Prolegomena to Library Classification

CHAPTER KA

GENERAL MNEMONICS

1 Definition

Mnemonics originates from a Greek word meaning "to remember". Its dictionary meaning is "the art of assisting memory; a mode of recalling to mind any fact or number, or a series of disconnected terms or figures". Arumugam and Sakuntala, the contemporary arithmetical prodigies, use some extraordinary mnemonics in their amazing feats of multiplication and other calculations. Magicians reproducing accurately a number of disconnected statements made to them some time earlier, exactly in the sequence in which they were made, use their own mnemonics to fix the statements in their memory in the sequence in which they hear them. Each of us improvise some sort of mnemonics for the moment. When we go to the market, we may remember apples by A, grapes by G and raspberry by R. Some tie a knot in the handkerchief to recall something to memory. These mnemonics are mostly private and individual, and are often temporary. In the *Ramayana,* Valmiki describes the cruel effect of mnemonics in certain circumstances. Maricha had once received a severe thrashing from Rama, the hero, when he was a marauder terrorising the sages in the forest. Years later, he confesses to Ravana the antihero, "The Phoneme R, written or spoken, brings "Rama" to my mind and the thrashing received from him. The memory of it makes me quiver."

2 General Canon of Mnemonics

The digit or digit-group used to represent a specific concept in a class number (or any of its constituents) should be the same in all class numbers having that concept represented in them, provided that insistence on such consistent representation does not violate more important requirements.

Accordingly, Berwick Sayers remarks: "There is a very general quality in modern classification notations which is ingenious and, within limits, of great value to the classifier. This is its mnemonic quality; its power of assisting the memory and of reducing the work of reference to tables and indexes to the minimum. By mnemonic notation we mean a notation which has always the same significance wherever it appears in the classification" [165]. This passage contains at once a neat definition of mnemonics and a pithy description of its benefits.

Bliss comments on the value of mnemonics in the following

words: "Notation, as a kind of symbolic language, depends extensively on memory of meanings. In learning to read and write a new language we gradually learn the words and their meanings and remember more and more of them. In like manner, librarians and users of libraries gradually learn the order of the classes and remember the class-marks, though they continue to make use of the catalogues, shelf-lists, and index to schedules. The more systematic the system is the more readily they will learn and the more efficiently they will remember. This is the natural and rational ground for a system of *mnemonics,* or symbols that may be readily and systematically remembered" [19].

3 Kinds of Mnemonics

In the building of a class number for public use—and not merely for private use—fortuitous, temporary, or private improvisation of mnemonics cannot be of help. There is an additional implication in the enunciation of the General Canon of Mnemonics. It denotes a mode of securing consistent sequence among the ideas figuring in classifying work. It is indeed a mode of choosing digits or digit-groups to represent ideas in such a way that the Canon of Consistent Sequence is satisfied in whatever subjects they occur (*See* Chap EQ). The following four kinds of mnemonics are possible in notation.

1 Alphabetical mnemonics;
2 Scheduled mnemonics;
3 Systematic mnemonics; and
4 Seminal mnemonics.

These are explained in the succeeding chapters.

CHAPTER KB

ALPHABETICAL MNEMONICS

0 Introduction

Verbal mnemonics are quite common in life. Their application to the construction of a number in classification is the Alphabetical Device (*See also* Chap NE). This consists in representing an idea by the first letter or the first few letters in its name.

A for Apple, B for Boat, and C for Cat are trivial examples. If the names of two or more ideas, coming in the same array, begin with the same letter, then one of them is represented by that letter, and the others are represented by the first two letters in their respective names. If the names of two or more ideas begin with the same two letters, then one of them is represented by these two letters, and the others are presented by the first three letters in their respective names. And so on.

1 When to Use

Alphabets have ordinal values in respect of their mutual sequence. They can also be used as decimal fractions. Thus, they are quite suited for use as digits in the construction of class numbers or their constituents. The construction of class numbers or any constituents of them by the alphabetical device is easy.

Alphabetical arrangement does not give a helpful sequence in most cases. However, when arrangement on the basis of any other characteristic is not more helpful than alphabetical arrangement in any universe or in any array derived from it, the alphabetical device may be preferred with advantage. The arrangement of "Brands",—say, of bicycles or of motor cars, of different variant forms of an instrument, having distinctive names—and of the different strains of an agricultural crop or cultivars are instances of justifying the preference of verbal mnemonics to the use of specially constructed oridinal numbers.

2 Canon of Alphabetical Mnemonics

Alphabetical mnemonics should be rejected without any hesitation, if a sequence more helpful to readers or more filiatory than alphabetical sequence exists. Alphabetical mnemonics should be preferred if the alphabetical sequence is as helpful as any other sequence and if an international nomenclature exists in the field to which it is applied.

The classificatory language of ordinal numbers is intended to be an international language. This is essential to facilitate inter-

national communication through classification. The use of a vernacular name in the alphabetical device will militate against this. The only means of avoiding this fault is to use international nomenclature for alphabetical device. It is true that international nomenclature does not exist in several fields, but this is compensated for by the number of occasions calling for alphabetical device being small. Moreover, in some cases vernacular names are accepted in international nomenclature—*viz*, the names of strains of cultivars in agriculture. Further, in several cases calling for the use of alphabetical device, such as, the makes of machinery, the laws of a subject derived by induction or deduction such as Hooke's Law, or the manufacturing processes, the words concerned are often virtually proper nouns. They are, therefore, suitable for use in alphabetical mnemonics.

3 Prescription

Division by alphabetical device is usually prescribed by most of the schemes in the light of the Canon of Alphabetical Mnemonics. LC prescribes it more often than others in preference to numbers based on a characteristic giving a more helpful and filiatory sequence. The use of English words as the basis of alphabetisation, coupled with far too many resorts to alphabetisation, increases the unsuitability of LC for international use. UDC is more sparing in the prescribing of alphabetical device. CC is even more sparing. Some differences between UDC and CC may be mentioned. Authors in Literature are arranged by UDC alphabetically, whereas CC arranges them on the basis of their year of birth as characteristic. So it is with authors in drama, fiction, and other forms of literature. Again, periodicals are arranged by UDC alphabetically. But CC first groups them by the country of origin, and arranges those in each country-group by chronological device, using their year of beginning as the epoch.

DC does not prescribe alphabetical device.

4 Amateur Classification

Many an amateur designs a classification based on alphabetical mnemonics from beginning to end. He gets disillusioned when it is too late. This temptation to play with the so-called mnemonic classification—mnemonic in the sense of alphabetical mnemonics—is caused by the very limited nature of the universe with which the amateur is concerned at the beginning. Usually, it is small in extent; it does not grow with sufficient rapidity to give him a shock early enough; further, it does not perhaps call for a particularly helpful sequence. Many eminent scientists have been tempted into such amateurish attempts at designing a classification. They

did not realise at the beginning the chaos—the very opposite of classification—towards which it was leading. The first influential pronouncement on the futility of amateurish design of classification came from the scientists themselves in 1950. It came through the Standing Committee on Subject Classification in Science set up by the Royal Society of London, in pursuance of a resolution of the Scientific Information Conference convened by it in 1948. At the end of 1950, this Committee reported that "the problem of classification is far more complex than was imagined at the outset." Its Secretary, Professor J D Bernal, has given the right lead in the matter by commending to the library profession a serious and systematic pursuit of the discipline of classification along the lines of scientific method. The library profession should have the sensibility and courage to pursue the subject uninhibited by the howlers among old guards and by the newcomers without experience of the exacting needs of the social implications of precise documentation work expected of libraries today.

5 Unnecessary Numeralising

At the other extreme, we find blind enthusiasts for numeralisation. Even where alphabetical device gives as good a help as any other, they retain only the first letter in the name concerned. They translate the succeeding letters into Indo-Arabic numerals. It is difficult to see the purpose served by such a translation of letters into numerals. For, the letters have as much ordinal quality as numerals. Early in the century, many able librarians wasted their powers in designing schedules for such letter-numeral translation. The vogue set by them is not yet dead; it appears even in professional examinations; and LC perpetuates it in its scheduls. Here are some examples from page 240 of the volume on Class T Technology: A6 apple; M2 Maize; W5 Wheat.

CHAPTER KC

SCHEDULED MNEMONICS

1 Canon of Scheduled Mnemonics

A scheme for classification should use one and the same digit or digit-group, as the case may be, to represent an isolate idea or an array isolate idea, in whatever subject it may occur.

Obviously, this Canon will automatically secure conformity to the Canon of Consistent Sequence (*See* Chap EQ). It will also satisfy the Law of Parsimony (*See* Chap DF) in regard to the length of the schedules of classification. The work of the classificationist also will conform to the Law of Parsimony.

The devices (*See* Part N) and the schedules of common isolates (*See* Chap RR) satisfy this Canon automatically. A Faceted Classification (*See* Chap CW to CY and JG) also satisfies it automatically in respect of the isolates in a facet.

What needs special attention is the observance of this Canon in other casual cases. In these cases, the schedules of isolates will be parallel in the sense that the isolate terms and their respective isolate numbers will be the same in all those cases.

2 Colon Classification

CC makes much use of the parallel schedules by instructions such as the following:

Basic Class	Facet	Parallel Schedule
W	[1P2]	As in [1P2] of V History
Y	[1P1]	6 Abnormal and Defective. To be subdivided as in 6 of [1P1] of S Psychology
Z	[1P2]	4 Tort. To be subdivided as 5 Crime in the same facet.

There are seventy-six such cases in Ed 6 of CC (1960) [3]. But there are still some other cases needing attention (*See also* Sec EQ43).

21 Parent Class-Context

CC follows a certain convention in respect of parallel schedules. The schedule is given only in one class-context. In all other class-contexts, only a reference to that one class-context is given. The choice of the class-context for giving the full schedule is not a random one. It is usually given in the particular class-context where

the schedule may be said to have its origin or primary scope. We would call that class-context the parent class-context. Just as the right of naming the child goes to its parents, the right of scheduling a set of isolates recurring in several class-contexts goes with what may be reasonably taken as the parent class-context. One should, however, avoid mechanically taking the first class-context having a particular schedule to be its parent class-context.

3 Decimal Classification

In DC, the use of parallel schedules to satisfy the Canon of Scheduled Mnemonics is secured by the instruction "Divide like. . ." scattered throughout the schedule, omitting those which are equivalent to Facet Device (for example, "Add Area Notation") and Subject Device (for example, "Divide like 001-999"). DC lists 856 such cases (excluding 001–999, and area notation) [47]. There are still some other cases needing attention. Here is an example. The digits to be compared are the last ones.

SN	Subject	DC Ed 17
1	Transport phenomena in solids	531.7
2	Transport phenomena in liquids	532.7
3	Transport phenomena in gases	533.13
4	Transport phenomena in dynamic geology	551.303
5	Transport phenomena in dynamic meteorology	551.51

Note.—The DC Number for subjects against serial number 4 and 5 is got from the index.

4 Flouting of the Canon

41 RIDER'S INTERNATIONAL CLASSIFICATION

RIC claims to meet the 'Divide-like Device' of DC "Head-on by providing in its own tables no 'Divide-Likes' whatever" [157]. It does not even take the benefit of having schedules of common isolates such as the Schedule of Geographical Isolates. It claims "When it thus tailors its 'Local List' to each specific occasion where it is used it obviously has to throw mnemonics to the winds; but it greatly lightens the work of the classifier" [157]. Here is a sample of the result.

Country	Is represented by	In Host Class				
		AI Libraries	CH Church	LG Labor	QU Geology	WB Fine Arts
India		V	R	U	S	E
China		W	S	V	Q	C
Japan		X	T	W	O	D

It is difficult to imagine how the use of different digits to represent the same geographical area in different class numbers "lightens the work of the classifier", and how the use of the same mnemonic digit would "burden" his work.

42 LIBRARY OF CONGRESS CLASSIFICATION

LC pays no heed whatever to mnemonics. It has no scheduled mnemonics. For lack of them it is encumbered with hundreds of pages of repetitive details. The repetition of geographical divisions almost on every other page with entirely different numbers to represent them is most irritating. So also with other repetitions.

Let us take the schedule of Political Science. It runs through 374 pages. Of these, about 100 pages are due to the repetition of geographical areas some forty or fifty times, each time with different digits to represent them, besides the prescription of the alphabetical device for geographical division in more than a hundred places. Again, the problem divisions such as, Crown, Legislature, Executive, Judiciary, and so on, and their subdivisions, are repeated practically under every country, with different digits to represent them. A mnemonic schedule provided for these, once for all, would have eliminated more than 100 pages. With the full economy procurable by scheduled mnemonics the number of pages in the volume could have been reduced to far less than fifty. (*See also* Sec EQ52).

5 Bibliographical Classification

Apart from the scheduled mnemonics forming the equivalent of facets and common isolates, BC rarely uses parallel schedules to conform to the Canon of Scheduled Mnemonics.

CHAPTER KD

SYSTEMATIC MNEMONICS

1 Canon of Systematic Mnemonics

In a scheme for classification, the digits used to represent the array isolate ideas in an array should run parallel to the sequence in which the Principles for Helpful Sequence (*See* Part F) would arrange the array isolate ideas.

Whether the array isolate number for the first array isolate idea should be the first digit in the sector—say 1 or A—depends on the context. If it is certain that there could be no array isolate idea preceding it, the first digit in the sector may be used.

Similarly, the array isolate number for the last array isolate idea should be the last digit in the sector—say 8, 98, or 998...Y, ZY, or ZZY—depends on the context. If it is certain that there could be no array isolate idea succeeding it, the last digit in the sector may be used.

2 Time Sequence

SN	Subject	CC Ed 6	DC Ed 17	UDC Ed 3	LC	BC	RIC
0	Stratigraphy	H5	551.7	551.7	QE724/760	DI-DJ	QT
1	Archeozoic	H51	551.71	551.71	QE724	DII	QIB
2	Primary	H52	551.72-551.75	551.73	QE725	DIM	QIC
3	Secondary	H53	551.76-551.77	551.76	QE731	DJA	QTJ
4	Tertiary	H54	551.78	551.78	QE735	DJN	QTN
5	Quaternary	H55	551.79	551.79	QE741	DJT	QTR

In this subject all the six schemes conform to the Canon of Systematic Mnemonics.

For other examples *See* Chap FB.

3 Evolutionary Sequence

SN	Subject	CC	DC	UDC	LC	BC	RIC
0	Zoology	K	591	59	QL	G	TM
1	Protozoa	K2	593	593.1	QL366 etc	GLB	TOB
2	Porifera	K3	593.4	593.4	QL371 etc	GLU	TOK
3	Coelenterata	K4	593.5	593.5/8	QL375 etc	GM	TOL
4	Echinodermata	K5	593.9	593.9	QL381 etc	GT	TOQ
5	Vermes	K6	595.1	595.1	QL386 etc	GN	TQ
6	Mollusca	K7	594	594	QL401 etc	GS	TP
7	Arthropoda	K8	595.2	595.2	QL403 etc	GP	?
8	Prochordata	K91	596	596	QL610 etc	GUA	TQT
9	Pisces	K92	597	597	QL619 etc	GVI	TSA
10	Amphibia	K93	597.6	597.6	QL668 etc	GWA	TSP
11	Reptilia	K94	598.1	598.1	QL666 etc	GWL	TST
12	Aves	K96	598.2	598.2	QL671 etc	GX	TT
13	Mammalia	K97	599	599	QL700 etc	TY	TU

In this subject all the six schemes nearly conform to the Canon of Systematic Mnemonics.

For other examples *See* Chap FC.

4 Spatial Sequence

SN	Subject	CC Ed 7 (forth-coming)	DC	LC	BC	RIC
0	Architecture, Building	NA, 2	721	NA2835	V	WC
1	Foundation	NA, 2, 1	721.1			WCN
2	Structural frame	NA, 2, 2	721.2/3	NA2940	VDC	WCO
3	Floor	NA, 2, 3	721.6	NA2970		WCS
4	Screen Wall	NA, 2, 4				
5	Room	NA, 2, 5				
6	Roof	NA, 2, 6	721.5	NA2900 etc	VDF	WCQ
7	Circulation	NA, 2, 7				

A building is of three dimensions. The spatial sequence of the parts of the building is taken to be from-bottom-upwards. CC and

BC conform to the Canon of Systematic Mnemonics. But DC, LC, and RIC do not. It is not easy to see what purpose is served by putting the "Roof" before "Floor".

For other examples *See* Chap FD.

5 Quantity Sequence

SN	Subject	CC	UDC
0	Town Planning	NB	711.43
1	Village	NB, 1	711.437
2	Town	NB, 3	711.434
3	City	NB, 5	711.433
4	Metropolis	NB, 7	711.432

CC follows the sequence of Increasing Quantity and UDC that of Decreasing Quantity. Here "quantity" means the area or the size of the population-cluster.

For other examples *See* Chap FE.

6 Complexity Sequence

SN	Subject	CC Ed7	DC Ed17	UDC	LC	BC	RIC
0	Psychology	S	150	159.9	BF	I	BJ
1	Perception	S;2	152.1	159.93	BF(211) etc	ICR	BKA
2	Consciousness	S;3	152.3		BF311 etc	ICA	BKK
3	Cognition	S;4	153	159.95	BF365	IFR	BKJ
4	Emotion	S;5	152.4	159.942	BF511 etc	ID	BLJ
5	Conation	S;6	153.8	159.943	BF608 etc	IEV	BLF
6	Personality	S;7	153.9	—	BF698	IG	BLN
7	Metapsychology	S;8	154	159.96	BF1001 etc	ION	BQ

The schemes appear to differ in their estimate of Increasing Complexity.

For other examples *See* Chap FF.

CHAPTER KE

SEMINAL MNEMONICS

1 Canon of Seminal Mnemonics

A scheme for classification should use one and the same digit to denote seminally equivalent concepts in whatever subject they may occur.

In scheduled mnemonics, the same concept is represented by the same term and the same number, in all its places of occurrence. It is also possible to have the same concept represented by the same *number* in all places of occurrence, but with different *terms* denoting it in the different places The identity of the concept is cognizable at great depths, beyond the reach of natural language. As and when the concept came up to the surface in particular contexts, a word in the natural language has been coined to denote it in that context. At the unmanifest depth of identity, there has been no need to denote that seminal concept by a term in the natural language. In classificatory language, it is possible to denote it by a definite digit or digit-group. But, in the different schedules where that concept is denoted by that digit, the equivalent term current in the natural language has to be different in each schedule. Therefore, it cannot be called a scheduled mnemonic. I denoted these deep mnemonics by the negative term 'Unscheduled Mnemonics' in the Ed 1 of this book. But my friends B I Palmer and A J Wells have hit upon the more happy and more truly descriptive term 'Seminal Mnemonics' to denote "what promises to be a valuable tool in any future scheme of classification. [95]. I gladly changed over from the term 'Unscheduled' to the term 'Seminal'.

2 Forgotten Tradition

In the mystic tradition of Chaldea and India, many such equivalences are believed to have been recognised. I have not yet been able to get hold of that tradition. It gives seminal mnemonic significance to letter as well as numerals. A correct knowledge of it will make the use of digits conform with seminal mnemonics. The forgotten tradition needs to be re-captured. As the deep region of seminal equivalences transcends expression in words alone, communication through the written or printed word is difficult. Seminal equivalences are ineffable, but they get permeated by personal association and communication in a "School" [145]. Class numbers formed with such seminal mnemonic digits will satisfy the Canon of Filiatory Sequence and the Canon of Helpful Sequence in an ideal way. The Canon of Consistent Sequence would also be satisfied even at a subtle level.

3 Many-One Correspondence

The seminal concepts and the digits have a "Many-one" relationship. Many related seminal concepts may be denoted by the same digit. As an example, Aesthetics, Painting, Women, Love, and Radiation are all represented by the digit 5.

4 Non-Conformity in Universal Decimal Classification

UDC freezes a digit representing a bibliographically poverty-stricken class. It keeps it in quarantine, as it were, for a prescribed number of years. It releases it thereafter to represent a new concept needing a digit for its representation. This is the very negation of any kind of mnemonics, let alone seminal mnemonics. It also implies forcing the new concept to take a place made available by the notational plane quite unmindful of the demand of the Canon of Helpful Sequence and of the Canon of Filiatory Sequence.

5 Conformity in Colon Classification

CC conforms to the Canon of Seminal Mnemonics to some extent as shown below:

1 "Function" in Political Science, "Physiology" in Biological Sciences, and "Social activities" in Sociology are equivalent at the unexpressed seminal level. They are all denoted by the digit '3'.

2 "Constitution" in Political Science, "Morphology" in Biological Sciences, "Physical anthropology" in Sociology, and "Morphology" in Linguistics are equivalent at the unexpressed seminal level. They are all denoted by the digit '2'.

3 "Disease" in Biological Sciences, "Social pathology" in Social Sciences, and "Tort" in Law are equivalent at the unexpressed seminal level. They are all denoted by the digit '4'.