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CHAPTER 6. STEPS OF THE THIRD STAGE IN THE CURRICULUM

3rd S T A G E

Linguistic and Systematic Seriated Mentation to organize mental content into a whole and extend it along originality-lines.

THIRD LIST OF GROUPS
(SECOND STEP IN LINGUISTIC MENTATION)

Data in world re[garding] predilections.

The Four Steps *of Linguistic Mentation.* The *first step* in linguistic mentation consisted in eliciting during the preparatory steps described in Stages 1 and 2, every item of your mental contents relating to your predilections, genius-capacities or abilities, and purposes, giving to each item and each topical group of items the usual names with their dictionary meanings. The most characteristic feature is that instead of learning indiscriminatively the words in a language just as they come along in any haphazard arrangement, only those words are learned which specifically relate to your primary responses (predilections and genius-capacities) and secondary responses (impulses-to-do and purposes), and they are learned in classific Word-Groups. There results an unusually active development of those portions of the mental content, and of the whole person and periperson, which are the embodiment of those abilities and purposes, causing these individualized characteristics to become more potently dominant and providing them with racially bequeathed and adapted knowledges which are needed for their efficient use and without which these abilities and purposes cannot be racially normal.

This accentuation of the mental content that relates to the genius-capacities is of prime importance, for upon these special abilities depend every achievement of your originality. It is also of prime importance to the realization of your personality because only by giving full expression to these primary and secondary responses can you mean anything useful or happy to yourself or the world. It is upon this predilective portion of the mental content that a knowledge of the rest of the world must be based if that knowledge is to be purposively or insightively understood, for it is only in the sphere of one's genius-capacities that true insights are attained. All other portions of your mental content than the predilective should be subsidiary and the learning of the words

relating thereto should be postponed; thus

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giving the heuric tendencies a chance to grow unimpeded. By learning in classific Word-Groups and by grouping these Groups the mental content, insofar as it relates to abilities and purposes, is classifically and functionally *organized,* whilst the other portion of the mental content is not, thereby making the brain a heuric machine.

That is, the first step in linguistic mentation consists in using the mental activities in learning and grouping those mental states and processes which constitute your primary and secondary responses. Quite largely these are *named* by the groups and items of the completed Second List of Groups and in the List of Purposes. The first step, in Stage 2, studies and inventories the data in *your mind* that relate to your predilections; the second step, in Stage 3, studies and inventories the data in the *world's* accumulated knowledge that relate to your predilections.

The *second step* in linguistic mentation consists in systematically, understandingly, and insightively learning those portions of the Six Groups of Sciences which relate most directly to your primary responses (predilections and genius-capacities) and secondary responses (impulses-to-do and purposes). Each nameable datum is understood and insighted and grouped into a *List of Topics* which should include the classific headings and their subdivisions with their definitions. Each item of the List will be a name or word which stands for *that which is named;* and it is by means of these words rather than by any other feature of one's knowledge that the facts are made available to ideation and thought. To learn the main words and sub-words of the sciences and know how to use them in conceptuation, ideation, and thinking and in recording and communicating is a *normal process of mind growth* without which the intellective ontogeny of the individual would be arrested in infancy; but with which it may not only repeat the full phylogenetic inheritance of the race in each individual but may, by special individual abilities, surpass it.

This acquisition and organization of the mental states and of the *names of these mental* states is very largely a linguistic technique; it is a mode of linguistic mentation. Every item of experimental observation that must be used in learning a science and every operation of volitionally directed mental processing connected with observing and thinking would be practically

unavailable but for your ability to use those wonderfully expedient mental tools called words. Every datum of science that is learned is remembered mainly as an item labeled by a word. The only passport of a concept from one person to another is its name. The only way concepts and ideas and thoughts can be

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practically used in mentation is by words and sentences of words. By understandingly and insightively learning the meanings of the words of a properly classified List of Topics one may easily and quickly learn the main content of the sciences, may quickly and easily arrange that mental content classifically and organize it functionally. Thereby the true knowledge portion of one's mental content is rendered dominant and effective, causing that usual 95 percent of useless and irrelevant and false mental content to lose its malign influence. It brings into regnancy that portion of the mental content which puts one into a true and efficient relatedness to the world, as distinguished from the untrue portion which puts one out of relatedness, or in a false, inefficient, or harmful relatedness.

An *insight* is an understanding of a thing from one's own standpoint, rising out of a sub-level, and in such a way that one sees that *it must* be so. An insight into the law that radiant forces diminish inversely as the distance shows the student that of geometrical necessity it must be so, and shows that the experimental fact may be determined in such and such ways, even in advance of a practical knowledge of the experimental method. But no one should attempt to *impart* insights unless he knows the experiential facts and the whole subject.

When we bring an item into a group with other things, and into kindred relations with them so as to mentally view them as a whole, we then *comprehend* the totality of things and *understand* the particular item.

The *third step in linguistic mentation* consists in ideationally and thoughtfully relating each classific item in a List of Topics with each classific item in a List of Groups (heurids or other data); it is called *Systematic* Seriated *Mentation.* It involves much that is not linguistic.

The *fourth step* in linguistic mentation consists of the method of *Cumulative Expository Mentation,* as outlined in the 4th Stage.

Language is not merely a mode of recording and remembering and communicating concepts, ideas, and thoughts but it was discovered that it is *par excellence* a FUNDAMENTAL METHOD

OF DISCOVERING THEM.

15. THE LIST OF TOPICS

In order to gain a preliminary knowledge of the sciences and acquire a heurotechnical vocabulary for immediate needs, the List of Topics is made. It organizes and summarizes your knowledge of the sciences, utilizing the principles of classification and taxonomy, especially that knowledge to be acquired by a "reading-study." The skeleton outline or synopsis of the Six Groups of Sciences is used as a guide. Each understood and insighted datum which is necessary to a classification of the

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data of a science is tabulated and grouped in the List of Topics, which will include the classific headings and subdivisions with their definitions, but their typical subordinate details are recorded. For ease and efficiency a special method of tabulation is used. To extend the specialized vocabulary, words are selected from the dictionaries and fitted into the Word-Groups of the List of Topics. The word "Topic" capitalized is a technical term.

Topics a Substitute for Concepts. The words in a language are not completely inclusive or exclusive of meanings and thus do not represent true psychological concepts. (A concept is a classific synthesis of images, symbolizing a taxonomic group of things.) Relations between two or more words expressed in a sentence thus are not true ideas. (An idea is the discovered relation between two or more concepts.) The list of Topics however, must use the actual words of some language for its headings and these words must retain their conventional meanings; must in some way often be made to cover meanings for which the language furnishes no names. That is, the words in a List of Topics must be something like a *topical heading* instead of a definite name whose meaning includes one definite fact or phenomenon and excludes all others. Such approximations as the language furnishes will be used as substitutes, and will be called "Topics." A *Topic* is a "subject or head of a discourse or a treatise; any matter treated of in speech or writing; a theme for discussion." A *topical synopsis* of a subject may be an entirely arbitrary classification of arbitrarily chosen headings, but a *List of Topics* as here used cannot be arbitrary but must arise out of an actual study of the subject as a whole, including every part, and it should consist ultimately of all the experiences therewith that a normal mind may get by systematic

experimentation and systematic and validated mentation of the data thus acquired.

Classification and *Taxonomy.* In making the List of Topics with its Word-Groups keep in mind the *subordination* and *coordination* of things; i.e., a subpart should never be placed in the same group or rank as that of which it is a part, or vice versa, for this is *non-ordination.* All sub-parts of the same things should fall in the same group, which is coordination. This is a standard principle of classification, especially in biology.

Let us say that the Kingdoms of Nature consist of the Animal, Vegetal, Mineral, and Mental. To each Kingdom there are sub-kingdoms, called phyla or branches in biology. Thus the order of decreasing generalization is Super-Kingdom, Kingdom, Sub-Kingdom, Class, Order, Family, Genus, Species, Variety, and sub-units of any one.

When similar things are put into the same group, those things are *classified.* Thus, birds may be classified into "wild" and

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"tame", and subdivided each group into "flying" and "walking." Or a different principle might be used; thus they could be grouped according to their colors into red birds, *black* birds, *white* birds, and so on. Or they might be classified according to their feet, as *clinging-footed, climbing-footed, walking-footed, perching-footed,* wading-footed, web-footed. Again they might be classified according to their distribution geographically, or according to their anatomy, or to their relative degrees of mental ability. It is obvious that each principle might place the same bird in a different group. The principle or basis according to which things are classified is called the taxonomic principle, and the classification thus made is called *taxonomy.*

In classifying the creatures of the animal kingdom great groups are found that include smaller groups. Thus all wading-birds in one group will not contain all birds; all swimming-birds would go into another group and all perching-birds into another and so on, until all known birds have been included without any omission. All these groups of birds constitute one great group or class of animals. Under this Class of Animals named AVES are *subsumed* the groups of wading, swimming, and perching birds. On the other hand, these groups of wading, swimming, and perching birds are generalized into a concept of a class called Aves. In like manner Turtle, Crocodiles, Lizards, Serpents and such are generalized into

the concept of animals called REPTILLA. Under the word Reptilla are subsumed the words Turtles, Crocodiles, Lizards. Reptilla, Aves, Pisces, Mammals and such are classes of animals that are subsumed under Vertebrata (or backboned animals), one of the greatest divisions of the animal kingdom. Each individual in any group is *coordinate* with the other individuals of the same group and is of equal rank. Thus swimming-birds are of equal rank in the classification with waders and runners and perchers in the class Aves. Turtles are of equal rank with Lizards in the class Reptilla. In the division Vertebrata the classes Reptilla, Aves, Pisces, and Mammals are ~of equal rank and coordinate. Swimming birds from the class Aves and Turtles from the class Reptilla are of the same rank but are in different classes, and are *synordinate.* Swimming-birds are synordinate with Serpents but not with Reptilla or Mammals, and still less so with Vertebrata. A swimming-bird is *dysordinate* with Mammals and Reptilla and Aves. Terms in the classification are dysordinate when they are different in rank. A term is *superordinate* when it is one taxic degree higher than another.

Another example of a successively increasing order of generalization from individual would be Huxley, Englishman, Caucasian, Humanity, Mammal, Animal, Living Being,

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Aggregate, Entity. We might call the groups included by the successive names as class, class of classes, class of classes of classes, and so on.

In making the List of Topics, with its classified list of definitions and corresponding details recorded, a special synopsis of the Six Groups of Sciences is used as a skeleton outline to aid in recording and enlarging the student's understood and insighted knowledge.

Synopsis of the Six Groups of Sciences: The Epistemotaxis. Broadly speaking it may be said that the individual living being is the cosmic unit which has experience, and all its experiences are conscious experiences with Consciousness, with Mind, and with the Environment. The middle term "with Mind" may be subdivided into experience "with Itself" and "with Other Selves."

Stating it to outline the names of the Super-Kingdoms of the synopsis of the Six Groups of Sciences, herein called the "Epistemotaxis," we have the following diagrammatic sentence.

The living individual being may have conscious experience

with
consciousness: COGNOSTOLOGY (not further described);
itself: SUBJECTIVE PSYCHOLOGY;
other selves: BIOLOGY;
and with
matter: HYLOLOGY,
motion: PHYSICS,
magnitude: MATHEMATICS,
time-sequences: COSMOLOGY.

Still more fully subdividing these super-kingdoms we may say that a person may have experience with the domain of SUBJECTIVE PSYCHOLOGY;
with the domain of BIOLOGY
Botany
Zoology
Sociology
Ethnology

with the domain of HYLOLOGY
Etherology
Radiology
Chemistry
Mineralogy
Geology
Astronomy

with the domain of PHYSICS
Mechanics
Thermodynamics
Acoustics
Optics
Electrics
Radio-Activity

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with the domain of MATHEMATICS
Arithmetic
Algebra
Geometry
Trigonometry

Group-Theory
Calculus

and with the domain of
COSMOLOGY
Evolution
History

Special Method of Tabulation. In making the List of Topics for actual use neither the diagrammatic sentence nor the ordinary diagram will be used, but a special method of tabulation in which the differences of capitalization and underlining and two vertical columns take their place. This method has the advantages that all the headings and the text of the records can be written and typed and printed in the ordinary small and capital letters and italics. The lines will extend the full width of the page, paragraphed in the usual way. It has other advantages that will become apparent with use.

The method consists in placing the Super-Kingdoms, Kingdoms, Sub-Kingdoms, Classes, and Orders in the first vertical column starting at the usual margin. The Super-Kingdom is in spaced capitals, heavily underlined; the Kingdom is in spaced capitals; the Sub-Kingdom in capitals, heavily underlined; the Class in capitals; the Order in spaced small letters, heavily underlined, the word beginning with a capital; the Family in spaced small letters, the word beginning with a capital. If any word is to be placed diagrammatically to the right of the first-column words it is indicated by enclosing the word in parentheses; and if a word is to be placed diagrammatically still further rightward it is enclosed in brackets; if still further rightward in double brackets.

Genera, Sub-Genera, Species, Sub-Species, Varieties, Sub-Varieties belong to the second vertical column whose margin is indented one inch; the word, if the first of the column or first at the head of a page, is preceded by five periods. The same principles of capitalizing, spacing, underlining, and using parentheses and brackets are applied to the second column as to the first.

Any heading in the first column may have further topical sub-headings indicated by commencing the words two letter-spaces rightward, with two periods in the spaces, and sub sub-headings by commencing the words four letter-spaces rightward with four

periods in the spaces. Still further subdivisions of any of these headings may be indicated by letters,

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numerals (cardinal or ordinal, in figures or spelling), or by signs.

Under *any* of these headings the actual Data-Headings should be placed in small letters, un-spaced, underlined, the word beginning with a capital; and the Data similar but not underlined. These Data-Headings may commence at *any* margin that corresponds to position of the Topic to which they belong.

An underlined word in these tabulations does not mean that it is printed in italics. The distinction between underlining and italicizing is as follows: in an underlined word which is to be printed with a line under it, the line extends one letter-space beyond the beginning and end of the word or phrase, or made very heavy especially in tabulations, whilst it is made light for italics and extends one letter-space less than the beginning and end of words, except in words of one letter under which it is only one letter-space in length.

This general method of spacing, capitalization, underlining, and columning may be partly illustrated by the following tabulation of a variety of yellow pine:

L I V I N G T H I N G S	Super-Kingdom
P L A N T S	Kingdom
SPERMATOPHYTA	Sub-Kingdom (Phyla in botany)
GYMNOSPERMAE	Class (in botany)
C o n i f e r a l e s	Order
P i n a c e a e	Family
.....P I N U S	Genus: Pine Family
	(Sub-Genus wanting)
PINUS PONDERSOA, Dougl.	Species: Western Yellow P.
	(Sub-Species wanting)
P i n u s s c o r p u l o r u m	Variety
	(Sub-Variety wanting)

The following scheme also typically represents the vertical

column method for classific subdivisions:

S U P E R – K I N G D O M
K I N G D O M
SUB-KINGDOM
CLASS
O r d e r
F a m i l y
. . Subdivisions
. . . . Sub-subdivisions
. . . . G E N U S
S U B - G E N U S
SPECIES
SUB-SPECIES
Variety
Sub-Variety
. . Subdivisions
. . . . Sub-subdivisions
Data-Headings
Data (Details)

The following tabulation will illustrate the rightward grouping of subdivisions rising out of any word or group:

B O T A N Y
Z O O L O G Y
(M O R P H O L O G Y)
(P H Y S I O L O G Y)
S O C I O L O G Y
E T H N O L O G Y
[C O M P A R A T I V E P S Y C H O L O G Y]

The above arrangement means the following:

Botany	Morphology	
Zoology	Physiology	
		Comparative

	Psychology
Sociology Ethnology	

Topics to the right of a straight vertical line apply to each topic to the left of it.

Remember that Subjective or Individual or Auto-psychology is the science of the experiences of a mind with itself. Biology includes not only individual and social Botany and Zoology but all other kinds of living being whatsoever, if any such are ever discovered. Hylology is the science of Matter and Material Forms, from the infinitesimal to the macrocosmic. Physics is the science of Motion and Energy. Mathematics is the science of Number and Magnitude. Cosmology is the science of the history of things, from the smallest and most ephemeral such as a Mayfly or a smoke ring, up to the largest and most eternal such as the Cosmos itself. The basic principle of history is evolution, which is the science of history, whilst the events from the birth to the death of things is another branch, representing multitudinous and successive *syntheses* that are steps in Cosmology. Remembering these things, you may understandingly and insightively tabulate your List of Topics using as a guide the skeleton outline of the Six Groups of Sciences, or Epistemotaxis, which follows.

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EPISTEMOTAXIS
Skeleton Outline of the Six Groups of Sciences

I.
S U B J E C T I V E P S Y C H O L O G Y
P H Y S I O L O G I C A L P S Y C H O L O G Y
P S Y C H O P H Y S I C S
A B N O R M A L P S Y C H O L O G I C A L

II.
B I O L O G Y
B O T A N Y
ECONOMIC BOTANY
PHYTOGEOGRAPHY

GENETIC BOTANY
SYSTEMATIC BOTANY
SCHIZOPHYTA
THALLOPHYTA
BRYOPHYTA
PTERIDOPHYTA
SPERMATOPHYTA
PALEOBOTANY
ZOOLOGY
ECONOMIC ZOOLOGY
PALEONTOLOGY
EMBRYOLOGY
GENETIC ZOOLOGY
SYSTEMATIC ZOOLOGY
PROTOZOOLOGY
METAZOOLOGY
(MORPHOLOGY)
(PHYSIOLOGY)
(ECOLOGY)
(PATHOLOGY)
SOCIOLOGY
EXPERIMENTAL SOCIOLOGY
DESCRIPTIVE SOCIOLOGY
ETHNOLOGY
ETHNOGRAPHY
HUMAN SOCIOLOGY
ETHNOTECHNICS
COMPARATIVE RELIGIONS
LINGUISTICS
FOLK LORE
[COMPARATIVE PSYCHOLOGY]

III.
H Y L O L O G Y
E T H E R O L O G Y
R A D I O L O G Y
C H E M I S T R Y
INORGANIC CHEMISTRY
ORGANIC CHEMISTRY
PHYSICAL CHEMISTRY
ANALYTIC CHEMISTRY

SYNTHETIC CHEMISTRY
(AGRICULTURAL CHEMISTRY)
(BIOCHEMISTRY)
(METALLURGICAL CHEMISTRY)
(PHARMACAL CHEMISTRY)
(SANITARY CHEMISTRY)
MINERALOGY
PHYSICAL MINERALOGY
CHEMICAL MINERALOGY
DESCRIPTIVE MINERALOGY
EONOMIC MINERALOGY
CRYSTALLOGRAPHY
GEOLOGY
GEOGRAPHY
METEOROLOGY
ASTRONOMY

IV.
P H Y S I C S
M E C H A N I C S
STATICS
KINETICS
HYDRONAMICS
PNEUMATICS
T H E R M O D Y N A M I C S
A C O U S T I C S
O P T I C S
E L E C T R I C S
ELECTRICITY
MAGNETISM
R A D I O - A C T I V I T Y

V.
M A T H E M A T I C S
A R I T H M E T I C
A L G E B R A
G E O M E T R Y
PARABOLIC
ELLIPTIC
HYPERBOLIC

T R I G O N O M E T R Y
C A L C U L U S
DIFFERENTIAL CALCULUS
INTEGRAL CALCULUS
G R O U P T H E O R Y
Q U A T E R N I O N S
V E C T O R A N A L Y S I S

VI.
C O S M O L O G Y
E V O L U T I O N
INORGANIC EVOLUTION
ORGANIC EVOLUTION
PHYLOGENETIC ORGANIC EVOLUTION
ONTOGENETIC ORGANIC EVOLUTION
CAUSES OF EVOLUTION
H I S T O R Y

In order that the foregoing skeleton list of topics may be diagrammatically understood and visualized the following diagrammatic synopsis is given.

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EPISTEMOTAXIS				
SUBJECTIVE PSYCHOLOGY	Physiological Psy. Psychophysics Abnormal Psy.			
BIOLOGY	BOTANY	Economic Bot. Phytogeography Genetic Bot. Systematic Bot. Paleo Bot.	MORPHOLOGY PHYSIOLOGY ECOLOGY PATHOLOGY	COMPARATIVE PSYCHOLOGY
	ZOOLOGY	Economic Z. Palentology Embryology Genetic Z. Systematic Z.		
	SOCIOOLOGY	Experimental Descriptive		
	ETHNOLOGY	Ethnography Human Sociology		

		Ethnotechnics	
		Comparative	
		Religion	
		Linguistics	
		Folk-Lore	
HYLOLOGY	Etherology		
	Radiology		
	Chemistry	Inorganic	
		Organic	
		Physical	
		Analytical	
		Synthetic	
	Mineralogy	Physical	
		Chemical	
		Descriptive	
		Economic	
	Crystallography		
	Geology	Geography	
		Meteorology	
	Astronomy		
PHYSICS	Mechanics	Statics	
		Kinetics	Hydronamics
			Pneumatics
	Thermodynamics		
	Acoustics		
	Optics		
	Electrics	Electricity	
		Magnetism	
	Radio-Activity		
MATHEMATICS	Arithmetic		
	Algebra		
	Geometry	Parabolic	
		Elliptic	
		Hyperbolic	
	Trigonometry		
	Calculus	Differential	
		Integral	
	Group Theory		
	Quarternions		
	Vector Analysis		
COSMOLOGY	EVOLUTION	Inorganic	
		Organic	Phylogenetic
			Ontogenetic
			Causes
	HISTORY		

The Making of *the List of Topics* (Reading-Study of the Sciences.) Beginning with this skeleton outline of the Epistemotaxis, proceed with dominant attention and exclusive labor systematically to enlarge it until it includes your understood and insighted knowledge of the sciences. This is a work of *voluntary* acquisition — a drudgery work (however interesting it may be) — a task in which one does not wait for moods and inspirations, but sternly keeps everlastingly at it until done. If there is no let-up at this work the brain soon "gets the hang of it" and it will go easy.

Select from a few of the best and most recent text-books of a science *all Topics which are essential to a classification of the data of that science, omitting such details as those that are explanatory, illustrative, or argumentative.* These Topics and their subdivisions may be tabulated in the classificatory order of the text-book, unless there are good reasons for a different arrangement. Do not adopt a rigid classification at the start; use any obvious subdivisions. Be careful to put each datum on a separate sheet so it may be readily transferred, and when all the data are recorded let the classification arise out of their natural likenesses and differences.

Before tabulating a Topic be sure that its true and exact *meaning* is fully UNDERSTOOD, else it will be a deceptive tool in every mentative process into which it enters. The Topic must also be INSIGHTED and thereby seen to be *true* and its classific *place* seen.

It will be very helpful, and in some cases probably necessary, to read aloud to a competent teacher a carefully selected book, especially the main and typical book on the subject, and especially the difficult portions thereof, until the classific Topics (minus Details) are thoroughly understood and insighted, then tabulated and incorporated into this ever-growing skeleton outline. This work should be kept up until the main classific Topics of every science are considered.

That is, with the Synopsis of the Six Groups of Sciences (Epistemotaxis) with which to start, tabulate the Kingdoms, Sub-Kingdoms, Classes, Orders, Families, Genera, Species, and Varieties of Topics on each science; keeping the whole in mind at every step. It must be *your* List of Topics, as *you* understand and insight it, *omitting what you do not understand and insight.*

Do not at any step lose sight of its relation to the whole taxis.

Do not record any Topic until it has been insighted from a higher level as to its *truth* and as to its *place* in the taxis.

Do not spend time on subjects which do not at all interest you; do not make a List of Topics in chemistry if you are not now interested therein, if you do not find yourself thinking

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chemically, if you do not use it in your heururgy (creative work). Do not tabulate the Topics of calculus if you have not learned it.

Do not concern yourself now about remembering the Topics you record. Be careful to state each Topic as briefly and compactly as possible, with its name and definition in a *synoptic sentence as introduction to each paragraph,* and let it go at that. You will have *no chance to forget it* when once you begin mentating systematically. Details of special subjects will be recorded as described later.

Your tabulated List of Topics should contain not a single Topic that has not been understood and insighted. The carpenter should not keep in his tool chest any tool which he does not know how to use, because he will be carrying it around as a useless burden, which would not be serious. But in the case of a Topic, if you use it and do not know how, you will get conclusions which are untrue or useless or harmful: the tool which the carpenter does not know how to use is simply in the way, but a misunderstood mental tool vitiates the mental process in which it is remembered as part of the content of that process.

The List of Topics need not be completed before use is made of it, but it should ultimately include the main and larger units of each science in each one of the six groups.

The List of Topics may be extended to include the significant technical or fine arts.

At the outset of the preparation of the List of Topics include only those which have been understood and insighted, and as soon as practicable it should be carried to the extent of *all that* can be understood and insighted. Include especially all Topics in which there is a predilective interest or which relate to genius-capacities. This rule augments and makes more definite your primary responses (predilections and genius-capacities) and secondary responses (impulses-to-do and purposes) to the Cosmic Process; that is, it augments and specializes that part of the student which is the basis of his meaning to himself and to the world.

The immediate purpose in preparing this List of Topics is to

use it as the concrete outline and summation of your reading-study of the Six Groups of Sciences. It is also used as one of the lists in Selective Seriated Mentation by which the Second List of Groups will be improved and extended and made into a Third List of Groups. Keep your immediate need in mind while preparing this List of Topics.

This reading-study of the sciences will enable the student at the start to acquire a general if perhaps somewhat cursory and superficial knowledge of the Six Groups of Sciences before especially mastering any part of them. He should acquire a

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comprehensive and bird's-eye view of the elements of not only what the world has done in science, but in invention, commerce, industry, creative work, and social affairs. He should also acquire as soon as practical a special knowledge relating to his originality-lines. If this study is not done, the student will bring too small an amount of mental content to bear upon any of life's problems; will not have sufficient mental content to efficiently think and feel and do; will not be able to bring *all* abilities adequately to bear on his practical affairs.

16. WORD-GROUPS FROM DICTIONARY

After the List of Topics has a majority of the classific headings included, then go through a standard dictionary and select therefrom each word which in any way would, on casual thought, seem to have some possible bearing on any heurotechnical lines, thereby bringing all named concepts and ideas of the race to bear on those lines. The words with their definitions as they are selected should be placed in their proper groups in the List of Topics of the Six Groups of Sciences and their subdivisions, unless they relate to the arts, in which case they are placed in the list of arts in *alphabetic order* without attempting to classify them. Then seek for the group the general term which most aptly names it.

Each Word-Group of the List of Topics should comprise every word that names any characteristically different phenomenon relating to the Topic, and if there are any unusual phenomena or relations of phenomena, special terms should be coined therefor. A Word-Group should be co-extensive with the mind's experience with that subject, because according to a psychologic law, no one word of such a group can be fully understood or over-archingly insighted unless all words of that group are understood and

insighted in their *differentiative* relations to *each other* and unless that whole Word-Group is fully understood and insighted in its relation to its superordinate groups.

Words of a Word-Group are to be learned by recognizing the finer distinctions between words in the same group (as correct names of facts and as synonyms and antonyms), by noticing the unnamed things in that domain, by taking account of the many-times named things and of overlapping meanings of names, and later on by experimentally studying the phenomena to which they relate.

It should be fully understood that this process of getting at the meanings of words is *not* a matter of etymology or dictionaries, but of experimental observation and introspection and validation. The name is the symbol of an actual phenomenon; it is to that phenomenon, and not to the current usage of some language, that one must appeal to learn the true meaning of a word.

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The Test for Selection. It will be obvious that this whole method brings one's *heuric* abilities and mental content into dominancy, giving to one's heururgy (heuric activity) a foremost place until the heuric urging is dominantly spontaneous, until heuric attitudes and methods become a habit and second nature. The whole bearing of this process of linguistic mentation is heuric: the sciences are learned heurically; the arts are practiced heurically; the whole life is lived heurically. Every datum in the List of Topics and Word-Groups is selected with direct reference to heurics, the test being, Does this word or Topic have any possible bearing on my power to make discoveries, or inventions, or do creative work, or to make money, or to organize persons?

Example From Group VI — Cosmology. The method of elaborating the skeleton outline of the Epistemotaxis into a List of Topics may be briefly illustrated by a few first steps with the sixth one of the groups of sciences, Cosmology. The problem is to collate as much of what modern science has thought and proved on evolution and history as the student has understood and insighted. For example, under the head of Evolution the student may find his predilective interest and understanding and insighting centering on such Topics as Darwinism, Lamarckism, Isolation, Mutation, Sexual Selection, Hybridism, Mendelism, Grafting and Budding, Cross-Fertilization. Having understood and insighted these Topics they are incorporated in the List of Topics.

Under History there may be recorded such things as the student knows about the origin, growth, events, and development of the Cosmos, of the Sidereal System, of the Earth, of Species, and especially of the Human Race and its Sub-Races, of Nations, of Countries, of Institutions, of Languages, of Sciences, of Art, of Law, of Religion, of Philosophy, of Persons, or of anything whatsoever that has had a beginning and can have an end. Only such Topics are used about which the student has an important understanding and insight, remembering that this subject is purely the history of a thing and not its science.

C O S M O L O G Y
E V O L U T I O N (Cosmogenesis)
INORGANIC EVOLUTION
ORGANIC EVOLUTION
PHYLOGENETIC ORGANIC EVOLUTION
ONTOGENETIC ORGANIC EVOLUTION
CAUSES OF EVOLUTION
D a r w i n i s m
L a m a r c k i s m
I s o l a t i o n

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M u t a t i o n
H y b r i d i s m
M e n d e l i s m
G r a ft in g & Bu d d i n g
C r o s s F e r t i l i z a t i o n
H I S T O R Y

The student may have taken the trouble to secure from dictionaries, encyclopedias, textbooks, and a teacher definitions of these Topics which should be incorporated in the foregoing List. It should be remembered that it is no longer of concern, for instance, what Darwin *taught* but what Darwinism now *is*. That is, the definition should not begin by saying that "Darwin taught that the prime and efficient cause of evolution is ..." All needs will be fulfilled by stating that "An efficient cause of evolution is..." Any special theories which the student does not believe or understand need not be included. In fact the term Darwinism will serve only as a starting point; as a Topic covering several concepts or sub-

Topics, each one of which needs soon to be stated separately. Malthusianism, Over-Population, Natural Selection, Variation, Heredity, and Sexual Selection are some sub-Topics that may arise. Instead of Neo-Darwinism the actual concepts or ideas or Topics contributed by Neo-Darwinians will be used.

Under these rules the foregoing very brief List of Topics will expand into the following brief List.

C O S M O L O G Y
EV O L U T I O N (Cosmogenesis)
INORGANIC EVOLUTION
ORGANIC EVOLUTION
CAUSES OF EVOLUTION
M a l t h u s i a n i s m

The doctrine of Malthus is that population tends to increase faster than the means of support, unless restrained by scarcity of the necessaries of life, war, voluntary restraint, or otherwise. It may be that Darwin would not have discovered the great principle of Natural Selection if he had not read and still further developed the Malthusian idea.

D a r w i n i s m

A prime and efficient cause of evolution of lower into higher organisms or vice versa (origin of species) is the selective action of the environment upon individual variations which are hereditarily transmitted (natural selection). It is a process analogous to the artificial selection carried on by breeders whereby distinct species have been produced, for Nature selects individual peculiarities which are of such advantage in any given environment as to cause the survival of the fittest (Spencer) for that environment.

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. . . Neo-Darwinism: is a modification, limitation, or extension of Darwinism by more recent studies.

L a m a r c k ism

Species have developed into other species by the functioning due to the *efforts* of the organism to adapt itself to new conditions and by the inheritance of the changes thus produced.

. . . Neo-Lamarckism is a further application and extension of Lamarck's views. Packard applied the term to those who, like himself (Cope and Hyatt), did not accept all of Darwin's ideas, but

sought to explain evolution by (a) fundamental laws of growth, by (b) the inherited effects of use and disuse, and (c) by environmental influence. In this belief in the inheritability of acquired characteristics they oppose Darwin and Weissman and most present opinion in a controversial subject.

I s o l a t i o n

Without *geographical* and *physiological* isolation the Darwinian and Lamarckian results would be continuously swamped by the leveling effect of inbreeding.

M u t a t i o n

Sudden and great variations (freaks), as pointed out by De Vries, give rise to new species.

S e x u a l S e l e c t i o n

The individual preferences of the sexes for each other give rise to evolutionary developments.

H y b r i d i s m

The interbreeding of one Variety (breed), Species, or Genus with another Variety, Species, or Genus, produces a *hybrid* (half-breed, mongrel), as the mule which is a hybrid of the horse and ass, or as a cross between the Blacks and Italians in bees. Hybrids are usually infertile among themselves and with either of their parents.

G r a f t i n g & B u d d i n g

Inserting into the stem of a plant a budding scion or bud from a plant of different kind thereby produces a different sub-variety.

M e n d e l i s m

Gregor Mendel proved, for example, that whilst black Rose-comb bantams breed true and whilst white Rose-comb bantams breed true, when black is crossed with white the resulting hybrids are not of an intermediate color, but the offspring are all black like a parent; that is, black is *dominant* to white and white is *recessive.* When the hybrid blacks are bred together they produce *three* blacks to *one* white and these whites thence afterwards breed *true* and throw no blacks but the blacks are of two kinds: PURE DOMINANTS which give only blacks even when mated with a white, and IMPURE DOMINANTS which behave *like the original hybrids* giving three blacks to one

white and these blacks or whites when mated with whites produce blacks and whites in equal numbers.

Any given germ cell contains only "whiteness" or "blackness"; it cannot contain both. When a "black" meets a "black" the result is a "pure dominant" black capable of producing only "black." When a "white" meets a "white" it gives rise only to "white." When a "black" meets a "white" the result is a "black" in *appearance* but it contains two kinds of germ cells, "black" and "white" in equal numbers, not "gray." When black mates with white, two black germ cells meet two white germ cells, which can *NECESSARILY* HAVE BUT ONE RESULT: namely, one quarter of the impregnation will be formed by the union of two black germ cells, one quarter by the union of two white cells, and two quarters by the union of a black and a white. These last will be black in appearance because blackness is dominant to whiteness where both exist in the same individual. Truly this fact disposed of much mysticism and sentimental "elective affinities," and laid the basis for modern findings about chromosomes and genes.

C r o s s F e r t i l i z a t i o n

A flower of one variety fertilized with the pollen of another and different variety, species, or genus, gives rise to a new variety, species, or genus.

Example Under History. Under the Kingdom of History is shown the taxonomic relations of the English language to the races of mankind, basing the classification of the races on a single characteristic, the *hair.* This ethnotaxis might be based on some other characteristic, such as the chemical content of the blood, or on the skull (dolichocephalic, long-skulled; mesocephalic, medial-skulled; and brachycephalic, broad-skulled). Quaterfages might be followed and divide the races according to color into the white race (Caucasian, leptorhine, Eurafrican), the yellow race (Mongoloid, mesorhine), and black race (Negroid, Ethiopian, platyrhine). It might be based on general ethnological grounds like Brinton's classification, or on any characteristic which serves the purpose of our exposition. As the need for a true taxis begins to be seen it will more and more approach a psychological taxis (psychotaxis), and the first step in that direction is a classification of races according to the languages they speak, because it more nearly corresponds to mental differences than any other except an actual psychological

analysis of human minds.

H I S T O R Y

The history of a thing is an account of something that has had a beginning as a differentiant or integrant, of what has gone before, and which has a period of growth, maturity, and has had

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or will, presumably, have an end.... The history of a thing may include an account of its direct antecedents and also of its direct consequents; and of its relations to other like or unlike things . . .The history of a thing is an account of one of the results or achievements of The Cosmic Process. . . . Each given thing generally includes, as sub-units, a number of other things, each one of which has a separate history; and each given thing is generally a sub-unit of some larger thing, with whose history it is bound; that is, history is always an account of a taxifunctional Cosmic unit. It is always a concrete synthesis of all the multifunctional influences and conditions that affected it. That individual and social histories are psychological processes are further insights into history.

HISTORY OF INORGANIC THINGS
HISTORYOF ORGANIC LIFE
HISTORY OF PLANTS
HISTORY OF ANIMALS
I n v e r t e b r a t a
V e r t e b r a t a
M a m m a l ia

M A N (Homo sapiens)

Man has long been classed as one of the primates (monkeys and man); all attempts to separate him taxonomically from animals, except in degree of development, have been scientific failures.

Alfred Russel Wallace has made such an attempt.
U L O T R I C H E S (Wooly Haired)
LOPHOCOMI (Tufted Haired)
PAPUANS
N e g r i t o s

Papuans
Melanese
Tasmanians
HOTTENTOTS
Hottentots
Bushmen
ERIOCOMI (Fleecy Haired)
KAFFIRS
Zulu Kaffirs
Bechuanas
Congo Kaffirs
NEGROES
Tibbon Negroes
Sudan Negroes
Senegambians
Negritians

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L I S S O T R I C H E S (Smooth Haired)
EUTHYCOMI (Straight Haired)
AUSTRALIANS
North Australians
South Australians
MALAYANS
Sudanese
PoIynesians
Madagascans
MONGOLIANS
Indo–Chinese
Coreo–Japanese
Altaians
Uralians
ARCTICS
Hyperboreans
Eskimos
EUPLOCOMI (Curly Haired)
AMERICANS
North Americans
South Americans
Central Americans
Patagonians
DRAVIDAS

Deccanese
Singalese
NUBIANS
Shangallas
Dongolese
Foolahs
MEDITERRANEANS
Caucasians
Basques
Semites
Indo – Europeans (Aryans)
Asiatic Division
Indic
Iranic
European Division
Celtic
Italic
Hellenic
Slavic
Teutonic
High Germans
Low Germans

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(a) Gothic
(b) Saxon
(c) Platt-Deutsch
(d) English
(e) Dutch
(f) Friesan
Scandinavian
HISTORY OF NATIONS
HISTORY OF LANGUAGES
HISTORY OF INSTITUTIONS
HISTORY OF PERSONS (Biographies, Autobiographies)
HISTORY OF THE SCIENCES
HISTORY OF THE ARTS
HISTORY OF RELIGIONS
HISTORY OF PHILOSOPHY
HISTORY OF THE EARTH
HISTORY OF THE SIDEREAL SYSTEM

Word-Groups for *Cosmology*. Having carried the List of Topics to such a degree of completion that a majority of the classific headings from Super-Kingdoms down to Details shall have been included, the student may then go through the dictionaries of his vernacular and other languages and select for the Cosmological Word-Groups all those words which relate to that subject, classifying according to the taxis of this Group in the List of Groups. Select all words insofar as they name some definite Topic or concept that has not been otherwise named and included in the Word-Groups. Out of these words, by segregating them will arise Topics not otherwise obtained. As these words are the names of all that the human race has thought upon these subjects, the cosmological list will ultimately be completed so as to include every classific group of Topics belonging to that subject.

An exposition of the cosmological List of Topics (including, of course, the Word-Groups thereof) will cover the whole ground of human knowledge of that subject and will give the student's individualistic view-point of that knowledge, which is the view-point from which he will be able best to express his personality and handle his affairs.

Other Groups of Sciences. Having done this work for the Sixth Group the student will in the meantime also have done the same (or will have started to do the same) for each one of the other science groups. He should acquire understandings and insights of all the main classific and coordinate headings in each group from the super-group down to Details in each one of the sciences of the Six Groups, being careful to observe the orderal series of subordinations.

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In order that it may be done in two or three years it will be necessary not to make the groups too large at the start.

These main Topics should be divested of argument and of the opinions of their protagonists, and should constitute an approximate taxonomic outline of the subject.

This List of Topics should be kept classified and tabulated not only on paper but (omitting Details) it should be kept active as a conscious taxic whole (Comprehension, as described in the 4th Stage) in the mind; visualized, understood and insighted as a Whole.

If the student has more than ordinary ability in philosophizing, he or she may undertake a *systematic* literary exposition of the

whole subject of the Six Groups of Sciences as known to the world, but as interpreted from his view-point. Now the more carefully the student shall have selected the Topics and Details with reference to the needs of his primary responses (predilections and genius-capacities) the more surely will such an exposition be a true expression of his personality and the more efficient will it be as an aid towards the realization of his personurgy and other purposes, and the more surely will it be a timely aid to the world. Provided, of course, that the student have definite predilections and genius-capacities and normal purposes at the outset. Failure to give a full and genuine expression to one's personality, if it be heuristic, will be a deplorable loss to the student and a greater loss to the world.

Details. The word Details, capitalized, is a technical term signifying the *data* under any classific heading, but not the definition of that heading. Consequently in the first outlines of the List of Topics the Details will be mostly grouped under the last orderal term, or at least the last few orderal terms of a taxis, such as the Variety or Sub-Variety. Thus under History as outlined in the foregoing classification, the first eleven orderal terms from History of Inorganic Things to Papuans are simply to be defined, no data being given thereunder except as "dotted sub-headings" as in the case of Man. The actual Details will begin under Negritos; going further down the column, Ericomi and Kaffirs are classific terms that need to be defined, but under Zulu Kaffirs comes the scientific description of things; namely, men, women, and children of that kind, their customs, and other data.

The distinction between classific terms Topics and Details will best be conceived by a study of actual Lists of Topics and in no other way will they be practically understood and insighted. In the same way, it is only by studying the Topics and Details of a science as a whole and its relations to other sciences that epistemology and taxonomy can be practically understood and

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insighted.

Having once made a taxic outline of the Six Groups of Sciences down to the Details, the student will thereby be greatly aided in classifying the words of his vernacular. Having this orderal series once established, it is only necessary to put the words in their "pigeon holes," until all the words belonging to any and every group shall have been tabulated.

The Details under each heading apart from its definition, should be recorded or referred to *and not remembered,* the purpose being *not to burden the mind with remembering them.* The record of, and reference to, Details should be such as to facilitate immediate access to them at any time, day or night, in a minute or two, so as to be able to use them in completing any train of thought that may at any time be going on. The record of Details must be of such a nature that additional data, whether of notes, clippings, or books, may readily be added thereto, the filing cabinet or system corresponding to the typed List of Topics. The ordeal arrangements should be followed in the arrangement of cases and drawers and bookshelves. This systematic omission of Details and this special method of reference to them, relieves the mind of most of the burden of mentation and makes Comprehension practicable.

The student *should fully appreciate the stupendous fact* that an active Comprehension of the main classific Topics of any science (if each one is actually understood and insighted and taxically related) amounts to a practical *mentative mastery* of that science, with all its Details pigeon-holed for ready reference by a method that is *far better than the memory.* Every time a new Topic or Detail is recorded in the List of Topics, the mind refunctions the comprehension as a whole with reference to that datum. Every datum thus recorded is ever after ready for mentative use, and is in the meantime *growing* with the comprehension as a whole. It is a twig on the living body of the whole and not a dead stick on the ground to be brushed aside and forgotten.

Startling, is it not? to be told that a properly recorded and classified collection of validated Details is far better than the memory of them! This artificial memory does not forget things. It *never forgets* a single detail committed to its care and remembers it *precisely* as the datum was given to it. Of what memory can this be said? It can recollect its whole content and any part of it much more *quickly* than the natural memory; even that note made half a century ago, and just as completely and accurately as it was then in the mind. This artificial memory, moreover, does not burden the attention; it does not use up mental energy; it leaves the mind free to use only its orderal

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Topics in its mentative work with no cumbersome baggage attached to each Topic.

Order of Preparation. Whilst all six of the groups should be

kept about equally developed insofar as the main classific units are concerned, there should never-the-less be a greater than the average development of those Topics and sciences in which there is (a) predilective interest; with a still further development of those subjects relating to (b) special abilities; with a still further development of those subjects relating to (c) genius-capacities; and with a still further and *very special* development of those Details relating to the student's (d) *purposes* at any given time.

This is the order of importance for *general* preparations. The reverse is the order for *special* preparations.

The First Level of Individual Linguistic Mentation. To build in one's mind and out of one's actual experiences *that have been named,* group of names that are coordinate, each group including all the names furnished therefore by one's vernacular, learning their exact meanings and their synonyms and antonyms, segregating related groups under superheadings and subdividing groups into subgroups is to make Kingdoms, SubKingdoms, Classes, Orders, Families, Genera, Species, and Varieties of the words of a language. No words are used except those whose meanings have actually been experienced or insighted, and thus linguistically to cover the whole domain of knowledge is the first level of Linguistic Individual Mentation. Linguistic mentation is of course a *mental process;* the result of a wider and more nearly true mental content, a more inclusive and exclusive conceptuation, a clearer and more efficient ideation, a higher thinking. These Word-Groups are steps in this mental process. By this method you may most quickly make your acquaintance with the Six Groups of Sciences, provided that each Topic is fully understood and insighted and known in its relation to the whole science to which it belongs and to each other science; and that you get with reference to it the normal and helpful purposive relatedness thereto, which is vitally important. The moment you do not *feel* the relatedness of a bit of knowledge to your life interests, here or hereafter, your knowledge becomes worthless.

Your List of Topics will be your first inventory of your relevant mental content, free from trash and theory and including all domains of the known. It will be the first systematic marshalling of the whole body of your actually understood and insighted knowledge-content from each domain of each science of each one of the Six Groups of Sciences. At the outset of your work with any science, you should insight it as a *whole,* as a classific whole, clearly demarcating in your understanding its

scope and nature and its relation to each one of the other sciences and to science

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and philosophy, industry and art, generally. When this step is accomplished you should do the same with the Sub-Kingdoms Classes, Orders, and Families of that science. Finally, you should acquire an understanding of each main thoughto-ideative and each concepto-imagive classific unit, and should insight it. This step will finish the conquest of that subject, because the multitudinous details that cluster under each Topic need not be remembered, they are looked up when needed, and the fore-going training will have taught when to look them up. This practice saves about *ninety percent of* the time and labor required to learn a science; it makes it practicable to learn the main classific units of all the sciences.

In this way you will not get lost in details; you will keep aware of your relatedness to the Whole even while immersed in a flood of details. You will get in the habit of using your knowledge-content as a *living, dynamic* whole and will know your mind to a more effective degree than could be achieved in any other way. This relationing of each Topic with each other Topic with which it has causal or any other relation produces an ideo-thoughtive functioning of the whole group of classific units in the mind and brings out the functional relatedness of the individual to the Cosmos, not merely as an epistemologically apprehended fact but as an actual and efficient going-on. Only in this way do you ever get fully to know a Topic and can fully understand and insight it. You thereby build up a systematic mind-content out of useful knowledge instead of useless and untrue trivialities; and the processes with which you mentate are thereby trained.

Advantages of List as Synopsis. The advantage of such a synopsis of one's knowledge is very great: it accustoms one to using it as a whole, to comprehending it as a whole, to understanding each part in its relation to the whole, to remembering details as belonging to each Topical Place in the taxis of the whole. It enables the eye greatly to aid the memory and the mentative process; it is a guide to an ever more and more true classification and a constant incentive to a more complete classification. It will be a useful guide only to the extent that it is a true classification. It prevents one from forgetting important portions of his knowledge in their relation to any subject. That this fact is important is proved by the experience of every discoverer

and inventor who says, "If I had only thought of that in connection with that subject I would have been the discoverer or inventor thereof."

Importance of Complete Lists. Why should not every thinker make use of every precious Topic that has been achieved by the race to date, especially when it is so easily done by means of a

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List of Topics. Easily? Yes, but it will take time and much systematic reading to get a List complete. The author had psychologic Lists at which he had been cumulatively at work for thirty years, and yet every now and then would add a new Topic — not merely one that had been recently discovered but one that was known ten or twenty years before. As a heurist one demands a *complete* List; he wants it to contain every known Topic relating to the group being used, else he will be deprived of data of importance, not merely as data in and of themselves, but far more important as understandings and insights contributed to his understanding and insight of the whole. Only by keeping at it a number of years can a List become approximately complete. Look for instance, at the growth of the English dictionary, which is an alphabetical List of Words; see how gradually it has grown and how incomplete it still is.

One Comprehension the Purpose. The purpose of all this work is to get the student's *available* knowledge-content of the sciences recorded and classified in the most accessible form, so that it may be seen and understood and insighted as ONE COMPREHENSION with any part thereof capable of being referred to in a serial or orderal manner, without, through lack of memory, skipping any parts that have been known and without omitting any that could have been easily known. In this way only can the whole of the knowledge-content to which the student by *ability is eligible* be brought to bear mentatively upon a heurotechnical subject.

Augmented Intellectualization and Expositional Vocabulary. This synoptic study of the sciences and arts — this placing of a new term in its proper place in that synopsis — this causal consideration of each word in the dictionary in order to select those which in any way belong to heurotechny, requires the giving of sufficient attention to the meaning not only of the selected words but also of every word that is not selected to enable the mind to determine whether or not it is wanted in the List of Topics and to

determine to what Word-Group therein it belongs. This selection thereby functions and re-functions all that you know about these words, and functions at least once the words that are not selected. All this considering and re-considering of the meanings of words functionally excites all the *useful* brain enregistrations, as distinguished from that much larger number of *useless* enregistrations that cumber every mind. Thus the useful knowledge-content of the mind is brought into dominancy over the 95 percent of useless memory content, making that person more normal; and more normal in his relatedness. When a selected word is being placed in its proper Word-Group that very act requires learning enough about it and

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about the Word-Groups to know where to place it, all of which is necessary to the proper understanding and insighting of the word. The whole linguistic process of word-selecting and word-grouping and word-defining makes the intellective content of the brain more dominant, giving to each datum a greater mental readiness; and those memory enregistrations which are thus intensified and equalized and associatively related are those which belong to *heurotechnical work* of that kind which constitutes your *originality-lines.* Whilst the Topics are not the equivalents of true concepts and ideas, they are the nearest approach thereto that are available, and when re-functioned as above outlined will greatly augment your conceptual and ideative powers, and thereby produce a *distinct augmentation of your intellectuality.* This greater intellectualization is one of the goals of this step in linguistic mentation.

To select from English all those words which on a moment's reflection are known to be of possible heurotechnic importance, classify them into natural Word-Groups, and learn their definite meanings for the purpose of acquiring a heurotechnical *vocabulary,* is a big undertaking and a very important one. You can get a sufficiently complete List of Topics in a few months of solid work to begin to use it heurically in Selective Seriated Mentation. You might indeed be offered a List of Topics that someone has already made, but in that case you would lose (a) the classifying training of making it, (b) the cerebral stimulation of that kind of word refunctioning, and (d) you would not so readily learn the meanings of all the Topics, and thereby you would not have so good a vocabulary. You should, for these and other

reasons, prepare your own List of Topics. Include therein only those heurically useful words whose *meanings you have thoroughly learned.*

While preparing this List of Topics you will be doing more than merely intellectualizing yourself — you will be equipping your mind with the ideas and concepts that are used as data for heurotechnical work; you will be segregating all words which as Topics comprise the concepts and ideas used whenever you are discovering or creating, and especially inventing. That is, this List of Topics represents the *conceptive and ideative equipment of your mental laboratories;* and be it remembered, this equipment will be embodied in your person as brain organs with which to mentate.

All this work, and more especially the seriated mentation which is to be based thereon, will develop a knowledge of the taxic (classific) relations of each Topic to each other Topic in that same group and also to all other groups, thereby not only increasing the *readiness* of the equipment of concepts and ideas

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for use and not only increasing the heurotechnical vocabulary, but also acquiring a *special* knowledge of those ideative relations which is the basis of skill in the art of exposition. Furthermore; those heurotechnical ideas and concepts will be more dominant in the mind. One who would practice this scientific art of exposition needs a much more extensive and definitely adjusted vocabulary than the usual literatus of the ordinary scientific writer, and this preparation of the Word-Groups is one of the ways to get it. This augmentation of one's expositional vocabulary along his special heuric lines is another important goal of the method.

It is *linguistic mentation* thus to acquire and be able to use all the words relating to one's heuric lines. For words are the *essential tools* of ideating and thinking; without them they are impossible. With poor tools, that is with incompletely learned words, the ideating and thinking will be poor; with an incomplete assortment of tools, the ideating and thinking will be incomplete, and so on.

Each Topic is a tool that is to be used not only in discovering and inventing and creating but in character development (Personurgy) and it should therefore be as perfect and reliable a tool as there are understandings and insights in the mind, and every main Topic in every science realized. Your List of Topics is your inventory of your useful mental content; it represents the crops and

not the weeds and bare places of your mental farm; it represents your relatedness to the Cosmos.

A List of Topics is Multifunctional. (1) It is the easiest and quickest way to make a *living whole* of one's knowledge. (2) It is the easiest and quickest way (in the absence of the Taxonomic Laboratory-Museum Method of teaching) to gain a knowledge of all of the Six Groups of Sciences. (3) It is the best way to get a scientific vocabulary coextensive with the student's heurotechnic needs and at his tongue's end — and the getting of a usable vocabulary is linguistic mentation. (4) It is the only way to bring the main data of each science to bear on the student's heururgy at the very *outset,* and without specially mastering these sciences beforehand. (5) It is the only way to learn the sciences from the heurotechnical standpoint. (6) It is the work that must be done before Seriated Mentation can be commenced. Seriated mentation is the first distinctive heurotechnical technique by which the first big crop of heurids may be reaped; and it is the method by which the whole mental content is finally compacted and organized into a personic whole. (7) It brings all of science and all of a person's abilities to bear on any problem heurotechnically. It is multifunctional in other ways.

Dominant Interest. The student should realize, over and over,

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again and again, that his or her true List of Topics cannot properly be selected or learned in the right way to the full limits of understandative and insightive eligibility (not mere presentability) unless the making of this List is dominantly dominant in the interest and attention during the climacteric days of its synthesis in his consciousness. If done otherwise it will not take a sufficiently deep root in the conscience, will not adequately impregnate the heururgic Goings-On, will not adequately sway the mental person. Unless each classific definition is understood and insighted from the heuristic impulse and with the heuristic *mastery feeling,* the Comprehension will not be productive of first class heurids or of an adequate conscious relatedness to the Cosmic Process. For this reason the emotional drive should be augmented by livelihood and business and creative incentives. If this work of taking squatter sovereignty of the domain of science is not the *main interest* at the time it is being done, to the exclusion of all other attention stresses and interests, if it is not *heuristically espoused* at every step, if each Topic is not understood and insighted, not as part of a

completed system of thought, but for what it is in and of itself (irrespective of its philosophic or other interpretations) and if its taxic relations are not then fully evident, and if the student does not become dominant while doing all this work, then the best results will not be attained.

The Goal of the Future — Psychotaxis. The fundamental psychologic laws of language, simply stated, were discovered to be: that a *concept* is the *simplest* mental unit that is *named;* it is the psychologic basis of speech, and the spoken, written, or other sign by which it is symbolized is a word. A concept is the unit of the processus of an *idea* which consists of at least two concepts, and the words for these ideas stated in a corresponding sequence constitutes a simple sentence, the natural sequence being the basis of a natural syntax and inflection. The syntactic sequence should follow that of the processus of an idea. An idea is the unit of a thought and may be represented by a symbol of the third degree of generalization (a word representing a sentence) and so on for thoughts of still higher generalization; that is, words although their orthography may contain no suggestion of the fact, are of different degrees of generalization, or rather they represent conscious integrants of different degrees of generalization.

The practical development of the mental content in the mind of the race is intimately related to the language by which it is remembered, communicated, and recorded. For instance, a concept is evolved out of simpler mental units (such as sensations, images) and when it has once been achieved by habit,

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it gets to be known by some one of the characteristics of its sub-units or it is labeled with some arbitrary sound or mark which thereafter *stands* for that concept. The concept is itself the classific synthesis of a conceptual group of images of objects by which the mind is able more easily to handle or deal with so large a group of details; a concept is a labor-saving invention.

It is the most important invention ever made. It is a tool used by the intellect to represent a multitude of coordinate images, and the word by which a concept is named and which is practically an integral part of the tool, makes the tool still more expeditious and effective; it is a tool for using a tool and language is a machine-tool; i.e., it is a machine for using words. A word is a sign which by an associational method reproduces a concept in the mind. When two conceptual groups of things are so often related in

experience that the concepts of those groups are habitually associated in memory, it thereby happens that the names of these concepts get to be uttered and written in that order and get by syntactic experience to mean just that kind of relationship between those groups of things, constituting an idea. The process of discovering it is ideating. The process of uttering or writing the names of these concepts in proper sequence is language, and the particular manner of indicating still other relationships than by the sequence of words involves all of inflection, special relational words, and syntax in general. If it is insightively understood that when by observing two conceptual groups of things it is discovered that two concepts have causal or spatial or other relations to each other, thereby arriving at a mental result which is an *idea* capable of being stated by writing or speaking these concepts in a certain order, affirming or denying something, then it will be evident that the idea of that relationship must arise in the mind before the concepts can be placed in that order or before the statement of the concepts in that syntactic order would mean anything. Phylogenetically, the concept must be ideated before the sentence can arise; but afterwards the sentence becomes the most potent ontogenetic means for teaching ideas and for ideating. The sentence has created literature and modern progress. Not only is it the means by which the cumulative experience of the race is recorded for posterity but it is the main means by which this accumulated knowledge may be acquired by each succeeding generation.

The sensation-memories and images relating to a group of objects had first to be acquired and then the race gradually became accustomed to associating with that group some visual or auditory or other characteristic that uniformly and conspicuously connected with that group, and that sound or mark thereby becomes the symbol or name for that group — but the

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group had first to arise in the mind (which is the first stage in the development of a concept) before it could get itself known by some sound or mark (which is the second stage in the development of a concept); its clear differentiation from other coordinate concepts and its relation to its subordinate and superordinate concepts is the third stage in its development, and this involves the relating of concepts into idea, requiring the use of the sentence. The name of a concept is quite frequently mistaken for the concept

itself; it is, however, merely the device by which concepts are conveniently labeled in their mental pigeon-holes.

The name of a concept becomes a most potent aid to the acquisition of ideas which lead to the discovery of other concepts which would otherwise not have been known; phylogenetically the linguistic bridge is many thousands of years in being built, but when once built millions may acquire it each generation. That is, language is a special mental method which offers a greater service to its creator than that for which it was created, for it may by the art of *linguistic mentation* taxically reorganize the whole mental content of the individual and the race, make "much in little" *(multum in parvo)* packages of the Six Groups of Sciences, and make a fruitful soil of many of the hitherto barren fields of the brain. By heurotechny may be expedited the achievement of new concepts and ideas by the individual, for the racial process and method of discovering them is placed at the disposal of the efforts of the individual, augments and directs it. The first great step in this direction, a step without which the others cannot be taken, is *linguistic mentation.* The concept must be conceptually achieved before it can be named; the relationship of two concepts must be observationally or introspectively discovered before the idea arises and this idea must arise before the names of these two concepts can be placed in their ideative order in a sentence.

Words in the best of existing languages are not inclusive (of all they should signify) nor exclusive (of all they should not denote or connote). The result is that almost no word is rigorously representative of only one taxic unit of knowledge but includes portions of other and unlike mental units. Consequently when a predicate truthfully affirms (or denies) something of part of the meaning of a word, that affirmative (or negative) does not apply to its other meanings. Moreover, words imply a classification of things and their relations. The word "animate" implies a classification of things into two categories, animate and inanimate; "useful and useless", "good and bad", "beautiful and ugly," imply a *correct* classification, for if under any one of these words are included or excluded meanings incorrectly, *every*

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sentence is thereby vitiated in which these words occur. This fact should be fully understood and insighted. Now, that which uses language is a *mind,* and classifications used should be true to the nature of the mind and in accord with its processes.

That is, our classificatory system should arise out of the mind's actual experiences with itself and with other things; such as out of its own sensations, images, concepts, ideas, thoughts, appetites, emotions, sentiments, volitions, activities, which would be a *"psychotaxis."* It is in terms of these units that we cognitively know the world, and in no other way do we know it.

In researches to discover more about the nature of knowledge, every conscious step was recorded in the process by which the mind, through its inductive experience with the phenomena of a science, engaged in learning it. It was found that these steps were a psychotaxis, or a psychological classification of the only possible data of a science, constituting a more truthful and advantageous classification divested of the usual content of theory and hypothesis. The science thus classified was much more easily learned and remembered and was self-eliminative of much untruth. This psychotaxis represents the true order of ascending degrees of generalization of knowledge ranging from the simple to the complex. In order to thus classify the knowledge of any science, its phenomena must be reobserved by new psychologic methods not only to redetermine these mental units but also more completely to eliminate therefrom theory and hypothesis and the Unproved, because incorrect and incomplete images, false concepts, untrue ideas, and unproved thoughts will not fit into a psychological classification. This process of reobservation will require a "Laboratory-Museum" especially equipped for showing as far as possible all the phenomena of a science in psychotaxic order.

A psychotaxis of all the experiences which the mind of man is able to get from a study of some one class of natural phenomena constitutes the *science* of that domain of knowledge and Nature. There are, or should be, as many sciences as there are groups of objective and subjective things and classes of relations.

For the individual and the race the preparation of this List of Topics is a matter of momentous importance. Only out of the complete Lists of *many* individuals for many generations can the ultimate psychotaxic language be safely formulated.

When the List of Topics can be replaced by a List of Concepts, then experience has proved that true psychologic ideating and thinking become possible and startlingly fruitful, and permit further steps in the art of applying science to invention and discovery.

(THIRD STEP IN LINGUISTIC MENTATION)

Selective Seriated Mentation. The seriated part of this third

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step in linguistic mentation *relates* the Topics in the List of Topics to the items in the Second List of Groups, evolving therefrom the Third List of Groups. This relationing gives rise to the discovery of new concepts and ideas and thoughts and develops the intellective process. Its purpose is (a) still more fully to determine the precise understandative and insightive "content" of each Topic; (b) to acquire the ideative and thoughtive skill involved therein; (c) to discover other heurids and to (d) improve those previously discovered and to (e) creatively utilize the heurids in giving full expression to your personal, social, and religious development (Personurgy); to make (f) the mechanical embodiment of the heurids for public use; and (g) to utilize them for business.

Seriated mentation may be applied to any of the six heurotechnical lines: Livelihood and Business, Discovery and Insights, Invention, Creative Work, Prognosis, and Social. Herein will be given only a brief description of its application to invention.

17. SERIATED INVENTIVE MENTATION

This step consists in *applying* each Topic of the List of Topics to each invention and prospection and business opportunity included in the Second List of Groups. By "applying" each Topic to each invention is meant that the Topic shall be considered imagively, conceptively, ideatively, and thoughtively in connection with each part and function of each invention or prospection for the purpose of discovering some improvement thereof either as a combination of the thing represented by each Topic with that invention or by a modification thereof, or otherwise.

This practice is not the highest kind of inventing but it produces a kind of invention that, generally speaking, needs but little experimental research to perfect. It is a good practice with which to begin, especially as it accomplishes several kinds of training incident to the inventive work, such as the intellectualization of the brain, the acquisition of a special vocabulary, and the integralizing of the mental content. It is the third step in linguistic mentation.

There are only a certain number of subjects or Topics which need to be inventively considered in connection with each

invention or prospection or business opportunity, and these Topics are nearly all capable of being represented by a word or phrase. There are many words that represent ideas of importance to an inventor, because if he has never thought of them in connection with any given invention he has missed a golden opportunity.

The Order of Applying. In considering a Topic as applying to a given invention there is *an order* to be followed—it matters not so

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much what order—so as to not waste time in wondering what phase of the "applying" to think of next and not to miss any important phase of its possible applications. For instance, does the Topic suggest increasing (a) durability, or (b) cheapness of any of the parts of the device? Does it suggest increased (c) lightness or (d) compactness or (e) beauty? Does it contribute to (f) safety and (g) santitation? Does it augment the (h) quality of the product (if any) or its (i) ease of production? Does it (k) suggest a new method of doing the same thing? Does it (k) suggest a new use of a (l) new invention?

This *order of subjects* according to which one Topic should be applied to another Topic or item will vary with the *purpose* for which the applying is done, whether for invention, discovery, business, creative work, insighting, or impulsion, and so on. An order of subjects should be arranged at the start to save time and for completeness.

This work of preparing a List of Topics is not an easy task and the work of serially relating each Topic to each datum of the Second List of Groups is still harder, but heurotechny is the *most useful work in the world.*

18. THE THIRD LIST OF GROUPS

Incorporate new achievements and results into the previous List to make a new and enlarged List, the Third List of Groups. These groups will be inventories of heurotechnical lines, with special attention to inventions, prospections, and business opportunities.

The Lists of Groups are steps in purposing. Inventions and livelihood are the reasons for the Lists; the Lists become purposes which will be carried out for invention and livelihood. Each prospection becomes a purpose to develop into an invention, each invention into a business opportunity and asset. The First List of Groups could be called the first step in purposing, and so on.