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SYSTEMS THINKING FOR CO-CREATIVE SOCIETY

Abstract: *Living in systems is living outside the box and is connected to the transformation of common linear thinking. Western society followed rules of classical western science, which form many centuries took analysis as mainstream of thinking and researching. One can find perfect and logical explanation for this. In the past, classical science researched matter and reached optimal results with analytical thinking. Following paper presents a change in thinking, which from analytical evolves to systems thinking. Systems thinking was overlooked in the past as common worldview. In a frame of systems methodology, we will show the importance of systems thinking in order to achieve global thought transformation through systems understanding. Contemporary society still deals with analytical consciousness; it is still oriented towards outer world and analysis. However, analysis and analytical consciousness are necessary when one is aware that they are only parts of a synthesis and thus a step in consciousness towards systems thinking. Analysis, in the past, caused technological progress; it caused the development of western science, which we now know it. It led to the discoveries that led to quantum physics and thus the shifts of thinking for dealing with complex challenges. Nowadays it evolves into systems thinking for co-creative society of the future, which is a basic condition for living in peace and prosperity.*

Keywords: *systems thinking, tip of the iceberg, modelling, "the big picture", co-creative society*

1. INTRODUCTION

Systems thinking is a framework that is based on the belief that the component parts of a system can best be understood in the context of relationships with each other and with other systems, rather than in isolation. The only way to fully understand why a problem or element occurs and persists is to understand the part in relation to the whole. [1]

In the beginning human beings experienced themselves as one with the nature. To survive they needed to understand and control the world. This kind of thinking soon become predominant and the experience of one with the nature ("oneness, wholeness") were lost. Breaking things down into parts, analytical thinking became the way how people thought. (E.g. Mass production is an example of analytical thinking. As people left farms and went to work to the factory, they learned to do isolated tasks the way engineers wanted them done. Systems thinking reappeared in the 1950s, when systems philosophers and engineers started to think from the perspective of a whole and used this approach, in the industrial area but also in social research. As a modern approach for problem solving was revived in the 90's with Senge's masterpiece The Fifth discipline [2], even though it had been an ancient mode of thinking. We can track systems thinking back to antiquity. Differentiated from Western rationalist traditions of philosophy, C. West Churchman often identified with the I Ching as a systems approach sharing a frame of reference similar to pre-Socratic philosophy and Heraclitus [3].

The first systems thinkers can be found in the oldest of human societies – the ancient Phoenicians with their cuneiforms, the

Egyptians with their pyramids, Greek philosophers and Maya Indians are the earliest ancient societies of system thinkers. The Mayan numerical system and long count units has been proven as one of the most accurate systems for describing the present and future of the civilization in which we have all evolved. [4] The Mayan calendars Tzolkin and Tun, based on mathematics as a strictly rational factor and enriched by intuition, are examples of an evolutionary system of human consciousness. The calendars and their meaning for sustainable society were explained and scientifically proven by Swedish microbiologist Carl Johan Calleman. The calendars presented personal intents of individuals and prophetic meanings for civilization. [5] Basically, he deciphered the purpose of the calendars, what they represented and meant to the Mayans and how they used them. He discovered that the calendars were timing the development and evolution of consciousness (individual, societal, universal [6], which ends with systems thinking as universal consciousness.

2. PROBLEM STATEMENT: CONVENTIONAL OR ANALYTICAL THINKING

"Ever since the Industrial Revolution, Western society has benefited from science, logic, and reductionism over intuition and holism. Psychologically and politically we would much rather assume that the cause of a problem is "out there," rather than "in here." [7]

It's almost irresistible to blame something or someone else, to shift responsibility away from ourselves, and to look for the control knob, the product, the pill, the technical fix that will make a problem go away. This is an old way of seeing. It is comforting, in that the solutions are in our hands but disturbing, because we must do things, or at least see things and think about things, in a different way of seeing and thinking. [7] When facing problems in contemporary world, one usually thinks that they these problems are not possible or easy to resolve. The reason for this lies in a fact that problems we encounter are complex and they cannot be resolved with a help of conventional or linear thinking. Analysis and linear (dual) thinking play an important role in human consciousness. From a childhood, a man is taught to break apart problems in order to make complex tasks and subjects easier to deal with. But this creates a bigger problem, since he loses the ability to see the consequences of his actions, and he loses a sense of connection to a larger whole. [2] Analytical thinking has been a dominant mode in science for centuries. Nowadays, the majority of society still falls into the trap of analytical thinking, which is short-term thinking without feedback information and knowing the deeper meaning of a challenge. Consequently, people remain unsatisfied, sad and generally in diminished emotional conditions. Everyday stressful situations cause life to be a burden on the individual and consequently to the society. Individuals and thus social groups focus on the present situations, which they see as problems and catastrophes, scandals and shocks, depending the power of media they read, watch are hear. These facts put them into the marginal groups of a society. The awareness of analysis and separation, of judging and praising is so strong that they cannot imagine life without feeling pressure and fear. This described situation has been the reality for the majority of the world for centuries if we follow the pyramid of transformation consciousness explained as Mayan calendrical system. [5] One doesn't have to explain Calleman's theory on the evolution of consciousness in order to see it. The events of the previous centuries clearly show the power of analytical consciousness, which separated the world into many countries, beliefs, wars…separating it in fear. We need only think of the last century, of wars that were caused by separation and analytical consciousness. The First World War was caused by vested and conflicting interest among decision makers inside ambitions and selfish elites. [8] The same economic reductionism, consciousness of winning and losing ruled in the next and in the subsequent wars. All these wars and conflicts had something in common: leaders: elites who started them had not seen the world as a whole, which belongs to the universe; they have only seen their separate shares of this world. Their consciousness was strictly analytic and paired with a reductionism which made them "micro-smart" (good at thinking through component parts) but also micro-dumb, since they were not good at looking at the whole world from the astronaut's point of view. [9]

3. SYSTEMS THINKING – HIGHER AND BROADER LEVEL OF THINKING

Systems thinking is intended for people who may be wary of the word "systems" and the field of systems analysis, even though they may have been doing systems thinking all their lives. I have kept the discussion nontechnical because I want to show what a long way you can go toward understanding systems without turning to mathematics or computers. [7]

We encounter the methods of systems approach and systems thinking as effective tools in every day's decision-making – in personal and professional lives. Systems thinking differs from conventional or linear thinking for its consensual role when comes to the problem or decision-making. It takes into consideration "wholeness, complexity of a problem and not only one part of it. In systems thinking a whole is of primary importance and the parts are of secondary significance. Vice versa is when we discuss of linear or conventional thinking. According to Stroh [15], conventional or linear thinking is the basis for how most of us were taught in school and still tend to divide the world into specific disciplines and problems into their components under the assumption that we can best address the whole by focusing on the parts. Conventional (linear) thinking is not suited to address the complex problems. The answer for solving complex problems of complex systems lies in a shift of thinking: from conventional (linear) thinking to systems (integrative) thinking. Systems thinking is thinking in terms of relationships, patterns, contexts and presents the new concepts of life. [1] It gives us a holistic perspective for viewing the world around us and seeing ourselves in the world. [11] It describes environment as an important element of modern social and economic systems. The feedback information, which is a typical element of systems thinking presentation graph, regulates positive and negative influences in a frame of system dynamics.

4. SHIFT OF THINKING AND CO-CREATIVE SOCIETY

Systems thinking searches for "(w)holistic" solutions, but it also is an important part in the conscious transformation of analytical thinking. It represents human awareness of the situation as a whole and it causes a shift of consciousness, in which long term solutions are of greater importance than short-term ones. An individual and later the society's systems awareness, which leads to co-creative actions, must take into consideration the principles of living systems as bought out in Haines [9]: system clarity first, the whole is primary, understand systems holistically in their environment, each system functions uniquely, system purposes first, the role of parts – to support the whole, all parts are interdependent, small changes produce big results, maximizing parts sub-optimizes the whole, causes and effects are not closely related, faster is ultimately slower, feedback loop, multiple goals, flexibility, natural hierarchy, entropy and tendency to run down. A system cannot be understood by analysis, but by synthesis; looking at it as a whole within its environment. To have this in mind, one doesn't think of fear but of co-creation the solutions for making fear disappear. Thinking in systems means to connect, to synthesize, to collaborate, to integrate, and to co-create. Systems strive to stay in harmony, so staying in harmony means to create our existence from the perspective of love, mutual understanding and co-creation. Nature is a system, so one must think in systems, for the sake of nature. Systems thinking gives us an awareness of co-creation, since it understands that there are no losers or winners but complementary players. And complementary, strong players always co-create the optimal solutions for whatever issues and challenges.

All the challenges were treated and understood in the linear direction. This linearity brought (and brings) a limited point of view, one that doesn't bring us understanding and deeper meaning of the stress, situations, challenges. Man is satisfied when gets a reward or prize and thinks of the fact that he deserved the award [12]. The same is with threat or catastrophe, but when it comes to the event, nobody thinks that he or she actually deserved the threat. This is the limitation of analytical thinking. It is too simple to solve the complexities of the world. So if we follow Bertalanffy's [13] thought about complexity, we are forced to deal with systems and wholes in all fields of knowledge, which implies a

basic reorientation in scientific thinking. We can recognize the analytical mode of thinking if we observe three independent individuals with their own analytical viewpoints. We get many separated perceptions, which have something in common: they represent separated, (none synthesized) thinking or points of view. They represent separate entities, without any interconnections. Each of them has its own reality, its own consciousness. We can see the linear process of bringing the observer from inputs to the outputs [12].

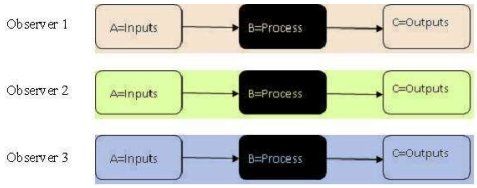

Figure 1. *Analytical thinking: from the left to the right*

An example of the three observers with analytical consciousness can be seen in figure 1. Each of the observers wants to reach the outputs C; they are parallel in time but in different places and want to achieve different outputs, since they have given different inputs (marked by different colors). They have analytical consciousness, without thinking of interconnectedness and acceptance each other's point of view. None of them thinks of the environment, just about the outputs and the processes.in order to adapt the strategy according to changes in the environment.

The transformation from analytical to systems consciousness brings natural thinking in systems, which always takes into concern the environment and the feedback information, figure 2.

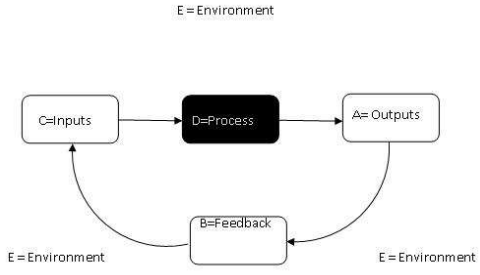

Figure 2. Systems thinking: from the right to the left

Transformation from analytical thinking to systems thinking is visible, since the observer uses as his primary questions the questions about the influence of his vision or (A-outputs) to the environment (E-other people, nature, society), uses feedback information (B-what will my vision bring to the E) and asks himself what will my vision (A-outputs) bring to the environment (E) and what is the current situation (C-inputs, ideas, teams, co-creation) for achieving the (A) and how can I help in the process (B), either with help or without any worries if he cannot influence the process.

5. CONCLUSION

In this paper, the problem we discuss is pointed to analytical thinking and suggested solution through shift of thinking to systems thinking. Handling independent elements is the essence of analytical thinking. [14]

Understanding interdependency requires a way of thinking different from analysis; it requires systems thinking. Analytical thinking and systems thinking are quite distinct. Analysis is a three step thought process. It takes apart that which it seeks to understand, then attempts to explain the behavior of the parts taken separately, and finally it tries to aggregate understanding of the parts in to an explanation of the whole. Systems thinking uses a different process. It puts the system in the context of the larger environment of it is a part and studies the role it plays in the larger whole.

Systems thinking and analytical thinking will come to be thought of as twin components of scientific thinking. [15]

Commitment to systems thinking is unconditional and not aggressive. It is a part of the individual who follows his inner voice and creates his own inner harmony, which shines outwardly. It is the commitment to the wholeness that fits to the feeling of its detachment and the transformation of consciousness, which leads to knowing "the Whole". This represents a person's awareness of being a part of a whole, a part of a planet interconnected with other people in a mutual co-creation process. The big picture is actually a "view from the space", which clearly shows the interconnections among all elements of our planet. It explains a systems thinking and the world with all its living and non-living

organisms. It is important that every single person has an awareness of being a part of civilization, humanity. With this awareness, man follows a natural path of evolution and his views of freedom, harmony, confidence and commitment to systems thinking rise. With self- and world-understanding, he becomes detached from the external world, yet he positively influences it with his inner peace. Devoted to the thoughts of connectivity and co-creativity, an individual in a team achieves optimal results for himself and for mankind. With this co-creative thinking, he enriches co-operation with higher thoughts of co-creation of strong teams for a future that is already here.

REFERENCES:

[1] Capra, F., & Luisi, P.L. (2014). *The Systems View of Life*, Cambridge University Press, UK.

[2] Senge, P. (2006). *The Fifth Discipline: The Art and Practice of The Learning Organization*. New York: Doubleday

[3] Hammond, D. (2003). *The Science of Synthesis*. Colorado: University of Colorado Press

[4] Lazanski, J., & Mulej, M. *et al*. (2013). *Dialectical systems thinking and the law of requisite holism concerning innovation (Exploring unity through diversity, vol.3)*. Litchfield Park: Emergent Publications, cop.2013 XVII, 365.p.

[5] Calleman, C.J. (2004). *The Mayan Calendar and the Transformation of Consciousness: Rochester Vermont: Bear and Company Senge P. (1994)*. The Fifth Discipline: The Art and Practice of the Learning Organization. Doubleday October.

[6] Calleman, C.J. (2009). The Purposeful Universe: How Quantum Theory and Mayan Cosmology explain the Origin and Evolution of Life. Bear and CompanRiley W.Love L., (2000). The State of Qualitative Tourism research, *Annals of Tourism Research*, 27(1), 164–187, Pergamon-Elsevier Science.

[7] Meadows, D. (2001). *Thinking in Systems: A primer*. Chelsea green Publishing. Vermont. USA

[8] Elohim, J.L. (2002). *Homo Sapiens May Still Find Out a Way Forward by Means of Bertalanffy's Way of Thinking. STIQE 2002 in Rebernik, M., Mulej, M. (eds.)*, Proceedings of the 6th International Conference on Linking Systems Thinking, Innovation, Quality, Entrepreneurship and Environment. Maribor.

[9] Haines, S. (2006). *The Simplicity of Systems Thinking*. Centre for Strategic Management. San Diego.

[10] Stroh, D.P. (2015). *Systems Thinking For Social Change: A Practical Guide to Solving Complex Problems*, Avoiding Unintended Consequences, and Achieving Lasting Results Chelsea green Publishing, VT, USA

[11] László, E. (2002). *The Systems View of the World: A Holistic Vision for Our Time (Advances in Systems Theory, Complexity, and the Human Sciences)*. New York: George Brazilier.

[12] Jere Lazanski (Jakulin), T. (2011). *Consciousness transformation: from analytical to systems thinking. V: Bohanec Marko (ed), et al Proceedings of the 14th International Multiconference information Society – IS 2011*, October 10th – 14th, 2011, Ljubljana, Slovenia: volume A, Informacijska družba. Insttut Jožef Stefan, 2011, str.396- 399, graf.prikaz.

[13] Bertalanffy, L.v. (1952). *General System Theory*. New York. George: Braziller

[14] Gharajedaghi, J. (2006). *Systems Thinking: Managing Chaos and Complexity: A Platform for designing Business Architecture*. Butterworth-Heinemann. Burlington. USA

[15] Checkland, P. (1999). *Systems Thinking, Systems practice*, John Wiley & Sons. Chichester. UK