Classification of the Sciences

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The article provides a solution to the problem of classification of the Sciences. This long-standing and important problem is solved on the basis of a new theory of cognition, which is built proceeding from some general physical representations and heuristic glance at the basics of General Psychology. The criteria for completeness of the foundation of any cognitive system and any research, which are critical for classification of the Sciences is also formulated and justified. Relevant disciplines of the physical, psychical and informational levels, as well as the Social Sciences in relation of society are represented in tabular form.

Keywords: Classification of the Sciences; Criterion for Completeness; Impact; Motion; Rest; Space; Time.

Introduction

Any classification allows us to regularize those or other knowledge and outline ways to further deepen and develop this knowledge. Therefore, classification of the Sciences is not only important for the synthesis of a large array of differentiated knowledge that mankind has accumulated over the many centuries, but and for the discretion the vector of development of the Fundamental Science in the future.

Many famous philosophers tried to solve the problem of classification of the Sciences, for example, Saint-Simon, Comte, Bacon, Hegel, Engels, Kedrov et al. But any of them was unable to thoroughly solve this problem, since this problem is unsolvable in the framework of Philosophy. For example, in due time the issue of detailed explanation of the reasons of occurrence the chemical bonds was unsolvable within the framework of Classical Chemistry, until the physical model of "planetary" atomic structure was not offered, and only after that made possible to assert that the redistribution of the orbital electrons of interacting atoms is the main reason to formation of the chemical bonds. Similarly with the problem of classification of the Sciences: need some **physical view** on this problem. Nowadays, this problem is solved through a new theory of cognition, which is built starting from some general physical representations and heuristic glance at the basics of General Psychology. Namely the interdisciplinary approach has allowed solved this problem.

Since the main purpose of this article to present a solution of the problem of classification of the Sciences then about new theory of cognition will be told very briefly, literally schematically. Then it will be said about criteria for completeness of any cognitive system and any research, which has a defining value to classification of the Sciences, and after that the Sciences of physical, psychical and informational levels of cognition, as well as the Social Sciences in relation to society will be represented in tabular form with the necessary brief explanations.

1. Briefly About New Theory of Cognition

The structure of the process of cognition surrounding us reality can be represented proceeding from the existence of link between the process of cognition and natural numbers from one to five. If *the process of cognition* is associated with number one, then the *ways* of cognition will match number two because there are only two *ways* of cognition around worlds: 1. Empirical; 2. Theoretical. *Methods of cognition* correspond to number three because there are three methods of cognition: 1. Scientific; 2. Religious; 3. Intuitive. *Levels of cognition* correspond to number four, since there are at least four levels of cognition: 1. Physical; 2. Psychical; 3. Informational; 4. Absolute. *The foundation of the theory of cognition* corresponds to number five, since only the presence of five conditions allows building a complete *Cognitive System* (CS): 1. The principle of conformity (conformity between any assertion of CS and the manifested essence of the object of cognition); 2. Noncontradictory of the foundation of CS (the assertions of the foundation of CS should consist of objective concepts and in doing so satisfy to the principle of conformity); 3. Completeness of the foundation of CS (the foundation of CS should consist of a minimum number of assertions sufficient for the development of CS); 4. Correctness of CS (a possibility of the discretion of connections between the past, the present and the future of the object of cognition, which are arising from the very object of cognition); 5. The principle of dual compliance (a correct scientific CS and a correct religious CS, each in its field and within the framework of its methods, should not contradict each other on the issues on which they intersect).

In the arsenal of the empirical way of cognition there are two tools of cognition – **observation** (1) and **measurement** (2), and by two tools of the theoretical way of cognition are **logical design** (3) and **mental simulation** (4). The number of possible combinations of four elements is equal to fifteen. Therefore different combinations of the four tools of cognition predetermine fifteen possible forms of

scientific cognition: description (1), computation (2), logic (3), philosophy (4), practice (1+3), designing (1+4), analysis (2+3), experiment (2+4), empirical generalization (1+2), theory (3+4), engineering (1+2+3), technique (1+2+4), general approach (1+3+4), application (2+3+4), foundation (1+2+3+4).

In detail the theory of cognition we will not consider: the interested reader can, if desired, refer to the source [1]. And now let's talk about the foundation of cognition in the part, which concerns the criteria of completeness of any cognitive system and research.

2. The Criterion for Completeness of Cognitive System

Under the essence of the object of cognition we will understand the totality of its characteristics relative to manifested properties, possible movements, states, structures and their changes over time. The definition of completeness of the foundation of CS sounds as follows: *the foundation of CS is **complete**, if composed of a minimum number of assertions, which are sufficient for the development of CS with a view to reveal the essence of the object of cognition.* Let me remind the reader following facts. The ground of the Classical Geometry in the presentation of Euclid are linked with the five postulates: 1. Required order to from every point to every other point could be draw a straight line; 2. And order to each straight line can be indefinitely continued; 3. And order to from any the center could be described a circle by any radius; 4. And order to all right angles are equal; 5. And order to whenever a straight line when crossing to the other two straight to form with them unilateral angles whose sum is less than two right angles, these straight lines will intersect with the side on which this sum is less than two right angles [2]. The ground of the Classical Physics makes up five assertions: 1. The principle of relativity of Galileo; 2. The law on the relationship of the derivative of a particle's momentum in time with the force acting on a particle; 3. The law of equality of an action and counteraction of two interacting bodies; 4. The principle of absoluteness of the space; 5. The principle of absoluteness of the time [3]. The ground of the General Chemistry consists of five assertions: 1. All substances consist of a plurality of identical (simple substances) or different (complicated substances) interacting with each other and are in constant motion atoms; 2. The properties of chemical elements, and therefore the properties formed by them of the simple and complex bodies are stand in periodic dependence (i.e. correctly repeated) from theirs atomic weight (the wording of Mendeleev) [4]; 3. The atoms are complex formations consisting of a set of nucleons, which form positively charged nucleus of atom around which revolves the negatively charged orbital electrons; 4. Reallocation of the orbital electrons of interacting atoms is the main cause to formation of the chemical bonds; 5. The mass of all substances that have entered into chemical reaction is equal to the mass of all reaction products. One can cite yet examples, but on this we will stop. As you can see, the grounds of these important cognitive systems consist of **five** assertions. Is it a chance occurrence or is regularity?

Here I will provide two assertions from General Physics: 1. Every process is a motion that takes place in space over time; 2. To lead out a body from a state of rest, it is necessary to have a certain impact on it. These two assertions contain **five** important and interrelated concepts: 1. I**mpact**; 2. **Motion**; 3. **Rest**; 4. **Space**; 5. **Time**. The impact there is the cause, the consequence of which is motion, i.e. the deducing of the resting body from the state of equilibrium, associated with a change in the order of arrangement of the body in space. The impact is also the cause of the change in the position of the body relative to the initial, and the arising motion allows measuring these changes at predetermined periods of time, forming interrelation between the various positions of the body in space. Taking into consideration the above said, one can compose the following ligaments: 1. Impact – cause – change; 2. Motion – consequence – measurement; 3. Rest – equilibrium; 4. Space – order; 5. Time – linkage. Thus, one can formulate the following condition for the completeness of the foundation of CS: *the foundation of CS is complete, if it consists of the five groups of assertions, each of which bijectively expresses its relation to one of the following concepts: 1. Impact; 2. Motion; 3. Rest; 4. Space; 5. Time.*

And it is natural, as, indeed, our whole life consists of a totality of different processes, that is, those or other motions that occur in space and time, and every motion begins with an impact, as well as every system tends to the equilibrium state. If the reader will conduct independently a cursory analysis, then a one-to-one correspondence between quoted above assertions of Classical Geometry, Physics and Chemistry with the specified criteria of completeness of the foundation of CS will be able to establish. The condition of completeness of any research is a particular case of the completeness condition of CS, and sounds as follows: *any research is complete, if substantial characteristics of the object of cognition identified during this research in some way correspond to the following criteria of completeness of the research: 1. Impact; 2. Motion; 3. Rest; 4. Space; 5. Time.* This condition of completeness and will help us in the issue of classification of the Sciences.

3.1. Classification of the Sciences of Physical Level

As noted above, the essence of the object of cognition there is the sum of its characteristics relative to the manifested properties, possible motions, states, structures and their changes over time. Then one can observe that the criteria for completeness of research and substantial characteristics of the object of cognition form the following pairs: 1. "Impact – properties", since without impact on the object of study impossible to reveal its properties; 2. "Motion – displacements"; 3. "Rest – stability", bearing in mind the state of chemical equilibrium; 4. "Space – structure", since namely the structure specifies on the molecular, atomic-crystalline, quasi-crystalline and etc. spatial ordering of a substance; 5. "Time – changes over time", bearing in mind the chronicle states of research object. Adduced characteristics are fair if the object to consider as **a whole consisting of parts**. However, the same object can be perceived as **parts which form a whole**, in doing so the parts which form a whole are in some interrelations to each other. In this case we have the following pairs: 1. "Impact – controllability of system"; 2. "Motion – concerted motion "; 3. "Rest – systemic stability"; 4. "Space – systemic orderliness"; 5. "Time – systemic interconnections". Identified pairs allow making the following assertion: *characteristics of the object of cognition and its forming parts, arising from the relevant criteria of completeness of the research, determine the foundation for cognition the physical level as follows: 1. Properties →* ***Physics****; 2. Displacements →* ***Mechanics****; 3. Stability →* ***Chemistry****; 4. Structure →* ***Strukturology****; 5. Changes over time →* ***History*** *(possible to use the word "Evolution"); 6. Controllability of system →* ***Cybernetics****; 7. Concerted motion →* ***Synergetics****; 8. Systemic stability →* ***X-dynamics****; 9. Systemic orderliness →* ***Ezodomics*** *(from the Greek. esoteriki domi – internal constitution); 10. Systemic interconnections →* ***Systemology***. The name "X-dynamics" may have some characteristic sound, for example, Nonlinear Dynamics, Thermodynamics, etc.

All objects of the physical level can be positioned in the form of the following series: the fundamental particles (electron, muon, tau and their neutrinos, u, d, c, s, t, b quarks, the corresponding antiparticles, interaction mediators) ↔ atom ↔ molecule ↔ physical macro object ↔ system of physical macro objects ↔ planet ↔ system of planets ↔ Galaxy ↔ the Universe (series 1).

If we accept the fifteen different forms of scientific cognition as the vertical conditional axis of coordinates, placing them from top to bottom, and the five characteristics of the object of cognition as the horizontal axis of coordinates placing them from left to right, we shall get a tabular representation of possible "operator" sciences of physical level, which are specified by means of Tables 1 and 2.

Table 1. The Sciences of Physical Level (part 1)

№	Charact.of the facility / Form of cognition	Properties	Displacements	Stability	Structure	Changes over time
1	Description	Systematization of Physics	Systematization of Mechanics	Systematization of Chemistry	Systematization of Strukturology	Chronicle
2	Computation	Mathematical Physics	Mathematical Mechanics	Mathematical Chemistry	Mathematical Strukturology	Chronology
3	Logic	Logic of Physics	Logic of Mechanics	Logic of Chemistry	Logic of Strukturology	Logic of Evolution
4	Philosophy	Philosophy of Physics	Philosophy of Mechanics	Philosophy of Chemistry	Philosophy of Strukturology	Philosophy of Evolution
5	Practice	The physical basis of production	Use of machines and mechanisms	The chemical basis of production	Practical Strukturology	Envisioning the future (forecast)
6	Designing	Modeling in Physics	Modeling in Mechanics	Modeling in Chemistry	Modeling in Strukturology	Reconstruction events
7	Analysis	Analytical Physics	Analytical Mechanics	Analytical Chemistry	Analytical Strukturology	Analytical Evolution
8	Experiment	Experimental Physics	Experimental Mechanics	Experimental Chemistry	Experimental Strukturology	Experimental Evolution
9	Empirical generalization	Generalizations of Physics	Generalizations of Mechanics	Generalizations of Chemistry	Generalizations of Strukturology	Generalizations of Evolution
10	Theory	Theoretical Physics	Theoretical Mechanics	Theoretical Chemistry	Theoretical Strukturology	Theoretical Evolution
11	Engineering	Engineering Physics	Engineering Mechanics	Engineering Chemistry	Engineering Strukturology	Engineering Evolution
12	Technique	Technical Physics	Technical Mechanics	Technical Chemistry	Technical Strukturology	Technical Evolution
13	General approach	General Physics	General Mechanics	General Chemistry	General Strukturology	General Evolution
14	Application	Applied Physics	Applied Mechanics	Applied Chemistry	Applied Strukturology	Applied Evolution
15	Foundation	Physics	Mechanics	Chemistry	Strukturology	Evolution

Table 2. The Sciences of Physical Level (part 2)

№	Charact.of the facility / Form of cognition	Controllability of system	Concerted motion	Systemic stability	Systemic orderliness	Systemic interconnections
1	Description	Systematization of Cybernetics	Systematization of Synergetics	Systematization of X-dynamics	Systematization of Ezodomics;	Systematization of Systemology
2	Computation	Mathematical Cybernetics	Mathematical Synergetics	Mathematical X-dynamics	Mathematical Ezodomics;	Mathematical Systemology
3	Logic	Logic of Cybernetics	Logic of Synergetics	Logic of X-dynamics	Logic of Ezodomics;	Logic of Systemology
4	Philosophy	Philosophy of Cybernetics	Philosophy of Synergetics	Philosophy of X-dynamics	Philosophy of Ezodomics;	Philosophy of Systemology
5	Practice	Practical Cybernetics	Practical Synergetics	Practical X-dynamics	Practical Ezodomics;	Practical Systemology
6	Designing	Modeling in Cybernetics	Modeling in Synergetics	Modeling in X-dynamics	Modeling in Ezodomics;	Modeling in Systemology
7	Analysis	Analytical Cybernetics	Analytical Synergetics	Analytical X-dynamics	Analytical Ezodomics;	Analytical Systemology
8	Experiment	Experimental Cybernetics	Experimental Synergetics	Experimental X-dynamics	Experimental Ezodomics;	Experimental Systemology
9	Empirical generalization	Generalizations of Cybernetics	Generalizations of Synergetics	Generalizations of X-dynamics	Generalizations of Ezodomics;	Generalizations of Systemology
10	Theory	Theoretical Cybernetics	Theoretical Synergetics	Theoretical X-dynamics	Theoretical Ezodomics;	Theoretical Systemology
11	Engineering	Engineering Cybernetics	Engineering Synergetics	Engineering X-dynamics	Engineering Ezodomics;	Engineering Systemology
12	Technique	Technical Cybernetics	Technical Synergetics	Technical X-dynamics	Technical Ezodomics;	Technical Systemology
13	General approach	General Cybernetics	General Synergetics	General X-dynamics	General Ezodomics;	General Systemology
14	Application	Applied Cybernetics	Applied Synergetics	Applied X-dynamics	Applied Ezodomics;	Applied Systemology
15	Foundation	Cybernetics	Synergetics	X-dynamics	Ezodomics;	Systemology

The word "operator" means that these sciences are not complete, but are necessary to attach to them some object of cognition, for example, Physics is an operator science, and Physics of Atom is the science that studies the properties of the atom, but if the word atom replace on the word planet, we get Geophysics, etc. If we accept the series 1 as the frontal conditional axis of coordinates, which is directed away from us, then we get a three-dimensional representation of Sciences.

The substance from which consist organisms can be studied with the help of sciences, which are similar adduced in Tables 1 and 2, with the only difference that the denomination of sciences will begin with the prefix "Bio". Because of the limited format of article we will not adduce them.

Next, consider sciences for cognition organisms. All organisms can be represented in the form of the following series: a plant (acellular, unicellular, multicellular); animals (acellular, unicellular, multicellular); a human (series 2). Indicated living creatures, besides a human, are subdivided into kinds. The aggregate of individuals of one kind is called population. Human and the different populations of living creatures do not live in isolation, but they are in some interconnections as with each other and so with the environment, forming biosystems, which can be represented as the following series: organism ↔ population ↔ biogeocenosis ↔ ecosystem ↔ biosphere (series 3). The criteria for completeness of research and relevant characteristics of the object of cognition form the following pairs: 1. "Impact – interaction"; 2. "Motion – vital activity"; 3. "Rest – equilibrium"; 4. "Space – texture"; 5. "Time – development". For the second group of characteristics we have the following pairs: 1. "Impact – controllability of system"; 2. "Motion – concerted functioning"; 3. "Rest – systemic stability"; 4. "Space – systemic orderliness"; 5. "Time – systemic interconnections". These pairs allow us to make the following assertion: *characteristics of the object of cognition and its forming parts, arising from the relevant criteria of completeness of the research, determine the foundation for cognition organisms as a physical whole in the following way: 1. Interaction → Ecology; 2. Vital activity → Physiology; 3. Equilibrium → Adaptalogy (from the word – adaptation); 4. Texture → Morphology; 5. Development → Bioevolution; 6. Controllability of system → Cybernetics X; 7. Concerted functioning → Synergetics X; 8. Systemic stability → Dynamics X; 9. Systemic orderliness → Ezodomics X; 10. Systemic interconnections → Systemology X.*

At the end of the name of sciences of the second group is standing the letter X, which means the name of object from the series 2 or 3, and note that the prefix "Bio" is missing. This is done in order to distinguish the biosciences about substance and science about biological systems, for example,

Biocybernetics of the Cage is studying a substance, of which the cage is consists, and the Cybernetics of Cage is studying the cage as a biological system. Relevant operator Sciences are indicated in Tables 3 and 4.

Table 3. The Sciences for Cognition an Organisms (part 1)

№	Charact.of the facility / Form of cognition	Interaction	Vital activity	Equilibrium	Texture	Development
1	Description	Systematization of Ecology	Systematization of Physiology	Systematization of Adaptalogy	Systematization of Morphology	Biochronicle
2	Computation	Mathematical Ecology	Mathematical Physiology	Mathematical Adaptalogy	Mathematical Morphology	Biochronology
3	Logic	Logic of Ecology	Logic of Physiology	Logic of Adaptalogy	Logic of Morphology	Logic of Bioevolution
4	Philosophy	Philosophy of Ecology	Philosophy of Physiology	Philosophy of Adaptalogy	Philosophy of Morphology	Philosophy of Bioevolution
5	Practice	Practical Ecology	Practical Physiology	Practical Adaptalogy	Practical Morphology	Practical Bioevolution
6	Designing	Modeling in Ecology	Modeling in Physiology	Modeling in Adaptalogy	Modeling in Morphology	Modeling in Bioevolution
7	Analysis	Analytical Ecology	Analytical Physiology	Analytical Adaptalogy	Analytical Morphology	Analytical Bioevolution
8	Experiment	Experimental Ecology	Experimental Physiology	Experimental Adaptalogy	Experimental Morphology	Experimental Bioevolution
9	Empirical generalization	Generalizations of Ecology	Generalizations of Physiology	Generalizations of Adaptalogy	Generalizations of Morphology	Generalizations of Bioevolution
10	Theory	Theoretical Ecology	Theoretical Physiology	Theoretical Adaptalogy	Theoretical Morphology	Theoretical Bioevolution
11	Engineering	Engineering Ecology	Engineering Physiology	Engineering Adaptalogy	Engineering Morphology	Engineering Bioevolution
12	Technique	Technical Ecology	Technical Physiology	Technical Adaptalogy	Technical Morphology	Technical Bioevolution
13	General approach	General Ecology	General Physiology	General Adaptalogy	General Morphology	General Bioevolution
14	Application	Applied Ecology	Applied Physiology	Applied Adaptalogy	Applied Morphology	Applied Bioevolution
15	Foundation	Ecology	Physiology	Adaptalogy	Morphology	Bioevolution

Table 4. The Sciences for Cognition an Organisms (part 2)

№	Charact.of the facility / Form of cognition	Controllability of system	Concerted functioning	Systemic stability	Systemic orderliness	Systemic interconnections
1	Description	Systematization of Cybernetics X	Systematization of Synergetics X	Systematization of Dynamics X	Systematization of Ezodomics X;	Systematization of Systemology X
2	Computation	Mathematical Cybernetics X	Mathematical Synergetics X	Mathematical Dynamics X	Mathematical Ezodomics X;	Mathematical Systemology X
3	Logic	Logic of Cybernetics X	Logic of Synergetics X	Logic of Dynamics X	Logic of Ezodomics X;	Logic of Systemology X
4	Philosophy	Philosophy of Cybernetics X	Philosophy of Synergetics X	Philosophy of Dynamics X	Philosophy of Ezodomics X;	Philosophy of Systemology X
5	Practice	Practical Cybernetics X	Practical Synergetics X	Practical Dynamics X	Practical Ezodomics X;	Practical Systemology X
6	Designing	Modeling in Cybernetics X	Modeling in Synergetics X	Modeling in Dynamics X	Modeling in Ezodomics X;	Modeling in Systemology X
7	Analysis	Analytical Cybernetics X	Analytical Synergetics X	Analytical Dynamics X	Analytical Ezodomics X;	Analytical Systemology X
8	Experiment	Experimental Cybernetics X	Experimental Synergetics X	Experimental Dynamics X	Experimental Ezodomics X;	Experimental Systemology X
9	Empirical generalization	Generalizations of Cybernetics X	Generalizations of Synergetics X	Generalizations of Dynamics X	Generalizations of Ezodomics X;	Generalizations of Systemology X
10	Theory	Theoretical Cybernetics X	Theoretical Synergetics X	Theoretical Dynamics X	Theoretical Ezodomics X;	Theoretical Systemology X
11	Engineering	Engineering Cybernetics X	Engineering Synergetics X	Engineering Dynamics X	Engineering Ezodomics X;	Engineering Systemology X
12	Technique	Technical Cybernetics X	Technical Synergetics X	Technical Dynamics X	Technical Ezodomics X;	Technical Systemology X
13	General approach	General Cybernetics X	General Synergetics X	General Dynamics X	General Ezodomics X;	General Systemology X
14	Application	Applied Cybernetics X	Applied Synergetics X	Applied Dynamics X	Applied Ezodomics X;	Applied Systemology X
15	Foundation	Cybernetics X	Synergetics X	Dynamics X	Ezodomics X;	Systemology X

If we attach the series 2 and 3 respectively toward these tables as the frontal axis of coordinates, then we obtain the corresponding three-dimensional representation of Biological Sciences.

3.2. Classification of the Sciences of Psychical Level

The objects of physical level are discrete, and therefore we have two complexes of five fundamental sciences, which study an object as a whole consisting of parts, and as a parts, which are form the whole. But we cannot speak about discreteness of the psyche. Therefore, five fundamental sciences are possible for studying the psychical level.

The psychical part of perception of an existing is possible to briefly characterize in the form of the following chain of steps: 1. Perception; 2. Preservation with the possibility of conscious recreating secondary images fixed in the neural memory; 3. Title, i.e. fixation of an existing in the form of knowledge; 4. Conceptual ordering by means of the mind; 5. Awareness. Proceeding from this chain, we can discern a connection between the criteria of completeness of the research and the relevant characteristics of the object of cognition: 1. "Impact – perception", since the process of cognition begins with perception, that is, the perception is the cause; 2. "Motion – awareness", since awareness is the process of psychical motion; 3. "Rest – notion", since the notion establishes equilibrium between an object and existing knowledge about object; 4. "Space – ordering of the knowledge", since, indeed, the mind helps to ordering of the acquired knowledge; 5. "Time – preservation", since without the possibility of preserving and recreating information at the right time, the process of cognition is impossible. With the consideration of these pairs, we have the following assertion: *characteristics of the object of cognition, arising from the relevant criteria for completeness of the research, determine the foundation for cognition the psychical level in the following way: 1. Perception →* ***Psychophysics****; 2. Awareness →* ***Psychology****; 3. Notion →* ***Linguistics****; 4. Ordering of the knowledge →* ***Logic****; 5. Preservation →* ***Neuromnemology***. Relevant operator Sciences are indicated in Table 5.

Table 5. The Sciences of Psychical Level

№	Charact.of the facility / Form of cognition	Perception	Awareness	Notion	Ordering of the knowledge	Preservation
1	Description	Systematization of Psychophysics	Systematization of Psychology	Systematization of Linguistics	Systematization of Logic	Systematization of Neuromnemology
2	Computation	Mathematical Psychophysics	Mathematical Psychology	Mathematical Linguistics	Mathematical Logic	Mathematical Neuromnemology
3	Logic	Logic of Psychophysics	Logic of Psychology	Logic of Linguistics	Critical Logic	Logic of Neuromnemology
4	Philosophy	Philosophy of Psychophysics	Philosophy of Psychology	Philosophy of Linguistics	Philosophy of Logic	Philosophy of Neuromnemology
5	Practice	Practical Psychophysics	Practical Psychology	Practical Linguistics	Practical Logic	Practical Neuromnemology
6	Designing	Modeling in Psychophysics	Modeling in Psychology	Modeling in Linguistics	Modeling in Logic	Modeling in Neuromnemology
7	Analysis	Analytical Psychophysics	Analytical Psychology	Analytical Linguistics	Analytical Logic	Analytical Neuromnemology
8	Experiment	Experimental Psychophysics	Experimental Psychology	Experimental Linguistics	Experimental Logic	Experimental Neuromnemology
9	Empirical generalization	Generalizations of Psychophysics	Generalizations of Psychology	Generalizations of Linguistics	Generalizations of Logic	Generalizations of Neuromnemology
10	Theory	Theoretical Psychophysics	Theoretical Psychology	Theoretical Linguistics	Theoretical Logic	Theoretical Neuromnemology
11	Engineering	Engineering Psychophysics	Engineering Psychology	Engineering Linguistics	Engineering Logic	Engineering Neuromnemology
12	Technique	Technical Psychophysics	Technical Psychology	Technical Linguistics	Technical Logic	Technical Neuromnemology
13	General approach	General Psychophysics	General Psychology	General Linguistics	General Logic	General Neuromnemology
14	Application	Applied Psychophysics	Applied Psychology	Applied Linguistics	Applied Logic	Applied Neuromnemology
15	Foundation	Psychophysics	Psychology	Linguistics	Logic	Neuromnemology

3.2. Classification of the Sciences of Informational Level

Five fundamental sciences are possible for studying the informational level. The same argumentation that has been said relatively psychical level is applicable and here.

The information component of perception can be characterized in the form of the following chain of steps: 1. Perception; 2. Preservation with the possibility of recreating secondary images at the level of imaginary consciousness; 3. A mapping, i.e. fixation of the perceived existing in the form of information; 4. the ordering of iconic information at the level of reason; 5. Comprehension. Proceeding from this chain, we can discern a connection between the criteria of completeness of the research and the relevant characteristics of the object of cognition: 1. "Impact – perception"; 2. "Motion – comprehension"; 3. "Rest – sign"; 4. "Space – ordering of information"; 5. "Time – preservation". With the consideration of these pairs, we have the following assertion: *characteristics of the object of cognition, arising from the relevant criteria for completeness of the research, determine the foundation for cognition the informational level in the following way: 1. Perception →* ***Anagnalogy*** *(from the Greek. anagnórisi – recognition); 2. Comprehension →* ***Noology*** *(from the Greek. nóos – the reason); 3. Sign →* ***Semiotics****; 4. Ordering of information →* ***Informatics****; 5. Preservation →* ***Mnemology***. Operator sciences of informational level are indicated in Table 6.

Table 6. The Sciences of Informational Level

№	Charact.of the Form facility of cognition	Perception	Comprehension	Sign	Ordering of information	Preservation
1	Description	Systematization of Anagnalogy		Systematization of Semiotics	Systematization of Informatics	Systematization of Mnemology
2	Computation	Mathematical Anagnalogy		Mathematical Semiotics	Mathematical Informatics	Mathematical Mnemology
3	Logic	Logic of Anagnalogy		Logic of Semiotics	Logic of Informatics	Logic of Mnemology
4	Philosophy	Philosophy of Anagnalogy		Philosophy of Semiotics	Philosophy of Informatics	Philosophy of Mnemology
5	Practice	Practical Anagnalogy		Practical Semiotics	Practical Informatics	Practical Mnemology
6	Designing	Modeling in Anagnalogy		Modeling in Semiotics	Modeling in Informatics	Modeling in Mnemology
7	Analysis	Analytical Anagnalogy		Analytical Semiotics	Analytical Informatics	Analytical Mnemology
8	Experiment	Experimental Anagnalogy		Experimental Semiotics	Experimental Informatics	Experimental Mnemology
9	Empirical generalization	Generalizations of Anagnalogy		Generalizations of Semiotics	Generalizations of Informatics	Generalizations of Mnemology
10	Theory	Theoretical Anagnalogy		Theoretical Semiotics	Theoretical Informatics	Theoretical Mnemology
11	Engineering	Engineering Anagnalogy		Engineering Semiotics	Engineering Informatics	Engineering Mnemology
12	Technique	Technical Anagnalogy		Technical Semiotics	Technical Informatics	Technical Mnemology
13	General approach	General Anagnalogy		General Semiotics	General Informatics	General Mnemology
14	Application	Applied Anagnalogy		Applied Semiotics	Applied Informatics	Applied Mnemology
15	Foundation	Anagnalogy	Noology	Semiotics	Informatics	Mnemology

Empty cells over Noology it is no happenstance: ***it is impossible to algorithmize the reason***. Therefore, *we can study the reason only with help of reason*, and this is important for the cognitive **process.**

3.4. Classification of the Social Sciences

Applied to Social Sciences the criteria for completeness of the research and the characteristics of the object of cognition form the following pairs: 1. "Impact – social self-governing"; 2. "Motion – social mutual agreement"; 3. "Rest – social stability"; 4. "Space – social organization"; 5. "Time – social evolution". Indicated pairs allow us to make the following assertion: *characteristics of the object of cognition, arising from the relevant criteria for completeness of the research, determine the foundation for cognition the society in following way: 1. Social self-governing –* ***Sociology****; 2. Social mutual agreement –* ***Sociosynergetics****; 3. Social stability –* ***Sociodynamics****; 4. Social organization –* ***Socioformatics****; 5. Social*

evolution – ***History***. Operator Social Sciences are represented in Table 7. They can be applied to the society of a country, to ethnos or to humanity.

Table 7. Social Sciences

№	Charact.of the facility / Form of cognition	Social self-governing	Social mutual agreement	Social stability	Social organization	Social evolution
1	Description	Systematization of Sociology	Systematization of Sociosynergetics	Systematization of Sociodynamics	Systematization of Socioformatics	Systematization of History
2	Computation	Mathematical Sociology	Mathematical Sociosynergetics	Mathematical Sociodynamics	Mathematical Socioformatics	Mathematical History
3	Logic	Logic of Sociology	Logic of Sociosynergetics	Logic of Sociodynamics	Logic of Socioformatics	Logic of History
4	Philosophy	Philosophy of Sociology	Philosophy of Sociosynergetics	Philosophy of Sociodynamics	Philosophy of Socioformatics	Philosophy of History
5	Practice	Practical Sociology	Practical Sociosynergetics	Practical Sociodynamics	Practical Socioformatics	Practical History
6	Designing	Modeling in Sociology	Modeling in Sociosynergetics	Modeling in Sociodynamics	Modeling in Socioformatics	Modeling in History
7	Analysis	Analytical Sociology	Analytical Sociosynergetics	Analytical Sociodynamics	Analytical Socioformatics	Analytical History
8	Experiment	Experimental Sociology	Experimental Sociosynergetics	Experimental Sociodynamics	Experimental Socioformatics	Experimental History
9	Empirical generalization	Generalizations of Sociology	Generalizations of Sociosynergetics	Generalizations of Sociodynamics	Generalizations of Socioformatics	Generalizations of History
10	Theory	Theoretical Sociology	Theoretical Sociosynergetics	Theoretical Sociodynamics	Theoretical Socioformatics	Theoretical History
11	Engineering	Engineering Sociology	Engineering Sociosynergetics	Engineering Sociodynamics	Engineering Socioformatics	Engineering History
12	Technique	Technical Sociology	Technical Sociosynergetics	Technical Sociodynamics	Technical Socioformatics	Technical History
13	General approach	General Sociology	General Sociosynergetics	General Sociodynamics	General Socioformatics	General History
14	Application	Applied Sociology	Applied Sociosynergetics	Applied Sociodynamics	Applied Socioformatics	Applied History
15	Foundation	Sociology	Sociosynergetics	Sociodynamics	Socioformatics	History

The light there is a flux of photons, and photon there is a quantum of electromagnetic field, which though the particle, but spreads similar to wave. In addition, the light carries in itself diverse information, that is, the light is part of physical and informational levels simultaneously. A complex of five Fundamental Sciences for the study of light are exist. There are also complexes of five Fundamental Sciences for the study of phyto-communities and zoo-communities. But because of the limited format of this article we will not consider them. In details about this stated in the source 1.

So, sixty *operator* Fundamental Sciences are possible, consequently, total their eight hundred eighty six (59x15 + Noology). It should also be noted that, proceeding from those or other practical purposes, the various Interdisciplinary Sciences have already been created and can be created, classification of which is senselessly.

References

1. Movsesyan A.A. *Glavnoye Prednaznacheniye Zemlyan*. Razvilka: Plars-M, 2013 (2 izd.)
(Movsesyan A.A., *The Main Predestination of Earthlings.* Razvilka: Plars-M, 2013 (2 izd.)).
2. Efimov N.V. *Vysshaja geometrija*. M.: Fizmatlit, 2003
(Efimov N.V. *Higher Geometry*. M .: Fizmatlit,, 2003).
3. Savel'ev I.V. Kurs obshhej fiziki. Tom 1. Ch. 3. M.: Nauka, 1970
(Savelyev I.V. *Course of General Physics*. Volume 1. Part 3. M .: Science, 1970).
4. Suvorov A.V., Nikol'skij A.B. *Obshhaja himija*. S-P.: Himija, 1995
(Suvorov A.V., Nikolsky A.B. *General Chemistry*. S-P .: Chemistry, 1995).
5. *Biologiya* / Kamenskiy A.A., Kim A.I., Velikanov L.L. i dr. M.: AST: SLOVO: Poligrafizdat, 2010
(*Biology* / Kamensky A.A., Kim A.I., Velikanov L.L. et al. M.: AST: WORD: Poligrafizdat, 2010.).

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