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Conflict in Classification for Document Retrieval.*

(Classification problems. 13).

S R RANGANATHAN.

States the conflict between changing the facet sequence and the Class Number of a subject to meet the needs of specialist readers on the one hand, and maintaining uniqueness of Class Number and of facet sequence as determined by postulates and principles on the other. Describes the method of bye-passing the conflict with the aid of Class Index Entries in generalist libraries, of formation of Favoured Collection in specialist libraries, and of inserting in the alphabetical index of a documentation list blocks of duplicates of relevant main entries under the name of the isolate of interest to the specialist reader.

ABBREVIATIONS USED

(BC) = Basic Class

CC = Colon Classification

DC = Decimal Classification

(CN) = Class Number

UDC = Universal Decimal Classification

1 Introduction

This paper is restricted to service to specialist readers. It deals with service of conventional books—that is, macro-documents—as well as articles in periodicals—that is, micro-documents. It is developed on the assumption that a subject has an individuality of its own. The integrity of a subject should be respected in naming it—be it in a natural language or in a classificatory language. In other words, its name in either

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language should be unique. This is now being increasingly recognised.

11 NATURAL LANGUAGE

In the context of natural language, this recognition is reflected by the progressive intensification of the establishment of standard terminology for diverse subject fields. The TC 37 of the International Standards Organisation has been entrusted with the promotion of standard terminology. There are also corresponding attempts in the national standards organizations of various countries. For example, the British Standards Institution has already established standard glossaries for several subjects. The Indian Standards Institution has established standard terminology for library classification and library catalogue. But there are difficulties in the widespread implementation of the standard terminology in a natural language. For, the words making up a standard terminology are taken from the words in common use. Normally, a person makes listless variations in the words used by him and in the meaning attached by him to words. This common tendency works against the firm establishment of the use of standard terminology. Indeed, there is even allergy, if not resistance, among many persons to standard terminology.

12 CLASSIFICATORY LANGUAGE

In the context of a classificatory language, the situation is not so difficult. Because classificatory language is not a language used by the common man. It is built and used only by the practitioners of the library profession. Moreover, it is an artificial language made of ordinal numbers and not of words in a natural language.

13 DC LANGUAGE

DC language was conceived by its author, as one giving a unique (CN) to each subject. However, the provision for representation of one facet alone or of one free facet alone, even if two or more facets are allowed, has vitiated the uniqueness

of DC number for many subjects embodied in even macro-documents of today. Merrill's *Code for classifier's* [1] bears testimony to this. The deviation from the provision of unique (CN) gets very pronounced when DC is used for classifying micro-thought.

14 A FALSE NOTION

A few years ago, a false notion was started in regard to "Integrity of (CN)". It was apparently forgotten that what is expected of standard terminology — be it in a natural language or in a classificatory language — is uniqueness and not permanence. It is a postulate in standardisation that standards should not freeze development but that they should be revised from time to time to keep step with the development. Overlooking this postulate, when the revision of DC was taken up some years ago, it was argued by some that the then existing (CN) should not be altered. This position was found to be too untenable to be respected. On the other hand, the Principle of Osmosis [3] provides a device to meet the inexorable need for change in (CN), at the least cost. Change in (CN) only denies permanence to it. But in any one epoch, its uniqueness can be and ought to be respected.

15 UDC LANGUAGE

The UDC language provides for more than one free facet in a (CN) at least outside its DC core. But its rules provide for alternative (CN) for one and the same subject. This is secured by allowing alternative sequences among the facets of a subject. This freedom denies uniqueness to UDC number. This freedom was taken by the promoters of UDC, as there was no penetrating theory of classification to guide them.

16 CC LANGUAGE

The CC language has altogether changed the foundations of classification. In its earlier editions it was ensuring uniqueness of (CN) for a subject with the aid of a facet formula and by making all the facets free facets. This worked fairly well for

macro-thought. By 1948 it came to be used to classify micro-thought also. Then the rigidity of a predetermined facet formula proved to be an obstruction. It is now realised that facets belong to a subject and not to (BC). Subjects going with one and the same (BC) may present several facets—many in number and different in nature. To meet the situation, CC took its foundation close to the seminal level. This has led to its being guided by postulates and principles. Indeed it has become a guided analytico-synthetic scheme [2]. In this version of CC, the facets of a subject have a definite sequence. The pattern of facet sequence is similar in all subjects. What is relevant to our present discussion is that the CC number representing a given subject is unique.

17 HELPFUL SEQUENCE

The unique CC numbers of the diverse subjects throw them into a helpful sequence. Helpful to whom? Certainly not to all. But equally certainly helpful to the majority of readers—generalist or specialist. The belief is that this quality of CC numbers will endure so long as the mode of thinking current today continues unaltered by any sudden mutation.

18 MINORITY AMONG SPECIALISTS

What about the minority among specialists whose interest can be served, if the sequence of documents, helpful to them, can be obtained, only by changing the sequence of facets in the (CN). The democracy of the Five Laws of Library Science is of a severe kind. A specialist reader, even if he were in a minority of one, should be served as efficiently as the majority. There is, thus, a dilemma. Are we to respect the severe democratic demand of the Five Laws of Library Science and change the sequence of facets in the (CN) to suit the needs of the minority, sacrificing the uniqueness of (CN)? Or, are we to preserve the uniqueness of (CN), disobeying the demands of the Five Laws of Library Science? The UDC decided in favour of the first alternative. In the view of CC, the dilemma can be resolved without sacrificing either of the apparently conflicting alternatives in one of three

ways — invoking the aid of the catalogue or invoking the aid of administrative methods or extending the catalogue. This paper explains these three methods. We shall start with some examples and arrive at a generalisation.

2 Needs of the Majority of Specialists

Consider the following set of macro subjects :

21 TABLE I. FIFTY-ONE SUBJECTS

SN	(CN)	Subject
1	B _y 42	History of mathematical thought in Japan
2	B _y 423	History of mathematical thought in Kyushu
3	B _y 45	History of mathematical thought in Persia
4	B2	Algebra
5	B3	Analysis
6	K96	Birds
7	K96.42	Birds in Japan
8	K96.423	Birds in Kyushu
9	K96.45	Birds in Persia
10	K96.2	Anatomy of birds
11	R	Philosophy
12	R3	Metaphysics
13	R842	Japanese philosophy
14	R842,3	Japanese metaphysics
15	R8423	Kyushu philosophy
16	R8423,3	Kyushu metaphysics
17	R845	Persian philosophy
18	R845,3	Persian metaphysics
19	T3	Adult education
20	T3.42	Adult education in Japan
21	T3.423	Adult education in Kyushu
22	T3.45	Adult education in Persia
23	T3:2	Curriculum for adult education
24	T3:2.42	Curriculum for adult education in Japan
25	T3:2.423	Curriculum for adult education in Kyushu
26	T3:2.45	Curriculum for adult education in Persia
27	U47	Human geography
28	U47.42	Human geography of Japan
29	U47.423	Human geography of Kyushu
30	U47.45	Human geography of Persia

SN	(CN)	Subject
31	U5	Political geography
32	V42:2	Constitutional history of Japan
33	V423:2	Constitutional history of Kyushu
34	V45:2	Constitutional history of Persia
35	Wa	Bibliography of political science
36	Wv42	History of political thought in Japan
37	Wv423	History of political thought in Kyushu
38	Wv45	History of political thought in Persia
39	W	Political science
40	Y	Sociology
41	Y:2	Anthropometry
42	Y742:2	Anthropometry of Japanese
43	Y7423:2	Anthropometry of Kyushu ites
44	Y745:2	Anthropometry of Persians
45	Z	Law
46	Z42	Japanese law
47	Z423	Kyushu law
48	Z45	Persian law
49	Z56	British law
50	Z73	United States law
51	Z(Q7)	Islamic law

22 STRENGTH OF BOND AND THE READER

Normally, the interest of readers goes by (BC). Specialisation is also by (BC). These form the majority of readers—generalist as well as specialist. Therefore, the above-mentioned sequence of the fifty-one subjects will meet the needs of the majority of readers. This is what we mean by saying that

- 1 The bond strength is greatest in the left end of the (CN).
- 2 The bond strength is the least at the right end of the (CN).
- 3 The bond strength decreases gradually as we move from the left end to the right end of the (CN).
- 4 The interests of the majority of readers including specialists cluster round the strong-bond-end of the (CN).
- 5 The interests of a small minority of specialists may cluster round the weak-bond-end of the (CN).

6 The interests of some other small minority of readers may cluster round some facet in the middle of the (CN).

The above mentioned statements will be valid if the (CN) of a subject is got on the basis of an analytico-synthetic classification such as the Colon Classification guided by the set of postulates and principles current at present.

3 Needs of Area Specialists

To consider the insistence of the Five Laws of Library Science on the equal rights for helpful sequence of the minorities, for convenience and without loss of generality, we may consider the rights of an Area Specialist—that is, one specialising in every subject. The sequence of subjects determined by the (CN) given in Sec 2 will not serve the Five Laws of Library Science in the case of an Area Specialist on Japan. His interest clusters round 'Japan'. His needs will be satisfied, if and only if the 22 subjects mentioned in Sec 2, having 'Japan' or one of its subdivisions, as a kernel term, are brought together without the interpolation of books belonging to any of the other 29 subjects. Let us remember that a guided analytico-synthetic classification implies the upholding of the uniqueness of (CN). Such a scheme, therefore, says, "I cannot serve two masters"—groups of readers with differing interests. I can only serve one group. It is desirable that it is the majority group.

The Five Laws protest saying "For a parent, the weakest child is as important as the strongest. So also for us, the minority specialists are as important as majority specialists. Library technique should carry out our needs". Classification pleads, "I do not claim to be the only library technique. What I cannot do without causing confusion and inconsistency, I shall ask the catalogue to do. I shall co-operate with the catalogue. I shall spin out the (CN) into a chain. I shall throw out as a tow for the catalogue, the weak-bond-end of a Space Isolate and also any intermediate facets having less bond strength than the one at the left end — whatever is needed".

4 Help of the Catalogue

The Class Index Entries with Japan (as a whole) as the first heading will bring together the (CN) of all the subjects of interest to the Area Specialist on Japan in the following way:—

41 TABLE 2. WITH 'JAPAN' AS FIRST HEADING

SN	Subject heading
1	Japan, Adult, Education.
2	Japan, Anthropometry.
3	Japan, Birds.
4	Japan, Constitution, History.
5	Japan, Curriculum, Adult.
6	Japan, History, Mathematics.
7	Japan, History, Political science.
8	Japan, Human geography.
9	Japan, Law.
10	Japan, Metaphysics.
11	Japan, Philosophy.

42 DIVISIONS OF JAPAN

But a 'Japan specialist' will need also documents on the subjects with 'Kyushu' as kernel term. These will be the following:

43 TABLE 3. WITH 'KYUSHU' AS FIRST HEADING

SN	Subject heading
1	Kyushu, Adult, Education.
2	Kyushu, Anthropometry.
3	Kyushu, Birds.
4	Kyushu, Constitution, History.
5	Kyushu, Curriculum, Adult.
6	Kyushu, History, Mathematics.
7	Kyushu, History, Political science.
8	Kyushu, Human geography.
9	Kyushu, Law.
10	Kyushu, Metaphysics.
11	Kyushu, Philosophy.

44 PROTEST OF LAW 4

The above-mentioned 22 Class Index Entries will ask the 'Japan specialist' to look up 22 different spots in the stack room. In the case of micro-documents, it will ask him to look up 22 spots in the classified part of the documentation list. Against this the Fourth Law will say, "This will involve waste of time for the specialist. Very often the specialist may feel too worn out and even too disgusted to go from spot to spot." Against this legitimate protest of the Fourth Law, classification and cataloguing will jointly state as follows: "We do not claim to be the only library techniques. What we cannot do by ourselves, we shall ask administrative methods to do".

5 Favoured Collection in a Specialist Library

In a library specialising on Japan, the protest of the Fourth Law can be met by pulling out all the books with "Japan" or any of its divisions as a kernel term in their respective subjects and forming a special collection of them. This will be the favoured collection for that specialist library. The books in the Favoured Collection will stand arranged strictly in the sequence of their unique (CN). This will certainly be a help to the specialist. If the library is for Area Specialist in general, the favoured collection may consist of sub-collections—one for each area. All the other books will together form the secondary collection. In an Area Specialist Library then, the resulting sequence of the 51 subjects mentioned in Sec 2 will be as follows:

51 TABLE 4. PRIMARY COLLECTION

SN	(CN)	Subject
JAPAN		
1	Bv42	History of mathematical thought in Japan
2	Bv423	History of mathematical thought in Kyushu
3	K96.42	Birds in Japan
4	K96.423	Birds in Kyushu

51 TABLE 4. PRIMARY COLLECTION—*Contd.*

SN	(GN)	Subject
5	R842	Japanese philosophy
6	R842,3	Japanese metaphysics
7	R8423	Kyushu philosophy
8	R843,3	Kyushu metaphysics
9	T3.42	Adult education in Japan
10	T3.423	Adult education in Kyushu
11	T3:2.42	Curriculum for adult education in Japan
12	T3:2.423	Curriculum for adult education in Kyushu
13	U47.42	Human geography of Japan
14	U47.423	Human geography of Kyushu
15	V42:2	Constitutional history of Japan
16	V423:2	Constitutional history of Kyushu
17	Wv42	History of political thought in Japan
18	Wv423	History of political thought in Kyushu
19	Y742:2	Anthropometry of Japanese
20	Y7423:2	Anthropometry of Kyushu ites
21	Z42	Japanese law
22	Z423	Kyushu law
PERSIA		
23	Bv45	History of mathematical thought in Persia
24	K96.45	Birds in Persia
25	R845	Persian philosophy
26	R845,3	Persian metaphysics
27	T3.45	Adult education in Persia
28	T3:2.45	Curriculum for adult education in Persia
29	U47.45	Human geography in Persia
30	V45:2	Constitutional history of Persia
31	Wv45	History of political thought in Persia
32	Y745:2	Anthropometry of Persians
33	Z45	Persian law
UNITED KINGDOM		
34	Z56	British law
UNITED STATES		
35	Z73	United States law

Then will follow the other subjects, forming the Secondary Collection as shown in Table 5 below.

52 TABLE 5. SECONDARY COLLECTION

SN	(CN)	Subject
1	B2	Algebra
2	B3	Analysis
3	K96	Birds
4	K96:2	Anatomy of birds
5	R	Philosophy
6	R3	Metaphysics
7	T3	Adult education
8	T3:2	Curriculum in adult education
9	U47	Human geography
10	U5	Political geography
11	Wa	Bibliography of political science
12	W	Political science
13	Y	Sociology
14	Y:2	Anthropometry
15	Z	Law
16	Z(Q7)	Islamic law

The Collection Number for these books may be suitably designed. Perhaps, '42' may be written above the (CN) for the Japan collection. Similarly, '45' may be written above the (CN) for the "Persia collection" and so on. Similarly, bay guides with legends such as '42 Japan' and '45 Persia' may be put up in the stack room to mark off the respective "Area Collections". The classified part of the catalogue also may be staggered into a corresponding number of parts with guide cards such as '42 Japan', '45 Persia', etc.

6 Sub-areas

The sub-areas in the solution mentioned in Sec 5 raise another problem. The subjects under the heading '42 Japan' include not only those with area '42 Japan' as isolate but also those with sub-area '423 Kyushu' as isolate. In fact, subjects with many other co-ordinate sub-areas as isolates will occur in the "Japan collection". Similarly, subjects with many other sub-sub-areas as isolates will also occur in the collection.

61 MOOT POINT

Should there be a single collection under 'Japan'? Or, should there be several collections under 'Japan'—One for 'Japan' as a whole, one for each of the first order divisions of Japan, one for each of the second order divisions of Japan, and so on, as shown in Table 6 below?

62 TABLE 6. STAGGERING OF PRIMARY COLLECTION

SN	(CN)	Subject
JAPAN		
1	Bv42	History of mathematical thought in Japan
2	K96.42	Birds in Japan
3	R842	Japanese philosophy
4	R842.3	Japanese metaphysics
5	T3.42	Adult education in Japan
6	T3:2.42	Curriculum for adult education in Japan
7	U47.42	Human geography of Japan
8	U42:2	Constitutional history of Japan
9	Wv42	History of political thought in Japan
10	Y742:2	Anthropometry of Japanese
11	Z42	Japanese law
KYUSHU		
12	Bv423	History of mathematical thought in Kyushu
13	K96.423	Birds in Kyushu
14	R8423	Kyushu philosophy
15	R8423.3	Kyushu metaphysics
16	T3.423	Adult education in Kyushu
17	T3:2.423	Curriculum for adult education in Kyushu
18	U47.423	Human geography of Kyushu
19	V423:2	Constitutional history of Kyushu
20	Wv423	History of political thought in Kyushu
21	Y7423:2	Anthropometry of Kyushuities
22	Z423	Kyushu law

It is for consideration whether helpfulness of arrangement will not be jeopardised, if the collection is staggered in a detailed way. This is a moot point that will arise if favoured collections are to be formed for isolates at the weak-bond-end or even at

any intermediate point in the bond-scale in the (CN). Perhaps, a satisfactory solution can be found to suit the specific context of a particular specialist library. The solution will be different in different contexts.

63 ELEGANT SOLUTION

Let us forget the problem of sub-areas, sub-sub-areas etc, for the time being. Or, let us assume that it is solved satisfactorily. The method of meeting the needs of minority specialists with the aid of Collection Numbers and the formation of favoured collections preserves the uniqueness of (CN). Perhaps, this is a more elegant and less disturbing method of serving minority specialists than varying the (CN) themselves to suit the interests of different kinds of minority specialists.

7 Documentation Lists

The question of forming favoured collections of books in the stack room does not arise in respect of micro-documents without independent physical existence but occurring in host macro-documents. In their case, their retrieval has to depend only on the documentation list. In the documentation list itself, all the problems discussed in Sec 2 to 6 will arise. But there may be one difference. The staggering of the collection of main entries into a number of specialist collection of main entries will involve difficulties and may become uneconomical, unless the documentation list is strictly a local one serving a single specified class of specialists.

71 ENRICHMENT OF INDEX ENTRIES

B C Tewari of the Indian Council of World Affairs pressed this problem on me at the time of the Library Seminar on Research in the Social Sciences held in New Delhi, in 1959. Area-grouping may arise in several other specialist interests. When I met P K Garde in November 1964 at the Rutgers Seminar on Colon Classification, he told me that he had faced these difficulties in the ECAFE Library at Bangkok. He had improvised a method to get over this difficulty. That method was to add an 'Area Index

Entry' — index entry having the name of a geographical area as the heading — for specified areas of interest. In our discussion the following solution was arrived at as more economical and helpful. For each main entry, whose (CN) has an Area Isolate number — be it in Personality Facet or in Space Facet — a duplicate card of the main entry should be prepared. One of these cards should be filed in the normal way in the classified part of the documentation list. On the top of the second card, the name of the area isolate should be added in words. This card should be filed in the proper place in the alphabetical index part. As a result, for example under the heading 'Japan' in the alphabetical part, will be found together a duplicate set of the main entries of all the subjects with Japan or any of its divisions as the case may be as the kernel term. Similarly with every other geographical area. Similarly with every other isolate term denoting the primary kernel idea of specialisation. The economy in this method is twofold. In the physical production of the entries for the index part, no extra cost of typing out is involved. In respect of the mental strain of the users, all the entries relating to — say, 'Japan' — will appear in the index part in a helpful sequence. This economy is a subtle hidden one, but of great value.

72 A NEW EXPERIMENT

Garde has now become the Head of the Reference Division of the United Nations Library. He is already feeling the pressure of the problem of the "Area Specialist". I have requested him to try out this new solution and report the result in due course.

The above-mentioned solution may not be economical in a generalist library with but a few specialist readers. In this case, it is more economical to follow the method indicated in Sec 4.

8 Conclusion

It is believed that it is more advantageous to uphold the uniqueness of (CN) and meet the requirement of the Five Laws of Library Science with the aid of the catalogue and administrative method. This conclusion is not special to the set of postulates

and principles now formulated and used in guiding the design of an analytico-synthetic classification. The same conflict will arise and the same solution will be valid even when any alternative postulates and principles are formulated and brought into use as guide to classification.

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Promotion of Co-operation in Classification Research.

(Classification problems. 14).

A NEELAMEGHAN, *Documentation Research and Training Centre, Bangalore* 3.

Reviews the Indian Standard *Glossary of classification terms* (1964) and Parkhi's *Decimal classification and colon classification in perspective*. Examines and establishes the value of a glossary of terms to facilitate communication among those interested in library classification. The development of the Indian *Glossary* is traced briefly. Attention is drawn to the structure of the *Glossary* and the advantages of the classified arrangement of the terms is stressed upon. Points for consideration in the revision of the *Glossary* are mentioned. Parkhi's method of comparison of DC and CC on the basis of postulates and principles is commented upon and commended. Highlights the value of the books to classificationists, classifiers, and teachers and students of library science.