

## Social holons and their epistemology

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**Abstract :** A description of a social system at least at three levels, namely at the level of the elements, of their properties and that as a whole with its emergent properties is considered beneficial.

A social system can be defined as the interdependent and interacting sets of persons and their artifacts, of their properties, of their relations including their communication, and of the social system emergent properties including culture, in the context of their social and physical environment.

Social holons here are considered social systems that are organized in holons. A family, a community, a town, a county, a nation, a sociocultural system belong to social holons. Each holon influence the others

Living systems as open systems have a continuous interaction and adaptation to their environments together with their effort to control and benefit from it. Hence the perception of the environment in a realistic way in order to survive control and adapt is important.

The presented property of auto-synthesis in living intelligence enables the system to maintain itself against the changes of the environment and at the same time adapt itself, namely its structure, function and behavior, towards its compatibility with its environment. The living system does not freely construct its reality but it forms and synthesizes a reality to the extent that enables it to control and be adapted to its environment.

The epistemology of social holons will be examined from three aspects. The first is the usefulness of description at three levels, the second is the consideration of the interactional epistemology and the third is that in the case of human and social world the meta-systems knowledge and aspect has to be evaluated at a higher degree.

### Introduction

Einstein (Einstein et al 1930) stated that in order to understand the cause's of a phenomenon, it is insufficient just one level of description.

Systemism being holism and individualism (Bunde 1996) makes system science to be at the same line.

Paritsis and Stewart (1983) regarding the understanding and describing the processes of the brain, they concluded that it is useful to make a description at the level of neurons, at the level of their relations and at the level of global properties of the neural network.

Social constructionism presents an analogous three levels view. In the sense that the perception and representation of a point of view rests upon the contribution of three levels that interact. The level of views of the person(s) in a socio-cultural system, the level of their communication (communicative relations) and the level of the culture itself (e.g. Berger and Luckmann 1966).

Social constructionism is related to a certain extent, conceptually, to constructivist point of view that reality is constructed, which in turn is related with the autopoietic perception and epistemology (Maturana and Varela 1980). According to the later the autopoietic systems -mainly the living systems- have the ability to maintain their characteristic structure and function independent from the different environments they may live. Thus, when the environment is perceived a transformation takes place with the perceived environment to be more influenced by the structure of the system than by the environment itself. As a result "reality" is more constructed than mapped into the organism.

In metamodern thinking there is a critical stand of any description of “reality” and the different points of view have not a priori any advantage of one over the other, largely due to that the meta-modern thinking basically accept the social construction of reality.

## **Socioholons**

### *A definition of a system*

A system can be defined, as an interdependent and interacting sets of elements, of their properties, of their relations, and of the systems emergent properties, in a given context. This definition is one among many others with the advantage of its logical consequences are useful for the consequent discussion.

### *A definition of a social system*

Following the above definition of a system, a social system can be defined as the interdependent and interacting sets of persons and their artifacts, of their properties, of their relations including their communication, and of the social system emergent properties including culture, in the context of their social and physical environment.

### *Holons*

Holons (Koestler 1967), are hierarchically organized systems within other systems which have analogies among them. Holons at different levels influence their neighborhood levels and thus each level influences the others (Baum 1984).

### *Social holons*

Social holons here are considered social systems that are organized in holons. A family, a community, a town, a county, a nation, a sociocultural system belong to social holons.

## **The intelligence of a social system**

### *Intelligence of life*

As intelligence of a living system is considered “the ability of a system to achieve its goals by receiving inputs, integrating them together with its adaptive responses, through coded information or other representations and by increasing its compatibility with the environment through its improvement (e.g. through evolution or learning)” (Paritsis 2003). This definition of intelligence holds for all living systems from cells to sociocultural systems with presenting an increasing complexity and new emergent properties at each step of the hierarchical organization of the living systems.

### *Social intelligence*

This definition of intelligence is close to other classical definitions of intelligence giving some emphasis to the influence of environment and to the improvement of the living intelligent system. Each social system has its own intelligence according to the above definition even from family or a natural group. Having their beliefs, myths, knowledge, decision-making, behavior as a whole. This intelligence can be regarded also as collective intelligence (Paritsis 1998), when relatively small number of members are involved, while, when the social system is more and more organized then we can speak about a brain of a social system (Beer 1972).

## **Towards an epistemology of social holons**

### *The intelligent system in its environment*

The system replicates itself not in a vacuum but with the components from the specific environment where it lives. Living systems as open systems have a continuous interaction and adaptation to their environments together with their effort to control and benefit from it. Hence the perception of the environment in a realistic way in order to survive control and adapt is important. Otherwise the living intelligent system will have problems up to the extent of death.

It will be argued here that the main function of living intelligent systems is to auto synthesize themselves (Paritsis 2003). The difference from autopoietic function is mainly that of the important role of environment in the case of autopoiesis, which contributes to the formation of the living system and to its epistemology. Structural coupling is a special case in autopoiesis.

### *An epistemology of auto-synthesis and co-synthesis*

Compatible to the presented definition of intelligence as a characteristic of life it is the auto-synthesis that enables the system to maintain itself against the changes of the environment and at the same time adapt itself, namely its structure, function and behavior, towards its compatibility with its environment.

According to the above discussion the living system does not freely construct its reality but it forms and synthesizes a reality to the extent that enables it to control and be adapted to its environment.

Maturana and his colleagues (Maturana et al 1960) did not succeed to map the eye's sensation through a mathematical transformation, or otherwise, to the brain's perception. Maturana then concluded that the construction of reality of the brain is independent from the sensation of the sense organs. However, Paritsis and Stewart (1983) succeeded to make this map for the macaques' eye to the perception of macaques' brain, and draw different conclusions for the perception of reality. More precisely, reality, different for each type of living system, individual or society, is formed or synthesized by the contribution of both the environment and the living system enabling the living systems and the societies as such, to survive, live, satisfy, adapt and evolve within their environments.

Each living system perceives an aspect of reality of the observable world. In a way the degree of usefulness determines the degree of truth.

At each level of living holons perception of reality the perceived reality of higher holons is more complicated and useful for the lower holons as well. Thus the brain's perception is useful for the cells (e.g. contributing for their food) and the science is useful for man.

### *Social holons and their perception*

The epistemology of social holons will be examined from three aspects. The first is the usefulness of description at three levels, the second is the consideration of the interactional epistemology and the third is that in the case of human and social world the meta-systems knowledge and aspect has to be evaluated at a higher degree.

In the case of living holons including the social ones, all lower holons contribute to a certain extent in their own way to the formation of reality of higher holons. Even the cells contribute to the formation of scientific knowledge. In the sense that the cells e.g. at the retina determine and put constraints to what is seen and the man's brain determine and put constraints to what is possible to be perceived by science. It is necessary to consider the definition of a system and to see that at each level of holons the perception is an emergent property of the processes at

the lower level. Which in turn influence the process.

The knowledge being at the internet and the cyberspace when documented is potentially a most important contributor to the perception of reality from the social holons. In addition from the availability of huge amount of information it offers also interaction between different levels of intelligent social holons and integrates social intelligence.

## Discussion

According to the above, the aspect of the social construction of reality is part of the story. The formation of reality in man and social systems is a result of interaction between many the levels of the living holons involved and between the members of a holon at each level. The emergent property of science and its perception of the world and the resulting technology it is the more valid and strong description of reality. Thus the meta-modern view of critical stand it is useful up to a point. The degree of critical stand has to be different for different levels of living and social holons. For example the critical stand for the perception of a lower holon cannot taken equally to the perception of a higher holon. Nor ignoring the contribution of meta knowledge of science present in an individual. In this way the aspect of an individual without being expert (having metasystems knowledge) and that of an expert in a field cannot be equally accepted.

The interactional aspect of epistemology or of co-synthesis departs from the epistemology of autopoietic system that construct its own reality having at the same time elements from classical cybernetics. However, it is by no means a first order cybernetics. The consideration of a more complex interaction between the different levels of perception of holons and of a more valid description from the higher holons leads to a more enriched view which is beyond the first or second order cybernetics. It takes more seriously the contribution of today science and technology and gives more value to the cyberspace.

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