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Non-Primary Basic Subject.

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[The formation, recognition, and arrangement in a helpful sequence of Non-Primary Basic Subjects — Secondary Basic Subjects of various orders and Compound Basic Subjects of several varieties — are discussed.]

0 Scope of the Paper

In Papers G to K of this issue, the formation, recognition, and arrangement in a helpful sequence of Primary Basic Subjects has been discussed. This paper discusses the formation, recognition, and arrangement in a helpful sequence of Non-Primary Basic Subjects — Secondary Basic Subjects of various orders and Compound Basic Subjects of several varieties.

1 Secondary Basic Subject by Fission of Primary Basic Subject

As the universe of subjects develops, a stage may be reached when the number and variety of subjects going with a particular Primary Basic Subject of any one of the varieties mentioned in the preceding paper, taken as a whole, may be found to be too many and non-homogeneous to form a convenient field of specialisation. A further division of the field of work — that is, the totality of subjects going with the Primary Basic Subject concerned — among the scholars/specialists may be found helpful. The classificationist usually finds it helpful and convenient to follow suit and to divide the subjects going with the Primary Basic Subject concerned, into a few smaller groups of subjects with some degree of homogeneity or other among themselves. The division and grouping is usually made to parallel the division and grouping of the field of work by scholars among themselves. Each of these smaller groups may be deemed to go with a division of the corresponding Primary Basic Subject.

This division by Fission of a field of specialisation going with a Primary Basic Subject, without explicitly using any characteristic for the division and deeming them to go with a corresponding division of the Primary Basic Subject, gives rise to canonical

divisions of the Primary Basic Subject concerned. Such a division may be called a Secondary Basic Subject of Order 1. A Secondary Basic Subject of Order 1 may be formed through a Fission of any of the varieties of Primary Basic Subjects mentioned in Papers G to J. For convenience of discussion, the term 'Secondary Basic Subject' is used in the succeeding sections instead of the term 'Secondary Basic Subject of Order 1'. Here are some examples of Secondary Basic Subjects from CC:

1 For the Fissioned Primary Basic Subject "Physics" the Secondary Basic Subjects are: Fundamentals; Properties of Matter; Sound; Heat; Radiation; Electronics; Electricity; and Magnetism.

2 For the Distilled Primary Basic Subject "Research Methodology," the Secondary Basic Subjects are: Survey Methodology; Observation Methodology; Experimentation; Discussion; Postulate Formulation; and Abstract Model.

3 For the Fused Primary Basic Subject "Geophysics", the Secondary Basic Subjects are: Volcanology; Seismology; Oceanology; and Atmospherology.

2 Compound Basic Subject by Lamination of Kind 2

In forming divisions of a Primary Basic Subject, it may be found helpful to use a specific explicit characteristic, unlike in the case of the formation of Secondary Basic Subjects mentioned in the preceding section. In this case, the ideas derived on the basis of a characteristic are used to qualify or speciate the totality of the subjects going with the Primary Basic Subject concerned. Here, each of the ideas derived on the basis of a characteristic is called a 'Speciator'. The attachment of a speciator to the Primary Basic Subject to be qualified is called Compounding or Lamination of Kind 2. It gives rise to Compound Primary Basic Subjects or Compound Basic Subject for short.

A variety of Compound Basic Subjects have been recognised on the basis of the variety of speciators used in lamination. These are discussed in the succeeding sections.

21 SPECIALS COMPOUND BASIC SUBJECT

The core entity of study in the subjects going with a particular Primary Basic Subject may be restricted or qualified using speciators derived on the basis of relevant characteristics specific to the subjects concerned, not amounting to any of the Anteriorising Isolates or any other isolate. This gives rise to Specials Compound Basic Subject. Here are some examples:

The core entity of study of the subjects going with the Primary Basic Subject "Medicine" is the "Human body and its organs". The study of the human body and its organs can be restricted or

qualified using speciators derived on the basis of such relevant characteristics as "By Age" and "By Sex".

Speciators derivable on the basis of the characteristic "By Age" include: Child, Adolescent, and Old Age. Attaching each of these speciators to the Primary Basic Subject "Medicine" for qualifying the totality of the studies, falling within its purview, gives rise to the Specials Compound Basic Subjects

Medicine-Child
Medicine-Adolescent
Medicine-Old Age,

respectively.

Similarly, speciators derivable on the basis of the characteristic "By Sex" include: Male; Female; Eunuch. Attaching each of these speciators to the Primary Basic Subject "Medicine" for qualifying the totality of the studies, falling within its purview, gives rise to the Specials Compound Basic Subjects

Medicine-Male
Medicine-Female
Medicine-Eunuch,

respectively.

22 ENVIRONMENTED COMPOUND BASIC SUBJECT

The core entity of study in the subjects going with a Primary Basic Subject may be restricted or qualified using speciators derived on the basis of the characteristic "By Environment". That is, the totality of the studies in the subjects going with the Primary Basic Subject is qualified by the core entity of study being placed within an extra-normal environment. This gives rise to Environmented Compound Basic Subject. Here are some examples:

The "Human body" is the core entity of study in all subjects going with the Primary Basic Subject "Medicine". Each of the studies can be restricted or qualified by speciators denoting various extra-normal environments in which the Human Body may be placed. Thus, the speciators derivable on the basis of the characteristic "By Environment" can be attached to the Primary Basic Subject "Medicine" to denote the extra-normal environment of study. Speciators derivable on the basis of the characteristic "By Environment" and relevant to the context include: High altitude environment; Under-water environment; Desert environment; Space environment; and Industry environment. Attaching each of these speciators to the Primary Basic Subject "Medicine" gives rise to the Environmented Compound Basic Subjects

Medicine-High altitude environment
Medicine-Underwater environment

Medicine-Desert environment
 Medicine-Space environment
 Medicine-Industry environment,

respectively.

Similarly, "Mind and mental phenomenon" is the core entity of studies in subjects going with the Primary Basic Subject "Psychology." Each of the studies can be restricted or qualified using speciators derivable on the basis of the characteristic "By Environment". Relevant speciators derivable on the basis of the characteristic "By Environment" include: Space environment; Industry environment; Alien group environment; and War environment. Attaching each of these speciators to the Primary Basic Subject "Psychology" gives rise to the Environmented Compound Basic Subjects

Psychology-Space environment
 Psychology-Industry environment
 Psychology-Alien group environment
 Psychology-War environment,

respectively.

23 SYSTEMS COMPOUND BASIC SUBJECT

The core entity of study in the subjects going with a Primary Basic Subject may be restricted or qualified using speciators derived on the basis of the characteristic "By System" (or School of Thought). The attachment of such a speciator to the Primary Basic Subject gives rise to Systems Compound Primary Basic Subject or Systems Compound Basic Subject for short. Here are some examples:

As has been mentioned earlier, the "Human body" is the core entity of study in subjects going with the Primary Basic Subject "Medicine". The study can be qualified or restricted using speciators derived on the basis of the characteristic "By System" (or School of Thought). Relevant speciators derivable on the basis of the characteristic "By System" include: Ayurveda System; Siddha System; Unani System; Homoeopathy System. Attaching each of these speciators to the Primary Basic Subject "Medicine" gives rise to the Systems Compound Basic Subjects

Medicine-Ayurveda system
 Medicine-Siddha System
 Medicine-Unani system
 Medicine-Homeopathy system,

respectively).

Similarly, "Mind and mental phenomenon" is the core entity of study in subjects going with the Primary Basic Subject "Psychology". The study can be qualified or restricted using speciators derivable on the basis of the characteristic "By System" (or School

of Thought). Relevant speciators derivable on the basis of the characteristic "By System" include: Experimental system; Psychoanalytic system; Gestalt system; Behaviourist system; Reflexology system; and Typological system. Attaching each of these speciators to the Primary Basic Subject "Psychology" gives rise to the Compound Basic Subjects

Psychology-Experimental system
 Psychology-Psychoanalytical system
 Psychology-Gestalt system
 Psychology-Behaviouristic system
 Psychology-Reflexology system
 Psychology-Typological system,
 respectively.

24 MULTIPLE COMPOUND BASIC SUBJECT

The studies in subjects going with a Primary Basic Subject can be qualified or restricted using successively speciators derived on the basis of two or more of the variety of characteristics mentioned in the preceding sections — that is Specials characteristic, Environment characteristic, and Systems characteristic. Attaching the speciators in a prescribed sequence to the Primary Basic Subject concerned gives rise to Multiple Compound Primary Basic Subject or Multiple Compound Basic Subject for short. Here are some examples:

Medicine-Ayurvedic system-Tropical environment
 Medicine-Ayurvedic system-Child
 Medicine-Tropical environment-Child
 Medicine-Space environment-Female
 Psychology-Psycho-analytical system-War environment
 Psychology-Behaviouristic system-Industry environment.

3 Division of Secondary Basic Subject

31 SECONDARY BASIC SUBJECT OF ORDER 2 ETC

In Sec 1 the formation of Secondary Basic Subject of Order 1 by Fission of a Primary Basic Subject was discussed. For similar reasons it may be found helpful to fission further a Secondary Basic Subject of Order 1 to form Secondary Basic Subjects of Order 2. For example, for the Secondary Basic Subject of Order 1 "Atmospherology," the following are the Secondary Basic Subjects of Order 2:

Meteorology
 Aeronomy
 Ionosphere studies.

Theoretically Secondary Basic Subjects of any higher order can be formed by Fission. But in actual practice, very rarely one finds the need to form Secondary Basic Subjects of order

higher than 2. At that stage it is usually found more helpful to form Compound Subjects by attaching isolates to the Basic Subject.

32 COMPOUND SECONDARY BASIC SUBJECT

Attachment of speciators — that is, Lamination of Kind 2 — to a Secondary Basic Subject in the same manner as described for Primary Basic Subjects, gives rise to Compound Secondary Basic Subjects of the following varieties:

- Specials Compound Secondary Basic Subject
- Environmented Compound Secondary Basic Subject
- Systems Secondary Compound Basic Subject.

Here are some examples:

- Physics Properties of matter-Low temperature environment
- Physics Radiation-Electromagnetic theory

In these examples, "Properties of matter" and "Radiation" are Secondary Basic Subjects derived from the Primary Basic Subject "Physics".

- Economics Consumption-Capitalist system
- Economics Public finance-Socialism

In these examples, "Consumption" and "Public finance" are Secondary Basic Subjects derived from the Primary Basic Subject "Economics".

Theoretically the attachment of speciators to Secondary Basic Subject of any Order to form Compound Secondary Basic Subjects is possible.

4* Arrangement of Non-Primary Basic Subjects in CC

It has been shown in the preceding sections that the mode of formation of Non-primary Basic Subjects are of two kinds, namely,

- 1 Fission; and
- 2 Lamination of Kind 2.

In the succeeding Sec 4 and 5, we shall consider the guiding principles used in the arrangement of the different varieties of Non-Primary Basic Subjects in CC.

4 Secondary Basic Subject

Secondary Basic Subjects are formed by a Fission of a Primary Basic Subject — that is, an Array division — without using any explicit characteristic. The division is based on the practice of the scholars/specialists in subjects going with the Primary Basic Subject concerned.

41 SEQUENCE BETWEEN A PRIMARY BASIC SUBJECT AND ITS SECONDARY BASIC SUBJECTS

The sequences of arrangement between the parent Primary

Basic Subject and the set of Secondary Basic Subjects derived from it by Fission conforms to the Principle of Decreasing Extension or the Principle of Increasing Intension (1).

Thus, the sequence between the Primary Basic Subject "Physics" and the Secondary Basic Subjects derived from it by Fission — namely,

Properties of Matter	Electricity
Sound	Electronics
Heat	Magnetism,
Radiation	

conforms to the Principle of Decreasing Extension.

Similarly, the sequence between the Primary Basic Subject "Philosophy" and the Secondary Basic Subjects derived from it by Fission — namely,

Logic	Ethics
Epistemology	Aesthetics,
Metaphysics	

conforms to the Principles of Decreasing Extension.

42 SEQUENCE AMONG SECONDARY BASIC SUBJECTS

The sequence among the Secondary Basic Subjects derived from a particular Primary Basic Subject, usually follows the traditional practice — the educational or scholars' consensus — or sometimes, conforms to the Principle of Increasing Complexity if that can be conveniently established. For example:

Arithmetic	Geometry
Algebra	Topology
Analysis	Mechanics,
Trigonometry	

for the Primary Basic Subject "Mathematics" conforms roughly to the Principle of Increasing Complexity.

In most other cases, such as, for example

1 The Secondary Basic Subjects

Fundamentals	Radiation
Properties of matter	Electronics
Sound	Magnetism,
Heat	

derived from the Primary Basic Subject "Physics";

2 The Secondary Basic Subjects

Civil engineering	Sanitary engineering
Building engineering	Power production engineering
Irrigation engineering	Commodity production engineering,
Track engineering	ing,

derived from the Primary Basic Subject "Engineering"

3 The Secondary Basic Subjects

General Chemistry	Analytical chemistry
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Physical chemistry Synthetic chemistry
 derived from the Primary Basic Subject "Chemistry";

- 4 The Secondary Basic Subjects
 Mineralogy Stratigraphy
 Petrology Paleontology
 Structural geology Economic geology,
 Geomorphology

derived from the Primary Basic Subject "Geology";

- 5 The Secondary Basic Subjects
 Logic Ethics
 Epistemology Aesthetics,
 Metaphysics

derived from the Primary Basic Subject "Philosophy"; are arranged among themselves according to the traditional or canonical sequence.

Where it is not easy to determine a traditional sequence or to use any other characteristic to derive a helpful sequence among a set of Secondary Basic Subjects, the Principle of Mnemonics is taken recourse to. For example, the sequence

- 31 Author's work 36 Compiler's work
 32 Translator's work 38 Editor's work,
 35 Illustrator's work

conforms to the Principle of Seminal Mnemonics (2). For, the digit

- 1 denotes Starting point, Creation
 2 denotes Two phases, Two dimensions
 5 denotes Aesthetics, Colour
 6 denotes Posterity, Time, Mechanical
 8 denotes Management, Organisation.

5 Compound Primary Basic Subject

51 SEQUENCE BETWEEN A PRIMARY BASIC SUBJECT AND THE COMPOUND PRIMARY BASIC SUBJECTS DERIVED FROM IT

As has been described earlier, a Compound Primary Basic Subject is obtained by attaching a qualifier or speciator derived on the basis of a characteristic to the Primary Basic Subject concerned. Such a process is called Lamination of Kind 2 (See Sec 2).

The sequence of arrangement between the parent Primary Basic Subject and the set of Compound Primary Basic Subjects derived from it, conforms to the Principle of Decreasing Extension.

52 SEQUENCE BETWEEN COMPOUND PRIMARY BASIC SUBJECTS

In Sec 2, it was mentioned that the following varieties of Compound Primary Basic Subjects could be derived from a Primary Basic Subject:
 Specials Compound Primary Basic Subject

Environmented Compound Primary Basic Subject

Systems Compound Primary Basic Subject

The above three sets of Compound Primary Basic Subjects for a given Primary Basic Subject, are arranged in the sequence mentioned, to conform approximately to the Principle of Later-in-Time. For example, for the Primary Basic Subject Medicine:

Specials Compound Primary Basic Subjects

Medicine — Embryo	Medicine — Male
Medicine — Child	Medicine — Female
Medicine — Adolescence	Medicine — Eunuch
Medicine — Old age	

Environmented Compound Primary Basic Subjects

- Medicine — High altitude environment
- Medicine — Space environment
- Medicine — Tropical environment
- Medicine — Aviation environment
- Medicine — War environment
- Medicine — Industrial environment

Systems Compound Primary Basic Subjects

- Medicine — Ayurveda system
- Medicine — Siddha system
- Medicine — Unani system
- Medicine — Homoeopathy system

It is presumed that the "Specials" studies emerged first; then the "Environment" studies (not necessarily all of the studies at the same time); and then new Systems or Schools of Thought.

The sequence can also be viewed from another angle. Every study in a particular field has to be based on the ideas of one System or School of Thought or the other, whether it is explicitly mentioned or not. A system may be deemed a favoured one for local convenience. Therefore, a "Systems" study covers the entire field of study, including "Environmented" and "Specials" studies.

The speciators used in deriving Specials Compound Basic Subjects relate to certain intrinsic characteristics of the core entity of study in the subjects going with the Primary Basic Subject concerned. In the above example, "Human body and its organs" in the core entity. "By Age" and "By Sex" are the characteristics used in deriving the "specials" speciators used.

The "Environment" — that is, extranormal environment — speciators are not intrinsic to the core entity of study. Further, an "Environmented" study has also to cover the "Specials" studies.

It has been suggested that if an entity B is characterised or qualified by the same set of characteristics as another entity A

and further, one or more additional characteristics are used in characterising B than in A, then B is said to be more concrete than A. Viewed in his way, the "Systems" study is the most concrete, the "Specials" study is the least concrete, and the "Environment" study is of an intermediate concreteness. Therefore, the sequence

Specials
Environment
System

conforms to the Principle of Increasing Concreteness.

53 SEQUENCE WITHIN A SET OF COMPOUND PRIMARY BASIC SUBJECTS

531 *Specials Compound Primary Basic Subject*

If the speciator used in the formation of Specials Compound Primary Basic Subjects are derived on the basis of two or more characteristics, then the characteristics are first arranged in a sequence using a principle such as the Principle of Increasing Concreteness in Facet Structure. Consider for example, the two characteristics "By Age" and "By Sex" used for deriving speciators for attachment to the Primary Basic Subject "Medicine". In order to determine the relative concreteness between the ideas "Age" and "Sex," each i. correlated with one of the five Fundamental Categories — Personality, Matter (Material; Property), Energy (Action), Space, and Time. The idea of "Age" can be correlated with the Fundamental Category "Time"; and the idea of "Sex" can be correlated with the Fundamental Category Matter (Property). According to the Postulate of Concreteness, the Fundamental Categories fall in the sequence, P, M, E, S, T when arranged in the sequence of their decreasing concreteness in Facet Structure. Thus, "Age" is relatively less concrete than "Sex." Hence, the sequence among the two sets of Compound Basic Subjects would be

Medicine—By Age
Medicine—By Sex,

when arranged according to their increasing concreteness.

Among the Specials Compound Primary Basic Subjects each of the subsets for a particular Primary Basic Subject, the sequence is determined according to an appropriate Principles for Array Isolate Sequence (3). Usually, the Principle of Later-in-Time or the Principle of Later-in-Evolution, or the Principle of Increasing Quantity may be found helpful. Consider the sequence

Medicine — Embryo	Medicine — Adolescent
Medicine — Child	Medicine — Old age

It conforms to the Principle of Increasing Quantity (Age) as well as to the Principle of Later-in-Time or the Principle of Developmental sequence,

It may be worth mentioning here that among the Principle for Array Isolate Sequence, if two or more are applicable and give equally helpful results, then the one enumerated earlier in the list of principles is to be preferred (according to the Law of Interpretation). The principle enumerated later is to be chosen only if it gives a more helpful sequence than by using an earlier listed principle in a given context or in relation to the particular purpose for which the grouping and arrangement of the entities is done. In the present case, the Principle of Later in Time is to be preferred as it is enumerated earlier in the list and the application of the other Principle does not give a more preferable sequence.

Consider the sequence

Physics—Molecule

Physics—Nucleus

Physics—Atom

Physics—Elementary particle.

It conforms to the Principle of Decreasing Quantity, as well as to the Principle of Periphery to Centre. The result of applying either Principle is the same. So there is no preference to one or the other Principle on that account. The Principle of Decreasing Quantity is enumerated earlier to the Principle of Periphery to Centre, in the list of Principles for Array Isolate Sequence. Hence, the former Principle is to be preferred here.

Consider the sequence

Economics — Small scale

Economics — Medium scale

Economics — Large scale.

It conforms to the Principle of Increasing Quantity (scale of size).

532 *Environmented Compound Primary Basic Subjects*

The Environmented Compound Primary Basic Subjects derived from a particular Basic Subject are arranged among themselves according to the Principle of Scheduled Mnemonics, giving a sequence parallel to the ideas in the schedule of Common Environment Isolates in CC, ed 7. The ideas in the latter schedule are themselves arranged according to the Principle of Scheduled Mnemonics (parallel to the schedule of Primary Basic Subjects).

Example:

L-9Un4	Medicine — High altitude environment
L-9Ux	Medicine — Space environment
L-9U3	Medicine — Tropical environment
L-9V4	Medicine — War environment
L-9XX	Medicine — Industrial environment

Here, the components

Un4 High altitude
 Ux Space
 U3 Tropical
 F4 War
 XX Industry

are taken from the Schedule of Common Environment Isolates. The Environment Device is used in forming the Environmented Compound Primary Basic Subjects and their respective class numbers. This ensures the automatic interpolation in a helpful sequence a new Environmented Compound Primary Basic Subject.

533 *Systems Compound Primary Basic Subjects*

The Systems Compound Primary Basic Subjects derived from a particular Primary Basic Subject are arranged among themselves according to the Principle of Later-in-Time, using the century or decade of origin, as required, of the Systems or Schools of Thought. Here are some examples of Systems of Psychology:

System of Psychology	Approx Decade of Origin	CC Number by Chronological Device
Experimental	1800s	S—M
Psycho-analytical	1890s	S—M9
Gestalt	1900s	S—N
Behaviorist	1910s	S—N1
Individualistic	1914	S—N14
Reflexology	1917	S—N17
Eidectict	1920s	S—N2
Field	1930s	S—N3
"We "	1936	S—N36

As indicated in column 3 of the table, the Chronological Device is used in forming the Class Number of Systems Compound Primary Basic Subjects. This secures the automatic interpolation in a helpful sequence any new Systems Compound Primary Basic Subject.

534 *Multiple Compound Primary Basic Subject*

In Sec 52 it was mentioned that in the schedule the sequence among the different varieties of Compound Primary Basic Sub-

jects for a particular Primary Basic Subject would be
 Specials Compound Primary Basic Subject
 Environmented Compound Primary Basic Subject
 Systems Compound Primary Basic Subject.

According to the Principle of Inversion (4) extended to Characteristics used in a facet for the division of a single typical entity, in the facet structure, "Systems" will be the most concrete, "Specials" the least, and "Environmented" being of an intermediate concreteness. Therefore, the sequence in which the speciators get assembled to form a Multiple Compound would be:

"Systems" component, "Environment" component, "Specials" component

For example:

Psychoanalytical Psychology—War environment S—M9—9V4

Ayurvedic system of Medicine—Tropical environment—

Women L—B—9V3—9H.

This secures an arrangement of the Multiple Compound Primary Basic Subjects—the documents on them on the shelves or their surrogates in the catalogue—conforming to the Principle of Increasing Concreteness.

54 COMPOUNDING WITH SECONDARY BASIC SUBJECTS

The varieties of Compound Secondary Basic Subjects formed in the manner discussed in Sec 32, are arranged in the same way as the different varieties of Compound Primary Basic Subjects are arranged. Multiple Compound Secondary Basic Subjects are treated in a manner analogous to that discussed in Sec 534.

6 Bibliographical References

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- 3 Sec 531 ——. ——. Part F.
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