

**General Theory of Library Classification and Classifying According to UDC.**  
(Classification problems. 57).

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[A classified catalogue has to be based on a scheme for classification. The basis of the design of a classified catalogue is "Classifying". UDC is primarily meant to serve as a basis for designing a classified catalogue. Classifying according to UDC is examined in the light of the postulates for facet analysis and the principles for determining facet sequence, forming part of the General Theory of Library Classification developed by S R Ranganathan in his *Prolegomena to library classification*. For this purpose, the principles, governing the development of UDC in its formative stage, are distilled out from the "General Introduction", Outline Structure, Auxiliary Tables and from the schedules. Each distinctive feature of UDC is correlated to the relevant basic principles. The devices prescribed by UDC for classifying in conformity with its basic principles are discussed with illustrative examples. Classifying according to UDC, for designing a Multiple Entry Classified Catalogue is demonstrated and the disadvantages of the latter are mentioned. The Single Entry System prescribed by the *Guide to UDC* (1963) is discussed. The principles for determining the Facet Sequence in a compound subject, prescribed by the *Guide*, are examined. It is shown that each of these principles has a corresponding postulate or principle, as the case may be, in the General Theory of Library Classification. This General Theory may be adopted by any scheme for classification for its design and development. For example, CC has adopted this. This General Theory has prescribed the Postulational Method of Classifying. An examination of the principles, for determining the facet sequence in a compound subject, as prescribed by the *Guide* indicates that it intends to recommend the Postulational Method of Classifying, though inadequately, as prescribed by the General Theory of Library Classification. It is shown that UDC has

the necessary "flexibility" for being adapted for this purpose, though at the cost of some economy and effectiveness. To ensure economy and effectiveness, much rethinking on the design and development of UDC will be necessary. The use of the Postulational Method of Classifying by UDC is demonstrated with an example.]

## 0 Introduction

### 01 OBLIGATION OF A LIBRARY CATALOGUE

A library catalogue must be equipped to satisfy a specific subject query. To satisfy a specific subject query, it has to provide information about the

- 1 Documents exclusively devoted to the specific subject;
- 2 Documents embodying subjects of extension greater than that of the specific subject, but having substantial portions devoted to it; and
- 3 Documents embodying subjects of extension smaller than that of the specific subject, but dealing with some facet of it.

The documents on the subjects collateral to the specific subject may contain some information, though indirectly, relevant to the purpose in hand. The library catalogue, therefore, is to provide further, the information about these documents.

### 02 TWO PRIMARY FORMS OF LIBRARY CATALOGUE

For the purpose of satisfying a specific subject query, a library may adopt either a

- 1 Classified Catalogue; or a
- 2 Dictionary Catalogue.

Each of these systems, taken as a whole, serves other purposes also. In a classified catalogue only the classified part together with its subject index in the alphabetical part is meant to serve this purpose. In a dictionary catalogue only the subject index made up of specific subject entries and of *See also* subject entries is meant to serve this purpose. Experience shows that in satisfying a specific subject query, a classified catalogue is far more efficient than a dictionary catalogue designed in the usual way (8).

### 03 CLASSIFYING

A classified catalogue has to be based on a scheme for classification. On the contrary, a dictionary catalogue has no such obligation. The basic operation governing the design of a classified catalogue is "Classifying". In a library, classifying ordinarily implies:

1 The use of a scheme for classification applicable to the universe of subjects, indicating implicitly or explicitly the associated succession of characteristics;

2 The assignment of each subject to the appropriate class of the scheme for classification, by ascertaining the way in which each of the characteristics of the scheme is shared by it;

3 The synthesis of the class number of each subject;

4 The use of the class number for

Arranging the documents embodying subjects, on the shelves

Arranging the main entries and the cross reference entries in the classified part of the catalogue; and

Deriving the headings of the subject index entries and

5 The creation of a new class when necessary, in accordance with the prescribed postulates and principles governing the design of the scheme for classification (12).

#### 04 NECESSARY ATTRIBUTES OF A SCHEME FOR CLASSIFICATION

The knowledge of the postulates and principles governing the design of the scheme for classification used, is therefore, essential for a classifier. To help classifying for the purpose of designing a classified catalogue, a scheme for classification should therefore possess the following attributes:

1 It should mention explicitly the postulates and principles governing its method of design;

2 It should prescribe a systematic procedure based on the postulates and principles to arrive at the appropriate class number for a subject; and

3 It should also preferably prescribe a systematic procedure to derive subject headings from a class number constructed according to it.

#### 05 SCOPE OF THE PAPER

For obvious reasons, the design and development of UDC could not be consciously based on the General Theory of Library Classification developed by S R Ranganathan in his *Prolegomena to library classification* (12). Nor did it mention explicitly the postulates and principles governing its method of design. This has been a handicap to the classifier using UDC. For, it would appear that in the absence of the explicit statement of these postulates and principles neither UDC itself could prescribe nor any classifier could develop, a systematic procedure for classifying, that would ensure consistency in practice with UDC. Further, it seems that due to the same reason, hardly any attention was paid to develop a systematic procedure to derive subject headings from UDC class numbers. In 1960, S R Ranganathan and A S Raizada demonstrated that the Postulational Method

of Classifying prescribed by the General Theory of Library Classification could be helpfully applied for classifying according to UDC (7, 19). This demonstration might have initiated some rethinking about classifying by UDC. For, in 1963, we find the Guide to UDC (= *Guide*) (2) published. It aims at prescribing a systematic procedure for classifying by UDC and for deriving subject headings from UDC class numbers. This paper attempts to

- 1 Distil out the postulates and principles implied in the design of UDC at its formative stage;
- 2 Identify the systematic procedure of classifying that would be in conformity with these original postulates and principles;
- 3 Spell out the full implication of each of the different principles recommended by the *Guide* to show its degree of conformity with those in the General Theory of Library Classification;
- 4 Show how far the principles recommended by the *Guide* deviate from the original ones;
- 5 Demonstrate the systematic procedure implied in the principles recommended by the *Guide*; and
- 6 Indicate the implication of this systematic procedure of classifying to the design and development of UDC.

No attempt is made here to demonstrate any systematic procedure of deriving subject headings from UDC class numbers.

## 1 Basic Principles Governing the Development of UDC

### 11 DC AS THE PROTOTYPE

It is well known that UDC is the result of remoulding and expansion in detail of the Decimal Classification (= DC) of Melvil Dewey. This was done under the auspices of the Institute International de Bibliographie. The purpose was to adapt it for classifying micro documents and to develop a classified catalogue for them.

### 12 DISTILLED PRINCIPLES

There were some basic principles that governed the development of UDC. These principles are not explicitly stated. But they are either implied in the structure of UDC or embedded in its General Introduction, Outline Structure, Auxiliary Tables, etc (20). It is possible to distil them out. Some of these distilled principles pertaining to the work in the idea plane and in the notational plane are given in the following sub-sections.

#### 121 *Principles for Work in the Idea Plane*

- 1 A scheme for classification should be so designed that it can meet the requirement of the specialist as well as of the

generalist by reconciling the conflicting interest wherever necessary.

2 A scheme for classification should accommodate any new formation in the universe of subjects.

3 A scheme for classification should reveal in its structure all the features which practical test of classifying has shown to be desirable.

4 There are no easily determinable "natural" relative sequence of the main subjects; on the other hand, the sequence of the main subjects in a scheme for classification, designed to meet a specific purpose, is always found to be reasonably helpful.

5 No theory of relative collocation of the main subjects is free from particular bias; and any alternative arrangement is open to adverse criticism, if a suitable standpoint is selected.

6 A concept by itself is always not a subject; but there are factors which define such a concept sufficiently for it to become a constituent of a compound subject. For example "Iron" is a concept not capable of being deemed to be a subject by itself, but it is a constituent concept in each of the following compound subjects: "Iron ore deposits", "The element iron", and "Metallurgy of iron".

7 There are constituent concepts which may go with any subject — such as, the constituent concepts falling in the category "Place" and the constituent concepts falling in the category "Time" — each of which may be called a "Common Auxiliary Subdivision".

8 There are constituent concepts which may normally form part of most of the compound subjects going with a restricted number of main subjects — such as, the constituent concepts falling in the category "Parts of Machinery" and the constituent concepts falling in the category "Shape of Products", which may form part of several compound subjects going with the different main subjects in "Applied Sciences" — each of which may be called a "Special Auxiliary Subdivision".

9 A scheme for classification should recognise the Common Auxiliary Subdivisions and the Special Auxiliary Subdivisions; and it should categorise them helpfully in their respective schedules to achieve economy in the length of the schedules by avoiding repeated enumeration.

10 A scheme for classification should prefer to prescribe devices to form, or extend, or sharpen a subject or a concept to achieve economy in the length of the schedules by avoiding repeated enumeration.

11 There is no logical sequence of the "Constituent Concepts" of a "Subject"; and a "Subject" is, to this extent, an arbitrary subdivision of each of its "Constituent Concepts";

for example, the subject "Mining for Copper in England" may be deemed by different specialists to be a subdivision of either the concept "Mining", or of the concept "Copper" or of the concept "England".

12 The arrangement of the compound subjects, going with a main subject should be according to the principle of "From Groups of Wide Extent to the Groups of Less Extent" without any undue stress on any theory of relative collocation of the main subjects.

#### 122 *Principle for Work in the Notational Plane*

1 The notation of a scheme for classification should admit of infinite interpolation between any two members without disturbing the sequence of the original numbers in a series.

2 The notation of a scheme for classification should consist of the series of indeterminate, infinitely extended decimal fractions.

3 The digits constituting the base of the notation of a scheme for classification should preferably be universally understood.

4 A scheme for classification should include the notational devices to guide the construction of a number for a subject or for a concept not enumerated in the schedule.

5 The notation of a scheme for classification should be fully equipped to admit of the construction of a class number by assembling the pertinent "Simple Constituents" (Notational Plane) each representing a Constituent Concept.

6 The number of digits in a "Simple Constituent" (Notational Plane) should ordinarily be as many as can be readily assembled in the mind and transcribed on to paper.

7 In the notational plane, a scheme for classification should be "Synthetic"—that is, its notation should admit of the construction of multiple class numbers for the same subject by cyclic permutation of the "Simple Constituents" (Notational Plane) involved—as distinct from a purely "Analytic" one, which prescribes one and only one sequence of the "Simple Constituents" (Notational Plane) for the construction of one and only one class number for each subject, specially for a compound subject.

8 The advantages of a Synthetic Scheme outweigh the disadvantages occasioned by the *vagueness* in the specification of the sequence of the resulting compound classes.

9 As far as necessary and sufficient, a class number should be coextensive with the subject represented by it.

10 The practical usefulness of a scheme for classification is much more concerned with making provision for classifying

coextensively than with restricting the number of digits in a class number.

### 123 *Restrictive Coextensiveness*

The basic principles enumerated as categories 8 and 9 above prescribe classifying coextensively. The intention of these principles is to be understood in the light of the following empirical principles found embedded in "Rules for Classifying" given in UDC (20).

1 Over-elaboration of a class number confuses an unskilled user, defeats the object in view, and results in waste of time.

2 To avoid over-elaboration of a class number, the use of the numbers for Auxiliary Subdivisions, both Common and Special, should be kept restricted to the minimum.

3 For the classified part of the catalogue of a general library, the class number should be worked out as brief as will allow the entry to be segregated within a reasonably small group, say, not exceeding 20 to 50 entries.

4 For the classified part of the catalogue in a specialist library, the class number may be constructed to be coextensive with the specific subject represented by it; but it is necessary to keep the use of the numbers for Auxiliary Subdivisions, both Common and Special, restricted to the minimum. For example, the class number for the subject "Copper mining in Utah" may be worked out as for the subject "Mining of Copper Deposits" and it may be used for the Main Entry. If the "place" aspect is considered helpful, a separate class number for the subject "Mining in Utah" may be worked out and it may be used for another Main Entry or for Cross Reference Entry.

5 For the purpose of shelving, the Class Number may be worked out even briefer than that worked out for the Main Entry in the Classified Part of the Catalogue.

## 2 *Distinctive Feature of UDC*

### 20 *Root*

It is evident that many of the principles that governed the development of UDC were the same as those governing the design of DC. However, the principles enumerated in Sec 121, 122 and 123 above additionally furnish the necessary explanation for UDC choosing DC as its prototype, as well as for its deviation from DC. It may be noted that of all the principles, the following are primarily responsible for the significant distinctive features of UDC:

1 The principle ruling out any "logical" sequence of the Constituent Concepts in the name of a compound subject in the idea plane (See Category 11 in Sec 121);

2 The principle preferring a "Synthetic" scheme as distinct from a "Purely Analytic" one in the notational plane (*See* Categories 7 and 8 in Sec 122); and

3 The principle prescribing coextensive classifying of each subject in the notational plane (*See* Categories 9 and 10 in Sec 122; and Sec 123).

The significant distinctive features of UDC are furnished in the following subsections:

#### 21 CLASSIFIED CATALOGUE ENVISAGED BY UDC

The principles forming the root of the distinctive features of UDC have their impact on the classified catalogue envisaged by UDC. As a result, this is to consist of the

1 Classified part made up of the Main Entries and the Cross Reference Entries under the multiple class numbers for each specific subject; and

2 Alphabetical part made up of general subject entries.

#### 22 GROUPING OF SUBJECTS

Classifying by UDC has to be in conformity with the principles forming the root of its distinctive features. As a consequence, UDC distinguishes the subjects to be classified by it, into the following two groups:

1 Subjects warranting "Simple Decimal Numbers" for their respective representation; and

2 Subjects warranting "Compound UDC Numbers" for their respective representation.

The term 'Simple Decimal Number' refers to a Class Number used in the main table to represent a mutually independent class. The term 'Compound UDC Number' refers to a Class Number synthesised by combining two or more of the Simple Decimal Numbers or by combining one or more numbers for Auxiliary Subdivisions—Common and Special—with one or more Simple Decimal Number..

#### 23 SEQUENCE OF COMPONENTS

In the case of a subject warranting a Simple Decimal Number for its representation, UDC does not recognise any component; and therefore, in constructing the class number, the question of the sequence of the components does not arise. In other words, the sequence of the components, if there are any, is already fixed by UDC; in such a case, the classifier has nothing to do in this respect.

#### 24 RESOLUTION OF CONFLICT

According to UDC, it may be possible to construct the



class number for a specific subject in more than one way. This situation gives rise to a conflict of class numbers. To resolve such a conflict, UDC has prescribed the following rules:

The choice of the right class number from among two or more class numbers for a specific subject should be governed by the following sequence of preference:

- 1 The Simple Decimal Number, having the lowest ordinal value;
- 2 The Compound UDC Number with a point-nought component number, having the lowest ordinal value;
- 3 The Compound UDC Number with a hyphen component number, having the lowest ordinal value;
- 4 The Compound UDC Number with an apostrophe component number having the lowest ordinal value;
- 5 The Compound UDC Number with a point-double-nought component number, having the lowest ordinal value; and
- 6 The Compound UDC Number with a Common Auxiliary Sub division Number.

#### 25 PRESCRIPTION FOR MULTIPLE ENTRIES

UDC has explicitly declared that there exists no "logical" sequence of the components of a compound subject. But, it still prescribes a sequence of the components of a Compound UDC Number. This appears to be contradictory. But in reality, this is not so. The prescription of sequence is to help in constructing just one of the several class numbers, the components of which may be helpfully permuted to construct the other class numbers for the same compound subject. It may also be noted that the prescription of the sequence of the components made up of Simple Decimal Numbers and of Compound UDC Numbers with a Special Auxiliary Subdivision Number, is too vague to provide any objective guidance. This feature also is quite in conformity with the pertinent basic principle ruling out any logical sequence of components. The other reason for this prescription appears to be to restrict the permutation of the components made up of Common Auxiliary Subdivision Numbers; because, this is deemed to be unnecessary for general purpose. However, to pay full respect to its pertinent basic principle ruling out any logical sequence of components, UDC prescribes the following:

- 1 Construct additional class numbers for a specific compound subject, for the preparation of additional main entries or cross reference entries under them, for the classified part of the catalogue, by *permuting cyclically* the component numbers of its full Compound UDC Number constructed according to

the pertinent prescriptions. Normally, component number made up either of a Simple Decimal Number or of a Compound UDC Number with a Special Auxiliary Subdivision Number, may be made the first component number of an additional class number. But if necessary, a component number made up of a Common Auxiliary Subdivision Number may also be made the first component number of an additional class number.

2 Construct, if necessary, an additional class number for a specific compound subject, for the preparation of an additional main entry or cross reference entry under it, for the classified part of the catalogue, by *interpolating* (or intercalating) the component number representing either a place-subdivision or a time-subdivision or a subject-subdivision, at the appropriate place of its full Compound UDC Number constructed according to the pertinent prescriptions.

## 26 DEVICES IN UDC

Besides the extensive use of the Enumeration Device, the basic principle about the preference of device: to achieve economy in the length of the schedules, as well as that of coextensively classifying, have led UDC to make explicit provision of several additional Devices for forming, or extending or sharpening, as the case may be, a subject or a concept, both in the idea plane and in the notational plane. These Devices are explained in the following subsections. Here, each Device has been given a name for easy reference.

### 261 *Partial Comprehension Device*

Device for forming a Partial Comprehension of two or more subjects or concepts for which no single comprehensive subject or concept, as the case may be, is enumerated in the schedule, by increasing the extension of one of the subjects or concepts involved.

The construction of the number for a partial comprehension of two or more subjects or of concepts is governed by the following rules:

- 1 Determine the distinct subjects or concepts as the case may be,
- 2 Construct the number for each distinct subject or concept,
- 3 If the numbers constructed are non-consecutive with reference to the schedules, then arrange the numbers in the increasing sequence of their respective ordinal values, and use the indicator digit ' + ' (plus) to combine each with its immediately preceding number.

*Example:*

622 + 669 Mining and Metallurgy;  
 (46) + (72) + (8) Spain, Mexico, and South America.

4 When the number is for a partial comprehension of two or more subjects, construct multiple class numbers for the preparation of multiple main entries for the classified part of the catalogue, by cyclic permutation of the components of the class number concerned.

*Example:*

669 + 622 Metallurgy and Mining; and  
 622 + 669 Mining and Metallurgy.

5 When the number is for a partial comprehension of two or more subjects together constituting a more or less comprehensive study of a subject or of a concept, the whole class number may be replaced by the class number having the lowest ordinal value followed by the indicator digit '+' (plus).

*Example:*

159.9 + for 159.9 + 159.923 + 301.151 + 616.89  
 + 65.013 (= Psychology, individual, social,  
 medical and industrial).

The number constructed in this way is to be used for the main entry. In such a case, use each of the other component class numbers followed by the indicator digit '+' (plus) as a distinct class number for the preparation of a cross reference entry.

*Example:*

159.923 +, 301.15+, 616.89+, and 65.013+.

6 If the numbers constructed are consecutive with reference to the schedules, arrange the numbers in the increasing sequence of their respective ordinal values, select the number with the lowest ordinal value, put after it successively the indicator digit '/' (virgule), and the number with the highest ordinal value to construct the number for the partial comprehension.

*Example:*

592/599 Systematic Zoology (equivalent to  
 (592 + 593 + ... + 599).

**262 Chronological Device**

Device for sharpening a subject or a concept on the basis of the chronological characteristic—that is, by using a time-concept as its qualifier—provided no such sharpened subject or concept is already enumerated in the schedule.

In the notational plane, it consists of interpolating (or intercalating) the time-number with its specific enclosing indicator digits at the appropriate place in the class number for the subject without the qualifying time-concept.

*Example:*

- 420 English philology  
 420-5 Grammar of English language  
     By Chronological Device  
 420\*01'-5 Grammar of old English language.

**263 Geographical Device**

Device for sharpening a subject or a concept on the basis of the geographical characteristic — that is, by using a place-concept as its qualifier — provided no such sharpened subject or concept is already enumerated in the schedule.

In the notational plane, it consists of interpolating (or intercalating) the place-number with its specific enclosing indicator digits at the appropriate place in the class number for the subject without the qualifying space-concept.

*Example:*

- 72 Architecture  
     By Geographical Device  
 72 (540) Indian architecture  
 721 Architecture of buildings  
     By Geographical Device  
 72 (540) 1 Indian architecture of buildings  
 726 Architecture of sacred buildings  
     By Geographical Device  
 72 (540) 6 Indian architecture of sacred buildings,  
 726.2 Architecture of mosques  
     By Geographical Device  
 72 (540) 6.2 Indian architecture of mosques.  
     By Chronological Device  
 72 (540) " 15 " 6.2 Mughal (Indian) architecture of  
     mosques.

**264 Subject Device**

Device for sharpening a subject either

1 On the basis of a subject characteristic — that is, by using another subject; or

2 On the basis of a characteristic, other than a chronological or geographical characteristic, already used in the schedule to sharpen some other subject — that is, by using a concept already used in the schedule; provided no such sharpened subject is already enumerated in the schedule.

When the sharpening is on the basis of a subject characteristic, in the notational plane, the device consists of the following steps:

- 1 The class number for the host subject is worked out;

- 2 The class number of the sharpening subject is worked out; and  
 3 The class number for the sharpening subject is connected with the class number for the host subject by using the indicator digit ':' (colon).

*Example:*

159·9:37 Psychology for teachers  
 32:91 Geopolitics  
 17:7 Morals in art  
 31:63 Agricultural statistics  
 016:61 Bibliography on medical sciences.

When the sharpening is on the basis of a characteristic already used in the schedule, then in the notational plane, the use of the device consists of the following steps:

- 1 The class number for the host subject is worked out;  
 2 The number for the sharpening concept is taken to be the whole class number in which the pertinent concept is represented by it: terminal digit or digit group; and  
 3 The number for the sharpening concept is connected with the class number for the host subject by using the indicator digit ':' (colon).

*Example:*

616·1-085:615·531 Homoeopathic treatment of heart diseases

In this example, the subject "Treatment of heart disease" is to be sharpened on the basis of the characteristic "system of treatment". There is no such sharpened subject already enumerated in the schedule. Search in the schedule shows that the same characteristic has been used in the schedule to sharpen the subject "Pharmacology"; and the number for Homoeopathic Pharmacology is 615·531, in which the concept "Homoeopathy" is represented by the terminal digit-group "31".

The number for the subject "Treatment of heart disease" is 616·1-085. For the purpose of sharpening this class number, the number for the concept "Homoeopathy", in this case, is to be taken to be 615·531. This number connected by a colon with the host class number gives rise to the sharpened class number 616·1-085:615·531, which represents the subject "Homoeopathic treatment of heart disease." It may be noted in this case, that the number '615·5' in the sharpened class number '616·1-085:615·531' serves the function of helping in finding the right meaning of the digit-group '31' in this context, while the number '615·5' itself loses its semantic content — that is in this context it does no more mean "Pharmacology".

If the sharpening subject does not warrant an entry under its class number to provide access to the sharpened subject, in

the notational plane the class number for the sharpening subject enclosed in square brackets, is added after the class number for the host subject.

*Example:* 620·174 [669·14] for 620·174:669·14

Material testing — bend test [for steel].

A class number admitting enclosure in square brackets may be interpolated (or intercalated), if necessary, at any desired point in the class number for the host subject.

*Example:*

620·1[669·14]74 Material testing [for steel] bend test.

## 265 *Concept Device*

Device for

1 Sharpening a concept on the basis of a characteristic already used in the schedule — that is, by using another concept; and

2 Creating a complex concept by bringing two concepts of the same category, derived on the basis of the same characteristic in relation to each other, provided no such sharpened or complex concept is already enumerated in the schedule.

In the notational plane, the sharpening of a concept number consists of the following steps:

1 The number for the host concept is worked out;

2 The number for the sharpening concept is worked out;

3 The number for the sharpening concept is connected with the number for the host concept by using the indicator digit ' : ' (colon).

*Example:*

(540:213) Tropical India.

"1963:322" Summer of 1963

In the notational plane, the creation of a complex concept consists of the following steps:

1 The number for each of the concepts is worked out;

2 The number having the lowest ordinal value is regarded as the first component of the complex concept number; and

3 The number having the higher ordinal value is connected with the first component by using the indicator digit ' : ' (colon).

*Example:*

341·63 (44:45) Arbitration between France (44) and Italy (45)..

*Note.*— A class number, having a complex concept number worked out in the way mentioned above, is to be used to construct another class number by permuting its components.

*Example:*

341·63 (44:45) Arbitration between France and Italy

## 341-63 (45:44) Arbitration between Italy and France

266 *Alphabetical Device*

Device for sharpening a subject or a concept, as the case may be, on the basis of the name characteristic — that is, by using the name of an individual entity, such as the name of a person, corporate body, work (title), concept, natural object (constellation, chemical element, plant species, animal species), machine and object of any kind — provided no such sharpened subject or concept is already enumerated in the schedule.

In the notational plane, it consists of several options as follows:

11 In the case of a name-of-person, the full name may be rendered in the sequence: the surname, a comma, and the forename; and the rendered name in full may be added directly or enclosed in circular brackets, after the number of the host subject or concept; or

12 The surname alone may be added directly or enclosed in circular brackets; or

13 A suitable abbreviation of the surname alone may be added directly or enclosed in circular brackets.

*Example:*

92Schiller,Freidrich  
 92(Schiller,Freidrich)  
 92Schiller  
 92(Schiller)  
 92Schil  
 92(Schil)  
 92S  
 92(S)

21 In the case of a name-of-corporate body, its standard abbreviation, if any, or the initials of its substantive words may be added directly or enclosed in circular brackets after the number for the host subject or concept, as the case may be.

*Example:*

061·5(42)I.C.I.	}	Imperial Chemical Industries
or		
061·5(42)(I.C.I.)		
or		
061·5(42)ICI		
or		
061·5(42)(ICI)		

22 The number for a multiworded name of a work (title) may be constructed in a way analogous to that for a name-of-corporate body.

31 In the case of a name-of-concept, its standard name in full may be added directly or enclosed in circular brackets after the number for the host subject, or the host concept, as the case may be.

32 The number for a name of natural object, a machine, and an object of any kind, may be constructed in the way analogous to that for a name-of-concept.

#### 267 Numerical Device

Device for sharpening a subject or concept, as the case may be, on the basis of the numerical name characteristic — that is, by using the number of an individual entity, if any — provided no such sharpened subject or concept is already enumerated in the schedule.

In the notational plane, it consists of adding after the number for the host subject or concept, the number (numerical entity), with the symbol "No." prefixed to it.

*Example:*

656·4·02(492·621)No.12

Management of Amsterdam tram services, line No.12

#### 27 NOTATIONAL PREFERENCE

The basic principle ruling out any logical sequence of the component concepts and the principle prescribing multiple class numbers have led UDC further to prescribe notational preference in some cases. Of these, the important one is concerned with the use of Special Auxiliary Subdivision Number. According to UDC, the number for the subject "Automatic control in foundries" is 621·74-52. But UDC prefers the number '621·74:621-52'. For, the latter alone can be permuted to construct another class number to prepare another Main Entry under it for the classified part of the catalogue. For the same reason, a number, such as

159·9 + 159·923 + 301·15 + 616·89 + 65·03

(= Psychology, individual, social, medical and industrial) is preferred to the number 159·9+.

#### 28 PROVISION OF THE SCHEDULE OF 'POINT-OF-VIEW CONCEPTS'

The principle prescribing that the scheme for classification should meet the special requirement of the specialist has led UDC to make provision for the schedule of "Point-of-View Concepts". They satisfy the criterion of Common Auxiliary Subdivisions. Use of these concepts ultimately amounts to the development of a special scheme for classification to meet the special requirement of the specialists. The indicator digit for 'Point-of-View' is '·00' (point-double nought). A class number followed by the point-of-view number is further sharpened by



## Subject Device.

291 *Ordinal Value of the Digits*

The principle of preference of a "Synthetic" scheme for classification to a "Purely Analytic" one (See Principle 7 in Sec 122) has led UDC to introduce several indicator digits. To implement the principle of "From Groups of Wide Extent to the Groups of Less Extent", for the arrangement of compound subjects going with a particular main subject (See Principle 12 in Sec 121), in the notational plane. UDC has assigned an ordinal value to each of the symbols forming the different digits in the base of the notational system of UDC.

The digits forming the notational base of UDC, may be categorised as follows:

(Note;— A digit in the notational system of UDC may consist either of a single isolated symbol, or of two or more isolated symbols. When it consists of two or more isolated symbols, all the symbols together are deemed as if they constitute a single digit).

1 *Indicator Digit*.— A digit which is used to indicate that the component number following it is either an Auxiliary Sub-division Number, or a number got by a Device. *Example* + / : or [...] or ((...)) = (0...) (...) (=...) "... " '00 - '0' and .

2 *Anteriorising Digit*.— An indicator digit which is used to endow the preceding host class number with an ordinal value immediately less than that of the host class number concerned.

*Example* + /

3 *Posteriorising Digit*.— An indicator digit which is not an anteriorising digit. *Example* : or [...] or ((...)) = (0...) (...) (=...) "... " '00 - '0' and .

4 *Packeting Digit*.— A posteriorising indicator digit which is used to enclose a component number. *Example* [...] or ((...)) = ... = (0...) (...) (=...) "... "

5 *Non-packeting Digit*.— A posteriorising indicator digit which is not a packaging digit. *Example* : = '00 - '0' and .

6 *Substantive Digit*.— A digit which is used to represent an idea forming a subject or a concept. *Example*

A or a B or b C or c D or d E or e F or f G or g H or h I or i J or j K or k L or l M or m N or n O or o P or p Q or q R or r S or s T or t U or u V or v W or w X or x Y or y Z or z 0 1 2 3 4 5 6 7 8 9

(Note.— The letters of the Roman Alphabets are used to construct component numbers by Alphabetical Device only. The use of the capitals and/or smalls is generally governed by the conventional rules of grammar of the language concerned. Thus in UDC, the Roman capitals and the Roman smalls do not occur

as two distinct species of digits).

An analysis of the demonstration of the arrangement of class numbers given by UDC leads us to the following conclusion about the ordinal value of each of the isolated symbols forming the different digits of its notational system:

1 When arranged in the increasing sequence of their respective ordinal values, the Anteriorising Indicator Digits fall in the following sequence:

+ /  
2 When arranged in the increasing sequence of their respective ordinal values, the isolated symbols of the Posteriorising Indicator Digits and of the Substantive Digits fall in the following sequence:

}	going with (A or a to Z or z	“
}	going with (=	(1 to 9
)	going with (1 to 9	(=
)	going with “ 1 to 9	(A or a to Z or z
)	going with (0	or A or a to Z or z
=	going with = 1 to 9	·00
) or ))	going with [ 1 to 9 or ((1 to 9	—
:		·0
[ or ((		’
=		0 to 9
(0		0 to 9

It may be stated here that UDC has failed to implement its principle of “From Groups of Wide Extent to the Groups of Less Extent” in the notational plane, in its assignment of ordinal value to a few of the isolated symbols forming some of the Indicator Digits (5).

## 292 *Subject Index to the Classified Part*

The construction of the subject index to the classified part of the catalogue has to be closely linked up with classifying. Specially, the procedure for deriving subject heading can be made systematic if it is based on the class number for the subject. DC demonstrated the helpfulness of this principle in its Relative Index. We have seen that UDC, though based on DC, developed its distinctive features on the basis of some principles of its own. But, in regard to the derivation of a subject heading, no such unique principle is discernible. In fact, principles regarding the subject index is too broad to provide any substantial guidance in deriving subject headings. Nor do its own indexes to the different fascicules provide a substantial base to search for any implied principles. However, the following appear to be the principles implied in its statement regarding the subject index:

1 The alphabetical subject index to the classified part of the catalogue is to take the form of a "Relative Index".

2 Each entry in the relative index is to correlate a specific subject with the class number for it.

3 The subject heading for a specific subject is to consist of a specific part, followed by a contextual part.

4 A term forming part of a subject heading should be "ordinary".

DC has not explicitly stated the principles governing the derivation of the subject headings for its relative index. But its excellent demonstration of the construction of a relative index is to a great extent self-expository of its major principles. Research in this respect has led to the formulation of several such principles (1). But the use of this procedure on class numbers constructed according to UDC calls for an elaborate set of rules. Neither UDC has provided these rules; nor any substantial work is known to have been done to formulate such rules. More research is necessary on this subject.

### 3 Example of Classifying

#### 31 MULTIPLE CLASS NUMBER

In Sec 2, we have taken note of the major elements constituting the distinctive features of UDC. Let us now construct coextensive multiple class numbers for each of the specific subject embodied in each of the following documents, on the basis of all the principles of UDC. This is to develop a classified catalogue — that is, the Classified Part and the Alphabetical Subject Index. No prescriptions of restriction, to be observed at the local level, are regarded here.

- 1 Encyclopaedia of general practice  
61(031)(EGP)  
(031)61(EGP)
- 2 Medical journal of Australia  
61(051)(MJA)  
(051)61(MJA)
- 3 Biographical history of medicine brought upto 1950's  
61(092) 61(100)" 195 "(091)  
92: 61 (091)61(100)" 195 "
- 4 Development of medicine in Great Britain during the war period (1939-1945).  
61(410)" 1939/1945 "(091)  
(410)61" 1939/1945 "(091)  
" 1939/1945 "61(410)(091)  
(091)61(410)" 1939/1945 "
- 5 Biography of Galen  
61(092)(Galen)  
92:61(Galen)
- 6 Indian Medical Association  
061·22: 61(540)(IMA)

- 61:061.22(540)(IMA)  
(540)061.22:61(IMA)
- 7 Research in Medicine in India in 1970's  
61.001.5(540)"197"  
(540)61.001.5"197"
- 8 Human anatomy  
611
- 9 Human Physiology  
612
- 10 Human diseases  
616
- 11 Difference between personal hygiene and public health  
613:614 (Difference)  
614:63 (Difference)
- 12 Human heart: its anatomy and physiology  
611.12+ } or { 611.12+612.17  
612.17+ }     { 612.17+611.12
- 13 Anatomy of human heart and lungs  
611.12+ } or { 611.12+611.24  
611.24+ }     { 611.24+611.12
- 14 Human respiratory system: its anatomy, physiology and diseases  
611.2+ } or { 611.2+612.2+616.2  
612.2+ }     { 612.2+611.2+616.2  
616.2+ }     { 616.2+611.2+612.2
- 15 Human lungs: its anatomy, physiology and diseases  
611.24+ } or { 611.24+612.24+616.24  
612.24+ }     { 612.24+611.24+616.24  
616.24+ }     { 616.24+611.24+612.24
- 16 Anatomy of lungs  
616.24
- 17 Physiology of lungs  
612.24
- 18 Diseases of lungs  
616.24
- 19 Treatment of the diseases of lungs  
616.24:615-08  
616-08:616.24
- 20 Therapeutic treatment of the diseases of lungs  
616.24:616-085  
616-085:616.24
- 21 Therapeutic treatment of the infectious diseases of lungs  
616.24:616.9:616-085  
616.9:616.24:616-085  
616-085:616.24:616.9
- 22 Therapeutic treatment of the infectious diseases of lungs of children  
616-053.2:616.24:616.9:616-085  
616.24:616-053.2:616.9:616-085  
616.9:616-053.2:616.24:616-085  
616-085:616-053.2:616.24:616.9
- 23 Ayurveda system of medicine  
61 (Ayurveda)
- 24 Siddha system of medicine  
61 (Siddha)
- 25 Medical Jurisprudence  
61:340 (Bias)

## 32 CATALOGUE

321 *Arrangement of Entries in the Classified Part of the Catalogue*

The UDC prescription for the construction of multiple class numbers, wherever possible, for one and the same subject, is meant as an aid to the preparation of the main entry or a cross-reference entry as the case may be, under each of the class numbers. These entries arranged in the increasing sequence of the ordinal value of their respective class numbers constitute the classified part of the catalogue. The *Guide to UDC (2)* has described this method of constructing the classified part of the catalogue as the "Multiple Entry System". This term has also been used to denote the catalogue constructed according to this method. The following arrangement of the class numbers will give an idea about the classified part constructed according to the Multiple Entry System:

SN	Class Number	Kind of Entry	SN of doc in Sec 31
1	(031)61(EGP)	Main Entry	1
2	(051)61(MJA)	do.	2
3	(091)61(100)" 195 "	do.	3
4	(091)61(410)" 1939/1945 "	do.	4
5	" 1939/1945 "61(410)(091)	do.	4
6	(410)61" 1939/1945 "(091)	do.	4
7	(540)061.22:61(IMA)	do.	6
8	(540)61.001.5" 197 "	do.	7
9	061.22:61(540)(IMA)	do.	6
10	61:061.2(540)(IMA)	do	6
11	61:340(Bias)	do.	25
12	61(031)(EGP)	do.	1
13	61(051)(MJA)	do.	2
14	61(092)	do.	3
15	61(092)(Galen)	do.	5
16	61(100)" 195 "(091)	do.	3
17	61(410)" 1939/1945 "(091)	do.	4
18	61 (Ayurveda)	do.	23
19	61 (Siddha)	do.	24
20	61.001.5(540)" 197 "	do.	7
21	611	do.	8
22	611.12+	do.	12
23	611.12+	do.	13
24	611.2+	do.	14
25	611.24+	Cross Reference Entry	13
26	611.24+	Main Entry	15
27	611.24	do.	16
28	612	do.	9
29	612.17+	Cross Reference Entry	12

SN	Class Number	Kind of Entry	SN of doc in Sec 31
30	612.2+	Cross Reference	14
31	612.24+	Entry	15
32	612.24	do.	17
33	613.614 (Difference)	Main Entry	11
34	614:613 (Difference)	do.	11
35	616	do.	10
36	616-053.2:616.24:616.9:616-085	do.	22
37	616-08:616.24	do.	19
38	616-085:616-053.2:616.24:616.9	do.	22
39	616-085:616.24	do.	20
40	616-085:616.24:616.9	do.	21
41	616.2+	Cross Reference	14
42	616.24+	Entry	15
43	616.24	do.	18
44	616.24:616-053.2:619.9:616-085	Main Entry	22
45	616.24:616-08	do.	19
46	616.24:616-085	do.	20
47	616.24:616.9:616-085	do.	21
48	616.9:616-053.2:616.24:616-085	do.	22
49	616.9:616.24:616-085	do.	21
50	92:61	do.	3
51	92:61 (Galen)	do.	5

### 322 Subject Index

UDC has prescribed the construction of the alphabetical subject index to the classified part of the catalogue, according to the procedure followed by the Decimal Classification in constructing its Relative Index. For the purpose of this paper, it is not necessary to furnish the subject index for the class numbers arranged in Sec 321. Therefore, it is not given here.

### 4 Problem of Multiple Entry System

The *Guide to UDC (=Guide)* (2) was published in 1963. It has worked out the economics of the Multiple Entry System. It has also evaluated the efficiency of this system. The findings of the study are quoted in the following section:

#### 41 DISADVANTAGES OF MULTIPLE ENTRY SYSTEM

"The drawbacks to multiple entry... are:

1 The impossibility of making anything but a selection of the possible permutations.

2 The lengthening of class numbers, which increases proportionately with the number of coloned elements.

3 The poor filing sequence which the use of the colon as a facet indicator entails.

4 The enlargement of the classified file, with the attendant problems of housing and filing it (6).

### 5 Solution to the Problem

#### 51 SINGLE ENTRY SYSTEM

The main purpose of the *Guide* is to recommend a solution to the problem arising in the Multiple Entry System. The solution recommended by it has been described as the "Single Entry System" (3). The Single Entry System is primarily based on the following principles:

1 It is necessary to regard a particular sequence of the facets of a compound subject as the most helpful one.

2 It is economical to deem the class number corresponding to the most helpful sequence of the facets of a compound subject, as the unique class number for the subject concerned.

3 It is helpful to prepare only one main entry, or one cross reference entry, as the case may be, for each of the subjects embodied in a document, under its unique class number for the classified part of the catalogue.

4 The alphabetical subject index to the classified part of the catalogue should be fully equipped to respond to a query for a specific subject using any facet term, occurring in the name of subject concerned, as the point-of-approach.

5 The alphabetical subject index made up of entries prepared under subject headings derived by Chain Procedure can equip it to respond to a query for a specific subject using any facet term, occurring in the name of the subject concerned as the point-of-approach.

#### 52 IMPACT OF THE GENERAL THEORY OF LIBRARY CLASSIFICATION

It may be noted that the principles forming the foundation of the Single Entry System lead to a revolutionary deviation from the basic principles governing the design and development of UDC in its formative stage. These new principles form part of the General Theory of Library Classification, developed by S R Ranganathan. It may also be noted here that the design and development of the Colon Classification (=CC) (9) have been governed by these principles; and the features that distinguish CC from UDC are largely contributed by these principles.

The adoption of the principles, forming part of the General Theory of Library Classification by UDC, is a measure of their helpfulness for the purpose for which they are meant. It confirms further that the General Theory of Library Classification is truly "general" in nature; and it is certainly not the monopoly of a particular scheme for classification. Simultaneously,

it confirms the helpfulness of CC-approach to library classification; for, the design and development of CC is governed by these principles only.

It may be noted here that the "flexibility" inherent in the design of UDC has made it practicable to adapt it helpfully in the context of so great a deviation from its original basic principles.

## 6 Classifying by UDC According to the *Guide*

### 60 NEED FOR PRINCIPLES FOR CLASSIFYING

The distinctive feature of the classified catalogue governs the basic operation of Classifying, as has been demonstrated in Sec 31. The classified catalogue recommended by the *Guide* is quite different from what originally UDC had in mind. Naturally, it calls for certain principles to govern the work of classifying. These principles form part of the set of principles constituting the basis for the design and development of the scheme for classification. The *Guide* has provided some of the principles required for classifying (4). They are examined in the following sub-sections.

### 61 PRINCIPLE OF "SUBJECT FACTOR PRECEDE ALL OTHERS"

The first principle in the *Guide* to UDC reads as follows: "Subject factors precede all others. 'Others' here mainly relate to forms of presentation of the information in the document...".

Each general scheme for classification has respected this principle in its design as well as in its rules for classifying. Only UDC according to the "Law of Local Variation" prescribed the option of treating a "form-facet" or a "language-facet" as the first facet if necessary, in one of the class numbers for the Multiple Entry System. In the Single Entry System, this practice is ruled out. This has been a compulsory practice with CC from the very beginning.

### 62 PRINCIPLE OF "CONSENSUS"

The principle of "consensus" in the *Guide* reads as follows:

"If a subject is traditionally studied along certain lines so that there is a strong expectation on the part of users to find certain aspects of the subject kept together, then this may determine citation order."

In the design and development of a scheme for classification, this principle has been respected by each classificationist to the extent he has found it helpful. The design and development of a scheme for classification is expected to be in conformity with the dynamic general theory of classification given in the *Pro-*



*legomena to library classification* (12). The *Prolegomena* introduced the concept of "Canonical Subject" defining it as follows: "Any traditional sub-division of a main subject, not derived on the basis of a definite characteristic." By this very definition, a canonical subject can occur only as an immediate sub division of a main subject. This automatically satisfies the condition of bringing together all the compound subjects going with a particular canonical basic subject. The *Prolegomena* also says, "Mathematics, Physics, perhaps Engineering, Geology, and Philosophy form one group of main subjects calling for canonical subjects to be enumerated as the first step, before facet analysis can be applied for further classification. In these cases, the main subject is more like a bundle holding several canonical subjects. Tradition has found such bundles to be convenient..." Evidently, the principle of "consensus" recommended by the *Guide* is in full agreement with the principle of "Canonical (traditional) Basic Subjects" given by the general theory of classification.

It may be noted here that the intention of bringing together all the compound subjects, having a particular facet, can be fulfilled only by recognising the concerned facet to be either a basic facet, or the first isolate facet going with a particular basic facet. This work is generally left to the care of the classificationist; and he incorporates his decision while designing the scheme. The classifier enjoys very little autonomy in this respect. But in the case of UDC, the provision of "interpolation" (intercalation) makes scope for the classifier to enjoy sufficient autonomy even in this respect.

### 63 PRINCIPLE OF "DECREASING CONCRETENESS"

The principle of decreasing concreteness in the *Guide* states: "More concrete elements are always cited before less concrete ones." The implication of this principle is very great. The *Guide to UDC* has not attempted any elaborate elucidation of this principle. It has simply referred to the *Colon classification*, Ed 6, 1961 where it is said to have been considerably developed. In fact, the principle of Decreasing Concreteness is a basic principle forming part of the General Theory of Library Classification. Its development also has been a feature of this General Theory only. The responsibility of CC, in this regard, has been only the implementation of this principle in its design and development. In other words, this principle has not been developed by CC; but it has simply implemented this faithfully.

The *Guide* has actually recommended the use of the "Postulate of Concreteness" for deciding the sequence of the isolate facets in the name of a compound subject. This postulate was first introduced in 1949 (11). Later on, it was incorporated in Ed 2

of the *Prolegomena* (13) and in Ed 2 of the *Elements of library classification* (10).

It may be noted here that the Postulate of Concreteness forms part of a set of integrally related postulates, and derives its proper significance when used along with the other postulates. In other words, it cannot be detached from this set and applied to serve any purpose. Therefore, the recommendation of the Postulate of Concreteness implies the recommendation of the whole set of integrally related set of postulates. This set of postulates consists of the following (15):

1 Postulate of Basic Facet.— Every compound subject has a Basic Facet.

2 Postulate of Fundamental Categories.— There are five and only five fundamental categories — *viz.*, Time, Space, Energy, Matter, and Personality.

3 Postulate of Isolate Facet.— Each isolate facet of a compound subject can be deemed to be a manifestation of one and only one of the five Fundamental Categories.

*Note.*— An isolate idea, without an idea qualifying it, is a simple isolate idea. A simple isolate idea qualified by another idea gives rise to a compound isolate idea. A compound isolate idea is deemed to be a manifestation of the same Fundamental Category of which the simple isolate idea, forming part of it, is a manifestation. The qualifying idea is said to be a Qualifier. A Qualifier going with a compound isolate, by itself, is not deemed to be a manifestation of any Fundamental Category. A Qualifier is to be suffixed to the entity qualified.

4 Postulate of Rounds of Energy.— The Fundamental Category "Energy" may manifest itself in one and the same subject, more than once. The first manifestation is taken to end Round 1 of the three fundamental categories — Personality, Matter, and Energy. The second manifestation is taken to end Round 2, and so on.

5 Postulate for Round for Personality and Matter.— Each of the Fundamental Categories — Personality and Matter, may occur in Round 1, Round 2 and so on.

6 Postulate for Round for Space and Time.— Ordinarily, any of the Fundamental Categories — Space and Time, may occur only in the Last Round in a subject.

7 Postulate of Level.— Any of the Fundamental Categories — Personality and Matter, may occur more than once in one and the same Round within a subject; and similarly with Space and Time in the Last Round. The first manifestation of a Fundamental Category within a Round will be said to be its Level 1 Facet in the Round. Its second manifestation within that Round will be said to be its Level 2 Facet in the Round, and so on.

8 Postulate of First Facet.— In a compound subject the Basic Facet should be the first facet.

9 Postulate of Concreteness.— The five Fundamental Categories fall into the following sequence when arranged according to their decreasing sequence of concreteness: P, M, E, S, T.

10 Postulate of Facet Sequence within a Round.— In any Round of facets of a Compound Subject in which each of any of the Fundamental Categories Personality, Matter, and Energy occurs only once, their sequence should be: Personality Facet, Matter Facet, and Energy Facet — that is, in the decreasing sequence of their respective concreteness.

11 Postulate of Facet Sequence within the Last Round.— In the Last Round of facets of a compound subject, in which each of the Fundamental Categories other than Energy may occur, and occurs only once, the sequence of the facets should be: Personality Facet, Matter Facet, Space Facet, and Time Facet — that is, in the decreasing sequence of their respective concreteness.

The integral relationship of this set of postulates is obvious. Still it is worth noting that on the one side the Postulate of Concreteness becomes applicable only in the form of the Postulate of Facet Sequence within a Round and the Postulate of Facet Sequence within the Last Round; and on the other the concept of this postulate cannot become operative unless the concepts behind all the other postulates enumerated before it (Categories 1 to 8) are conceded.

This integrally related set of postulates, enumerated above, form part of the general theory of classification. Any scheme for classification can make use of them in its design. For example, CC has done this, and it has adopted the Postulational Method of classifying prescribed by the General Theory of Library Classification.

Evidently, the *Guide* has recommended the adoption of the same Postulational Method of Classifying prescribed by the General Theory of Library Classification.

#### 64 PRINCIPLE OF "PURPOSE"

According to the *Guide*, "this is the principle of subordinating means to ends". This principle corresponds to the Act-and-Action-Actor-Tool Principle of the General Theory of Library Classification (17). It states,

"If in a subject, facet B denotes action on facet A by Facet C, with facet D as the tool, then the four facets should be arranged in the sequence A B C D."

This principle again can be adopted by any scheme for classification in its design and development. It can also be adopted for classifying. For example, CC has done this. And the *Guide* has recommended the adoption of this principle in classifying according to UDC.

#### 65 PRINCIPLE OF "DEPENDENCE"

According to the Principle of Dependence, "If in a compound subject an element y is dependent on, or implies, another element x, then y is subordinated to x, and this citation order is xy, and not yx". This corresponds to the Wall-Picture Principle of the General Theory of Library Classification (16). It states "If two facets A and B of a compound subject are such that the concept behind B will not be operative unless the concept behind A is conceded, even as a mural picture is not possible unless the wall exists to draw upon, then the facet A should precede the facet B". This principle again can be adopted by any scheme for classification in its design and development. It can also be adopted for classifying. For example, CC has done this. And the *Guide* has recommended the adoption of this principle in classifying according to UDC.

#### 66 STANDARD FACET FORMULA

The *Guide* has recommended the following Standard Facet Formula:

"Whole thing — Kinds — Parts — Materials — Properties — Processes — Operations — Agents."

Evidently, this is a specific version of the Generalised facet Structure forming part of the General Theory of Library Classification (18). It is in conformity with the set of postulates enumerated in Sec 63. This can be adopted by any scheme for classification in its design and development. It can also be adopted for classifying. For example, CC has done this. And *Guide* has recommended the adoption of this Facet Formula in classifying according to UDC.

#### 67 SUBJECT INDEX

We may also take note of the recommendation of the *Guide* in regard to the preparation of the subject index to the classified part of the catalogue. It recommends that the subject index should be made of entries prepared under the subject headings derived by Chain Procedure. The term 'Chain Procedure' essentially denotes any systematic method of deriving subject headings for a specific compound subject, involving the determination of the Chain in which the subject concerned is the Last Link. It aims at providing the necessary and suffi-

cient number of subject headings for a specific compound subject to respond to all the pertinent—general, and specific—subject approaches of readers, for the subject concerned. Obviously, it has to be based on a set of postulates for the analysis of the facets (components) of a compound subject, and also on a set of principles for the determination of the sequence of those facets.

It is evident, therefore, that the derivation of subject headings by Chain Procedure is integrally related to a theory of library classification. It is for this reason, that a class number constructed according to any scheme for classification may form the basis for deriving subject headings by Chain Procedure; though a class number is not an essential condition for applying Chain Procedure, nor the latter is in any way dependant on the former. Of course, the postulates for facet analysis and the principles for facet sequence are no doubt essential conditions for applying Chain Procedure. The effectiveness of the subject headings derived by Chain Procedure increases if their derivation is based on the postulates and principles forming part of the General Theory of Library Classification. By recommending the adoption of Chain Procedure together with these postulates and principles, UDC has confirmed the helpfulness of Chain Procedure.

## 7 Conclusion

### 71 POSTULATIONAL METHOD OF CLASSIFYING ACCORDING TO UDC

It is quite evident from Sec 6 above, that the *Guide* has recommended the adoption of the Postulational Method of Classifying prescribed by the General Theory of Library Classification. The design and development of UDC has not been done consciously in conformity with the dynamic General Theory of Library Classification. Therefore, classifying by UDC is not directly amenable to the Postulational Method. But UDC has the necessary "flexibility" for being adopted for this purpose, though at the cost of some economy and effectiveness. If this economy and effectiveness is to be gained, much rethinking on the design and development of UDC will be necessary. However, classifying according to the Postulational Method even with the present schedules of UDC will ensure a high degree of effectiveness. Here is an example demonstrating how the Postulational Method with the necessary and sufficient adjustment can be applied to classifying according to UDC:

1 Expressive Name-of-Subject.— Treatment of the infectious diseases of lungs of children, in medicine.

2 Name-of-Subject in Kernel Terms.— Treatment. Disease—Infectious. Lung. Medicine—Child.

3 Analysed Name-of-Subject.— Treatment [Operation = Energy Isolate Facet]. Disease [Property = Matter Property Isolate Facet]— Infectious [Qualifier to “Disease”]. Lung [Whole thing = Personality Isolate Facet]. Medicine [Basic Facet with which the compound subject is to go]— Child [Deemed to be a Qualifier to “Medicine” to treat the resulting subject “Child Medicine” as a Basic Subject by itself, for the purpose of bringing all the aspects of “Medicine” dealing with “Child” together; for it is assumed that it is a speciality (Specials Basic Subject) in “Medicine”; and the majority of the readers having Child Medicine as their respective specific subject of interest would prefer to have this arrangement].

4 Transformed Name-of-Subject.— Medicine-Child [Basic facet]. Lung [Whole thing = Personality Isolate Facet]. Disease— Infectious [Property = Matter Property Isolate Facet]. Treatment. [Operation = Energy Isolate Facet].

5 Name-of-Subject in Standard Term.— Assuming that the terms used in the schedule of UDC are standardised we can arrive at the following “Name-of-Subject in Standard Terms”.

Medical Sciences— Children [Basic Facet]. Lungs [Whole thing = Personality Isolate Facet]. Disease— Infectious [Property = Matter Property Isolate Facet]. Treatment [Operation = Energy Isolate Facet]

6 Name-of-Subject in Focal Numbers according to UDC— 61[3-053.2] [Basic Facet].

611.24 (Whole thing = Personality Isolate Facet).

616.9 (Property = Matter Property Isolate Facet).

616-085 (Operation = Energy Isolate Facet).

7 Class Number according to UDC.— 61[3-053.2]: 611.24:616.9-085

## 72 ANNOTATION

It is necessary to take note of the following points in regard to the conditions necessary to apply the method of classifying used in Sec 71 above:

1 The Basic subjects are to be marked out in the Schedule of UDC. The criteria of recognising new basic subjects— simple and compound— are to be formulated.

2 Each of the facets other than the Basic Facet in the name of a compound subject is an isolate facet— simple or compound.

3 Wherever necessary, the number for an isolate facet is to be constructed by Subject Device.

4 In a simple isolate number belonging to a compound class number constructed by Subject Device only the last digit or digit-group depending upon the context, represents the isolate idea. The other digits preceding it are to be deemed as

semantically empty. But they have to be retained in the class number because of the peculiarity of design of UDC. In the worked out class number, for example, the isolate number 611.24, has only the digit-group 24 semantically rich — 2 representing "Respiratory System," and 4 representing "Lungs". But the digit-group 611 preceding the digit-group 24 has no semantic significance in this context, though in the schedule it represents "Anatomy". So also is the case with each component number of a compound isolate. Similar is the case with the second and further component numbers of a compound basic subject.

5 In the present structure of UDC, it is possible to construct two or more isolate numbers for the same isolate idea by subject device. To be consistent in practice, it is necessary to choose that one having the least ordinal value.

6 In the present structure of UDC, it may be possible to construct two or more class numbers for the same compound subject even following the Postulational Method of Classifying. To be consistent in practice, it is necessary to choose that one which is simultaneously coextensive and shortest in length.

7 To arrange the compound subjects going with a particular basic subject for the Single Entry System, the ordinal value of the digits has to be changed. This is an area for immediate research.

8 To achieve economy in the notational plane, and also in designing the schedule in a more effective way to meet the requirement of the Single Entry System, much rethinking about the design and development of the schedules of UDC is immediately necessary.

## 8 Bibliographical References

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