DR. ȘTEFAN ODOBLEJA'S WILL TO YOUNG PEOPLE

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Abstract: Dr. Ștefan Odobleja (13.10.1902 – 4.09.1978), military doctor, inventor of cybernetics, post-mortem member of the Romanian Academy, is the author of the monumental work in two volumes entitled "Consonantal Psychology" (1938–1939) which laid the foundations of a new "Consonantal Psychology" revealed the importance of dual, binary and dichotomous mechanisms both in psychology and beyond, in all sciences. He suggested and applied as another essential method for the mechanization of thought, along with circularity (feedback). Instead of logic based on 3, Dr. Ștefan Odobleja proposed and sketched a logic based on 2, being a forerunner of Computer Science and Artificial Intelligence. After 1972, when he read the autobiography of Norbert Wiener – considered the founder of modern cybernetics, Odobleja fought for the international recognition of the foundation of cybernetics through the 9 universal laws that he studied and defined, Odobleja's cybernetics being explained as in the two volumes "Consonantal Psychology". In addition to these studies, Odobleja left many studies on the sciences, organization and use of the human mind and even a will for young people. In this article we will see how current are these tips that the scientist Odobleja describes, advice addressed especially to young people. They are classified into: The need for Creation, The need for learning, The need for organization of mind, The need for diversified work, The need for discipline of the senses and imagination, the use of experiments, The need for classification, comparison, analysis and synthesis, The need for living logic.

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Motto: "Let's purify our thinking. Let us get used to thinking real, in images, thinking without words, undressing our ideas of verbalism and prolixity. To give them a concrete, metaphorical character, to bring them back to the senses. Let's reject all obscure, confusing, vague ideas or clarify them. Let's only manipulate clear, precise, concrete and concretizable ideas, well defined, reducible to sensations and senses". Dr. **Ștefan Odobleja**[1] (1902–1978), creator of generalized cybernetics, post-mortem member of the Romanian Academy

1. THE NEED FOR CREATION

To create, we must feel and elaborate to the maximum. In order to create, you need intensity: a vigorous, solid and precise spirit. It takes depth and penetration, divinatory and inventive intelligence, sagacity, a spirit of synthesis, great strength of intuition. It takes, on the other hand, a lot of finesse, discernment and analysis, aptitude for meticulous work.

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To create, you need amplitude: a great wealth of elaborate material. Memory richness: complex, broad, encyclopedic spirit. The great inventions were made by scientists who were, at the same time, scholars. With simple incursions not much can be done. It must be attacked on a broad front. Only in this way can an important breach be made in the enemy's enemy front.

To create you need duration, perseverance, fixity, patience, a fixed idea pursued with perseverance, passion, obsession, lasting and tenacious concentration. Genius is only long-suffering.

We must keep the ideas and let them mature; the greater their gestation, the more perfect they are. Nothing important can be achieved without patience. To produce something beyond the common, we must also work and think infinitely more than others. Before inventing something in science or even in art, a lot must be invented in personal hygiene.

To create, you need a good memory, extensive knowledge, encyclopedic knowledge.

Scientific, philosophical, artistic or technical creation requires, first of all, updating with the present, with what is already acquired, known, expressed or invented. It demands the exhaustion of the assimilation of everything that has taken place in the respective field: a vast culture, a specialized, concrete and well-classified erudition. It is therefore necessary to thoroughly examine all the

works that have appeared on the subject we are concerned with. Let's not waste time discovering gunpowder or what is already known.

Psychology and Logic represent the foundation of all human knowledge and the backbone of all sciences. Indeed, knowledge presupposes not only a thing to be known, but also a knowing mind, an instrument of knowledge, and logic is the science of knowledge, the science of intellectual mechanisms, the normative science of methods of knowledge.

Research and observation methods, methods of thinking as well as methods of exposition are the tools with which we determine the contours and physiognomy of sciences and these methods, which are applied everywhere, are part of Logic. That is why logical theory cannot be indifferent to any Science, nor can it neglect it. For a good method is a good tool, while a rudimentary method is a rudimentary tool.

2. THE NEED FOR LEARNING

We must learn using the method of rediscovery. Let's learn each thing from several authors: let's consult as many books as possible for each problem. Let's use creative games, intelligence games (word families, derivations, synonyms, analogies, poetic exercises). Let's get used to contemplation and meditation.

Let us inform ourselves in the specific spirit of the creation we are preparing for: the scientist must observe and classify, the philosopher must contact the sciences, systematize them, the artist must feel and express, the technician must experiment and combine real objects.

Let's avoid skepticism, let's cultivate optimism. Science, philosophy, art, technique are not exhausted at all; there are always discoveries to be made. Everyone must hope that he will have the right chance. In every new fact a great truth must be assumed.

The love for research will be cultivated by reading the history of discoveries, the lives of illustrious scientists, autobiographies of philosophers, scientists or artists. Curiosity will be cultivated through problems and expectations.

Let it be known, moreover, that all truths have gone through the phase of stupidity; there is no way to suddenly produce perfect truths.

We must be optimistic; we must believe in our strengths and possibilities. If you have an intelligence slightly above average, you can always have self-confidence.

Let's work progressively; let's start with personal observations and ideas. Reading, let's work out. Let us always anticipate and anticipate reading; to read only to confirm or refute one's own ideas. Let's start with a little reading and the easiest, to avoid bluff inhibition. Let's read, if possible, in the order of the evolution of that science.

During the reading, let us doubt everything and everything. Let us doubt all the previous truths; to doubt everything that has been said or written in the matter. Let's read in a critical, difficult and distrustful spirit. Let's doubt the author's ability, despite his eventual celebrity. Let's not admit anything as an absolute, let's

accept everything in reserve. Let us not be fascinated, the idolatry of masters is a great obstacle to progress. Let's put the truth above any authority or celebrity.

Let's change, redo, reclassify everything we read. Let's try to offer everything in the clearest and most focused way. Let's look for novelty and originality; to reduce to more general classes or laws, to relate to other things, to explain in a different way.

… If the creation demands the renunciation of a number of pleasures and amusements, it offers in compensation, its own pleasures.

Let's abandon the other problems; only one big problem will be worked on.

Let's focus as much as possible on our study, focusing entirely on what we do at a given time. Great attention leads to great inventions. Let's avoid dilettantism and superficiality.

Let's dismantle the theme, let's attack each of its parts separately, through successive concentrations. To separate, to differentiate, to individualize, to specialize, to distinguish each problem. Let's avoid amalgam, mixing, shapeless mass. Let's open subchapters at every step. Let's isolate in separate chapters: history, bibliography, criticism, applications, discussions. Let's avoid sprinkling criticism, discussions, hypotheses and facts at every step; it is better for them to be separated.

… There is a great need for the memory to be materialized, depositing it on paper, in files, in files, which will thus replace it, substituting itself. It's an economy and an amplification at the same time.

… When reading, when making observations, etc. the creator to get used to omitting everything unrelated to his work. To create a selective, unilateral, limited, specialized perception. Always ask yourself: what should be kept in mind? In what order of importance?

… We must insist for a long time on the rare books, exceptionally well written and thought out, and even resume their reading.

Let's write down everything that deserves to be remembered: observations, experiences, events, ideas, readings. Let's write down all the details, all the results, all the subtleties. Let's note the successes as well as the failures. Let's note the rare elements, as well as the frequent ones, especially at the beginning when it is difficult to guess in which direction what is important will be found. Let's use memotechnics. Let's use general files, memos, forms, summaries, books, libraries. Let's note (materialize, fix) the sensations with the help of recording devices: photography, cinematography, phonography, compass, electrical measuring devices, mechanical recording devices, scales, chemical detectors.

3. THE NEED TO ORGANIZE THE MIND

Let's write down our ideas through the images that compose them. Let's even note the events, through literary sketches, or through their musical expressions (these notes will, themselves, be useful for artists).

Let us seek to delve into the deep depths of ideas; to retain them exclusively, in their simplest, purest and most concrete form. Let's learn to look for ideas, to discover them under the shell of words; to know how to peel them. Let's learn to undress ideas and detach them from form and language. Let's only record or write down classes and laws. Let's extract the essence, let's not copy the texts of the books.

Let's think without speaking; let's get used to it. But, because it is necessary to record the fruit of one's own thinking, this recording must at least be kept to a minimum. Very abbreviated notes will be taken (by signs, drawings, synoptic diagrams, sketches or transcripts), which only slightly impede the course of thought. A little later (after the moments of inspiration) these notes will be developed, which will suggest the rest of the thinking. Sometimes it is useful to delete any recording, for 5–30 minutes, to give the thought the freedom to take off. After that, the products will be recapitulated and registered.

Let's purify our thinking. Let us get used to thinking real, in images, thinking without words, undressing our ideas of verbalism and prolixity. To give them a concrete, metaphorical character, to bring them back to the senses. Let's reject all obscure, confusing, vague ideas or clarify them. Let's only manipulate clear, precise, concrete and concretizable ideas, well defined, reducible to sensations and senses.

Let's always exemplify. To set an example for ourselves is to give our thinking a solid foundation. To exemplify while expressing ideas is to make oneself understood.

Let's focus our ideas; to work with pure and focused ideas. Let's express them in the same way; readers will only gain. Science is enormous while time is short and life is complex. Therefore, prolixity, digressions, uselessness, nothingness will be combated, in writing as well as in thinking.

Think of synoptic tables; this means removing the heavy burden of the imperfections of a language (conjunctions, prepositions, inflections, articles, genres, pronouns, and the countless multitude of synonyms). Let's avoid digressions and uselessness.

… It is preferable to think without using words; to think in direct sensory images or representations.

4. THE NEED FOR DIVERSIFIED WORK

Let's react against excesses, fatigue, overwork. Let's apply the rules of aesthetics; to learn to drift, to have fun, to relax.

We mention among the appropriate derivatives and entertainments: manual work, walking, walking, cycling, traveling, horseback riding, swimming, gymnastics, sports, games, friction, massage, poetry, literature, humorous readings, music, dance.

Creative activity – like all our actions, in fact – must be cyclical, oscillating rhythmic, constantly oscillating between the various antitheses of which our

intellectual and physical functions are composed. Intelligence is a myriapod whose steps must alternate successively. We must, therefore, specialize the moments, differentiate them, always vary them. Creative work is not a block; it is reducible to many phases, the succession of which must be cyclical.

We have to work cyclically. Let's resume a few times. Let's go back to the work often until the results are perfect.

Let's alternate work and rest, exercise and relaxation, stimulation and calm, creation and recreation, concentration and distraction.

Let's alternate learning with elaboration, observation with meditation, reading with its resumption, perception with reflection, sensations with thinking, formation of apperception with creation, incubation with hatching, gestation with birth, preparation with inspiration, prelude with "intuition", facts with hypotheses. Reading excites productivity, and productivity demands control through new readings. Thus, reading builds and builds, but it is also reading that verifies and destroys or confirms and reassures.

Let's alternate the elaboration of the various chapters (parts) of the paper. Let's alternate its conception and expression, ideation and eloquence, meditation and writing, background and form, conception and style.

Let's alternate theory with practice, speculation with application, science with art. Any science that does not turn into practical applications is a crippled, lame and useless science.

Let us alternate synthesis and analysis, classification and division, definition and description, generalities and details, theses and antitheses, fusion and discrimination, similarity and differentiation, far vision and close vision. Let's build, destroy and rebuild a few times.

Let's work at a steady pace; studiousness, constancy, patience. Let's use especially the morning and evening work.

Let's read in order of difficulty, complexity, confusion and inaccuracy. Let's start with what is clear, easy, simple.

Let's start with building the skeleton of a plan, which we will cover in time. Gradually the outline of this plan will be replaced by another (better, more complete and more appropriate).

Let's write and formulate our ideas; we are inspired by writing. Let's present our ideas in a scientific society; the criticisms that will be expressed there will guide us and, at the same time, will stimulate us. Let's get involved in the fight for ideas. Let's talk and talk to someone; the conversation is a real collaboration.

5. THE NEED TO DISCIPLINE THE SENSES AND IMAGINATION, TO USE EXPERIMENTS

Let's discipline our senses and imagination. Let us educate our will to think; without voluntary activity the efficiency of the creative imagination will be very low.

Let's be careful; not to lose our moral balance. In practical life, let's not give up salutary common sense. Let us avoid being deceived by our own ideas; let's stay on the middle line.

Let's challenge the experimental approach; let's experiment. Let's ask the studied phenomenon (or object) all the possible questions, applying all kinds of imaginable techniques. Let's learn the experimental technique; there are a lot of books on this today. Let us never limit ourselves to a single experience; it would mean exposing ourselves to a definite error. Hundreds must be made. Let's repeat a few times the experiences whose results are simple, constant, easy to decipher.

Let's try to inventory new techniques, making new approaches. Let's not resign ourselves to the usual experiences, trivialized or already used in that field. A trivial experience is an exhausted experience; it can only offer a trivial truth and nothing original. So let's try to adapt new techniques. To this end, we should consult all experiments performed in other branches of science (physics, etc.). reviewing them yields useful suggestions. Let's classify the known techniques, in order to be able to invent new ones.

When we want to study a science, we must compare and bring it closer to all other sciences: physical, psychological, psychological, etc. Every restricted branch of a science must be sought in all other branches of that science (and in all other branches of other sciences) phenomena, laws, classes, and analogous, equivalent, or related notions.

In each field, let's read a few treatises, with the preconceived idea of finding similarities with the particular science we are concerned with. Let's insist until they are found, because they certainly exist. There will be a rich harvest of valid scientific ideas. Then there is nothing left to do but to gradually filter out the similarities until we catch their unifying thread, which is most often a common cause or law.

In each subject, in each chapter, in each problem, after consulting several authors, they must be placed in parallel in a comparative synoptic table.

Dictionaries will be used frequently; each word will be searched for all its synonyms. That word should be followed in translation into a foreign language; also to be followed in retranslation. Thus, new synonyms and new meanings will be found, which are just as many new ideas, especially for the particular field of research. Each new word evokes a lot of collateral ideas.

6. THE NEED FOR CLASSIFICATION, COMPARISON, ANALYSIS AND SYNTHESIS

Everything that is done will be done in series; it will be learned, thought about, classified, compared, criticized, defined, divided, synthesized or analyzed in series. All chapters and notions will be divided on the same day; only divisions will be made during this time. Another day each notion will be defined; nothing but definitions. Another day, again, only laws will be studied.

The readings will be done in series; on the same day, all the authors will be consulted on a certain problem (limited and circumscribed) in the subject that

concerns us. It will then be repeated, the same for each of the other issues or chapters. The idea must be "hatched."

It must never be abandoned; it must always be kept at the forefront of thinking. It must always be carried with us; she must accompany us everywhere, on a journey as at home, in society or in solitude; night and day, in a dream or in a dream. As long as the research lasts, let's be obsessed with this fixed idea. Let us always remain absorbed and meditative. Let's always enjoy this idea and be passionate about it.

The affective states will be harmonized with the intellectual processes and vice versa. It will cause, on the one hand, the feeling appropriate to the process we want to carry out. On the other hand, the presence of various feelings will be exploited by working in accordance with the case; will take advantage of moments of exaltation and optimism to criticize others and create hypotheses; moments of pessimism and depression (bitterness, disappointment and hesitation) will be used to self-criticize, to check, to control oneself.

Let's look for the ambiance, the closeness, the contact, the knowledge, the friendship of the great creators. Let's try to imitate them, to understand them, to contaminate ourselves with their virtuosity, sensitivity and intelligence.

Theme catalogs will be organized, with divisions and subdivisions. Prior to any particular training, the general plan will be reviewed. The general plan will be frequently agreed with the new stage of knowledge. It will often be resynthesized; the works will be reclassified in the sense of the new views. The general plan of each cited work will be studied; the general plans will be collected and compared. After that it will be necessary to decide the best one. Classifications will be collected; it will seek to unify them. The points of view will be collected and will be systematized according to their practical importance. The methods will be classified; not to advance at random. A work plan must be drawn up together with the work plan. The time must be well set, ie classified.

7. THE NEED FOR LIVING LOGIC

Formal logic – the classic logic of yesterday and today – is compared to real, true logic, in the same relationship in which a stuffed bird is to a living and true one. Indeed, apart from the feathers and the external appearance, beyond that it lacks almost everything, it lacks the entrails, it lacks feeling and movement, it lacks life.

Adherents of formal logic claim that they are engaged in the study of truths. But how will you be able to know the truth if you ignore the thinking that produces it? Who would dare to claim that he has studied flour thoroughly, if he does not also know the mill that grinds the wheat from which it comes?

The truth interests us not only as a product, but also as a production and even more as a production than as a product. Since truth is the product of thought, we are interested in thinking at least as much as its product, even more so. A study of truth that ignores truth-producing thinking would be nonsense. The

methods of obtaining the truth are more important than the methods of trying and recognizing it.

To answer the question, "how is truth born and how can we obtain it," is more important than answering the question, "what is and how is truth." A pattern is worth more than a print, because by owning a pattern we can have with its help, hundreds and thousands of prints. Likewise, the knowledge of thought is worth more than the knowledge of the truth, because by mastering the secrets of thought you can produce many and precious truths. The production of truths interests us more than the truths produced. Just as the creation of literary works is more valuable than their evaluation by literary critics. Consequently, static, inert logic must give way to another dynamic and genetic one. The logic of the product must be complemented by a logic of production, the science of truth must be included and subordinated to the science of thought.

If the old logic put the main emphasis on ideas or thoughts, the logic of the future will consider it first and foremost the ideation or thinking. Instead of ideas that stand, ideas that move. Instead of pressed and dried ideas, fixed with a bold in the logical insectarium, the logic of the future puts living ideas, in full motion and in full logical evolution. We will not be satisfied only with the cataloging of the different figures resulting from the association of ideas, but we will seek to decipher the determining cause of the association and the intimate mechanism by which those logical figures are formed. We will not limit ourselves to fixed and immobilized ideas in fixed patterns and forms, but we will follow especially the mobile ideas, the mobility of ideas and the laws of this mobility. Having exhausted the study of forms, we shall now turn to the study of the formation of forms.

In the old logic, the principles had only the mission to be inscribed on its frontispiece. They were talked about once and for all, at first, in an introductory chapter. Furthermore, nothing reminded them. Today we ask logical principles not to stand, but to activate, work and process, to energize, to collaborate, to lead, to initiate, to attract and repel, to pull and push, to implode and to inhibit., to organize the whole logic, to penetrate everywhere and do everything. The principles make the concept, they build the judgment and the syllogism and also through their action the classification and the division take place like all the other logical processes. Principles are the natural laws present at the origin of all logical facts.

The logic until today was bookish: it studied the preserved thought, the thought put on paper in the form of sentences and phrases. In its place, a real logic is required today, to study fresh thinking, unmummified thinking and not yet buried in the sarcophagus of papers.

The logic of today was a verbal, indirect logic. She studied ideas and thinking through the words she expressed, the ideas translated into words. Instead, we propose an ideational, direct, non-verbalist logic, studying thinking directly on thinking and ideas directly on ideas.

The logic of today was a posthumous logic: it studies thinking more or less later after it has been thought. She proceeded to examine the thought — that is, something alive — waiting for it to die first and then for an autopsy. Dissecting the

corpses of ideas, she claimed to know everything about ideas. Dissecting the earthly remnants of thought, she claimed to know all its secrets, which was exaggerated, because the most interesting secret – life – escaped these post-mortem investigations. Instead of this kind of logic, we envisage a live logic, which would study thinking in full swing and ideas and truths in the nascent state in the process of being constituted.

The old logic floated in the air like a stray balloon, unbound by no one and nothing, isolated in time and space, detached from the chain of causality and disparate from the rest of science. Instead of such a logic – monstrous and absurd flying tree without roots.

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