Traditionally, Classification has meant a process of division and sub-division, proceeding from general to particular, until specific units of considerable concreteness are reached. This produces a rigid set of classes and class relationships. The classes are displayed in tables, arranged to show a hierarchy or family tree of relationships, often called a tree of knowledge. It is possible, however, by using a broader definition of classification to introduce a different approach, utilizing the "scientific method" and working from particular to general.

Classification is an orderly method of grouping things according to their salient characteristics of properties. The thing classified is a concept (an idea, an inference) or a complex of concepts, which is an accepted subjective
representation of a real, but not necessarily observable unit. The groups (or categories) are arranged systematically according to definite criteria, so that the relationships among them or derivation of one group from another are clearly indicated. A unique designation or verbalization is applied to each category. A notation, preferably either one which mirrors the internal structure of the classification or which reflects the constitution of its elemental concepts, may be applied.1

Such a classification is created by building upwards, by putting individual parts together to form a whole (synthesis). The net result is a flexible set of classes and class relationships, displayed through block patterns rather than by the more familiar hierarchy or tree diagram.

The new, analytic types of classification are being developed in recognition of the fact that, as Shera points out, "every book is a complex creation composed of a larger number of related patterns which reflect the multi-dimensional nature of knowledge."2 In the analytic classifications, it is recognized that every relationship of a single classification element is vitally necessary for the eventual retrieval of information.


PURPOSE

The purpose of this non-traditional classification is two-fold: to escape from the procedure of classifying something in one place and in one place only, and to permit approach to information from any angle which may be pertinent. Various analytic methods are utilized which produce a compound classification composed of elemental parts, each of which is made available for searching purposes because it can be indexed separately. In my work I have used the term "faceted" to denote any classification which is compounded of parts, each of which in turn is built up by assigning individual items to more general, related categories.

Probably, the chief motivating factor behind the new approach to classification has been the tremendous growth of scientific literature during the past century. The revised fundamental concept, that one should bring out the full scope of the book or article, has had some far-reaching consequences upon the development of modern classification. In the attempt to present more than a cursory indication of the content of a book, a special system was devised over almost more than thirty years ago by Dr. S.R. Ranganathan. The 'Canons of Classification', as enumerated by Ranganathan, led him to the conclusion that it is possible in every subject to analyze knowledge into five basic categories personality, matter, energy, space and time.
Others using Ranganathan's pattern have not limited themselves so strictly, and have added more categories as the individual subjects demanded.

In any case, the main categories are converted into links or facets of the classification. The facets themselves may represent the fundamental categories directly or in combination and they are made up of elements, called "foci": A notation is assigned, and the whole is riveted together in a predetermined order with special connective symbols. The necessity of distinguishing between the whole and its parts and of using the elemental material of a single category more than once in describing a title has led to the adoption of the idea of different "levels" and "rounds" of classification. The need for indicating what influences what or is influenced by what, and the form in which the material is presented, has resulted in the addition of special indicators for relations and the "common isolate" for an expanded system of form division.

Other classificationists have followed Ranganathan with wide modifications. The approach to subject analysis inherent in faceted classification has been promoted by recognition of the fundamental element or "isolate" as its basis. These isolates, the atoms for the facet (itself the equivalent to the molecule), are the building blocks from which the classification is made. It has also led to the realization that there are two ways in

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which expansion in any classification takes place, horizontally, called classification in array, and vertically called classification in chain.

The present work deals with the principles of book classification and includes an attempt to consider distinctly and simply, both the traditional theories and modern ideas of synthesis and exact analysis of subjects. Synthesis is a term used to refer to the creation of compound subjects by the combining of simple elements. Chapter I begins with the concept of Library Classification. Classification primarily deals with the arrangement of objects which are like and separation of those which are unlike in order to conceive the characters of objects in question clearly and to disclose the correlations or laws of unity of properties and circumstances.

The question which comes to mind is 'how to develop a class and further to break it up into sub-classes?' Aristotle's predicables and Porphyry's Tree of Knowledge have been abandoned in favour of the newer techniques of classification-making, but familiarity with them is advantageous for the sake of clarity.

Chapter II deals with the Development of Classification in the Twentieth Century. The older bibliographical schemes have always found it difficult to keep pace with changes in the field of knowledge, for in attempting to list every branch
of learning and to provide complete class-marks for nearly all subjects, they are virtually out of date as soon as they appear. In order to eliminate this drawback schemes such as Dewey Decimal Classification, Universal Decimal Classification and Bibliographic Classification, although are basically enumerative are now turning more and more towards analysis and synthesis in the Idea Plane and in the Notational Plane.

Chapter III reflects the Making of Analytico-Synthetic Scheme of Classification. In 1933 appeared the first edition of Colon Classification. Ranganathan's creation of an entirely synthetic scheme with a provision of a distinctive class-mark, the scheme with maximum of flexibility and mnemonic aids and provision of autonomy to the classifier. In 1964, Ranganathan developed a new methodology for the design of schemes for the classification of micro-subjects. His 'Design of Depth Classification Methodology' has opened up considerable scope for applied and developmental research. The work is being carried out at DRTC, Bangalore which has published a series of Depth Classification Schemes of individual subjects. A critical study of Ranganathan's Colon Classification is dealt with including a survey of its new developments and future prospects.

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Chapter IV, Concept of Analytic-Synthetic Scheme of Classification, begins with the query, what is a concept? and goes into the depth of Analytic-Synthetic Schemes of Classification, studying the development of Faceted Classification and Fundamental Categories based on Ranganathan's PMEST formula.

The principal centre of research on classification in England was started in 1952 by the Formation of Classification Research Group. The members of the team have been extremely industrious in examining the foundations of the existing schemes and sometimes in assisting in their revision, in helping to develop the new principles unearthed by Ranganathan and others. Keeping the basic teachings of Analytic-Synthetic Classification in view, namely that these can be reorganized into a standard pattern by reference to a general-decision-making pattern-special classification schemes have been designed by Barbara Kyle, Farradane and Foskett, which are discussed in Chapter V. Most of the special schemes show the influence of Ranganathan's Faceted approach.

Modern Classificatory Theory has now questioned the value of certain aspects of the traditional outlook on notation and has shown that a non-structural notation too has definite merits. In Chapter VI, I have tried to focus the readers attention on the new developments in notation and how further away it has moved from the traditional concept of a good notation.
Documentation Research and Training Centre was established in Bangalore in 1962 by Dr. S.R. Ranganathan and since then it has been actively engaged in research on classification and related areas. Although A. Neelamegham; M.A. Gopinath; G. Bhattacharya; and Seetharama have published papers on classification problems, Design series in Library Science with a Slant to Documentation (a quarterly journal started in 1964), the publication of Colon Classification. 7th edition is much awaited. A new indexing technique POPSİ (Postulate-based Permuted Subject Indexing) was developed at DRTC. It is a procedure for implementing the policy of 'Grouping by Juxta-position'. It has a strong classificatory base. New Developments in POPSİ have been discussed in Chapter VII, Faceted Classification and Indexing.

Tremendous developments in information technique, computer technology and communication facilities have taken place in recent years. For instance, the introduction of third generation digitized computers has made it possible to process information much faster. It has also tremendous storage capacity to handle large data rapidly. There is now an urgent need to formulate a general classification for use in computer systems to take full advantage of computers.


6 A. Neelamegham and M. A. Gopinath, "Postulate Based Permuted Subject Indexing" (POPSİ), Library Science with a Slant to Documentation, 12; 1975, Paper H.
The question arises that "can a computer measure statistically the frequency of word-use and word associations and thus promote mathematically generated classifications based on impartially selected keywords and clusterings." 7

One of the modern and advanced techniques of information retrieved is the SMART retrieval system operating on an IBM-7094 and on IBM-360/65 since 1968. The system takes documents and search requests in English, performs a fully automatic content analysis of the texts, matches analyzed documents with analyzed documents with analyzed search requests, and retrieves those stored items believed to be most similar to the queries. 

PRECIS (Preserved Context Index System) is essentially a system for producing printed alphabetical subject index, generally with computer assistance. Since Precis involves the creation of machine readable data, the system has an obvious potential for mechanized searching. 8

Keeping the Future of Library Classification in view UNISIST aims to achieve global information net-work which requires a programme for setting up ordinary systems. In the years to come, we are likely to have large scale, multi-national, multi-organisational information systems. Classification is


an important tool for information retrieval. Therefore, it must be developed to take care of the requirement of information retrieval.

However, while objectively examining these new special schemes which have emerged, one finds that the chief aims of these classifications are to rely on an almost entirely synthetic-structure, to promote in every way possible the achievement of an helpful order on the shelves, to deal with complex subjects according to definite predetermined rules, and to ultimately produce a method so condensed and so perfect in operation that every user will automatically give the same call-mark to a document without reference to the classificationist. The enormous impetus given to classificatory research, on an international scale but the system cannot be overestimated. The principles laid down point the way forward to the making of new schemes both general and special. In the words of Maltby, I quote, "the ideas which can be seen in the classification, and those which are still evolving, open up new vistas of the bibliographic schemes of the future." The new principles of classification have pointed the way forward to the making of new schemes both general and special.

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9 Arthur Maltby, op.cit.