

Lib sc. 10; 1973; PAPER G.

Primary Basic Subject by Fission.

(Universe of subjects. 5). (Classification problems. 68).
(Design series. 33).

**A Neelameghan, Documentation Research and Training Centre,
Indian Statistical Institute, Bangalore 560003.**

[The formulation of the initial set of Basic Subjects — the schedule of Traditional Primary Basic Subjects — for use in a scheme for library classification, is discussed. The mode of formation of such a Basic Subject is deemed to be by Fission of the universe of subjects. Guiding principles used in the Colon Classification in arranging the Primary Basic Subjects in a helpful sequence are mentioned with illustrative examples.]

1 Scope of the Paper

A designer of a scheme for classification covering the whole of or several subject-fields in, the universe of subjects, generally finds it convenient and helpful to begin with the formulation and enumeration of an initial set of Basic Subjects. A Basic Subject in this set is a Primary Basic Subject. This paper discusses the mode of formation and arrangement of the initial set of Primary Basic Subjects in the schedule of Basic Subjects with particular reference to the Colon Classification (= CC).

2 Three-Related Universes

21 UNIVERSE OF ENTITIES

The universe of entities or knowees consists of all known entities and of all knowable entities. Therefore, the universe of entities is very large, practically limitless, tending to infinity.

22 UNIVERSE OF IDEAS

Human intellect, ever since the evolution of *Homo sapiens*, has been actively and continuously engaging itself in knowing about the components of the universe of entities. An idea is generated when a knower knows an entity. Thus, a stream of ideas has been continuously flowing and accumulating constituting the universe of ideas. The totality of all the ideas preserved by civilisation at a particular point of time, constitutes the universe of knowledge. Thus, for each idea in the universe of

ideas there is an entity-correlate in the universe of entities. Therefore, the universe of ideas has also been continuously growing.

23 UNIVERSE OF SUBJECTS

The totality of all the sets of systematised body of ideas — that is, subjects — constitutes the universe of subjects. Thus, for each subject in the universe of subjects there is a set of idea correlates in the universe of ideas. Therefore, as the universe of ideas develops the universe of subjects also develops. Librarians are essentially concerned with the universe of subjects embodied in documents and in the queries of readers.

3 Need for the Division of the Universe of Subjects

As the universe of subjects is ever-dynamic and ever-growing, new ideas and combination of ideas, such as subjects, emerge from time to time. In the course of its development, the existence and rapid emergence of an increasingly larger number of subjects made it necessary for scholars to divide among themselves the field of work — that is, the universe of subjects taken as a whole — in such a way that each division contained a more or less homogeneous group of subjects, each group being fit to form a convenient field of specialisation among a group of scholars. The number of such initial groups of subjects is usually small. A classificationist intending to design a scheme for the classification of subjects in the universe of subjects as a whole, usually finds it convenient to initially group the subjects parallel to the general pattern of division of the field of work by scholars among themselves. As already mentioned in Paper F, in designing a scheme for classification and applying it for classifying and arranging documents or their surrogates in a helpful sequence according to the degree of mutual filiation of the subjects embodied in them, it is helpful to deem each of the homogeneous group of subjects to go with a "Subject-field" called a Basic Subject. Such a Basic Subject initially derived in the manner mentioned above is called a Primary Basic Subject. Every subject in the universe of subjects is deemed to go with one or other of the Primary Basic Subjects.

4 Fission

41 DIVISION WITHOUT DISCERNIBLE CHARACTERISTIC

The initial set of Primary Basic Subject included in a scheme for library classification results from a division by Fission of the universe of subjects in a manner similar to the division of the universe of subjects by scholars among themselves as convenient fields of specialisation. It may not be possible to discern a specific characteristic used in this initial division. Therefore,

this initial set of Primary Basic Subjects is taken to be postulated by the classificationist for the scheme he designs. Hence, the resulting divisions are called Traditional or Canonical Primary Basic Subjects. Further, as the Primary Basic Subjects in the initial set are derived by Fission, each of them is called a Fissioned Primary Basic Subject. Thus, the classificationist usually starts with a schedule of postulated traditional Fissioned Primary Basic Subjects. Schedules of isolates for the subjects going with each of the Primary Basic Subjects are then drawn up for the classification of these subjects.

42 CC, EDITION I

CC in its edition I (1933) enumerated the following Primary Basic Subjects:

9 Generalia	N Fine arts
A Science (General)	O Literature
B Mathematics	P Philology
C Physics	Q Religion
D Engineering	R Philosophy
E Chemistry	S Psychology
F Technology	T Education
G Natural science (general) and Biology	U Geography
H Geology	V History
I Botany	W Politics
J Agriculture	X Economics
K Zoology	Y Miscellaneous social sci- ences including Sociology
L Medicine	Z Law
M Useful arts	

In the terminology developed later, 9 Generalia, A Science (general) G Natural science (General) and Biology, and Y Miscellaneous social sciences including Sociology, would each be called a 'Partial Comprehension.'

43 FISSION: DEFINITION

It has been mentioned that the mode of formation of the first set of Primary Basic Subjects is by Fission. Fission is the process of division or splitting or breaking up into parts. This process has, until recently, been denoted by the term 'Dissection.' However, dissection usually implies the splitting, breaking up, etc. of an entity into parts by an outside agency. On the other hand, Fission is an internal process of division without the involvement of an outside agency (1). Hence, the term 'Fission' is

preferred in naming the process of division of the universe of subjects into Primary Basic Subjects.

5 Attribute of Primary Basic Subject

The Primary Basic Subjects enumerated in the schedules of a scheme for library classification are expected to be mutually exclusive and totally exhaustive of the universe of subjects concerned. The presumption is that no Primary Basic Subject can be expressed in terms of the other Primary Basic Subjects in the scheme for classification concerned. Experience in the designing and practical use of the schemes for library classification indicate that the initial set of Primary Basic Subjects formulated by a scheme for classification should be fairly stable in respect of the scope and coverage of subjects going with each of them and in respect of their sequence in the schedules. For this reason often the division of the universe of knowledge by those concerned with the study of the theory of knowledge or by philosophers is followed by the classificationist in the formulation of the initial set of Traditional Primary Basic Subjects. Further, the methodology for the design of schemes for library classification should provide for the correct representation of new developments of any of the subjects at the apical points, and for the interpolation and extrapolation of any variety of Basic Subject in the schedules without doing violence to the general pattern and structure of the scheme to any appreciable extent at least so long as there is no mutation in the mode of thinking of human beings.

6 Arrangement in CC

The Colon Classification, like most other general schemes for library classification, has formulated an initial schedule of Traditional Primary Basic Subjects. The set was derived by a direct Fission of the universe of subjects, following the pattern of division of the field of work by scholars among themselves for convenience of specialisation. It is not easy to recognise any explicit characteristic used in this division. Therefore, it is also difficult to pinpoint an attribute shared by these Basic Subjects which might be said to have been used in their arrangement in a helpful sequence.

However, in CC, in its initial set of Traditional Primary Basic Subjects, the following broad groups may be noted:

- Primary Basic Subjects covering the Natural Sciences
- Primary Basic Subjects covering the Useful Arts
- Primary Basic Subjects covering the Humanities
- Primary Basic Subjects covering the Social Sciences
- Primary Basic Subjects covering subjects not belonging to or associatable with any one of the above-mentioned groups alone.

The first four groups mentioned above are arranged among themselves in the sequence in which they are enumerated here. The last mentioned group is placed at the beginning of the schedule of Basic Subjects. The arrangement of the first four groups follows a traditionally accepted sequence or the consensus of a number of scholars. The sequence is said to conform to the Principle of Canonical Sequence or Traditional Sequence (3). All that can be said about the grouping and arrangement of these four sets may be as follows:

The disciplines concerned with the study of natural objects and phenomena constituting the environment of man (the traditional scientific disciplines) get grouped together and are placed first; the Useful Arts based on science and technology get grouped together and are arranged immediately after the natural science disciplines; the disciplines in the Humanities, essentially concerned with the study of man as an individual, get grouped together and are arranged immediately after the Useful Arts; the disciplines in the Social Sciences, essentially concerned with the study of man-in-society, get grouped together and are arranged immediately after the Humanities. The disciplines which cannot be associated predominantly with any one of the abovementioned groups of disciplines have been placed at the beginning of the set.

Such a grouping of the subjects and their arrangement in the sequence mentioned may be found in some of the philosophical systems of classification of knowledge (2).

61 DECREASING PREDICTABILITY AND INCREASING RICHNESS OF CONTENT

It may also be mentioned that the sequence Natural Sciences, Humanities, Social Sciences is in general conformity with the Principle of Decreasing Predictability and Increasing Richness of Content (4). For example, the subjects in the field of Mathematical Sciences with relatively the highest predictive quality but with little "content" are placed at one end of the spectrum, while the subjects in the field of Social Sciences with relatively poor predictive quality but with rich "content" are placed at the other end of the spectrum. The Humanities have an intermediate degree of predictive quality and richness of content.

62 PURE DISCIPLINE-APPLIED DISCIPLINE SEQUENCE

Within each of the broad groups of Primary Basic Subjects mentioned in the preceding section, a sub-grouping as Pure Discipline followed by Applied Discipline is discernible. In general, a Primary Basic Subject with which the subjects in an applied discipline are deemed to go is placed after the Primary Basic Subject with which the subjects in the pure discipline on

which the applied discipline is dominantly based, are deemed to go. For example:

Applied discipline		Pure discipline on which (a) is dominantly based
(a)		(b)
Engineering	<i>follows</i>	Physics
Chemical technology	<i>follows</i>	Chemistry
Agriculture	<i>follows</i>	Botany
Animal husbandry	<i>follows</i>	Zoology
Industrial economics	<i>follows</i>	Economics
Social work	<i>follows</i>	Sociology

The principle for guiding the arrangement used here is the principle of Pure discipline–Applied discipline sequence. It is of help in interpolating a new applied discipline in the schedule. For example, in CC, ed 7 the following applied disciplines have each a new Primary Basic Subject:

The applied discipline “Library service-in-action” is placed as an adjunct to the pure discipline “Library Science.”

The applied discipline “Economics-in-action” is placed as an adjunct to the pure discipline “Economics.” Similarly, when admitted,

“Applied Mathematics” will be adjunct to “Mathematics”;
 “Applied Physics” will be adjunct to “Physics”; and
 “Applied Chemistry” will be adjunct to “Chemistry.”

63 PRIMARY BASIC SUBJECTS COVERING PURE DISCIPLINES

631 *Natural Sciences Group*

The Primary Basic Subjects covering the pure disciplines in the Natural Sciences group are arranged among themselves according to the Principle of Increasing Concreteness or the Principle of Decreasing Abstractness. The sequence of the following Primary Basic Subjects is illustrative of this:

Mathematics	Geology
Physics	Botany
Chemistry	Zoology
Biology	

The sequence conforms also to the Principle of Increasing Complexity.

As mentioned in Sec 61, predictability decreases and richness of “content” increases as we move from Mathematical sciences,

through the Physical and Chemical Sciences, to the Biological Sciences.

632 *Useful Arts*

Useful Arts covers a conglomeration of several groups of subjects. These subjects largely deal with science-based crafts involving skill and art. Hence the position of Useful Arts between the schedule of Primary Basic Subjects covering Natural Sciences on one side and the schedule of Primary Basic Subjects covering Humanities and Social Sciences, on the other side.

633 *Humanities Group*

The Primary Basic Subjects covering the pure disciplines in the Humanities group are arranged among themselves according to the Principle of Increasing Artificiality or the Principle of Decreasing Naturalness. The sequence of the following Primary Basic Subjects is illustrative of this:

Spiritual Experience and Mysticism	Linguistics Religion
Fine Arts	Philosophy
Literature	Psychology

634 *Social Sciences Group*

The Primary Basic Subjects covering the pure disciplines in the Social Sciences group are arranged among themselves according to the Principle of Increasing Artificiality or the Principle of Decreasing Naturalness. The sequence of the following Primary Basic Subjects is illustrative of this:

Education	Political Science	Sociology
Geography	Economics	Law
History		

7 **New Primary Basic Subjects**

An important factor for consideration in designing a general scheme for library classification is that, as the universe of subjects develops, there will be need to formulate new Primary Basic Subjects and accommodating them helpfully in the schedule. For example, new ideas and new subjects may emerge which from the point of view of helpfulness to the specialists in the field may be preferably deemed to go with a new Primary Basic Subject than with an existing one. The accelerated and complex development in the universe of subjects as witnessed in the recent past poses problems in the formulation of new Basic Subjects which will conform to the conditions mentioned in Sec 5. Over a period of four decades from 1933 to 1973, the number of Primary Basic Subjects alone in CC has increased from a

mere two dozens to about 140. One helpful approach to have some control over the situation has been to study the mode of formation of each of the Basic Subjects and categorise the modes into a few patterns at a near-seminal level. With respect to new Primary Basic Subjects, the following modes have been recognised:

Distillation 1;
Distillation 2;
Fusion; and
Clustering.

Further, in order to facilitate and secure consistency in the interpolation and extrapolation of new Primary Basic Subjects, several guiding principles have been used.

New Primary Basic Subjects formed according to each of these modes and their management in a helpful sequence are discussed in the succeeding papers.

8 Bibliographical References

- 1 Sec 43 PARKHI (R S). Library classification: Evaluation of a dynamic theory. 1972. Sec Mh.
- 2 Sec 6 —, —. Chap E.
- 3 Sec 6 RANGANATHAN (S R). Prolegomena to library classification. Ed 3. Assist by M A Gopinath. 1967. Chapter FG.
- 4 Sec 61 REISER (O L). Integration of knowledge. 1958. Chap 6.