information storage and retrieval. For example, in the area of data modelling now the basic problem is to identify the world as a domain of objects with properties and relations (11). Although, classificationists have been involved in finding such a generic framework since the days of Dewey and Cutter, it was not until the 1950s that such need was explicitly expressed by the Classification Research Group (CRG), in the United Kingdom (16). By that time, it was realised that existing enumerative schemes of classification were falling apart in their attempt to keep pace with the 'information explosion', and especially, these were inadequate in specifying complex subjects. As an alternative, a new approach was advocated : a turning aside from enumerated lists of subjects, and

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the adoption of freely faceted principles and anlytico-synthetic approach. This resulted into an upsurge of classification schemes, mostly in special subject fields, based on what is now epitomized as the technique of 'facet analysis'.

Similarly, during the 1970s or so, there have been attempts to find a unified theory of indexing. Because, a complete and commonly accepted theory of indexing, once created, would be a central theoretical construct in information science (51). A synthesis of compatible theories may prove to be the first step in establishing a comprehensive indexing theory. In 1977, Borko described indexing theories formulated by Jonker, Heilprin, Landry and Salton, and concluded that although some of them needed to be validated, the "remarkable degree of congruence among these theories ... is indicative that a comprehensive theory of indexing not be far from the future" (13, p. 365). Unfortunately, no such attempt has been made so far. Rather, several theories have been put forward by researchers from time to time : theory of probabilistic indexing by Maron and Kuhns, Swets, Robertson, etc.; utility-theoretic indexing by Cooper (for general discussions on both these theories and their later developments, see ref. 34) ; axiomatic theory of indexing by Fugmann (26, 27) ; and so forth. However, on this occasion, we are not so much interested in the indexing process and the characteristic of indexing vocabulary, as we are in the nature of the languages used to perform the task of indexing, i.e., information languages (ILs).

2 Ranganathan and the Indian School

However, the above realization was not entirely new to the profession. As early as the 1940s, the use of categorization of component ideas forming the name of a subject into a few fundamental Categories, and defining an order of these categories to form a 'logical classificatory language' resulting in 'faceted' library classification schemes were developed in India by Ranganathan (43, 45). But, Ranganthan and his work remained almost unheard of in the West (25), till B. I. Palmer came to India during World War II and took it to the knowledge of the profession at large. But, first we will have a look into the developments that took place in India, especially at the Documentation Research and Training Centre (DRTC), Bangalore, under the stewardship of Ranganathan.

It was realized that, the order of component ideas denoting the different categories in the name of a subject as prescribed in the Personality-Matter-Energy-Space-Time (PMEST) formula is a context-dependent order. More specifically, it is a context-specifying order (21, p.23). Every component category sets the next and following ones. Also, in this classificatory language, every category should explicitly have the corresponding superordinate component ideas preceding it. The reason for fixing the superordinates

before the component elements concerned is to make the component elements denote precisely the ideas they represent. Further, it has been conjectured that the order (syntax) of representation of the component elements in the name of a subject as prescribed by the principles for sequence — facet sequence — is more or less parallel to the 'Absolute Syntax' — the sequence in which the component ideas of subjects falling within a subject field arrange themselves in the minds of majority of intellectuals (37, 44). This idea of absolute syntax is similar to Chomsky's (14, p.4) idea that, "more intriguing is the possibility that by studying language we may discover abstract principles that are universal by biological necessity and not mere historical accident, that derive from mental characteristics of the species". Not only linguistic universals, but also, similar universals were evidenced in other fields of knowledge, e.g., biocybernetics, philosophy, epistemology, etc. (for a brief discussion see ref. 36). If the syntax of the representation of component ideas in the name of subjects is made to conform to, or parallel to, the absolute syntax, then the pattern of linking of the component ideas — that is, the resulting knowledge-structure — is likely to be :

(1) more helpful in organizing subjects in a logical sequence for efficient storage and retrieval ;

(2) free from aberrations due to variations in linguistic syntax from the use of the verbal plane in naming subjects ; and

(3) helpful in probing deeper into the pattern of human thinking and modes of combination of ideas (36, p. 170).

It is interesting to note that it has been realized that Ranganathan's fundamental categories of Personality, Matter and Energy are "general categories building the system's structure as a spatio-temporal neighbourhood relationship" useful in deriving meta information for a process of automatic semantic analysis too (15). Research on the psychological and linguistic aspects of PMEST structure (32) and the ability of such a structure to communicate information with least distortion (41), suggests that the PMEST structure has psychological roots, in the way human mind thinks and organizes concepts. Therefore, this can constitute a cognitive model which can be effectively used in information retrieval (IR). Iyer (31) has also shown that, Ranganathan's PMEST model can be effectively used in developing the network representation of the user's problem statement, in evolving standardized search strategies to resolve anomaly (as viewed in Belkin's (3) ASK (Anomalous State of Knowledge) hypothesis), thereby minimizing the intervention of the search intermediary.

Consequent to the development of techniques for structuring of subjects and for classification of subjects, several experiments were conducted at the DRTC to use them for subject indexing, thesaurus construction, formulating search queries for computerized databases, etc. (22). Till about 1935, the processes of classifying the subject of a

document and of preparing the subject headings for it were considered as if they were independent and mutually exclusive. But with the development of chain indexing (originally called 'chain procedure') by Ranganathan (42, 47), it became obvious that subject headings can be constructed by a translation into a meaningful representation of the class numbers in the verbal plane. Large scale use of chain indexing in big university library catalogues as well as commercial publications, such as *British National Bibliography and British Technology Index* (later renamed as *Current Technology Index*), bear testimony to its helpfulness in structuring a subject in the verbal plane and in formulating subject headings in consistent, systematic, and economical way (38). But, as early as the beginning of the sixties, it was becoming apparent that chain indexing was not always helpful in subject specification and in its service to the user (50). This culminated in British National Bibliography's rejection of chain indexing as the tool for its alphabetical subject index generation and adoption of Preserved Context Index System (PRECIS) as a favoured replacement. Also, the latter claimed to be better suited to a mechanized environment. However, it appears that one particular work by Ranganathan went almost unnoticed in the Western hemisphere, especially in the United Kingdom, which showed that, "the choice of the name of subject of a document and the rendering of the name in the heading of a specific subject entry can be got by facet analysis based on postulates and principles" and also pointed out that "using facet analysis for subject heading does not amount to using class number" (46, p. 109). Further research into the fundamentals of subject indexing languages resulted in the development of a General Theory of Subject Indexing Language (4, 6). The Postulate-based Permuted Subject Indexing (POPSI) system was developed through logical interpretation of the 'deep structure' of subject indexing language forming part of the General Theory of Subject Indexing Language (8, 9). According to Ranganathan, there are only five basic facets (categories) : Personality, Matter, Energy, Space and Time, to which one can add the Basic facet or the Discipline facet. These have been abstracted and interpreted further to be contained in the four facets or Elementary (fundamental) Categories : Discipline, Entity, Property and Action, and a special component called Modifier, which constitute the 'deep structure' of subject indexing language (5, 8). It also makes use of the concepts of 'Base' and 'Core' to be used as the first context-specifying category and second context-specifying category, respectively, to enable 'need-oriented' indexing (7, 10). The computerized Deep Structure Indexing System (DSIS) is based on the 'deep structure of subject indexing language' (20).

3 Classification Research Group (UK)

We have already mentioned CRG's acceptance of freely faceted principles and analytico-synthetic techniques as the basis of all methods of information retrieval. In the next step, CRG proposed that the concept of main classes should be abandoned as the

basis for a library classification, at least during the initial stages of its design. It directed its attention to the 'universe of concepts', i.e., those discrete ideas which constitute the components of the name of a subject in all fields of knowledge, rather than to the 'universe of subjects' and its organization into disciplines (2). This change of direction had been noticed by Foskett (22, p. 234), who pointed out that : "starting with the theories of analytico-synthetic classification developed by Ranganathan, the Group has moved forward in a rather different direction from Ranganathan himself'. That means, each concept would be assigned to a category according to its meaning, and without being associated with a discipline from the outset. It would then be notated on a once-for-all basis. Compound subjects would be built by synthesis out of these elements, using generalized rules to determine the order in which concepts should be cited. Two different but interrelated lines of enquiry emerged out of this necessity : (a) establishment of a general system of categories; and (b) search for a universal citation order of concepts.

In its first approach to the universe of concepts, CRG employed the same approach as the one employed by earlier classificationists in their approach to the universe of knowledge. Depending on the human ability to judge likeness/unlikeness, two general classes of concepts were established : (i) entities or things; and (ii) attributes of entities (1). Entities were divided into two mutually exclusive groups, naturally occurring things and artificial things. The latter class was further divided into : (1) concrete substances and objects (artefacts), such as 'libraries' and 'film'; and (ii) mental constructs (mentefacts), such as 'theorems'. Attributes were distinguished as either properties or activities, and each of these was further subdivided, a new principle of division being introduced at each step.

Work on the second component began with accepting Ranganathan's PMEST formula as the basic model. But subsequent research proved that, in many respects it was too imprecise for practical use. This applied particularly to the primary facet, 'Personality'. It was pointed out that, the classifier cannot in practice decide which concept should be assigned to the fundamental category Personality, and therefore cited as the first element in a subject statement, until the subject as a whole has already been assigned in his mind to some appropriate class. This means, there is an element of intuitive perception in the recognition of personality, rather than clear cut rules (48). Finally, the CRG devised a new schema which depicts a mixture of features belonging to two other systems, those of Vickery and Farradane. The order of concepts in a compound subject was generally that proposed by Vickery (52) :

Things; Kinds; Parts; Materials; Properties; Processes; Operations; Agents.

This formula ensures that concepts should be set down during number building in their order of relative significance, but not necessarily in a 'meaningful' order, nor on the basis of inter-concept relationships. It was Farradane who adopted relational analysis of con-

cept pairs as the basis of arrangement of concepts in a name of subject. Instead of imposing a predetermined order upon the components of a compound subject, he proposed that, concepts, represented by English terms, are to be connected by symbols called 'relational operators', each of which expressed one of nine dyadic relationships (23). The operator /-, for example, expresses 'Reaction', a group of relations which expresses 'action of a thing or process on another thing or process', and this would be written as a connecting device in the index entry.

Serials /- Acquisition,

i.e., "Acquisition as the *action* performed on serials". In the resulting 'analet', both concepts and their interrelationships were thus made explicit. The user who has mastered the relational codes can then read the analet as a meaningful statement.

But, finally, following Vickery, it was decided that the order of concepts in a compound subject should be determined by the use of a general precedence formula. The syntactic role of every concept except the first would also be expressed by a special symbol written as a prefix to its notation. The roles employed for this purpose were broadly those prescribed by Vickery, together with 'Space' and 'Time' as found in Ranganathan's PMEST formula. The role symbols were written between parentheses (the procedure still followed in PRECIS string writing) and their filing value would determine the order of concepts (PRECIS has abandoned the use of the retroactive order). Another important distinction recognized during the CRG research is that between the substantive and adjectival element in a subject, which was later used as the 'differencing' procedures in PRECIS. For example, the property concept 'relevance' can be used as it is in a name of subject 'relevance of documents', as well as to denote a class of documents, as in 'relevant documents'. All these developments leading to the generation of a new general classification scheme have contributed one way or another to the final shaping of PRECIS and its claim of universality.

4 Comparitive Method of Finding IL Universals

One of the most obvious methods of finding universals is to compare as many systems as possible. For natural language (NL) this would represent an almost impossible task, since no single effort can claim to have comprehended all existing languages existing in this world. Explicit theorization and testing each individual NL against it might be a viable alternative. Examples of such generalization within, say, the context of transformational-generative grammar are the universal status of certain semantic components (e.g., ± HUMAN, ± MALE, ± YOUNG, etc.) and of certain 'deep' case relations (e.g., objective, agentive, benefactive, etc.).

As far as ILs are concerned the comparative method is not a practical impossibility, since their numbler is always within comprehension. But, with the exception of Grolier's (29) study of 'general categories' and Soergel's (49) survey of relational categories, very few comprehensive comparisons of ILs have been undertaken so far. An attempt of different nature was, however, made in the Aslib-Cranfield Research Project (17), which viewed IL structure as an 'amalgam of recall and precision devices'. Hypothesized IL universals were defined in terms of their functional effectiveness, as promoters of recall or precision. But, Hutchins (30, pp. 131) has pointed out that, any hypothesized IL universals are valid only within the framework of a particular model and do not have much or any validity outside it.

5 Intermediary IL or Switching Language

During the recent past, a new idea has emerged in the search for IL universals, the idea of an intermediary IL or 'switching language' (18, 28). It was realized that, compatibility and convertibility of indexing systems and languages are a prerequisite for effective information retrieval on an international scale (35). Of course, the stimulus is an economic one : reduction of indexing duplication. Three approaches to compatibility among ILs were identified : (i) establishing a concordance among the ILs used, (ii) the use of a single IL in all systems, and (iii) developing a switching language to move from one IL to another (54).

At the simplest level where only two or three information centres are involved and only two or three ILs, a bilingual or trilingual lexicon showing how to translate a descriptor in one IL into another IL, is what we need. However, true compatibilities throughout the vocabularies are hardly evidenced. Problems of homonymy, synonymy, descriptor specificity, etc., vary considerably from one vocabulary to the other. Neville (39) and Niehoff (40) have thrown some light on the methods of reconciling IL vocabularies.

The second alternative approach is to merge the ILs into a single IL for all the participating information centres. But this is possible only when the ILs have the same structural forms, e.g., post-coordinate indexes with controlled list of descriptors. Where the IL structures differ greatly or where there are more than three or more ILs involved the reconciliation approach becomes virtually impossible. Also, the development of a unique common IL may not be feasible because of the variety of uses to which it is put (53).

Instead of creating as many equivalence tables as there are pairs of ILs between which information is to be transferred, a series of concordances are constructed between each of the ILs and the switching language. The switching language has to operate at a

'crude' level, because, as an intermediary IL it must be as neutral as possible and select the most generic representation of descriptors. The last factor leads to a low general level of indexing specificity on which the intermediary IL would operate.

6 Conclusion

History of the principles of librarianship has revealed that in the sphere of organization and dissemination of recorded knowledge efforts were limited at first within the boundaries of a single institution, slowly extending to that of a nation. Advancement in technology brought the scope of dissemination beyond the national frontiers. This resulted in the search for an effective system of communication with universal acceptability. Various solutions were proposed - from Melvil Dewey's notational system to its offshoot Universal Decimal Classification, from faceted systems (such as Colon Classification) to coordinate indexing (e.g., Uniterm indexing), from CRG's proposal to development of BSO, etc. The horizon is ever expanding. Austin's PRECIS and Bhattacharyya's POPSI are two further additions in the same continuum, both making at least some contributions to our understanding of the process of information communication. Following Hutchins (30, p. 136), we can say that these "may claim closer approximation to universality in DL (documentary language or information language) structure than any earlier indexing or classification system."

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LEARN YOURSELF THE USE OF CCF AND OTHER ASSOCIATED STANDARDS

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Abstract

Demonstrates a methodology of self learning the use of the CCF or Common Communication Format (Ed. 3, 1992) — that is both CCF/B (Bibliographic) and CCF/F (Factual) for preparing computer-readable records of information about the sources of information. It starts with the methodology of converting a bibliographic entry prepared according to AACR2 (R) into a computer-readable format according to CCF/B. Explains the record structure of CCF/B with reference to ISO 2709. Also demonstrates the methodology of preparing a computer-readable non-bibliographic record with an illustrative example. Brief references are made to other associated standards for bibliographic description which seem to be essential for designing the information storage and retrieval system at the local level including the writing of the 'Program Package' for this purpose Inadequacies of the use of CCF for cataloguing practice are highlighted. Suggests to complement and supplement the use of CCF by adopting a code for cataloguing practice to overcome the deficiencies of CCF. Also suggests that the Classified Catalogue Code, after necessary revision of the descriptive part of Cataloguing on the basis of ISBD (G), should be adopted as the perfect model to satisfy the ultimate objective of CCF.

Part - I Bibliographic Record

1. Introduction

This presentation consists of a demonstration of a user-friendly methodology for learning by self-efforts the use of the Common Communication Format (CCF) - that is of

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both CCF/B (Bibliographic) and CCF/F (Factual) for preparing appropriate computer-readable records for sources of topical information, both bibliographic and non-bibliographic, for the ultimate purpose of storing information about the sources of information in various documentary forms in a computer readable format so that it can be retrieved pinpointedly, exhaustively and expeditiously when the needs arise by using again the computer capability of retrieving computer readable records.

2. Demonstration of the use of CCF/B (Ed. 3, 1992)

2.1 Transcript of a Title Page

Consider the following transcript of the title page of a single volumed monograph :

OPTICAL FIBERS

by

T. Okoshi

ACADEMIC PRESS

London

Note : 1) It was first published in 1990.
2) It has xii preliminary pages
3) It consists of 299 text pages
4) It's height is 23 cm.
5) Its ISBN is 0-12-525260-9

2.2 Entry (Record) according to ISBD (G)

Now, let us convert the information selected from the monograph itself into a bibliographic entry (record) according to the prescription of ISBD (G).

ISDG (G) stands for the "General International Standard Bibliographic Description : an annotated text prepared by the Working Group on the General International Standard Bibliographic Description set up by the IFLA Committee on Cataloguing."

Optical fibers / by T. Okoshi — London :
Academic Press, 1990 — xii, 299p; 24 cm.
ISBN 0-12-525260-9

2.3 Entry (Record) according to AACR-2 (1988)

Now, let us convert the entry in the earlier section into the Main Entry according to AACR-2 (1988).

AACR-2 (1988) stands for the *"Anglo-American Cataloguing Rules, second edition as revised in* 1988."

OKOSHI, T.
Optical fibers / by T. Okoshi —
London : Academic Press, 1990.
xii, 299 p.; 23 cm.
ISBN 0-12-525260-9.

2.4 Computer Readable Record according to CCF/B

Let us now convert the AACR Entry into a computer readable format according to the prescriptions of CCF/B, assuming that we intend to use CDS/ISIS, the programmed package for bibliographic database management system developed by PGI (General Information Program) of Unesco, Paris. In that case, the part of the technical work a professional cataloguer is to carry out minimum by avoiding avoidable complications to prepare a computer readable record would result into something as follows :

Field Tags	*Datafields*
001	A040327
020	00@ AGBINSPEC
021	00@AB
022	00@A19910000
030	00@B2
040	00@Aeng
060	00@A100
100	00@A0-12-525260-9
200	00@AOpticalfibers
300	00@AOkoshi@BT

400	00@A London@BAcademic Press
440	00@A19900000@C1
460	00@Axii, 299 p.@C23 cm

It is to be noted here that the "Computer Readable Bibliographic Record" is based on another bibliographic record produced by INSPEC, the "International Information Service for the Physics and Engineering Communities" in 1991. Here the record preparing agency and the record-information supplying agency — that is, the other organisation, namely INSPEC — are in an agreement of cooperation and coordination; and the former agency follows CCF/B and has not adopted CDS/ISIS. The record preparing agency has not yet developed a conversion program. So it prepares its records according to its own adopted format and program package.

According to the methodology demonstrated here, we are now to try to interpret each of the "entry" (the statement against each "Field Tag") as far as possible without referring to CCF/B text. You would see that you can make out quite a lot.

After completing this stage, now you refer to (consult) CCF/B by taking each "Field Tag" and the statement against it at a time. Prepare your "Note" after understanding the contents of each "Tag" as given in CCF/B. Experience shows that the result would be a thorough understanding of problems corresponding to each type of source of information.

The worked out example as furnished in the earlier section, is one of the worked out examples in CCF/B itself. It is advisable to use this demonstrated methodology by using each of the worked out examples furnished in CCF/B by omitting the portions which are comparatively complicated. For example, in the worked out example, the portions designated as "Segment Identifier", and "Occurrence Identifier" (Field Occurrence Identifier") have been omitted because of their comparative complexity. Besides, experience shows that the same advantages can be obtained by several other alternatives.

'Segment Identifier' refers to "a single character associated with each occurrence of a datafield and appearing in the directory entry for that occurrence, which identifies the segment to which the datafield belongs." "Occurrence Identifier" refers to a single character appearing in the directory, which differentiates multiple occurrences of the same datafield within the same record segment'. It is to be understood that for the purpose of creating an efficient and effective database needs arise to link up (1) one record with another record; (2) one segment of a record with another segment of the same record; and (3) one field of a record with another field of the same record. CCF/B has provided mechanism for all these purposes. But after learning all the elements which are comparatively simpler, one should concentrate on these complicated elements.

3. Structure

Before starting the process of interpretation, a few important pieces of information are to be taken note of. For example :

1. The very decision of adopting CCF implies that the record structure of CCF constitutes a specific implementation of the international standard *ISO 2709 : 1981 : Format for Bibliographic Information Interchange on Magnetic Tape*.
2. According to ISO 2709 : 1981 each record consists of four parts with their respective components (contents) as follows :
    - Record Label
    - Directory
    - Datafields
    - Record Separator

Record Label : Each CCF Record begins with the Record Label consisting of a fixed-length label of 24 characters, the contents of which are as follows :

Character Position (s)	*Contents*
0-4	Record length
5	Record status, e.g. a = new, b = replacement; c = deleting
6	(blank)
7	Bibliographic level, eg. s = Serial; m = single volumed monograph; c = multivolumed monograph; a = Component part; e = made-up collection
8	(blank)
9	(blank)
10	'2' = Indicator length (= the first two characters in each datafield supplying further information about the contents of the field; and also about the computer manipulative function, if any, to be carried out.
11	'2' = The subfield identifier length
12 - 16	Base address of data = The location of the first character of the first datafield in a record relative to first character of this record.

Character Position (S)	Contents
17 - 19	(blank)
20	'4' = the length of the "Length of the Datafield" in the directory
21	'5' = the length of the "Starting Character Position" in the directory
22	'2' = the length of the implementation defined section of each entry of the directory. The first character for the "Segment Identifier"; the second for "Occurrence Identifier."
23	(blank)

DIRECTORY : The directory is a table containing a variable number of fourteen character entries. The table is terminated by a field separator character. Each directory entry corresponds to an occurrence of a datafield in the record; and it is divided into five parts.

- Tag — 3 characters
- Length of the datafield — 4 characters
- Starting character position — 5 characters
- Segment identifier — 1 character
- Occurrence identifier — 1 character

DATAFIELDS : A datafield consists of

- Indicator — 2 characters
- One or more subfields each preceded by a subfield identifier — 2 characters. Each Subfield — Variable
- A datafield separator — 1 character

Record Separator : The record separator

(Character 1/13 of ISO 646) is the final character of the record = # or ■

It is essential that the parties to exchange will agree as to the size, recording density, etc. of the physical media to be exchanged. ISO 10011 should be consulted for guidance on magnetic medium labeling and the structure.

Those who do not intend to use CCF in toto, will be helped by it in designing their own formats, whether in conformity or not. Those who intend to adopt it, will not find it necessary to be bothered by the Record Structure specified by ISO 2709.

5. Interpretation

According to CCF/B, the Bibliographic level (s = Serial; m = single volume monograph; c = multivolumed monograph etc.) is to be indicated in the character position 7 in the "Record Label". In the worked out example, it has been assumed to have been done. The working out of the Notes' for each of the Field Tags by using the faculty of interpretation with reference to the original texts for each Tag may take the following shapes :

1. Tag **001** stands for the "Record Identifier". It refers to the characters uniquely associated with such a record and assigned by the agency preparing it. It is "Represented" (recorded) as assigned. It is a "Mandatory" field and Not Repeatable". (Note : As stipulated in ISO 2709, this field does not contain "Indicators" or "Subfields".

2. Tag **020** stands for the "Source of the Record". It refers to the identification of the agency preparing the "Record". It is preferable to be represented in a coded form. The Field is "Mandatory"; and it is "Not Repeatable". The characters "00" are its "indicators". It may have several "Subfields". Subfield "@A" identifies the agency in a coded form.

3. Tag **021** stands for the information about the "Completeness of the Record". It refers to an indication of whether the record includes

   a) Mandatory; or

   b) Optional; or

   c) Local data elements; or

   d) If it is a CIP (Cataloguing in Publication) record; or

   e) If has been prepared by using a published item.

   It is prescribed to be represented in coded form. The field is "Mandatory", and not repeatable. There are specified indicator characters. The first character, if it is "O" it indicates that data about "Mandatory" or "Optional", (indicated by 1) or "Local" data ("indicated by 2") are not specified. The second character "0" indicates that whether data have been collected by examination of the item (indicated by 1); or it is a CIP record (indicated by 2); or it is based on another source (indicated by 3) is not specified. The field may have subfields. The subfield "@AA" indicates that "All mandatory and optional elements are provided"; "@AB" indicates that all mandatory elements are provided; and "@AC" indicates that less than all mandatory elements are provided. Hence, '00@B' represents that all mandatory elements are provided.

4. Tag **022** stands for the "date when the record was prepared by the agency and/ or entered on its file". It is prescribed to be represented in accordance with the prescriptions of ISO 8601. Its use is mandatory; and it is not repeatable. It has indicators. If the first character is "1" it indicates that the Subfield "A" shows the date of record creation; if "2" it indicates that the subfield "A" shows the date entered on file; if "0" it indicates that it is not specified. In all such cases, the second character is always "0".

5. Tag **030** stands for the standardised "Character Sets used in the Record". This is prescribed to be represented by its ISO registration number. Its use is "Mandatory"; and it is not repeatable. Its indicators are "00". The subfield "@B" is indicative of the use of "Default Graphic Set". 2 is the Code for the "International Reference Version" graphic set (ISO 646 : 1991). (Note : In a CCF record, character 1/13 of ISO 646 is used as the final character of the record as the record separator. In CCF example, it is indicated as "■". The datafield separator is character 1/14 of ISO 646. The subfield identifier flag is represented by the character 1/15 of ISO 646. In CCF examples, it is shown as @. The field separator is shown as # hash mark; so also is the code of "Record separator in practice".

6. Tag **040** stands for the "Language and Script of the Item". It is prescribed to be represented in a coded form. The codes for the widely used languages and scripts are provided by CCF/B. Its use is "Mandatory" when the item includes language-material. It is repeatable when there is more than one script. Characters "00" are its indicators. It has the subfield for the language; it is indicated by "@A"; and it has the subfield for the script also; it is indicated by "@B". The use of the subfield for the language is mandatory; and it is repeatable when there is more than one language using a single script. The use of the subfield for the script is also mandatory when a language can be written equally in more than one script, e.g. Serbo-Croation in Roman or Cyrillic. Otherwise its use is Optional. It is not repeatable; for, when a script of the item is included, it refers to all the language codes which appear in subfield "@A".

7. Tag **060** stands for "the type of material". It refers to the intellectual form of presentation of the item. It is prescribed to be represented in a coded form. The codes for the widely recognised forms of presentation are enumerated in CCF/B along with their respective codes. Its use is optional; and it is not repeatable. Its "Indicators" are "00". If it is used then its subfield "@A" followed by the "standardised" Material Code indicates the "Type of Material". In such a case, its use is mandatory and it is repeatable. The codes are not

mutually exclusive. One or more may be used. The general types such as, "Textual", and "Non-textual" are represented by "100"; and "900" respectively. They are general types; and their codes always end up with two zeros (00).

8. Tag **100** stands for the "International Standard Book Number (ISBN)". It refers to a number which identifies one title or an edition of a title published by a specific publisher, and it is unique to that title or edition. It is allocated in accordance with the stipulations of ISO 2108 and *ISBN Users' Manual.* Its use is "Mandatory"; and it becomes "Repeatable" when an item has more than one valid ISBN. It's "Indicators" are characters "00". Sometimes the information about the price and/or binding is associated with an ISBN, it is to appear in Subfield "@C" of this field rather than in Field 465. Its subfield @A indicates the 10-digit ISBN divided into four parts of variable length, separated by hyphens. In this connection, it may be noted that Tag 465 stands for information on "Price and binding". It is prescribed to be represented in accordance with the practice of the agency preparing the record. Its use is Optional. If used, its use is repeatable for editions of a work in different bindings. The characters "00" are its indicators. Its subfields are "@A" for the price; "@B" for the specification of the binding; and "@C" for the date of price. For example, "00@AUSD10@Bpbk@C1991" in the field tagged 465 would specify that the item is priced 10 US dollar, it is in paperback; and the price was fixed in 1991.

9. Tag **200** is meant to furnish the "Title" and the Associated Statement(s) of responsibility. These items of information include (1) the title - that is, the word(s), phrase(s), a character or group(s) of characters normally appearing on the bibliographic item naming the item or the work contained in it. It may be represented in four forms : (1) a form not specified in the item, (2) the form as in the item, in the form and sequence as given in the item, exactly as to wording but not necessarily as to punctuation, capitalisation or character set, (3) Modified title; and (4) Translated title. The use of this field (as indicated by the tag 200) is mandatory except for serials when the key title is given. It is repeatable when more than one title for an item is recorded, such as, the title as on the item and a translated title. Its indicators are two characters, of which the first character is always "0". The second character may be 0,1,2, or 3 specifying the 4 options of representing the title as mentioned above. Its subfield "@A" is followed by the title. "@B" is followed by the statement of responsibility associated with the title; but its use is optional. It is repeatable for each statement related to the title found on the item. It may be noted here that the Fields 300, 310 and 320 are used to record names in a standardised form, e.g. Levy, Geraldine, 1936-, as distinct from the form ap-

pearing in a statement of responsibility. The subfield "@L" is followed by the statement specifying the language of the title. A code taken from the list of language Codes is used for this. The use of the subfield is optional; and if used, it is not repeatable. The subfield "@S" is followed by the statement specifying the script of the title. A code taken from the list of Script Codes is used for this. The use of the subfield is optional and it is not repeatable.

10. Tag **300** stands for the specification of a name of person rendered in a standardised form. The "Name of Person" in this case refers to the name identifying a person responsible for or contributing to the creation of the intellectual or artistic contents of a work contained in the bibliographic item or its realisation. It has to be represented in accordance with the practice adopted by the agency preparing the record. The use of the field is mandatory, and it is repeatable for the name of each person when more than one person is responsible for the work. The indicator consists of two characters. The first character may be either

    "0" to indicate that the level of responsibility is not defined; or

    "1" to indicate the primary responsibility; or

    "2" to indicate alternative responsibility; or

    "3" to indicate secondary responsibility.

    The second character may be either

    "0" to indicate that the source is not specified or

    "1" to indicate that the source is the authority file of the agency preparing the record.

    The subfield "@A" is followed by the entry element, and its use is mandatory and not repeatable. Subfield "@B" is followed by other elements of the name; and its use is mandatory, and not repeatable. Subfield "@C" is followed by the additional elements to the name. Its use is optional, and repeatable for different kinds of additional elements. If it is used, it is preferable to use standardized abbreviations if it is possible. Subfield "@D" is followed by "Dates". Its use is optional and not repeatable. Subfield "@E" indicates the "Coded Role"; and its use is optional; and repeatable. Subfield "@F" indicates the "Non-Coded Role" and its use is optional and repeatable. Subfield "@Z" indicates the "Authority Number", a unique number assigned to the heading of a person. It is not repeatable. Here is an example of the statment of form in standardized name : 01@AStokes@BR.B.@CProf.@ Eeditor.

11. Tag **400** stands for the Field specifying the "Place of Publication and Publisher" of the bibliographic item. "Place of Publication" refers to the name of

the place or one of the places (usually town or other locality) where the bibliographic item is published. It can include the state, province, or country. It is to be recorded in accordance with the practice of the agency preparing the record. Its use is mandatory, and it is repeatable. "Name of publisher" refers to the name of the person or corporate body responsible for publishing the bibliographic item. It is presented by the name of the publisher as shown on the item. It may be in a shortened form also, provided it can be identified without ambiguity. Its use is mandatory; and it is not repeatable. The postal address of the publisher may also be furnished along with the name of the country or countries where the publisher is located. But their use is optional. If all these items of information are to be provided, the indicators for the field is "00". Subfields "@A, @B, @C and @D are used to indicate the "Place", "Publisher", "Postal Address", and the "Country or Countries" respectively. Here is an example :

00@ALondon@AOxford@AMelbourne@ADelhi@BOxford University Press

12. Tag **440** stands for the field specifying the "Date of Publication" of the bibliographic item in hand. Four different types of date of publication are permitted to be recorded in the way as mentioned below :

1. Subfield @C0 = Not specified
   @ C1 = Date of publication
   @C2 = Date of coverage
   @C3 = Date of copyright
   @C4 = Approximate date of publication

The use of four (4) kinds of dates defined in Subfield C is mandatory for bibliographic items; and they are repeatable. Indicators of this field are "00". In a multisegmented record, Field 440 appears in the same segment as the fields describing the item to which the date applies. Subfield "@A" indicates the Date in formalized form as prescribed by ISO 8601. In the case of spanning a period, the two dates are set out in full and separated by a hypen. Any digit may be replaced by a question mark when an approximate date is given. When no month or day is given the month and day is replaced by "0000". The use of this practice is mandatory when the date is convertible to ISO format; and it is not repeatable. Subfield "@B" indicates the Date in nonformalized form (i.e. as it appears on the item). The use of the non-formal form is mandatory when the date cannot be converted into ISO format, e.g. a non-Gregorian date, dates including such terms as 'Spring', 'Winter' and it is not repeatable.

Example :

00@A199?0000@C4

This specification indicates that the date of publication of a monograph is between 1990 and 1999, and it is not ascertainable. For this reason the last digit of the year is replaced by "?". The code sets to "4" at the end - that is the subfield "@C" is to show that the date is uncertain.

13. Tag **460** stands for the Field specifying the "Physical Description" - that is, the description of the physical attributes of the bibliographic item. This is represented in accordance with the practice of the agency preparing the record. Its use is optional, and it is not repeatable. The location of an item in relation to its host item is recorded in the field tagged 490.

14. It has already been mentioned earlier that the example demonstrated here is based on a printed entry (record) produced by INSPEC, the "International Information Services for the Physics and Engineering Communities in 1991". Besides, this is the example that has been demonstrated by CCF/B (Ed.3). This a typical example for preparing a computer readable record for a conventional single volume Monograph.

15. Important at this stage is to take note of a few more fields which are indicated by tags belonging to "600 Group". "Tag **600**" stands for the Field furnishing the "Abstract" for the bibliographic item under consideration. The term "Abstract", here, refers to a brief description of the content (intellectual and/or artistic) of the bibliographic item. It is intended to include items of information, such as

    1) An Informative abstract; or

    2) An Indicative abstract; or

    3) A Combination of both - that is, "Informative cum Indicative abstract", or

    4) A critical or evaluative abstract, or

    5) A summary; or

    6) An annotation

    Whatever may be the appropriate choice, it is prescribed to be represented in accordance with the adopted practice of the agency preparing the record. The prescription is optional; and the field is not repeatable. Its indicators are "00". Its subfield "@A" is intended to record the "Abstract" as appropriate and defined above. Its subfield "@L" is meant for furnishing information identifying the language of the abstract. The use of this subfield is optional; and it is not repeatable. For example, the "Abstract" for the contents of the bibliographic item may be recorded in the following form and style.

600 00@A Deals with various optical wave guides, including optical fibre for communication use. Only those optical fibres having axially symmetrical structures are discussed by emphasising their respective optical and electromagnetic wave aspects. Considerations include discussions on materials, fabrication technologies, application and communication systems00@Beng.

16. The next important Field is tagged "**610**". It stands for furnishing information about the "Notation" of the adopted "Scheme for Classification", and also about the identification of the adopted scheme. The notation is represented in accordance with the "Scheme". The "Indicators" of the field is "00". The use of the "Field" is optional. The field is repeatable for each "Notation", and for each "Classification System". Its subfield "@A" is meant for recording the "Notation". Subfield "@B" is meant for recording information about the identification of the "Classification Used". It has been prescribed to be recorded in a codified form if preferred. Some of the codes for such schemes are as follows :

U = Universal Decimal Classification (UDC)

D = Dewey Decimal Classification (DDC)

L = Library of Congress (LC) Classification

For example, this Field for the bibliographic item under consideration may be recorded as follows :

610 00@AA4280M@AA0130K@AA4280S@AB0100@AB4130 @BINSPEC Classification Codes

17. The third important field (and perhaps the most important Field in the group tagged 600) is the Field tagged **620**. It is meant to be used to furnish the "Subject Descriptors" preferably according to a standardized verbal "Vocabulary Control Device", such as, a "Classaurus", a 'conventional' Retrieval Thesaurus', popularly referred to as a "Thesaurus" in the professional parlance. The term "Subject Descriptor" refers to a word, term, name, phrase, or a sequence of words, terms, names, and phrases, deemed to be a single "Proposition (Expression) chosen to characterize the bibliographic item described in the record in order to facilitate primarily the retrieval of the record. For the purpose of controlling the use of subject - descriptive vocabulary for the ultimate purpose of "Information storage and Retrieval" it is essential to have the vocabulary logically standardized prior to the use of the "Subject Descriptors". It may be readily available for many generalized disciplines, in the form of either a "Classaurus", "Thesaurus", or "A List of Ready-made Subject Head-

ings". Whatever is available, is never adequate for the use of any organization. Any such vocabulary control device, always calls for logically introduced augmentation to meet the requirements of an individual organization. Many a time, this requirement is compromised by adopting a ready-made device as it is by sacrificing the demand of very specific information need. Any way, information is this field is to be furnished in accordance with the practice of the agency preparing the record. The use of this Field has been prescribed to be optional for reasons only known to the designers of CCF. It is repeatable for each recognized subject descriptor. Its indicators are "00". Its Subfields "@A" is used for each subject descriptor, "@B" is used for the identification of the "System" used; and "@C" is used for the type of the "Subject Descriptor" in coded form such as, "O = Topical Subject Descriptor", and "9 = Unknown or not specified". For example, the Field tagged 620 for the bibliographic item under consideration may be recorded as follows :

620 00 @ ASingle-mode fibers @ A Optional Communication @ A Light Scattering @A Optical fiber@AAxially symmetrical structures @ AElectromagnetic wave aspects @ AFabrication Technologies @ ACommunication-system considerations @ AFiber analysis @ARay theory @ AWave theory @ AMode theory @ AWKB method @ APower series method @ AVariational methods @ AStaircase approximation @ A Refractive-index distributions @ AMaltimode fibers @ A Coupling phenomena @ ATransmission chacteristics @ BNone

Part - 2 : Non-bibliographic Record

Demonstration of the Preparation of a Computer-readable Non-Bibliographic Record according to CCF/F

1. Introduction

Once the demonstrated methodology of preparing a computer-readable bibliographic record is adopted and followed in practice with all sincerity, the next stage of learning the use of CCF/F (Ed. 3, 1992) may be taken up. For this purpose, one can adopt and follow in practice the same methodology. Perhaps, the procedure can be economized to some extent. Such a procedure is demonstrated here.

2. Record for an Institution

Consider the following computer - readable non-bibliographic record prepared according to CCF/F. It is an entry (record) for an institution named as the "Institute for Biochemical Research".

Field Tags	*Datafields*	*Remark*
001	000062	Record Identifier
020	00@B...	Source Agency preparing the record
022	20@A19920103	Date entered on file (=2)
030	00@B2	Character set used in the record. B = Default Graphic Set. 2 = International Reference Versions Graphic Set (ISO 646 : 1991)
040	00@Aeng	Language of the Institute (Entity)
062	00@AINS	Type of factual information (Type of the entity)
086	00	Field to Field Linking @A = Field linked from. @B = Field relationship code. @C = Field linked to
088	00	Record to Record linking. @A = Linked record identifier. @B Relationship code, such as, BIB = Target record is a bibliographic record, and INS = Target record describes an institution. Field 510 = "Note on Related Entity" may be used instead of or as well.
300	00@AGraham@BBabara@CProf.@E300@FDirector	Name of person. @A = Entry element. @B = Other name elements. @C = Additional elements. @D = Date or birth and/or death. @E = Role in coded form. @F = Role non-coded. @Z = Authority record number.
310	00@AInstitute for Biochemical Research	Name of the Institution (Corporate Body) Indicators, 1st 0 = Compulsory; 2nd 0 = Source Not specified, 2nd 1 = Source : Authority file.

430	00@B18 Maynard Road@CBrighon@EEngland@FBN12UN	Address. @A = Identification other than a numbered building, e.g. Remington House, Hotel de Sully. @B = Street Address. @C = Locality. @D = State. @E = Country. @F = Postal code...
448	00@A19600401	The date of the foundation of the Institution. @A = Date in formalized form. @B = Date in non formalized form. @C = Duration.
610	00@A577.1@CU	Classification Scheme Notation. @A = Notation. @B = Identification of the Scheme in text form. @C = Scheme in code form, e.g. U = UDC; D = DDC; L = LC Classification.
620	00@ABiochemistry	Subject descriptors @A = Subject descriptor. @B = Identification of the system. @C = Type of descriptor, e.g. 0 = Topical; 1 = Geographic; 2 = Chronological, 9 = Unknown or not specified
700	00@Adirector@B1@AAssistant director@B1@Aresearch fellows @B3 @A research assistants @B5@Atechnicians @B3	Human resources. @A = Level of responsibility @B = Number.
705	00@ANMR Spectrometer	Equipment and other resources. @A = Equipment.
715	00@AResearch Councils @B45%	
715	00@AIndustry@B40%	Income components.@ASource of funding.
715	00@A Fees@B15%	@B = Amount (actual or %). @C Time period. @ D = Additional information.
716	00@Astaff@B75%	Expenditure components @A = Type of component.
716	00@Aequipment @B10%	@B = Amount, @C = Time period. @D = Additional component.

Part - 3 : Associated Standards

Other Associated Standards for the Preparation of Computer - readable Records for Sources of Information (Specially, Bibliographic Sources) by Using CCF (Ed. 3, 1992)

1. Introduction

In this part, brief references are made to other associated standards specially called for the purpose of

1. Designing the information storage and retrieval system; specially at the local level;
2. Working out the "Program Package" for this purpose; and
3. Using the system for preparing computer - readable records for bibliographic sources of information, which is expected to be largely in conformity with the spirit of CCF.

2. Concept of format

The first thing to be made clear is the concept of "Format". The term is used in several senses in the common parlance; and it is used as a noun as well as a verb. As a noun if refers to the shape, size, and general make-up (as of something printed) and also to a general plan of organization or arrangement. As a verb it refers to 'produce in a specified form or style', e.g. formatted output of a computer. In the context of "Secondary Information Storage and Retrieval", it would be convenient to develop the conception of "Format" as follows :

Format : A set of closely related logical statements bearing primarily the spirit of and serving as prescriptions or instruction to help work-out a general plan of organization or arrangement for something, specially by recognizing in well-defined terms its parts of different orders and their interrelationships, irrespective of the physical form, and style in which it is presented.

In the sense mentioned above the following bibliographic items (documents) which have already been developed in relation to "Secondary Information Storage and Retrieval" so far may be recognized and accepted as examples of a "Format".

1. The bibliographic items (documents) which have already been designated as "Format" (such as CCF); and also those which have been designated by using other terms such as the following :
2. Rules, such as, Rules for Dictionary Catalogue and AACR-2
2. Instructions, such as Prusian Instructions;
4. Codes, such as, Classified Catalogue Code; and

dered item of information when it gives rise to a homonym, or homograph, or when such a probability exists.

5. CCF falls short of regulating the choice of language, script, capitalization, punctuation etc. of an entry (record) in a very large measure. This technical cataloguing process has been popularly known as "Recording".

6. The technical cataloguing process of "Conflict Resolution" is very much warranted in many situations in cataloguing. It consists of deciding about the entity the name of which is to be preferred over another entity when such a situation arises. CCF does not provide any guideline for such conflict resolution.

7. As result of all these inadequacies, CCF is not at all an adequate tool to be used for developing any kind of authority list, or their abbreviation lists, or code list. Those are very much warranted in cataloguing.

8. CCF is in no way a guide for preparing "Abstracts", or systematic "Subject Propositions (Descriptions)" in any form; nor is it intended for this purpose. Of course, CCF has recognized the inclusion of these items though "Optionally".

4. Strategies for further developments

In order to make up for all these deficiencies of CCF, it is essential to complement and supplement the use of CCF by adopting or adapting a "Code" (Rules/Instructions/ Manual etc.) for "Cataloguing Practice". Among the available ones AACR-2 (1988) can serve the purpose to a large extent. But, from the point of view of the "Basic Intentions" (Objectives) of CCF as a whole, AACR-2 (1998) is not a comprehensive "Code" as envisaged by CCF. For, it is not intended to guide the technical work of "Abstracting" or preparing the "Subject Proposition". From this point of view CCC(Ed.5) is a more perfect model. It has all the essential ingredients to serve as a perfect model for being an adequate complement and supplement for the use of CCF. Of course, it is assumed here that the construction of class numbers should be guided by a complementary "Scheme for classification", as CC is to CCC. Obviously, CCC calls for a large measure of revision to serve this purpose and to make adoptable or adaptable at the international level. The most important point to be noted here is that CCC should be adopted as the perfect model to satisfy the ultimate objective of CCF.

There again arises an important question. So far as the part of descriptive cataloguing is concerned, what should be the basis for the revision of CCC? Or, would it be

advisable to develop an entirely new code by adopting the CCC model and enhancing and enriching it with necessary additional material? In that case also, what should be the basis. Whatever may be the decision, the basis for both the purposes should be the adoption of ISBD (G).

Regarding "Abstracting", "Subject Proposition", "Formulation" and "Class Number Construction" in addition to "Authority List Preparation", there must be a set of complementary and supplementary volumes to a 'Basic version' of CCF. This would call for further revision of CCF in the light of this objective. The ad hoc developments in all these respects have been quite admirable. Those must be taken note of.

5. Conclusion

It is hoped that the intention behind this presentation is well understood. It is not a teaching manual. It simply demonstrates a methodology which the author himself has developed; and has adopted for learning the use of CCF by himself. He believes that such a self-learning method would prove to be user-friendly, economic, efficient, and effective specially to those who are acquainted or familiar with "Cataloguing". The development of this self-learning methodology is entirely based on his won experience. The reason for this is that it is his conviction that the learning of the use of a set of rules, instructions, prescriptions etc. taking the shape of a "Code" or "Manual" for cataloguing is not amenable to conventional methods of learning. It calls for some innovation to reduce the incidence of repeated reading with somewhat understanding leading to repeated incidence of forgetting. It is this line of thinking that has led to the development of this method of self learning. It is quite expected that many may not find anything significant on the first occasion of seeing its demonstration. In such cases, the appeal of the author would be "Please try it once; and then develop your scientific opinion, and then make it public with all your intellectual vigour". Finally, the direct access to all the original documents is an essential requirement to adopt this methodology of self-learning the use of CCF. So also is the case of practising "Cataloguing" (intellectually manual or intellectually computerized) in the future as a member of the profession of secondary information work and service.

Teaching Methods of Cataloguing practice - A case Study

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Abstract

Describes the teaching method followed at Jadavpur University to teach the Cataloguing Practice by using AACR2R and CCC at the BLISC and MLISC levels. Emphasizes that this teaching method enables the learners to be familiar with the geography of the codes for cataloguing practice and also permits them to interpret the rules and to make appropriate decisions according to the need of the given library system.

1 CATALOGUE & CATALOGUING

Cataloguers follow a particular cataloguing code for the preparation of the catalogue of any library. Library schools also include one or two cataloguing codes in the curriculum for making the students familiar with the code (s).

2 WEST BENGAL SCENARIO

In West Bengal at present there are seven universities where Library and Information Science (LIS) is taught either at the BLIS level of BLIS & MLIS levels both.

21 Certificate in LIS

Bengal Library Association conducts the course at the certificate level. West Bengal Government has one centre at Rahara, West Bengal. LIS at the certificate level is taught here.

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3 CATALOGUING CODE

Except Calcutta University, in all other six universities in West Bengal both the codes, CCC and AACR2R are in the syllabus. BLA and Rahara teach only AACR2R.

31 Condition code

Both the codes, CCC and AACR2R, are condition codes. The term 'condition' has been used by Lubetzky to denote a relevant code problem. While preparing entries for any item (book or non-book material), cataloguer will have to examine the item from the cataloguing point of view and determine the cataloguing conditions (problem) of the item. Then he correlates the conditions with the relevant rules in the code. Useful entries can be prepared only if the identification of the cataloguing conditions are done properly.

32 Liberty to the cataloguer

Rules for cataloguing as provided in a code are subject to change, so we find that as and when context changes the rules are also changed. So we get the new edition of a code. The new edition incorporates the amended rules to suit the new environment.

But the new edition of a code, we do not get every morning. Therefore, in any code (or in any edition of a code) we find that there are provisions of flexibility, viz., optional rules, alternative rules etc., which permit the cataloguer to interpret the rules and apply his experienced judgement for making entries. It is not compulsory that one would follow the rules blindly as it is laid down in the code.

This is called the permissiveness of the code. This allows the cataloguer the liberty, the freedom to do entries which will be most suitable for the library users for whom the catalogue is made.

33 Principle of Context

The flexibility, the permissiveness, the liberty, the freedom given to the cataloguer to interpret the rules and apply his considered judgement and finally to make decisions according to the need of the user of the library is essential in any new generation cataloguing code. This provision in the code is the result of the Principle of Context.

34 Rules and Principles

Rules are formulated according to the direction of the principles. From the rules we come to know only how to do the entries. Whereas the principles answer why to do. Rules do change when the context changes. The principles are the general framework, the philosophy of cataloguing, the fundamental truth. They do not change.

For example, if the context changes, the rules will be changed, as we find in AACR2R, the structure of the code has been changed thoroughly under the influence of Principle of Context.

One who is practical in his approach, understands that in a particular library, the local library, where he works, catalogue should be made friendly to the users of his library. This is known as a pragmatic approach. This approach is also developed out of the Principle of Context. Those who want to follow the rules rigidly they are condemned as legalistic. We can call them fundamentalist.

35 AACR2R

This code is aware of this principle. On page 3, paragraph 0.9 this Western code for the first time has expressed that you do your catalogue according to the requirement of the users of your library. Permits the cataloguer to interpret the rules and apply his own judgement. It also admits that universal cataloguing is neither possible nor desirable.

36 Ability to interpret

We follow a code for the sake of consistency. The cataloguer is familiar with the rules of the code as well as the environment of the library where he works. Therefore, he is the best person who can interpret the rules and make appropriate decisions for doing the catalogue.

Interpretation of the rules and making decisions are not very easy job. If one's knowledge of the library, where he works, and knowledge of the rules and cataloguing principles are not adequate and sound he will prepare entries mechanically following the rules. And the catalogue thus made naturally will not be useful to the users of the library. This is called legalistic approach.

The ability to interpret the rules requires sound knowledge of the principles and rules and familiarity with the nature of the collection of the library, the services rendered by the library and the demands of the users of the library.

4 TEACHING OF CATALOGUING

In many library schools cataloguing is taught mechanically. That is why during the examination, examinees are not allowed to consult the code. It is found that students of these schools are not familiar with the geography of the code. They just memorise some of the rules and the structure of the entry. As a result students do not learn cataloguing, and the subject appears to them a very dull and uninteresting subject.

41 Teaching method at the Jadavpur University

Both at the BLIS and MLIS levels the cataloguing practice is taught in an altogether different way.

411 At BLIS Level

Two codes are taught, both CCC and AACR2R are in the syllabus. More than one hundred problems are discussed in the class. 50 to 60 problems for AACR2 and similar number for CCC.

4111 Outline of the cataloguing theory

In the beginning, an outline of the cataloguing theory is discussed in 2 or 3 lectures, assuming that, otherwise the practical work cannot be understood by the freshers. Certificate passed students may have some knowledge about cataloguing but the freshers cannot follow anything if some idea is not given about the theory.

4112 General decisions in case of AACR

Some general decisions are also taken. Examples of decisions at BLIS level :

i) Card form will be chosen for practical work. Whereas in the computer class they will learn to do data entry following the work sheet/data sheet as told by the computer teacher.

ii) Main entry and Added entry method to be followed.

iii) Main entry based Unit card will be practised.

iv) Tracing to be made in the front side of the Main entry.

v) Method of doing continued card when necessary, is also discussed and demonstrated.

vi) Subject heading to be done following 15th ed. of SLSH for AACR2R entries and Chain indexing method to be followed in case of CCC.

vii) Cataloguing condition of the item to be mentioned for all the problems discussed in the class, class tests and Final examination.

These decisions are made only after thorough and detailed discussion and demonstration.

In AACR2R, only the definition of 'tracing' is given, nothing else has been told. Similarly, only definition of 'Unit card' is there in the glossary. Nothing else. Therefore

the problem of preparation of added entries, based on Main entry, is discussed and demonstration is also given. There is also no rule for making continued card.

No rule for making subject heading has been given in AACR2R. So these problems are discussed as thoroughly as possible.

For subject cataloguing, for the two codes, two different methods are discussed and demonstrated. Therefore, students get an opportunity to make a comparative study of the two methods and understand and realise the limitations of a ready made subject heading list e.g., SLSH.

4113 Specific decisions and decision table in case of AACR

While the problems are discussed and entries are worked out, specific decisions are also made. These are not forced upon the students by the teacher. Students participate in the discussion and decisions come out as a consensus of the class.

Each student notes down the decisions, and arrange systematically all the decisions made in the class, which is called "Decision Table" (DT). During the examination students are allowed to consult the code as well as their DTs for makings the entries. They are advised to arrange the decisions in a systematic way. The DT is considered as if this is the local library catalogue code. DT not only includes the particular optional or alternative rules to be used but also includes the deviations from the rules of the code where found necessary.

4114 Book number construction

AACR2R is an incomplete code. Neither there are rules for subject cataloguing nor filing rules. The code also does not have rules for construction of book numbers.

Method for constructing unique book numbers is also discussed and decisions are made. Book numbers are made on the basis of publication year of the item, which is most scientific. This method is followed for entries made by AACR2R and CCC.

Examples of some of the specific decisions

i) GMD not to be recorded in case of books and printed serials.

ii) SMD is to be recorded.

iii) For continuation of the Access Point go back to first indention. Write 'Continued 1' in the fresh card. Give one line gap after the Access Point.

iv) First 4 areas to be recorded in one paragraph.. 5th and 6th areas in the 2nd para. 7th area in one para. 8th area in one para.

Thus there will be four paragraphs to accommodate the description.

v) Tracing is to be done in the next para (5th para).

vi) If specific subject heading is not available in the SLSH, 15th ed., students are told to consult other tools (viz. DDC, UDC, CC, Encyclopaedias, Dictionaries etc.) and construct the SH which is appropriate for the item. But in this case they will have to mention on the back of the Main Entry, which tool they consulted.

Some more decisions are made. Only a few decisions have been mentioned above.

They also supply one copy of the DT to the teacher for evaluating the examination scripts of the Class test and of the Final examination. First Class test is held at the end of 6 months when discussion on the CC code is over, and when discussion on AACR2R is finished the Second test is arranged.

All the entries of the class works made following each code are also submitted separately by the students as the last dates of submission are announced by the teacher.

4115 AACR2R class works

Entries are submitted in two bunches,

(a) one bunch having all the transcriptions of the problems discussed on standard cards and arranged according to their Accession no. (Serial no.).

Cataloguing condition to be written in detail. The name of the student, session, section, roll no. etc. is to be written on the 1st card of the bunch for easy identification by the teacher. The bunch is to be properly tied with a rubber band and a piece of thread through the punched hole.

(b) In the second bunch the entries are to be filed in alphabetical sequence properly guided by coloured guide cards.

In the beginning there should be the direction how to use this part. This is called "Guide to users". This bunch will be considered as if a mini Dictionary Catalogue. This also makes the students familiar with the filing rules.

4116 Previous system

Previously the practice was to take multiple tests at the BLIS level to cover the entire cataloguing practical paper (minimum ten tests, five for AACR and five for CCC). As soon as discussion of a chunk of the syllabus would be complete, it would be followed by a test. Separate questions would be given to each student in each test. Even now separate questions are given to each student for the two tests now held. It was laborious

indeed for the teacher, but convenient, effective and beneficial for the students. Students also used to score high marks in this paper. And this practice in two papers, Cataloguing and Classification practical, was helpful because it was instrumental in reducing the load of the students to a great extent during the Final examination. Tests used to be held when the rules were fresh in their memory. A Question Bank was also created to conduct the tests smoothly.

Unfortunately this practice was later discontinued for some administrative problems.

4117 CCC class works

To be submitted in 3 bunches :

(a) Transcriptions of the problems, including analysis of the class numbers with cataloguing conditions and,

(b) Classified part having all the numbered entries arranged properly,

(c) Alphabetical part with all the word entries arranged in alphabetical sequence.

2nd and 3rd bunch are to be properly guided by the guide cards. 'Guide to users' also to be inserted, one for the Classified part and the other for the Alphabetical part.

Class works are submitted after the Class tests of the respective codes are held.

There are twenty five marks for the tests and the class works. After evaluation the class test scripts and the class works are returned to the students showing the marks scored by each student.

Two classes are devoted exclusively to discuss the mistakes done by the students in the Class tests.

Before the Class tests of AACR2R and CCC, revision of 10 years question papers of our Final examinations are undertaken devoting four to six classes.

During the Class tests and Final examinations, all relevant reference tools, including codes, DDC sets, SLSH, UDC, CC, Encyclopaedias, Dictionaries etc., are kept ready in the examination hall for consultation by the examinees. Blank cards/sheets are supplied to the students by the Department for doing the entries.

412 MLIS course

Since the beginning of MLIS course at Jadavpur University till 1995, there was a paper in the syllabus as Advanced Cataloguing (Practice). The paper was of 50 marks - 20 marks for cataloguing the problems of non-book materials following AACR2R and

another 20 marks were allotted for cataloguing the problems following CCC, 10 marks were for Class test and class works. From 1996-97 session, Cataloguing practice examination was discontinued from the Final examination. At present only 25 marks are there for cataloguing practice. Problems of cataloguing of non-book materials following AACR2R are discussed. Students submit the prepared entries alphabetically arranged and properly guided at the end of discussions as the BLIS students do. In MLIS only non-book materials are in the syllabus. It may be noted in this context that there was also a provision of teaching cataloguing of non-book materials following CCC (which includes a chapter where it discusses how to catalogue the non-book materials). Relevant rules used to be formulated in the class. A dissertation was also done in the department by one MLIS student on how to catalogue non-book materials following CCC model. However, the method of teaching the cataloguing practice is same as at BLIS as said earlier.

4121 General decisions

Some general decisions are taken after thorough discussions, viz.,

(i) Main entry and added entry method discarded.

(ii) Alternative heading method is followed following description based unit card.

(iii) Descriptive part is to be accommodated in one para.

(iv) Tracing to be recorded after the description.

(v) GMD and SMD both to be recorded.

(vi) Subject heading to be done following Chain procedure but only the specific subject heading is to be made following Ranganathan's modification for the Dictionary Catalogue.

(vii) UDC medium edition is used for generating class numbers for deriving specific subject headings.

(viii) Unique Book number is to be created on the basis of the publication year of the item.

4122 Specific decisions

Some specific decisions regarding the descriptive part are also taken wherever necessary.

5 MERITS OF THIS METHOD

Students, those who are regular in the class are benefited very much. For the irregular students it becomes difficult to follow the class. Neither the teacher nor the students, therefore, can afford to miss classes.

Students get the opportunity to be familiar with the codes, SLSH, Classification schemes, as well as different reference tools which they need to handle to work out the entries.

As they submit all the entries worked out in the class throughout the session with guide cards properly arranged in Dictionary form following AACR2R as well as in Classified form following CCC, they form an idea of both the Inner forms of the catalogue.

Students get confidence in using all the tools including the codes they handle.

Teacher gets satisfaction when he finds his students take interest in the subject and in the class. What else a teacher can expect in these days of general absenteeism in the class?

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A PEEP INTO THE WILLIAM CAREY HISTORICAL LIBRARY OF SERAMPORE

*Juran Krishna Sarkhel**

Abstract

Presents a brief overview of the Willian Carey Historical Library of Serampore. Discusses the historical background of the organisation and development of this library. Highlights the major old and rare documents including the early Indian Imprints preserved in this library.

1 INTRODUCTION

Serampore is known as the "Cradle of Indian Printing". Printing of books started in serampore (Now in Hooghly District, West Bengal) from the first year of the Nineteenth century by the effort of Rev. Dr. William Carey. The year 1799 is a notable milestone in the march of Indian printing. It was marked by the event of the landing of a band of missionaries on the bank of the Ganges at Serampore under the leadership of Rev. Dr. William Carey. Carey formed a missionary settlement in Serampore with John Marshman and William Ward as his associates. Many books and periodicals on various subjects started publishing from the press of Carey through their combined efforts and perseverance. A missionary library was also established by Carey and his associates during that time and the activities of the library were extended with the establishment of Serampore College in 1818. The library acquired a comprehensive collection of early Indian imprints along with a good number of valuable works on different branches of knowledge. A need was felt to make a separate arrangement of the old and rare collection of the college library. Accordingly, the authority of the Serampore College founded the William Carey Historical Library of Serampore (hereafter will be referred as Carey Library) by setting aside the old collection. To understand the Carey Library, it is prerequisite to know the environment upon which the said library was developed. An attempt has been made in the following sections to furnish the historical background of the development of the Carey Library along with a brief overview of its collection.

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2 BIRTH OF SERAMPORE MISSION PRESS

Carey came here to propagate Christianity and soon after the settlement in Serampore he decided to bring out into print the Bengali version of the Bible and set up a printing press (known as Serampore Mission Press) for the purpose. It was from this press that his first Bengali version of the Bible was printed in 1801. Carey then decided upon bringing out translations of the Bible in all important languages of India. Another important event in the dawn of the Nineteenth century was the establishment of Fort William College for imparting knowledge of the Indian Languages to British civilians. The college authorities felt the need of publications in Indian languages without which instruction in these languages could not be properly imparted. Fort William College was the chief patron of Serampore Mission Press and this press brought out many books in print prescribed for the college. Of the Fort William College group of Writers Rev. Carey, Mrittyunjay Vidyalankar and Ramram Basu were the most remarkable. On the request of Lord Welesley, Carey joined the college as head of the department of Bengali and Sanskrit in 1807. It is to be noted here that the importance of the college remained by no means confined to the practical need of the rulers. This great institution also played a significant role in the creation of Bengali prose literature as well as in its production in printed form. Serampore Mission Press also played a significant role in respect of the printing of books required by the college.

Serampore Mission Press seems to have performed almost a prodigious work by bringing out many books in different Indian languages in a short span of 32 years between 1800 and 1832. The publications from this press not only included translations of the Bible in the native tongues but also a large number of original works. It brought out some text books in Bengali prose which was then just evolving and also some vocabularies and lexicons and grammars, the value of which can not be overestimated. The printing of Carey's "Dictionary of the Bengali Language" (2 vols.) in 1825 from Serampore Mission Press is an epoch-making event in the history of Bengali dictionary. The contribution of Serampore Mission Press to the cause of Indian printing is really immeasurable. It not only initiated but also standardised printing in most of the modern Indian languages. Though Carey could not make much headway in winning over the people into the fold of Christianity by printing the Bengali translation of the Bible and by distributing free copies, it is certain that he won many a Bengalee heart by publishing the two most popular national epics namely the Ramayana and the Mahabharat and by making them available at every Bengalee home.

3 RAJA RAMMOHAN ROY AND SERAMPORE MISSION

A survey of the socio-economic and socio-religious conditions of India during the later part of the 18th century leaves the impression that the whole country was in a very

dismal condition. But this period of darkness was followed by a bright dawn in the early 19th century which saw the birth of modern India and the commencement of the series of movements having far reaching consequence. It has been accepted that Raja Rammohan Roy inaugurated this century of reform and regeneration.

Before 1815, probably Rammohan had known William Carey as the Professor of Bengali and Sanskrit in the Fort William College, because his life long friend John Digby was one of Carey's students at the college. It is also presumed that he might have been brought in contact with Carey at that time. After settling in Calcutta he came in closer terms with the missionaries through William Yates, a young missionary of Serampore. It is observed from the old records of the Serampore College that Rammohan Roy participated in several meetings on subjects relating to religion with serampore missionaries. These meetings were of much help to Rammohan to understand the doctorine of Christianity. Probably his visit to Serampore was an outcome of these meetings. He extended his warm support to the missionaries in organising their library. He was one of the earliest respondents to their appeal for liberal gifts to the library which had the privilege of getting the entire set of his publications (2nd report of Serampore College, 1821; p.9).

4 EMERGENCE OF CARRY LIBRARY

The Serampore Mission was organised by Carey, Marshman and Ward in 1800 and the missionary library was established under the supervision of John Fountain. The extension work of this library began in 1818 with the establishment of the Serampore College. Since then the missionary library became an integral part of the college. The library began to enrich with the collection of Bengali prose literature since 1815 when Raja Rammohan Roy, the path-maker of modern India, appeared in the field with a powerful pen to exploit the forgotten and hitherto unexplored Upanishads. This library was also enriched by having had a good number of collection from the Saint Paul's Cathedral. At that time the Cathedral Library was abolished. The college authority founded the William Carey Historical Library of Serampore by setting aside the old collection of the library. Subsequently the college was closed owing to financial constraints and the library could not purchase any books during that time. The college started its functioning again in 1910. The Carey Library, organised and developed as a part of the historic Serampore College Library, now comprises some 10,000 volumes of valuable works on different branches of knowledge, ranging in date from the second decade of the Sixteenth Century to the end of the Nineteenth, and representing no less than one hundred languages and dialects, many of them oriental.

5 OLD AND RARE COLLECTION OF CAREY LIBRARY

Almost all books printed in India upto 1870 were collected by the library. A catalogue of the library collection was prepared in collaboration with Mr. Trafford, the then Principal of the college.

The oldest book in the collection of the Carey Library is *"Palterium"* published in 1516. There is also an early printed book of India entitled *"Susamacharchatwstay"* written in Tamil language and published from Tranquebar in 1714. The Bible printed in Paris in 1549 is also available here. *"An account of the life and times of Christ"* written by Clergymen Jerome Xavier is a remarkable collection of the Carey Library. This manuscript is written in French language and the presumptive date of its composition might be the last part of the kingdom of Akbar or the last part of Jahangir. The first book written in English relating to the religious life of Confucius (1809) is in the collection of the Carey Library. The library possesses a good number of books on Science published during 18th and 19th centuries. The remarkable titles on Botany in the collection of the library are *"Plantae Assiatical Raviors"* (1830) and *"Flora Indica"* written by Roxburgh. Besides, the pamphlets and manuscripts written in Sanskrit, Bengali and other languages have become a treasure in the Carey Library.

The most attractive part of the Carey Library is the collection of periodicals published during the cradle period of Indian printing. William Carey and his associates were the exponents of journalism. They published *"Digdarshan"* in 1818. The first Bengali newspaper entitled *"Samachardarpan"* was printed and published that time from Serampore Mission Press and preserved in the Carey Library.

In 30th April of 1818, Carey, Marshman and Ward published a monthly magazine entitled *"Friend of India"*. In June 1920, Marshman arranged to publish it a quarterly. In 1827, the publication of this magazine was closed. The weekly *"Friend of India"* was published again from 1st January, 1935. Then in 1876 a journalist named Robert Night started publishing this magazine from Calcutta. Night was also the founder of *"The Statesman"*. From 1923, these two magazines, after merging, being entitled *"The Statesman"* had been publishing.

There are also many periodicals on the subjects like state affairs, trade, public opinion, economic and social conditions of India. The festivals of Hindu and Muslim, temples, mosques, proclamation of Christianity, Chastity and infanticide are vividly depicted in these periodicals. There also a few periodicals on education in the Carey Library.

It is interesting to note that the paper used in the production of a good number of books still preserved in the Carey Library was manufactured in Serampore Printing House and printed in the press established by William Carey. It appears that the insects could not damage the paper manufactured in the Serampore Printing House at that time as it was

mixed with arsenic to some extent, and as a result books are still lasting in a healthy condition. Many manuscripts written on the hand made paper manufactured at the Serampore Printing House are also preserved in the Carey Library.

Carey Library is, at present, air-conditioned having a spacious reading room. The research workers coming from outside are required to have prior permission from the college authority to use the library. Those who are interested on history, languages, religion of the 18th and 19th centuries India generally come to the library.

There is also a museum adjacent to the Carey Library, equipped with many early books, photographs, and furniture used by William Carey. The Deed of Grant (23rd February, 1827) presented by King Frederic of Denmark is very remarkable among other preserved thing. There are also many distinguished things such as - a medicine box, table and feather-pen used by Carey and an 'Arrow' of stone age (presented to Serampore College by the Queen of Denmark). Other valuable things of the museum include two photographs of Serampore (1810 and middle part of 19th century) and the first list of the members of Serampore Mission.

6 BENGALI BOOKS IN CAREY LIBRARY

By going through the records, it is presumed that almost all the books printed during 19th century were collected in the Carey Library. But many of them is no longer preserved. The first book having some Bengali characters and printed in this country is the *"Grammar of the Bengali Language"*, written by N B Halhed (1778) and this book is preserved in the Carey Library. Another important collection is the most outstanding printed book next to Halhed's Grammar is H P Forster's *"A vocabulary in two parts"*. It is the first dictionary in the bengali language printed in this country in the year 1802. Other early Bengali books preserved in the Carey Library include Law, Religion, Bengali Prose Literature, Bengali Dictionaries and Grammar, History, Medicine, etc. A large collection of Bengali books and manuscripts written by Raja Rammohan Roy is another important feature of the Carey Library. It is interesting to note that the first Bengali Encyclopedia entitled *"Vidyaharabali"* written by William Carey's son Felix Carey was not found in the Carey Library. Many Bengali Prose literature produced by the Serampore Mission Press during that time are not available in the Carey Library.

7 CONCLUSION

Serampore College is considered to be the first modern university in India. Its main interest was in Christian Theology. Even now, Serampore college grants degrees in The-

ology, but for those who receive an education in Arts and Science at this college, degrees are granted by the University of Calcutta. The performance of this college was excellent and one of the reasons for its success was the library of the college, its collection and services. The college in its 180 years of existence has many adversities, and as a result many old and rare documents were lost. This library is still considered by many scholars and educationists as part of India's National Heritage. The research-workers associated with Politics, Sociology, Economic and Social History of 18th and 19th centuries in India, will get many valuable documents from this library.

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রঙ্গনাথনের সূচীকরণের উপসূত্রসমূহ

পিনাকীনাথ মুখোপাধ্যায় *

১ ভূমিকা

বিশিষ্ট ভারতীয় গ্রন্থাগার বিজ্ঞানী ডঃ শিয়ালী রামামৃত রঙ্গনাথন, গ্রন্থগার ও তথ্যকেন্দ্রের বিভিন্ন কার্যাবলীর ভিত্তি হিসেবে বিভিন্ন স্তরের জন্য বিভিন্ন নীতি প্রণয়ন করেছেন এবং তাদের বিভিন্ন নাম প্রদান করেছেন। যেমন-গ্রন্থাগার ও তথ্য বিজ্ঞান এবং পরিষেবার সামগ্রিকতার বিচারে "গ্রন্থাগার বিজ্ঞানের পঞ্চসূত্র (Five Laws of Library Science)"। এই পঞ্চসূত্র গ্রন্থাগার ও তথ্য বিজ্ঞান এবং পরিষেবার মৌলিক নীতি। এই মৌলিক নীতির ওপর ভিত্তি করে বিভিন্ন কার্যাবলীর জন্য বিভিন্ন নীতি প্রণয়ন করেছেন। যেমন-সূচীকরণের উপসূত্রসমূহ (Canons of Cataloguing), বর্গীকরণের উপসূত্রসমূহ (Canons of Classification), ইত্যাদি। আবার, পরবর্তী স্তরে সূচীকরণের বর্ণানুক্রম নীতি (Alphabetization in Cataloguing), বর্গীকরণের প্রভাগীয় ক্রমের নীতি (Facet Sequence in Classification), প্রভৃতি। সবকটি নীতি-উপসূত্র-সূত্র এক একটি নীতি, তবে তা ভিন্ন ভিন্ন ক্ষেত্রের ও স্তরের উপযোগী। প্রত্যেকটি নীতির ভিন্ন ভিন্ন নাম ও প্রত্যেক স্তরের জন্য ভিন্ন ভিন্ন প্রয়োগক্ষেত্র নির্ধারণ করে দিয়েছেন। যেমন-মূল বিষয়ের জন্য সূত্র (Laws), দ্বিতীয় স্তরের জন্য উপসূত্র (Canons) এবং পরবর্তী বিভাজিত স্তরের ক্ষেত্রে নীতি (Principles)। এই ত্রিস্তরীয় বা বিভিন্ন স্তরীয় নীতি-উপসূত্র-সূত্র সমূহ সামগ্রিক ও সমষ্টিগত ভাবে গ্রন্থাগার ও তথ্যবিজ্ঞান এবং পরিষেবার নীতিতন্ত্র (System of Principles) হিসেবে পরিগণিত হয়েছে। এরা প্রত্যেকে নির্দিষ্ট ক্ষেত্রের ও স্তরের জন্য প্রয়োগযোগ্য এবং সামগ্রিকতার বিচারে একে অপরের পরিপূরক, পরস্পরের প্রতি বিরোধীতাহীন। এছাড়া ডঃ রঙ্গ নাথন বলেছেন যে, যদি কখনও এমন অবস্থার সৃষ্টি হয় যে, আপাতদৃষ্টিতে নীতিগুলির মধ্যে পারস্পরিক দ্বন্দ্ব প্রতীয়মান, তখন দ্বন্দ্বরত নীতিগুলির মধ্যে যে নির্দিষ্ট নীতি সব থেকে বেশি পরিমাণে গ্রন্থাগার বিজ্ঞানের পঞ্চসূত্রকে অনুসরণ বা চরিতার্থ করছে, তারই প্রাধান্য স্বীকার করে নিতে হবে।

মানুষ তার নিজের ও সামাজিক প্রয়োজনেই 'গ্রন্থাগার ও তথ্যকেন্দ্র' প্রতিষ্ঠা ও ব্যবহার করে। তার স্মৃতির দুর্বলতা কাটিয়ে ওঠার জন্যই গ্রন্থাগার ও তথ্যকেন্দ্রের 'জ্ঞান-বিষয়-তথ্য' সম্বলিত মাধ্যমগুলি প্রতিনিয়ত ব্যবহার করে। এই ব্যবহার ফলপ্রসূ করার জন্য গ্রন্থাগার ও তথ্যকেন্দ্রে মাধ্যমগুলিকে সংগ্রহ, সংরক্ষণ-পরিচর্যা করে। ফলে, ব্যক্তিগত ও সামাজিক জ্ঞান সম্পদের প্রসারও বৃদ্ধি ঘটে। সুতরাং একথা বলা যায় যে, ক্রমবর্দ্ধমান ও সতত পরিবর্তনশীল সামাজিক অবস্থায় (পঞ্চমসূত্র) গ্রন্থাগার ও তথ্যকেন্দ্রে 'জ্ঞান-বিষয়-তথ্য' সম্বলিত মাধ্যমগুলিকে ব্যবহারের জন্যই সঞ্চয় করা হয়ে থাকে (প্রথম সূত্র)। এমনভাবে সঞ্চিত ও সংরক্ষিত থাকে, যার ফলে খুব অল্পসময়ে (চতুর্থসূত্র) প্রত্যেক ব্যবহারকারী তাঁর বাঞ্ছিত ও কাঙ্খিত 'জ্ঞান-বিষয়-তথ্য' সম্বলিত মাধ্যমটিকে পেয়ে যায় (দ্বিতীয় সূত্র) এবং প্রত্যেকটি মাধ্যমই ব্যবহৃত হবার সুযোগ পেয়ে যায় (তৃতীয় সূত্র)। এটা হল মৌলিক নীতি সমূহের প্রয়োগের দিক। যার ওপর ভিত্তি করে গ্রন্থাগার ও তথ্যকেন্দ্রের সব কার্যাবলীর উদ্দেশ্য এবং ব্যবহারিক রূপরেখা নির্ণয় করা যায়। এবার আমরা এই প্রেক্ষা পটে ডঃ রঙ্গনাথন বর্ণিত সূচীকরণের উপসূত্রগুলির (Canons of Cataloguing) প্রয়োগ যোগ্যতা আলোচনা করব।

২ সূচী-সূচীকরণ-সূচীকারক

সূচী (Catalogue) হ'ল একটি নির্দিষ্ট গ্রন্থাগারের 'জ্ঞান-বিষয়-তথ্য' সম্বলিত মাধ্যমগুলির তালিকা। এই তালিকাটি একটি নির্দিষ্ট পদ্ধতি মেনে তৈরী করা হয় এবং ধারবাহিক ভাবে নিয়ন্ত্রণ ও পরিচর্যা করা হয়। জ্ঞান অর্জ্জনের জন্য, তথ্য আহরণের

* বিভাগীয় প্রধান, গ্রন্থাগার ও তথ্য বিজ্ঞান বিভাগ, রবীন্দ্রভারতী বিশ্ববিদ্যালয়, কলিকাতা

জন্য এবং চিত্তবিনোদনের জন্য। গ্রন্থাগারে আগত ব্যবহারকারীর অথবা অনাগত ব্যবহারকারীর আবেদন এই তালিকার দ্বারা চরিতার্থ করা হয়। গ্রন্থাগারে সঞ্চিত 'জ্ঞান-বিষয়-তথ্য' সম্বলিত মাধ্যমগুলির আকৃতিগত ও প্রকৃতিগত বৈশিষ্ট্য সূচীতে এমনভাবে নথীভূক্ত করা হয় যে, যে কোন স্থান থেকে যে কোন সময়ে ব্যবহারকারীরা ঐ মাধ্যমগুলির অন্বেষণ, পরীক্ষণ ও নির্বাচন করতে পারে এবং চূড়ান্ত পর্যায়ে তাদের (মাধ্যমগুলির) অবস্থান নির্ণয় করতে পারে। সূচী তৈরী করা, ধারাবাহিক ভাবে নিয়ন্ত্রণ ও পরিচর্যার প্রক্রিয়া হ'ল সূচীকরণ। যে ব্যক্তি ঐ কাজ করেন তাঁর নাম সূচীকারক (Cataloguer)।

অতএব, দেখা যাচ্ছে যে, জ্ঞান-বিষয়-তথ্য সম্বলিত মাধ্যমগুলির প্রত্যেকটির আকৃতিগত বৈশিষ্ট্য ও প্রকৃতিগত বৈশিষ্ট্য সূচীতে নথীবদ্ধ করতে হবে। এর প্রতিটি মাধ্যমের আকৃতিগত ও প্রকৃতিগত চরিত্রায়ণ (Characterization) বিশ্লেষণ (Analysis) করে যে যে উপাদানগুলি (Elements) পাওয়া যাবে তাদের সম্যক্ পরিচয় সূচীতে নথীবদ্ধ করতে হবে। এরপর ব্যবহারকারীরা কোন সময়ে কিভাবে মাধ্যমগুলিকে পেতে চাইছেন, অন্বেষণের জন্য কি কি উপাদান প্রয়োগ করছেন, পরীক্ষণের জন্য কি কি বৈশিষ্ট্য বিচার করছেন সেগুলি জানা দরকার। মাধ্যমগুলির বৈশিষ্ট্য ও ব্যবহারকারীর আবেদন, এই দু'য়ের মেল বন্ধন ঘটানোই হ'ল সূচীর কাজ। এখন দেখা যাক্ রঙ্গনাথনের উপসূত্রগুলি কিভাবে সহায়তা করে।

৩ সূচীকরণের উপসূত্র

ডঃ রঙ্গনাথন যে যে উপসূত্রগুলি উল্লেখ করেছেন, সেগুলি হ'ল :

১) নির্ণয় যোগ্যতার উপসূত্র (Canon of Ascertainability)
২) প্রাক্‌শক্তির উপসূত্র (Canon of Prepotence)
৩) স্বতন্ত্রীকরণের উপসূত্র (Canon of Individualisation)
৪) বাঞ্ছিত শীর্ষকের উপসূত্র (Canon of Sought Heading)
৫) প্রাসঙ্গিকতার উপসূত্র (Canon of Context)
৬) স্থায়িত্বের উপসূত্র (Canon of Permanence)
৭) প্রচলিতির উপসূত্র (Canon of Currency)
৮) সঙ্গতি বিধানের উপসূত্র (Canon of Consistency)
৯) তলবীমানের উপসূত্র (Canon of Recall Value)

ডঃ রঙ্গনাথন এই উপসূত্রগুলি বারবার পরীক্ষা-নিরীক্ষা করেছেন, সংস্কার করেছেন, পরিবর্তন ঘটিয়েছেন এবং জ্ঞান-বিজ্ঞানের অন্যান্য শাখা থেকে নতুন নীতি নিয়ে সূচীকরণের ক্ষেত্রে প্রয়োগ করেছেন।

৪ উপসূত্রের উদ্দেশ্য

ডঃ রঙ্গনাথন বর্ণিত সূচীকরণের উপসূত্রগুলির উদ্দেশ্য হ'ল

ক) নতুন সূচীকরণ সংহিতা (Cataloguing Code) প্রণয়নে সাহায্য করা,
খ) প্রচলিত সূচীকরণ সংহিতার সংস্কারে সাহায্য করা,
গ) প্রচলিত সূচীকরণ সংহিতার নতুন বিধি (Rules) প্রণয়নে সাহায্য করা,
ঘ) সংহিতায় বর্ণিত বিধিগুলির যথার্থ ব্যাখ্যা প্রদানে সাহায্য করা,

ঙ) সংহিতায় বর্ণিত বিধিগুলির যথাযোগ্য প্রয়োগে সাহায্য করা,

চ) সূচীকরণের প্রাত্যহিক কাজে সাহায্য করা,

ছ) একাধিক সংহিতাগুলির তুলনামূলক আলোচনায় সাহায্য করা,

জ) একাধিক বিধিগুলির তুলনামূলক আলোচনায় সাহায্য করা,

ঝ) একই পরিপ্রেক্ষিতে প্রয়োগযোগ্য বিধিগুলির দ্বন্দ্ব অবসানে সাহায্য করা।

৫ নির্ণয় যোগ্যতার উপসূত্র (Canon of Ascertainability)

এই উপসূত্রের মূল বক্তব্য বা নির্দেশ হ'ল, যে বই বা অবই'এর সূচী তৈরী করা হবে, কেবলমাত্র সেই বইটির আখ্যাপত্র ও তদ্‌সংলগ্ন পাতা থেকে বা অবই এর ক্ষেত্রে পরিচয় জ্ঞাপন স্থান থেকে সূচীর তথ্য সংগ্রহ করতে হবে। বাইরের কোন উৎস থেকে তথ্য সংগ্রহ করা যাবে না বা উচিত নয়। আখ্যাপত্রে বা পরিচয় জ্ঞাপন স্থান থেকে সংগৃহীত তথ্যের ভিত্তিতে সূচী সংলেখের (Entry) বিভিন্ন বিভাগের (Section) উপাদান (Element) নির্ণয় করতে হবে। এর জন্য অবশ্য প্রয়োজন হয়ে পড়ে নির্দিষ্টমানের আখ্যাপত্রের বা নির্দিষ্টমানের পরিচয় প্রদানকারী স্থানের। যেটা ঐ সামগ্রীর মধ্যেই থাকবে।

সাধারণত : বইয়ের সংলেখ তৈরীর জন্য যে যে তথ্যের দরকার হয় তা হল :

১। অগ্রগামী বিভাগ (Leading Section) এবং শিরোনাম বিভাগ (Heading Section)। এক্ষেত্রে বিষয় নাম বা বর্গাঙ্ক (Class Number), লেখক, প্রতিষ্ঠান, আখ্যা (Title) বা একরূপী আখ্যা (Uniform Title), প্রভৃতি ব্যবহার করা হয়। এছাড়া, নির্দেশিকার (Reference) জন্যও সংলেখ তৈরী করা হতে পারে।

২। বর্ণনা (Description)। বর্তমানে আন্তর্জাতিক মান (ISBDs) অনুসারে গঠন করা হয়। সেগুলি আবার বিভিন্ন অঞ্চলে (Area) বিভক্ত। যেমন —

ক) আখ্যা ও দায়-দায়িত্বের অঞ্চল (Title and Statement of Responsibility area)

খ) সংস্করণ অঞ্চল Edition area)

গ) উপকরণ ও শ্রেণীগত রূপ অঞ্চল Material and type of publication area)

ঘ) প্রকাশনা ও পরিবেশনা অঞ্চল (Publication and distribution area)

ঙ) আকৃতিগত বিবরণ অঞ্চল (Physical description area)

চ) গ্রন্থমালা অঞ্চল (Series area)

ছ) টীকা অঞ্চল (Notes area)

জ) প্রামাণ্য সংখ্যা ও প্রাপ্যতার শর্ত অঞ্চল (Standard Number and Terms of Availability area)

এছাড়া, গ্রন্থাগারে নিজস্ব সিদ্ধান্তের ওপর ভিত্তি করে মুখ্য সংলেখ ও সহায়ক সংলেখ বা অতিরিক্ত শিরোনাম যুক্ত বিবরণ (Alternate Heading) সংলেখ প্রভৃতি নিয়ন্ত্রণের জন্য বিশেষ সংলেখ। যেমন —

৩। সংলেখ সমূহের বিবরণী (Tracing)।

৫.১ উৎস বৈচিত্র্য ও সীমাবদ্ধতা :

ঐ সকল বিষয় সংক্রান্ত সব সময়ে সব বই বা অ-বই সামগ্রী থেকে পাওয়া যায় তা নিশ্চিত করে বলা যায় না। এছাড়া ভিন্ন ভিন্ন অ-বই সমাগ্রীর জন্য ভিন্ন ভিন্ন তথ্যের দরকার হয়। তাদের উৎসগুলিও বৈচিত্র্যপূর্ণ। প্রয়োজন হয়ে পড়ে প্রত্যেকটি সামগ্রীর

নির্দিষ্ট মানের তথ্য উৎসের এবং সামগ্রীকতার বিচারে সংলেখের জন্য সাধারণ তথ্য উৎসের। অগ্রগামী বিভাগে যখন বর্গাঙ্ক ব্যবহার করার দরকার হয়, তখন আখ্যাপত্র থেকে বা পরিচয় জ্ঞাপন স্থান থেকে বর্গাঙ্ক পাওয়া যায় না, বর্গীকরণ তালিকা (Classification Schedule) থেকে বর্গাঙ্ক তৈরী করা হয়। আবার, বিষয় নাম কোন কোন ক্ষেত্রে অভিব্যক্তিপূর্ণ আখ্যা (Expressive Title) থেকে নির্ণয় করা সম্ভব হলেও সবক্ষেত্রে যে সঠিক ও পূর্ণাঙ্গ হবে তা নিশ্চিত করে বলা যায় না। বিশেষ করে রূপক / কল্পিতআখ্যা (Fanciful Title) এবং একরূপী আখ্যা (Uniform Title), এর ক্ষেত্রে কখনো বিষয়টি চূড়ান্ত ভাবে নির্ণয় করা যায় না। নির্দেশিকার (Reference) জন্য অব্যবহার্য শিরোনাম নির্ণয় করা সম্ভব নয়। বর্ণনার জন্য সাধারণ ভাবে যে সব তথ্য পাওয়া যায় তার দ্বারা টীকা (Note) তৈরীর জন্য প্রয়োজনীয় তথ্য পাওয়া যায় না। সংলেখ সমূহের বিবরণীর (Tracing) জন্য গ্রন্থাগারের নিজস্ব সিদ্ধান্তের ওপর নির্ভর করতে হয়, তবে সে তথ্যগুলি বর্ণনার ওপর নির্ভরশীল। প্রশ্ন হচ্ছে যে, বইয়ের বিভিন্ন অংশে বিভিন্ন তথ্য পাওয়া যায়, আবার একই তথ্য বিভিন্ন রূপে মুদ্রিত থাকে। বইয়ের মধ্যেই অনেকগুলি উৎস আছে, যেমন — মলাট, পুট (Spine), আখ্যাপত্র, পরিশিষ্ট, নির্ঘন্ট, ইত্যাদি। এর মধ্যে সর্বাধিক গুরুত্বপূর্ণ হচ্ছে আখ্যাপত্র। সেই আখ্যা পত্রকেই প্রধান তথ্য উৎস (Chief Source of Information) হিসাবে বিবেচনা করতে হবে। অ-বই সামগ্রীর ক্ষেত্রে, ভিন্ন ভিন্ন সামগ্রীর ভিন্ন ভিন্ন প্রধান তথ্য উৎস আছে। এ.এ.সি. আর (সর্বাধুনিক সংস্করণ) - তে সুপষ্ট ভাবে উল্লেখ করা আছে। ডঃ রঙ্গনাথনও এই সীমাবদ্ধতার কথা স্বীকার করেছেন এবং সমস্যা সমাধানের দিক নির্দেশ করেছেন।

৫.২ সমাধানের পথ

সমস্যাগুলি অনেক ক্ষেত্রেই সমাধান করা যায়, যদি প্রাক্ প্রকাশনা সূচী তৈরী করা যায়। ডঃ রঙ্গনাথন যাকে প্রাক্ প্রকাশন সূচীকরণ (Pre-natal Cataloguing) বলে উল্লেখ করেছেন। বর্তমানে বিশ্বের প্রায় সকল দেশের প্রকাশনা ব্যবস্থায় এর প্রয়োগ প্রাক্ প্রকাশনা সূচীকরণ [Cataloguing in Publication (C I P)], এর মাধ্যমে পরিলক্ষিত। আখ্যাপত্রের পিছন দিকের পাতায় সূচীসংলেখ মুদ্রিত থাকে। এছাড়া প্রকাশকদের বইয়ের তালিকা বিতরণের সময় সূচীসংলেখ সমৃদ্ধ তালিকা বিতরণ করা যেতে পারে। প্রকাশনার সঙ্গে সঙ্গেই যদি বিভিন্ন ধরনের গ্রন্থপঞ্জী প্রকাশিত হয়, তবে এই সমস্যার সমাধান হতে পারে।

৫.৩ সূচীকরণে উপসূত্রটির উপযোগিতা

এই উপসূত্রটির উপযোগিতা অপরিসীম। বিশেষ করে সূচী তৈরীর সময় তথ্য পাওয়া না গেলেও বাইরের উৎসের জন্য সময় ব্যয় করতে হয় না, প্রাপ্ত তথ্যের ভিত্তিতেই সূচী তৈরী করা যায়। সূচীকরণের ব্যবহারিক কাজগুলির ক্ষেত্রে — নির্বাচন (Choice), রূপনির্ধারণ (Rendering)' এর কাজে প্রত্যক্ষ সহায়তা পাওয়া যায়। সূচী সঙ্গতিপূর্ণ এবং বিভিন্ন সূচী সমতাপূর্ণ হয়। সূচীকারকের ব্যক্তিগত পছন্দ-অপছন্দের ওপর নির্ভরশীল সূচী তৈরী হয় না। কম সময়ে সূচী তৈরী করা যায়। বিভিন্ন সংলেখের মধ্যে সঙ্গতি আনা সম্ভব হয়।

৬ প্রাক্ শক্তির উপসূত্র (Canon of Prepotence)

এই উপসূত্রের মূল বক্তব্য বা নির্দেশ হল : বিভিন্ন সংলেখের মধ্যে নির্দিষ্ট একটি সংলেখের অবস্থান তার শক্তি অনুযায়ী নির্ণয় করতে হবে এবং সংলেখের অন্তর্গত উপাদানগুলির ক্রমবিন্যাস তাদের পারস্পরিক শক্তি অনুযায়ী নির্ণয় করতে হবে। এই শক্তি হ'ল 'জ্ঞান-বিষয়-তথ্য' সম্বলিত মাধ্যমগুলির চূড়ান্ত চরিত্রায়ণ (Absolute Characterization) করে যে উপাদানগুলি পাওয়া যায়, তাদের ঐ মাধ্যমটিকে ব্যবহারকরীর দ্বারা চিহ্নিত করণ, পরীক্ষণ ও নির্বাচনে কে কতটা সাহায্য করতে পারে, তার উপর নির্ভরশীল। উপাদানগুলির মাধ্যমটিকে চিনিয়ে দেওয়ার ক্ষমতাটাই হল তাদের শক্তি। সর্বাধিক গুরুত্ব অগ্রগামী বিভাগের (Leading Section) জন্য দিতে হবে এবং পরবর্তী ক্ষেত্রের তথ্যের জন্য শক্তি অনুযায়ী ক্রমান্বয়ে গুরুত্ব দিতে হবে।

ডঃ রঙ্গনাথন এই নীতিটি রাশি বিজ্ঞানের (Statistics) সাংখ্যিক বিশ্লেষণের (Numerical Analysis) বহুরূপতা (Numerousness) সংক্রান্ত নীতি থেকে গ্রহণ করে সূচীর ক্ষেত্রে প্রয়োগ করেছেন এবং এই নীতির প্রয়োগক্ষেত্র শুধু ব্যক্তি নামের (Personal Name) জন্য সীমাবদ্ধ রেখেছেন।

আমরা সংলেখ তৈরীর জন্য আখ্যাপত্র থেকে বিভিন্ন তথ্য সংগ্রহ করি। সংগৃহীত তথ্যগুলির মধ্যে ক্ষমতার বিচারে অপ্রয়োজনীয় তথ্য বা তথ্যাংশ বাদ দিই। প্রয়োজনীয় তথ্যগুলির গুরুত্ব বিচার করে রূপনির্ধারণ করি। এই সময়েই উপাদান গুলির শক্তির বিচার করে ক্রম নির্ধারণ করি এবং সূচীতে নথীবদ্ধ করি। বর্গীকৃত সূচীর ক্ষেত্রে সর্বাধিক গুরুত্ব বর্গাঙ্ককে দিই এবং পরবর্তী পর্যায়ে শিরোনাম, আখ্যা, প্রভৃতিকে দিই। আভিধানিক সূচীর ক্ষেত্রে শিরোনামকে অধিক গুরুত্ব দিই এবং শিরোনামের মধ্যে সংলেখের মুখ্য / প্রথম (Entry Element) উপাদানটিকে সর্বাধিক গুরুত্ব দিই। তারপর অন্যান্য বিভাগ / অংশ, আখ্যা, সংস্করণ, প্রভৃতিকে দিই। প্রত্যেকটি উপাদান এবং তার অন্তর্গত বিভাগ / অংশগুলিকে তুলনামূলক শক্তির বিচারে নির্ণয় করি এবং সূচীতে নথীবদ্ধ করি। দেখা যায় যে, সূচী সংলেখের বামদিকের উপরের ক্ষেত্রেকে সর্বাধিক গুরুত্ব দিয়ে ক্রমপর্যায়ে শক্তির তীব্রতা হ্রাসের তারতম্য অনুযায়ী ডানদিকে এবং উপর থেকে নীচে নথীবদ্ধ করতে করতে এগিয়ে যাই। সংলেখ সম্পূর্ণ হয়।

৬.১ সমস্যা

সমস্যা হ'ল ব্যক্তি নামের বিভিন্ন অংশের মধ্যে কোন অংশটি অনুসন্ধান, চিহ্নিত করণ, পরীক্ষণ, প্রভৃতির ক্ষেত্রে সর্বাধিক গুরুত্বপূর্ণ তা বিচারের। কেউ রবীন্দ্রনাথ ঠাকুর কে — বিশ্বকবি রবীন্দ্রনাথ ঠাকুর, কবিগুরু রবীন্দ্রনাথ ঠাকুর, রবীন্দ্রনাথ ঠাকুর, রবীন্দ্রনাথ, রবিবাবু, প্রভৃতি বিভিন্নভাবে চেনেন বা উল্লেখ করে থাকেন। বিভিন্ন ভাষার ক্ষেত্রে, বিভিন্ন দেশজ সাংস্কৃতিক প্রথা অনুযায়ী বিভিন্ন ব্যক্তিকে বিভিন্নভাবে চেনানোর প্রথা আছে। সেই দেশের বা অঞ্চলের ভাষা-সাংস্কৃতিক ইতিহাসের ওপর এটা নির্ভরশীল। দেশ, কাল, ভাষা, সংস্কৃতি ইত্যাদি অনুযায়ী ব্যক্তিকে চিনে নেয়ার বিভিন্ন প্রথা আছে। এছাড়া একই ব্যক্তির বিভিন্ন নাম, বিভিন্ন রূপের নাম বিভিন্ন প্রকাশনায় থাকতে পারে।

৬.২ সমাধানের পথ

এক্ষেত্রে ডঃ রঙ্গনাথন নামের বহুরূপতা (Numerousness) তত্ত্বের প্রয়োগ ঘটিয়ে সমাধানের পথ দেখিয়েছেন। ব্যক্তি নামের ক্ষেত্রে যে যে অংশ পাওয়া যায়, সেগুলি হ'ল — প্রদত্ত উপাধি, ব্যক্তিগত নাম, ব্যক্তিগত নামের মধ্যাংশ, পারিবারিক নাম, ইত্যাদি। এক্ষেত্রে প্রদত্ত উপাধিকে অপ্রয়োজনীয় অংশ হিসাবে বাদ দেওয়া যেতে পারে। তবে, প্রদত্ত উপাধি যদি জনপ্রিয় এবং প্রচলিত থাকে অধিকাংশ প্রকাশনায় সেই নামের উল্লেখ থাকে, তখন ভিন্ন সিদ্ধান্ত গ্রহণ করার প্রয়োজন হয়। তবে, নিরীক্ষা করে দেখা যায় যে, সাধারণতঃ ইউরোপীয় নামের ক্ষেত্রে পারিবারিক নামের বহুরূপতা বিদ্যমান। সাধারণ বাঙালী নামের ক্ষেত্রে ব্যক্তিগত নামের বহুরূপতা বিদ্যমান। যে অংশের বহুরূপতা আছে, তার শক্তি বেশী। সেটি একক এবং অদ্বিতীয় (Unique)। অদ্বিতীয়তা যার বেশী, তাকে চিনে নেয়া অনেক সহজ। অনেকটা কৃষ্ণের অষ্টোত্তর শতনামের মতন। ব্যক্তিগত নামের বহুরূপতা আছে, সুতরাং সাধারণ বাঙালী নামের ক্ষেত্রে ব্যক্তিগত নামই সংলেখের প্রথম অংশ হিসেবে পরিগণিত হবে। এই অংশের রাশি বিজ্ঞান ভিত্তিক প্রাধান্য বেশী। পরিসাংখ্যিক বিশ্লেষণ অনুযায়ী যে যে ক্ষেত্রে যে যে অংশের বহুরূপতা পাওয়া যাবে, সেটাকেই সংলেখের প্রথম অংশ হিসেবে নথীবদ্ধ করতে হবে। রঙ্গনাথন ১৯৫১ সালে ইউনেস্কোর একটি প্রকল্পের আওতায় বিশ্বের যাবতীয় নাম সংক্রান্ত বিষয় নিরীক্ষা করে এই সিদ্ধান্তে উপনীত হ'ন এবং সূচীকরণে এর প্রয়োগ করেন।

৬.৩ সূচীকরণে উপসূত্রটির উপযোগিতা

এই উপসূত্র প্রয়োগের ফলে সূচীকারকের সিদ্ধান্ত নেয়া সহজতর হবে। সংলেখের প্রত্যেকটি উপাদানের ক্রম নির্ধারণ সহজে করা যাবে। উপাদানগুলির অন্তর্গত তথ্যাংশের ক্রমবিন্যাস সহজতর হবে। সূচীর রূপের মধ্যে সমতা আনা সম্ভব হবে। সূচীকরণ প্রক্রিয়াটি সঙ্গতিপূর্ণ হবে। সংলেখগুলির অবস্থান নির্ণয় সহজতর হবে। বিন্যাস সংক্রান্ত বিধি প্রণয়ন করা সম্ভব হবে।

বর্তমানে আন্তর্জাতিক প্রামাণ্য পঞ্জীয় বিবরণ গুলিতে (ISBDs) এই উপসূত্রের প্রতিফলন লক্ষ্যণীয় ও দৃষ্টান্ত স্বরূপ।

নির্দিষ্টক্রমে বিন্যাস করার ফলে প্রত্যেকটি মাধ্যমকে ব্যবহারকারীদের চিনে নেয়ার ক্ষেত্রে যদৃচ্ছ অভিগমণের (Random Access) সুযোগ দেয়া যাবে এবং সম্পর্কযুক্ত মাধ্যমগুলির মধ্যে সংযোগ উপস্থাপন সহজতর হবে। সম্পর্কযুক্ত মাধ্যমগুলির একত্রিকরণ (Collocation) সম্ভব হবে। উপাদানগুলির নির্ধারিত ক্রম থাকলে যান্ত্রিক সূচীর দ্বারা স্থান বা ক্রম অনুযায়ী উপাদানকে সনাক্ত করা সহজ হবে।

৭ স্বতন্ত্রীকরণের উপসূত্র (Canon of Individulisation)

এই উপসূত্রের মূল বক্তব্য বা নির্দেশ হল যে : সংলেখের শিরোনাম হিসাবে যে তথ্যই নথীবদ্ধ করা হোক্ না কেন — ব্যক্তিনাম, প্রাতিষ্ঠানিক নাম, ভৌগলিক নাম, আখ্যা, বিষয়, গ্রন্থমালা, বর্গাঙ্ক, ইত্যাদির যে কোন একটি — সেই শিরোনামটি যে নির্দিষ্ট 'জ্ঞান-বিষয়-তথ্য' সম্বলিত মাধ্যমটিকে সনাক্ত করণের ও পরীক্ষণের জন্য প্রয়োগ করা হচ্ছে, কেবলমাত্র সেই নির্দিষ্ট মাধ্যমটিকেই নির্বাচন, পরীক্ষণ ও অবস্থান নির্ণয়ের জন্য ব্যবহৃত হবে, অন্য কোন মাধ্যমের জন্য নয়। ব্যবহৃত শিরোনামটি এক ও অদ্বিতীয় হবে। গ্রন্থাগারে সংরক্ষিত মাধ্যমগুলির মধ্যে যে কোন মাধ্যমকে অন্য মাধ্যম থেকে পৃথকীকরণ সহজে করা যাবে।

আমরা আখ্যাপত্র থেকে একটি সাধারণ বাংলা বইয়ের লেখক হিসাবে 'আশুতোষ মুখোপাধ্যায়'কে নির্বাচন করে নথীবদ্ধ করলাম। তিনি হ'লেন সর্বজন শ্রদ্ধেয় 'বাংলার বাঘ' উপাধি প্রাপ্ত স্যার আশুতোষ মুখোপাধ্যায়। আবার, অন্য একটি বাংলা উপন্যাসের বইয়ের জন্য 'আশুতোষ মুখোপাধ্যায়'কে নথীবদ্ধ করলাম। সূচী সংলেখে কিন্তু এই দু'টি বইয়ের জন্যই লেখক 'আশুতোষ মুখোপাধ্যায়'এর নাম নথীবদ্ধ করা থাকবে। কোন ব্যবহারকারীর পক্ষে কে 'বাংলার বাঘ', কে 'উপন্যাসিক' চিহ্নিত করা সহজ হবে না। সে জন্য প্রত্যেকটি শিরোনামকে স্বতন্ত্র হিসাবে উপস্থাপন করার জন্য, অন্য শিরোনাম থেকে পৃথক্ এবং অদ্বিতীয় করার জন্য প্রয়োজনে স্বতন্ত্রীকরণের উপাদান যোগ করা দরকার। এটাই হল এই উপসূত্রের নির্দেশ। এই সমস্যা সকল ভিন্নার্থক সম্মোচারিত শব্দ/শব্দ সমষ্টির জন্যই প্রয়োগ করতে হবে।

৭.২ সমাধানের পথ

উপরে বর্ণিত সমস্যা সমাধানের জন্য জন্ম তারিখ, মৃত্য দিবস (প্রয়োজন হলে) প্রভৃতি যোগ করতে হবে। একই ভৌগলিক নাম আবির্ভূত হলে, তার থেকে বড় ভৌগলিক অঞ্চলের নাম যোগ করতে হবে। ভিন্ন বিষয় বোঝাতে একই শব্দ ব্যবহার করা হলে, তাদের প্রেক্ষাপট চিহ্নিত করতে হবে। প্রয়োজনে সূচী সংলেখে ব্যবহৃত প্রতিটি ভিন্নার্থ শব্দ বা সমধ্বনিক শব্দ (Homonym) এর জন্য স্বতন্ত্রী করণের উপাদান যোগ করতে হবে।

৭.৩ সূচীকরণে উপসূত্রটির উপযোগিতা

এই উপসূত্রটি প্রয়োগের ফলে বিশ্বজনীন জ্ঞান সাম্রাজ্যে (Universe of Knowledge) প্রত্যেকটি 'জ্ঞানাংশ-বিষয়-তথ্য' কে পৃথক পৃথক ভাবে চিহ্নিত করা যাবে। গ্রন্থগারে সংরক্ষিত প্রত্যেকটি মাধ্যমকে স্বতন্ত্র হিসাবে মর্যাদা দেওয়া যাবে। প্রত্যেক ব্যবহারকারীকে সূচীর মাধ্যমে যদৃচ্ছ অভিগমনের (Random Access) সুযোগ দেওয়া সম্ভব হবে। যে কোন সামগ্রীকে সহজে খুঁজে পাওয়া যাবে। সন্ধান কার্য ও পরীক্ষণ সময়ের সাশ্রয় হবে।

৮ বাঞ্ছিত শীর্ষকের উপসূত্র (Canon of Sought Heading)

এই উপসূত্রের মূল বক্তব্য বা নির্দেশ হল যে : আখ্যাপত্র থেকে বিভিন্ন তথ্য সংগ্রহ করে প্রয়োজনীয়তা-শক্তি-গুরুত্ব অনুযায়ী নির্বাচন ও রূপনির্ধারণ করে সংলেখের শিরোনামে নথীবদ্ধ করা তথ্যটি ব্যবহারকারীর অনুসন্ধিৎসা কতটা চরিতার্থ

করতে সক্ষম তা মূল্যায়ণ করতে হবে। সত্য-সত্যই কি প্রধান বা মুখ্য সংলেখ, সহায়ক সংলেখ, নির্দেশিকা সংলেখ, প্রভৃতিতে নথীবদ্ধ করা লেখক, বিষয় আখ্যা, ইত্যাদি ব্যবহারকারী যে সম্পদ-জ্ঞান-বিষয়-তথ্য সম্পর্কে অনুসন্ধান করছেন তা চরিতার্থ করছে? কতটা করছে? না, অবাঞ্ছিত শিরোনামের ভীড়ে অসুবিধার সৃষ্টি করছে?

এখানে সূচীকরণের প্রতিটি পদক্ষেপের — তথ্য সংগ্রহ, নির্বাচন, রূপনির্ধারণ, নথীবদ্ধকরণ, প্রভৃতির মূল্যায়ণ করার নির্দেশ দেওয়া হয়েছে। সূচী সংলেখকে সহজ-সরল করার নির্দেশ দেওয়া হয়েছে এবং ব্যবহারকারীর উপযোগিতা, চাহিদা, অনুসন্ধান-পরীক্ষণ, অবস্থান নির্ণয়কারী প্রক্রিয়ার সঙ্গে সামঞ্জস্য বিধান করে সূচীসংলেখে শিরোনাম ব্যবহার করার কথা বলা হয়েছে। বহু পূর্বে চালর্স অ্যামি কার্টার 'Convenience to Public' কথার উল্লেখ করেছেন এবং আজকাল প্রায়ই আমরা 'user friendly' কথাটি শুনতে পাই। এসব কথাই এই উপসূত্রের প্রতিফলন স্বরূপ। যারা শৃঙ্খল নির্ঘন্টীকরণ (Chain Indexing) পদ্ধতি জানেন তাঁরা 'Unsought Link' ও 'Sought Link' এর পার্থক্য বুঝতে পারবেন এবং এই উপসূত্রের মূল নির্দেশ সহজেই বুঝতে পারবেন।

৮.১ সমস্যা

এখন প্রশ্ন হচ্ছে কোন্ ব্যবহারকারীর বাঞ্ছা অনুযায়ী শীর্ষক নথীবদ্ধ করতে হবে। এক একজন ব্যবহারকারীর বাঞ্ছা এক এক রকমের। সাধারণের জন্য একরকম, বিশেষজ্ঞের জন্য অন্যরকম? প্রত্যেক ব্যবহারকারীর বাঞ্ছার তারতম্য আছে, আবার, বিষয়, কাল, ইত্যাদির ওপর নির্ভর করে একই ব্যবহারকারীর বাঞ্ছার তারতম্য দেখা যেতে পারে। অথবা, এসব বিষয় বাদ দিয়ে যদি বলা হয় যে, গ্রন্থাগারিকের জ্ঞান, অভিজ্ঞতা, কৌশলগত প্রশিক্ষণ, প্রভৃতির ওপর নির্ভর করে তাঁর পছন্দমত ব্যবহৃত শিরোনামে সকল ব্যবহারকারীকে খুঁজতে বাধ্য করতে হবে? অথবা, ব্যবহারকারীর আবেদন ও কঠিন শৃঙ্খলার মধ্যে সমন্বয় সাধন করতে হবে। ব্যবহারকারীর মনোবাঞ্ছা জানার উপায় কি?

৮.২ সমাধানের পথ

একথা অবশ্যই স্বীকার করে নিতে হবে যে, সূচী ব্যবহারকারীকে সহায়তা করার জন্যই তৈরী করা হয় এবং ধারাবাহিকভাবে পরিচর্যা করা হয়। তাদের চাহিদামত সূচী সংলেখে শিরোনাম ব্যবহার করতে হবে। অপ্রয়োজনীয় তথ্যের ভীড়ে ব্যবহারকারীর অসুবিধা দেখা দিতে পারে। নির্ণয় যোগ্যতার উপসূত্র অনুযায়ী সেই নির্দিষ্ট সামগ্রীটির মধ্য থেকেই তথ্য নির্বাচন করব, কিন্তু ঠিক কোন কোন উপাদান, অংশ ইত্যাদি গ্রহণ করব বা বর্জন করব তা নির্ভর করবে ব্যবহারকারীর আবেদনের ওপর। এই উপসূত্রটি অধিকতর শক্তিশালী।

সূচীকাররের অভিজ্ঞতা, ব্যবহারকারীদের সম্বন্ধে সম্যক ধারণা, তাঁদের চাহিদা, পছন্দ অপছন্দের নিরীক্ষা, গ্রন্থাগারে জনসংযোগকারী প্রক্রিয়াগুলির প্রতিনিয়ত মূল্যায়ণ, অনুলয় সেবার অভিজ্ঞতা, ইত্যাদি বাঞ্ছিত শীর্ষক ব্যবহারের সুবিধা দেয়। নির্দিষ্ট সামগ্রী বা মাধ্যমটি থেকে তথ্য আহরণ করে নির্বাচন ও রূপনির্ধারণ করলে ব্যবহারকারীর জানা মাধ্যম'এর পরিচয় প্রদান করা সম্ভব হয়। কারণ ব্যবহারকারীরা মাধ্যমটির পরিচয় বিভিন্ন ভাবে পেয়েই তবে সূচীতে অনুসন্ধান করতে আসেন।

৮.৩ সূচীকরণে উপসূত্রটির উপযোগিতা

সূচীটি ব্যবহারকারীর উপযোগী হবে। অবাঞ্ছিত শীর্ষক বাদ দেওয়া হলে সূচী ব্যবহারে অনুসন্ধান-পরীক্ষণ প্রক্রিয়াটি স্বল্প সময়ে ঘটানো যাবে। ব্যবহারকারীদের যদৃচ্ছ অভিগমনের সুযোগ দেওয়া যাবে। সূচীকরণ প্রক্রিয়াটি সহজ সরল হবে। অপ্রয়োজনীয় তথ্যে সূচীটি ভারাক্রান্ত হবে না।

৯ প্রাসঙ্গিকতার উপসূত্র (Canon of Context)

এই উপসূত্রের মূল বক্তব্য বা নির্দেশ হ'ল : সামগ্রিক পরিবর্তনের সঙ্গে সঙ্গতি রেখে সূচীকরণ সংহিতার বিধিগুলির সংস্কার করতে হবে। সংহিতাকে বর্তমান পরিস্থিতির উপযোগী করে তুলতে হবে। পরিবর্তন যে কোন ক্ষেত্রেই আসতে পারে — তা সে মাধ্যমের বাহ্যিক / অন্তর্নিহিত রূপের হোক্, পরিসেবার ক্ষেত্রেই হোক, ব্যবহারকারীর আবেদন, চাহিদা, প্রভৃতির ক্ষেত্রেই হোক্, সামগ্রিক গ্রন্থগার ব্যবস্থার এবং গ্রন্থাগারিকতা পেশার ক্ষেত্রেই হোক্, সব রকম পরিবর্তনের সঙ্গে সামঞ্জস্য রেখে সূচীকরণ সংহিতার বিধিগুলি সংস্কার করে প্রাসঙ্গিক করে তুলতে হবে।

৯.১ সমস্যা

বর্তমান বিশ্ব এক জায়গায় দাড়িয়ে নেই। গ্রন্থাগার ও তথ্যকেন্দ্রে শুধু বইয়ের সম্ভার নেই, অবইয়ের সম্ভারও সংগৃহীত এবং পরিবেশিত হচ্ছে। জ্ঞান অর্জন, তথ্য আহরণ ও চিত্তবিনোদন সংক্রান্ত মাধ্যমগুলির ব্যাপক পরিবর্তন ঘটেছে। শ্রুতি থেকে পুঁথি, বই থেকে অ-বই, এমনকি বৈদ্যুতীন প্রকাশনাও গ্রন্থাগার ও তথ্যকেন্দ্রের উপাদান হিসাবে উত্তরিত হয়েছে। গ্রন্থাগার বিজ্ঞান শিক্ষাক্রমে পরিবর্তন এসেছে। গ্রন্থাগারও তথ্য কেন্দ্রের ব্যবহারে সময় ও দূরত্ব আজ আর কোন সমস্যা নয়। অধুনা টেলি যোগাযোগ ব্যবস্থার ফলে বিশ্ব এক গ্রামের পর্যায়ে পরিণত হয়েছে। সমাজের প্রতিটি ক্ষেত্রে ও স্তরে তথ্য আদান-প্রদান, ব্যবহার, প্রভৃতির ক্ষেত্রে ব্যাপক পরিবর্তন এসেছে। ব্যবহারকারীরা নতুন পদ্ধতিতে গ্রন্থাগার ব্যবহার করতে চাইছেন এবং বিভিন্ন পরিবর্তন পরিষেবার ক্ষেত্রে দাবী করছেন। তাদের উপযোগী মাধ্যমগুলির সংলেখ তৈরীর জন্য নতুন নতুন বিধি নিয়মের প্রয়োজন হয়ে পড়ছে। পুরোনো বা প্রচলিত সংহিতার দ্বারা এই দাবী চরিতার্থ করা সম্ভব হচ্ছে না। প্রয়োজন নতুন নিয়মের, পদ্ধতির, বিধির, সংহিতার।

৯.২ সমাধানের পথ

পরিবর্তনই জীবন। সমাজ জীবনে, ব্যক্তিজীবনে ক্রমান্বয়ে পরিবর্তন ঘটেছে ও ঘটছে। সমাজ জটিল থেকে জটিলতর পর্যায়ে উত্তরিত হচ্ছে। যুগের প্রয়োজনের সঙ্গে সঙ্গতি রেখে না চললে ধংস বা অবলুপ্তি অনিবার্য।

নতুন নতুন সামগ্রীর জন্য, ব্যবহারের পদ্ধতির জন্য, অনুসন্ধান-পরীক্ষণ প্রভৃতির জন্য নতুন বিধিসমূহ প্রণয়ন করতে হবে। সূচীকরণের উপসূত্রগুলির উদ্দেশ্য আলোচনার সময় এ কথা উল্লেখ করা হয়েছে। সময়ের সঙ্গে তাল রেখে সূচী, সূচীকরণ, সূচীকরণ বিধি, সূচীকরণ সংহিতা প্রভৃতির পরিবর্তন করতে হবে। গ্রন্থগার বিজ্ঞানের পঞ্চম সূত্রের (5th Law) প্রতিফলন এই উপসূত্রে লক্ষ করা যায়।

৯.৩ সূচীকরণে উপসূত্রটির উপযোগিতা

সূচী, সূচীকরণ, সূচীসংহিতা, প্রভৃতির সংস্কারও নব নির্মাণে দিক নির্দেশ করে। সূচীকে আধুনিক করে তোলে।

১০ স্থায়ীত্বের উপসূত্র (Canon of Permanence)

এই উপসূত্রের মূল বক্তব্য বা নির্দেশ হল : সংলেখে নির্বাচিত, রূপনির্ধারিত এবং নথীবদ্ধকৃত যে কোন উপাদান, বিশেষ করে শিরোনাম সংক্রান্ত উপাদান কখনই পরিবর্তন করা যাবে না, চিরস্থায়ী করতে হবে, যদি না সংহিতার বিধিসমূহ পরিবর্তিত হয়ে যায়।

১০.১ সমস্যা

পূর্বে আলোচনা করা হয়েছে 'পরিবর্তনই জীবন'। এখন আবার সংলেখে ব্যবহৃত শিরোনামকে চিরস্থায়ী করার কথা বলা হচ্ছে। ব্যক্তিনামও পরিবর্তিত হতে পারে।

১০.২ সমাধানের পথ

ডঃ রঙ্গনাথন এই উপসূত্রটি শুধু ব্যক্তিনামের ক্ষেত্রে প্রয়োগ করতে বলেছেন। ব্যক্তিনাম পরিবর্তিত হলে নির্দেশ সংলেখ তৈরী করতে বলেছেন।

১০.৩ সূচীকরণে উপসূত্রটির উপযোগিতা

ব্যক্তিনাম ব্যবহারকারীরা ব্যবহার করার ফলে, সেই নামটি তার জানা থাকে ও স্মৃতিকে সহায়তা করে। সংলেখে অকারণ পরিবর্তন ঘটালে ব্যবহারকারীর অসুবিধা হতে পারে। সূচীকরণে নথীবদ্ধ করণ প্রক্রিয়াটি সমতাপূর্ণ হয়।

১১ প্রচলিতির উপসূত্র (Canon of Currency)

এই উপসূত্রের মূল বক্তব্য হ'ল : বিষয় শিরোনাম হিসাবে ব্যবহৃত শব্দ / শব্দসমষ্টি সর্বাধুনিক প্রচলিতির ভিত্তিতে নির্ণয় করে সংলেখে ব্যবহার করতে হবে। বর্গীকৃত সূচীতে বর্গনির্দেশী সংলেখে (Class index entry) এবং আভিধানিক সূচীতে বিষয় শিরোনাম সংলেখে এর প্রয়োগ করতে হবে।

রঙ্গনাথন বিষয় শিরোনাম ও বর্গনির্দেশী সংলেখে এর ব্যবহার সীমাবদ্ধ করেছেন। সমস্যার কথা নেই। তবে যদি বিষয় পরিবর্তিত হয়ে নতুন নামে আবির্ভূত হয়, তখন নতুন নামটিকেই ব্যবহার করতে হবে এবং পুরাতন নাম থেকে নির্দেশী সংলেখ তৈরী করতে হবে। এটি ব্যবহারকারীর সুবিধার্থেই তৈরী করা হয়েছে। ব্যবহারকারীরা যে কোন বিষয় সম্বন্ধে নির্দিষ্ট বইয়ের কথা, তার লেখক, আখ্যা, ইত্যাদি জানা না থাকলে তার বিষয়ের নাম করে অনুসন্ধান চালান এবং প্রচলিত নামই ব্যবহার করে থাকেন। এই উপসূত্রটি প্রয়োগের ফলে বিষয় সংক্রান্ত সূচী ব্যবহারকারীর উপযোগী এবং যুগোপযোগী হয়ে ওঠে।

১২ সঙ্গতি বিধানের উপসূত্র (Canon of Consistency)

এই উপসূত্রের মূল বক্তব্য বা নির্দেশ হ'ল : সূচীকরণ সংহিতায় নির্দেশিত সহায়ক সংলেখ সংক্রান্ত বিধিগুলি মুখ্য সংলেখ সংক্রান্ত বিধিগুলির সহিত সঙ্গতিপূর্ণ হবে এবং সাধারণভাবে যে কোন সংলেখের বিভিন্ন উপাদানের ক্ষেত্রে নির্বাচন, রূপনির্ধারণ ও নথীবদ্ধকরণের বিধিগুলি একই ধরনের হবে ও পরস্পরের সহিত সঙ্গতিপূর্ণ হবে। ফলে, একই ধরনের বইয়ের সংলেখ একই ধরনের হবে এবং মুখ্য সংলেখ ও সহায়ক সংলেখগুলির মধ্যে সঙ্গতি থাকবে। এই নির্দেশ মানার ফলে সূচীটি সমতাপূর্ণ হবে ও সূচীকরণের প্রক্রিয়াটি নির্দিষ্ট ধারাবাহিকতা বজায় রেখে সম্পন্ন করা সম্ভব হবে।

১২.১ সমস্যা

অনেক সময় মনে হতে পারে যে, বিভিন্ন 'জ্ঞান-বিষয়-তথ্য' সম্বলিত মাধ্যমের রূপ ও অন্তর্নিহিত তথ্য বিভিন্ন প্রকার। তাদের চিহ্নিত করণ ও পরীক্ষণের প্রক্রিয়াটিও ভিন্ন ভিন্ন প্রকারের। সংলেখের নথীবদ্ধকৃত রূপও ভিন্ন ভিন্ন হতে বাধ্য।

১২.২ সমাধানের পথ

সব ধরনের মাধ্যমের একই রূপ সূচী হবে, একথা মনে করা ভুল। ধরা যাক্, সাধারণ একটি বইয়ের ক্ষেত্রে মুখ্য সংলেখে শিরোনাম হিসাবে প্রধান লেখককেই প্রাধান্য দেওয়া হয় এবং তাকেই নথীবদ্ধ করা হয়। সেই রকম সব সাধারণ বইয়ের ক্ষেত্রে একই পদ্ধতি অনুসরণ করলে সূচীটি সঙ্গতিপূর্ণ হয়ে ওঠে। আবার, সহায়ক সংলেখ এবং মুখ্য সংলেখের সঙ্গে সম্পর্ক রহিত হলে ব্যবহারকারী দিক্‌ভ্রান্ত হয়ে পড়বেন এবং সূচীটি সুষ্ঠুভাবে নিয়ন্ত্রিত এবং পরিচর্যিত হবে না। মুখ্য সংলেখকে ভিত্তি হিসাবে ধরে প্রয়োজনীয় সহায়ক সংলেখ ও নির্দেশী সংলেখ তৈরী করতে হবে। মূল উদ্দেশ্য হল নির্বাচন, রূপনির্ধারণ ও নথীবদ্ধকরণে নির্দিষ্ট ধারা অনুসরণ করা ও সূচীটিকে এক রূপী ভাবে তৈরী করা।

১২.৩ সূচীকরণে উপসূত্রটির উপযোগিতা

এই উপসূত্রটি প্রয়োগের ফলে সূচীকারক প্রাত্যহিক কাজের জটিল সমস্যা থেকে মুক্তির পথ খুঁজে পাবেন। সূচীকরণ প্রক্রিয়াটি সহজ - সরল ও ধারাবাহিক হবে। সূচীটির একরূপতা (Uniformity) বজায় থাকবে। সূচীকারকের খেয়াল-খুশী অনুযায়ী তৈরী হবে না। ব্যবহারকারীর উপযোগী হবে। নথীবদ্ধকরণের বিভিন্ন সমস্যার সমাধান সম্ভব হবে। বিভিন্ন গ্রন্থাগারের সূচীর মধ্য সমতা আনা সম্ভব হবে ও তথ্য, সূচীতথ্য আদান প্রদান সহজ হবে। কম সময়ে সূচীটি তৈরী করা সম্ভব হবে।

১৩ তলবীমানের উপসূত্র (Canon of Recall Value)

এই উপসূত্রের মূল বক্তব্য বা নির্দেশ হল : কোন নির্দিষ্ট সংলেখের প্রথম উপাদানটি যদি একাধিক শব্দ বিশিষ্ট হয়, তবে সেই নির্দিষ্ট একটি শব্দ / শব্দ সমষ্টি প্রথম অংশ (Entry Element) হিসেবে ব্যবহার করতে হবে যার সর্বাধিক তলবীমান আছে। একাধিক শব্দ বিশিষ্ট নাম, বিষয়, ব্যক্তি প্রতিষ্ঠান, আখ্যা, গ্রন্থমালা, প্রভৃতি যে কোন ক্ষেত্রেই শিরোনাম হিসাবে ব্যবহার করা হোক্ না কেন, নামের বা একাধিক শব্দের মধ্যে যে শব্দটির মাধ্যমে অল্প সময়ে বা তৎক্ষণাৎ (Instant) ব্যবহাকারীরা সূচীতে খুঁজে পাবেন সেই শব্দটিকেই সংলেখের প্রথম অংশ হিসাবে ব্যবহার করতে হবে।

এ প্রসঙ্গে ব্যবহারকারীর স্মৃতি সহায়তার কথা এসে পড়ে। সূচী ব্যবহারকারীদের জন্য তৈরী করা হয়। ব্যবহারকারীদের প্রত্যেকের মনের কথা সূচীতে নথীবদ্ধ থাকলে অনুসন্ধান ও পরীক্ষণ সুবিধাজনক হয়। একাধিক শব্দ বিশিষ্ট উপাদানের মধ্যে যে নির্দিষ্ট শব্দটি ব্যবহারকারীরা মনে রাখতে পারেন ও তলব করতে পারেন বা তৎক্ষণাৎ তলব (Instant Recall) করতে পারেন সেই শব্দটিকেই শিরোনামের প্রথম অংশ (Entry element) হিসাবে নথীবদ্ধ করলে সূচীর ব্যবহার সার্থক হয়ে ওঠে। সেজন্যই সূচীকে ব্যবহারকারীর স্মৃতি সহায়ক প্রাতিষ্ঠানিক স্মৃতি বলা হয়।

১৩.১ সমস্যা

ব্যবহারকারীর মনের কথা বা স্মৃতিশক্তির কথা আগে ভাগে নির্ণয় করা খুবই কঠিন কাজ। প্রত্যেক ব্যবহারকারীর ক্ষমতা ভিন্ন ভিন্ন। কে কোন শব্দটি মনে রাখতে পারবে তা বলা কঠিন। দিনের পর দিন যে কোন নামের জন্য শব্দের ব্যবহার ক্রমাগত বেড়ে চলেছে, একাধিক শব্দ ব্যবহার করে যে কোন নামকে আরো নির্দিষ্ট (Specific) করা হচ্ছে। যত বেশী বিশেষত্বের দিকে সমাজ অগ্রসর হচ্ছে, সেই নামটিকে অর্থবহ করে তোলার জন্য একাধিক শব্দের ব্যবহার তত বেশী পরিমাণে হচ্ছে। এর ফলে মানুষের মনে রাখার ক্ষমতাও কমে যাচ্ছে। যে যার ক্ষেত্র অনুযায়ী বিশেষ বিশেষ নামের সঙ্গে এবং নামের প্রধান উপাদানের সঙ্গে বিশেষভাবে পরিচিত হচ্ছে। অন্যান্য নাম বা তার অংশ তাঁর ক্ষেত্রে অপ্রাসঙ্গিক হয়ে পড়ছে।

১৩.২ সমাধানের পথ

ব্যবহারকারীর স্মৃতি আবার তাঁর শব্দ ব্যবহারের অভিজ্ঞতার ওপর নির্ভরশীল। ব্যবহারকারী যে শব্দ বেশী ব্যবহার করে সেটা বেশী মনে রাখতে পারে। এই ব্যবহারের সঙ্গে যদি বোধ (Understanding) যুক্ত হয়, তবে সেটা বেশী স্মৃতি সহায়ক হয়। সেই শব্দটিকে সহজে মনে রাখা যায় এবং সহজে তলব (Recall) বা উপস্থাপন (Representation) করা যায়। বেশী ব্যবহার ও বোধ যুক্ত হয়ে তলব (Recall) সহজ হয় এবং উপস্থাপন (Representation) সহজ হয়। উপস্থাপন সহজ হলে সঠিকভাবে প্রকাশ করা যায় (Expression)। আবার বোধ ছাড়া শব্দ বেশী ব্যবহারের অভিজ্ঞতা সব সময়ে স্মৃতি সহায়ক হয় না, উপস্থাপনা ও প্রকাশনা ব্যাহত হয়। আমরা অনেক সময়ে দেখি যে, পরীক্ষার সময় ছাত্র-ছাত্রীরা টানা মুখস্ত করে পরীক্ষা হলে লিখতে বসে। কিন্তু, যদি একটি শব্দ বা বাক্য ভুলে যায় তবে আর লিখতে পারে না। তখন এদিক-ওদিক তাকায়, অপরকে জিজ্ঞাসা করে নতুবা বাইরে গিয়ে পড়ে আসার চেষ্টা করে। কিন্তু ছাত্র-ছাত্রীরা বিষয়বস্তু বুঝে হৃদয়ঙ্গম করে লিখতে বসলে, সহজে সাবলীল ভঙ্গীতে লিখতে পারে। মনের কথা গুছিয়ে লিখতে পারে। সুতরাং দেখা যায় যে, বোধ যুক্ত শব্দের ব্যবহারই বেশী স্মৃতি সহায়ক। সূচীকে সেই স্মৃতিতে সহায়তা করার উপাদান নথীবদ্ধ করতে হবে। যেমন, ধরা যাক্, একটি বইয়ের আখ্যা — An Introduction to Physics, যে ব্যক্তি এর মধ্যে যে শব্দটি বেশী বেশী ব্যবহার এবং পড়াশোনা করবে, তার মধ্যে Physics শব্দটিই যে বেশী পরিচিত ও প্রয়োজনীয় হয়ে উঠবে একথা নিশ্চিত করে বলা যায়। এখানে প্রথম অংশ হিসাবে Physics শব্দটি ব্যবহার করা বেশী স্মৃতি সহায়ক হবে।

১৩.৩ সূচীকরণে উপসূত্রটির উপযোগিতা

এই উপসূত্রটি সর্বাধিক গুরুত্বপূর্ণ এবং অসীম ক্ষমতার অধিকারী। ব্যবহারকারীর উপযোগী সূচী তৈরী করার ক্ষেত্রে সর্বোতভাবে সাহায্য করে। সংলেখের উপাদানগুলির রূপনির্ধারণের কাজে যথাযথ সাহায্য করে। অধুনা Truncated Search কথাটি বেশী শোনা যায়। সেটিও এই উপসূত্রটির প্রতিফলন স্বরূপ।

১৪ সূচীকরণ সংহিতায় প্রয়োগ

সাধারণ ভাবে ঐ উপসূত্রগুলি আলোচনা করা হল। এখন, বহুল প্রচলিত সূচীকরণ সংহিতা এ.এ.সি.আর (২য় সংশোধিত সংস্করণ, ১৯৮৮) -এ যে যে ক্ষেত্রে ব্যবহার লক্ষ্য করা যায় তা উল্লেখ করা হল :

নির্ণয় যোগ্যতার উপসূত্র — আন্তর্জাতিক পঞ্জীয় বিবরণ (ISBD) অনুযায়ী বিভিন্ন পরিচ্ছেদে 'তথ্যের উৎস (Sources of Information)'। বিধি নং ২·০ বি ১ থেকে ২·০ বি ২, ৩·০ বি ১-৩·০ বি ২, প্রভৃতি। বিধি নং ২১·০ বি, ২১·৬ বি ১, ২১·৬ সি ১, পরিশিষ্ট-৩

প্রাক্‌শক্তির উপসূত্র — আন্তর্জাতিক পঞ্জীয় বিবরণ সমূহের (ISBDs) অন্তর্গত বিভিন্ন উপাদানের ক্রম। বিবরণের স্তর ভেদ (১·০ ডি ১ - ডি ৩)। বিধি নং ২২·৪ থেকে ২২·১১। IFLA'র নির্দেশ অনুযায়ী 'Names of Person' (পৃ: ৪১৮)।

স্বতন্ত্রী করণের উপসূত্র — বিধি নং ২২·১৮ থেকে ২২·১৯ বি। ২২·১২-২২·১৮। ২৪·৪ এ - ২৪.৪ সি ১০। ২৩·৪ - ২৩·৪ জে। ২৪·৮ বি, ২৪.৬ - ২৪·৭ বি ১। ২৪·৭ বি ৪, ২৪·৮ এ. ২৪·৪ সি।

বাঞ্ছিত শীর্ষকের উপসূত্র — পরিচ্ছেদ নং ২১ : প্রবেশ দ্বারের নির্বাচন (Choice of Access Point)। বিধি নং ২২·১ এ, ২২·১ বি, ২২·২ এ, ২২·২ সি, ২২·৩ এ, ২২·২ সি ৪, ২২·৩ বি ১, ২২·৩, ২৪·১, ২৪·২, ২৪·৩, ২১·৩০ জে ৩, ২১·৫ এ।

প্রাসঙ্গিকতার উপসূত্র	—	সংহিতাটি প্রতিনিয়ত সংস্কার করার পথ নির্দেশ রয়েছে এবং ব্যবস্থাও গ্রহণ করা হয়েছে। নতুন মাধ্যমের জন্য কিছু পরিচ্ছেদ খালি করে রাখা আছে।
স্থায়ীত্বের উপসূত্র	—	বিধি নং ২২·২ বি, ২২·২ বি ১।
প্রচলিতির উপসূত্র	—	এই সংহিতায় বিষয় সংক্রান্ত বিধি নেই। সাধারণ ভাবে এর প্রয়োগ ব্যক্তিনামের ক্ষেত্রে বিধি নং ২৪·১ বি, ২৪·৪ সি ৬, ২২·২ বি ২১·১ এ, প্রভৃতিতে পরিলক্ষিত হয়।
সঙ্গতি বিধানের উপসূত্র	—	বিধি নং ২১·০ এ, ২১·২৯ থেকে ২১·৩০ এম। ত্রিস্তরীয় বর্ণনার ভিত্তিতে প্রবেশদ্বার নির্ণয়।
তলবীমানের উপসূত্র	—	বিধি নং ২৪·৩ এ ও তার বিকল্প বিধি (পাদটীকা), ২৪·৫ থেকে ২৪·৫ সি, ২২·১ সি, ২৪ এ, ২৪·৩, ২৪·৩ সি, ২৪·৮, ২৪·১৪, ২৫·৩, ২৫·৪, ২৫·১৭ থেকে ২৫·১৮, ২৪·১২ - ২৪·১৪। পাদটীকা : পৃষ্ঠা - ৪০৫, ১৯, ৩৮১, ৪১৮, ১৭।

১৫ সাধারণ সূত্রসমূহ

এই উপসূত্র ছাড়া আরো অনেক সাধারণ সূত্র সূচীকরণের ক্ষেত্রে প্রয়োগ করা যেতে পারে। যেমন — ব্যাখ্যা সংক্রান্ত সূত্র (Laws of Interpretation), নিরেপক্ষতার সূত্র (Laws of Impartiality), সমতার সূত্র (Laws of Symmetry), মিতব্যয়িতার সূত্র (Laws of Parsimony), স্থানীয় বৈচিত্রের সূত্র (Laws of Local Variations) এবং সংস্কার পদ্ধতির সূত্র (Principles of Osmosis)। সর্বোপরি বয়েছে গ্রন্থাগার বিজ্ঞানের পঞ্চসূত্র (Five Laws of Library Science)। পঞ্চসূত্র, সাধারণ সূত্রসমূহ অন্যান্য সকল শাখার মতন সূচীকরণে প্রয়োগ করা হয়।

১৬ উপসংহার

এই নীতিগুলির ভিত্তিতে সূচী তৈরী করা হলে সূচী সার্থক হয়ে উঠবে। সূচীকারকের এই নীতিগুলি সম্বন্ধে সম্যক্ জ্ঞান থাকলে প্রাত্যহিক কাজ সহজ হবে, সমস্যার উদ্ভব হলে বিশ্লেষণ ও প্রয়োগের কাজ সহজ হবে। সর্বোপরি সূচী ব্যবহারকারীর উপযোগী হবে ও সমতাপূর্ণ হবে। আজকের দিনে "উপাত্ত কোষ প্রবর্ধনে'র ক্ষেত্রেও এই নীতিগুলির প্রয়োগ যোগ্যতা লক্ষ্য করা যায়। আজও এই নীতিগুলি মূল্যবান।

সহায়ক গ্রন্থমসূহ

১। Theory of Cataloguing, by Grijakumar and Krishan Kumar. 5th rev.ed. 1986.

২। Headings and Canons, by by S. R. Ranganathan. 1955.

৩। A.A.C.R-2R (1988)

৪। C.C.C. 5th ed 1964.

৫। Encyclopedia of Library & Information Science. V.11, p.374-377.

৬। গ্রন্থগার ও তথ্য বিজ্ঞানের পরিভাষা কোষ — বিমল কান্তি সেন ও অন্যান্য, ১৯৮৮