

# *Complexity Sciences*

## **Future Research**

# The 10-Year Future Scenario of the Internet (www)



The reach of one's globalization is defined  
by the limit of the pronoun "WE"...



**The Unicist Research Institute**  
Pioneers in Complexity Science Research since 1976

## The 10-Year Future Scenario of the Internet (www) 2017 - 2027

Internet is becoming a “Virtual Emulation of the Real World” which drives to major changes in its development and use. This is a 10-year future scenario developed using unicist double dialectical logical inferences based on the actual conceptual functionality of Internet, the available technologies and those that are being introduced.

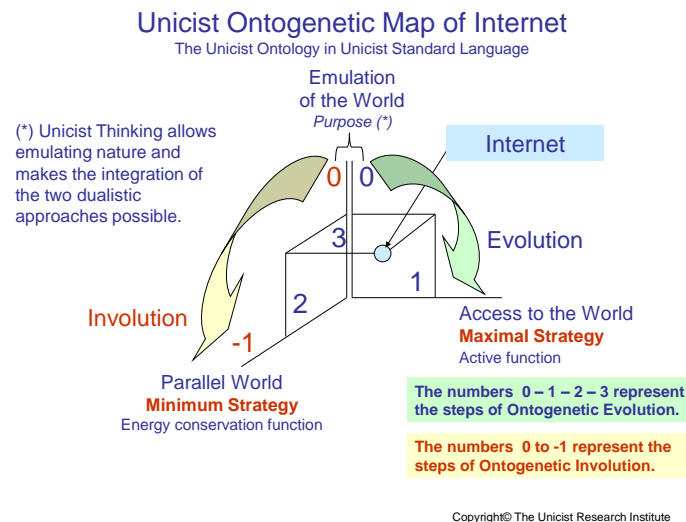
The purpose of this future research was to provide the trends of this activity to the worldwide community of Internet users. This research was led by Peter Belohlavek and Diego Belohlavek.

To access the basics on Unicist Future Research please enter:

<http://www.unicist.org/sdp.shtml>

### Introduction

The name Internet or www is already an anachronism because it describes an entity that seems to provide a network between the participants, but in fact evolved towards being an entity that has its own “artificial life”.



Internet, as an entity, is considered to have an artificial life because, as a timeless organization, it has a life of its own, and grows and evolves as a “virtual emulation of the world”.

At the beginning, it was a workspace for academics, scientists and researchers. It was an environment to integrate people dealing with technologies and science.

But it evolved to become the first global, bottom-up built, democratic, multi-minorities organized entity that emulates the world providing a reliable environment.



Now the Internet has already become an emulation of the world. As such, it is integrated by multiple cultures, languages, ethnicities, religions and histories that are integrated by a common meta-language and are ruled by a universal “common law”.

This common law is evolving extremely fast in order to avoid chaos and establish the limits between the inlaws and the outlaws without inhibiting the power of the bottom-up democracy that underlies Internet.

The meta-language is a virtual communication language that allows integrating people, building social capital, providing a pastime space, allowing addictive behaviors, making business and integrating all the aspects of human behavior that can be managed in a virtual environment.

**The drivers towards Internet as an emulation of the world are:**

1. The influence of the Internet generation
2. The anthropocentricity of human behavior
3. The globalization of the markets
4. The business opportunities
5. The democratization that is implicit in its bottom-up approach

**The new technologies that make the emulation possible are:**

1. The Web 2.0 and Future Web 3.0 technologies
2. The responsive technologies to adapt to multiple hardware
3. The development of virtual, commercial and semantic objects
4. The segmentation based on predictors that allow building commercial communities.

**What will have happened during the next 10 years?**

1. Internet will have become a business catalyst for all the central B2B providers.
2. It will be the main tool for virtual collaboration and virtual marketing.
3. It will have empowered the transparency and reliability of central participants.
4. The parallel internet world will have grown enormously and will have generated the need to control it.
5. A “common law” system will have been established.
6. People will have become multi-minorities organized based on their values and interests.
7. Education will have evolved focused on learning using virtual tools, changing structurally the role of teaching.
8. Social networks will have changed towards multi-segmented communities in order to become commercially feasible.
9. Customer support, counseling and coaching will be centrally managed on the Internet.
10. Object driven marketing will be the core of the business use of the Internet.
11. Healthcare will be strongly sustained by virtual monitoring and servicing.

## The Real World and the Parallel World on the Internet

Internet emulates the real world and as such it has differentiated positions for its participants, which define the power they have in the world.

The paradox is that, although Internet is democratic, which means that everyone can earn a place based on the value that they add, the differentiation between the participants is frequently extreme.

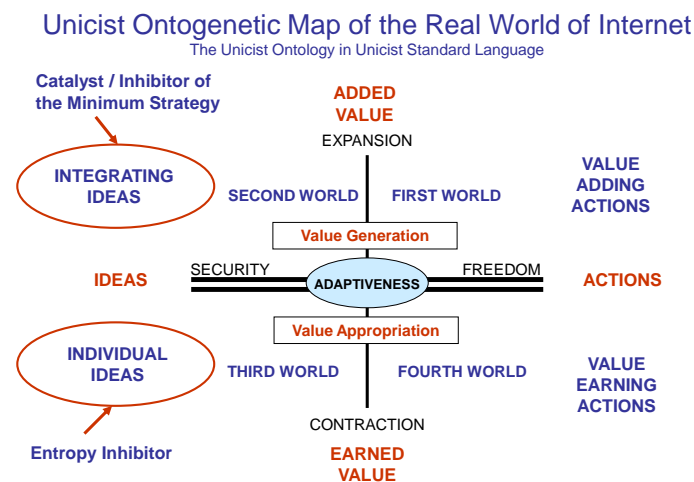
There are two worlds in this “artificial world” defined by the Internet:

1. A real world for those who participate in an adapted way.
2. A parallel world for those who participate in an over-adapted way.

### 1) The Real World of Internet

Four segments have been identified in the Real World:

In the next ten years, within the Real World Internet, four segments that incipiently exist will be clearly developed:



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**The First World:** It is the segment of all the websites that open the possibilities of the users by providing them a vision of the world that expands their boundaries. It is extremely democratic and ethic driven. The success of those that are in this segment depends on the capacity to adapt to changes in the environment while introducing changes to the environment. Google is an example of this segment. This segment allows using the Internet as a gravitational object to influence the behavior of the environment and as a catalyst for social actions and businesses.





**Conspirators:** This segment is composed by those websites that follow conspiracy theories that always publish an alternative version of an event that is happening or happened in the past.

**Self-fulfilling:** these are the websites of those individuals who consider that their opinion is important in the world and publish it without considering the actual added value of what they are publishing.

**Terrorists:** these are the websites that exert the power of destruction, including the self-destruction of what is part of an institutional structure.

**Hackers:** these are the websites that invade others in order to demonstrate their intellectual power and the weakness of others.

## *History of the Future – Internet Society*

*On October 24, 1995, the FNC unanimously passed a resolution defining the term Internet. This definition was developed in consultation with members of the internet and intellectual property rights communities. RESOLUTION: The Federal Networking Council (FNC) agrees that the following language reflects our definition of the term "Internet". "Internet" refers to the global information system that -- (i) is logically linked together by a globally unique address space based on the Internet Protocol (IP) or its subsequent extensions/follow-ons; (ii) is able to support communications using the Transmission Control Protocol/Internet Protocol (TCP/IP) suite or its subsequent extensions/follow-ons, and/or other IP-compatible protocols; and (iii) provides, uses or makes accessible, either publicly or privately, high level services layered on the communications and related infrastructure described herein.*

*The Internet has changed much in the two decades since it came into existence. It was conceived in the era of time-sharing, but has survived into the era of personal computers, client-server and peer-to-peer computing, and the network computer. It was designed before LANs existed, but has accommodated that new network technology, as well as the more recent ATM and frame switched services. It was envisioned as supporting a range of functions from file sharing and remote login to resource sharing and collaboration, and has spawned electronic mail and more recently the World Wide Web. But most important, it started as the creation of a small band of dedicated researchers, and has grown to be a commercial success with billions of dollars of annual investment.*

*One should not conclude that the Internet has now finished changing. The Internet, although a network in name and geography, is a creature of the computer, not the traditional network of the telephone or television industry. It will, indeed it must, continue to change and evolve at the speed of the computer industry if it is to remain relevant. It is now changing to provide new services such as real time transport, in order to support, for example, audio and video streams.*

*The availability of pervasive networking (i.e., the Internet) along with powerful affordable computing and communications in portable form (i.e., laptop computers, two-way pagers, PDAs, cellular phones), is making possible a new paradigm of nomadic computing and communications. This evolution will bring us new applications - Internet telephone and, slightly further out, Internet television. It is evolving to permit more sophisticated forms of pricing and cost recovery, a perhaps painful requirement in this commercial world. It is changing to accommodate yet*





another generation of underlying network technologies with different characteristics and requirements, e.g. broadband residential access and satellites.

New modes of access and new forms of service will spawn new applications, which in turn will drive further evolution of the net itself.

The most pressing question for the future of the Internet is not how the technology will change, but how the process of change and evolution itself will be managed. As this paper describes, the architecture of the Internet has always been driven by a core group of designers, but the form of that group has changed as the number of interested parties has grown. With the success of the Internet has come a proliferation of stakeholders - stakeholders now with an economic as well as an intellectual investment in the network.

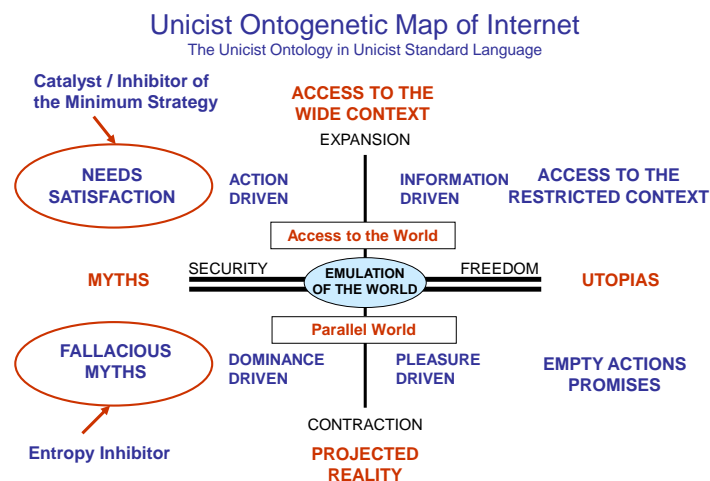
We now see, in the debates over control of the domain name space and the form of the next generation IP addresses, a struggle to find the next social structure that will guide the Internet in the future. The form of that structure will be harder to find, given the large number of concerned stakeholders. At the same time, the industry struggles to find the economic rationale for the large investment needed for the future growth, for example to upgrade residential access to a more suitable technology. If the Internet stumbles, it will not be because we lack for technology, vision, or motivation. It will be because we cannot set a direction and march collectively into the future.

<http://www.internetsociety.org>

## Synthetic Information of the Concepts included in this Future Research

### The Concept of Internet

Functionally, Internet can be defined as an access to an “emulation to the world” and to a “parallel world”. Internet mutated since its creation. It began as a tool and is being transformed into an emulation of the world.



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The emulation of the world implies that the Internet builds a homologous reality that allows people to adapt to the world, provides a vision of reality and a virtual way to experience it.

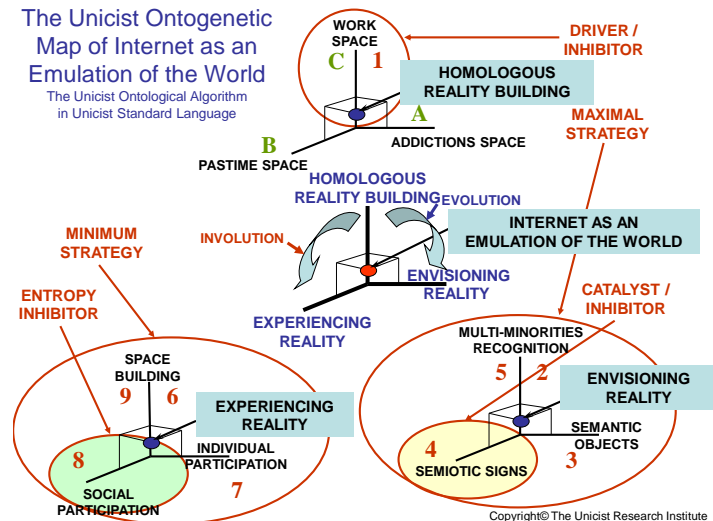
The emulation of the world is the core of what was introduced by the Internet providing an environment that allows people to have a virtual contact to the world.

Internet gives access to the wide context of the world limited by the use of languages and the multi-segmented content. Internet is a bottom-up building of the world which naturally includes the strengths and weaknesses of human beings.

It increases the level of transparency of human actions although, at a first sight, it is very difficult to perceive the truth and falsity of the information. As an emulation of the real world, Internet has all its characteristics in terms of credibility, reliability and predictability.

## The Concept of Internet as an Emulator of the World

The emulation of the real world is what has made and makes Internet a powerful environment to influence people. The emulation of the world does not happen in the WWW, it happens in the mind of the people who use the Internet.



As any emulation in mind, Internet provides the stimuli that allow individuals to envision the real world and have a virtual experience within it.

The purpose of these stimuli is to build and sustain the building of a homologous reality that allows making decisions and developing actions to transform such virtual stimuli into actions in the real world.

The original purpose of the WWW was to provide a tool to develop work. The mutation of the system integrated a pastime space and an addiction space in this virtual reality.



The WWW is addictive for all those who are trapped in an environment of uncertainty, hopelessness, impotence or absence of a role. Internet allows them to avoid the responsibility for solving their problems.

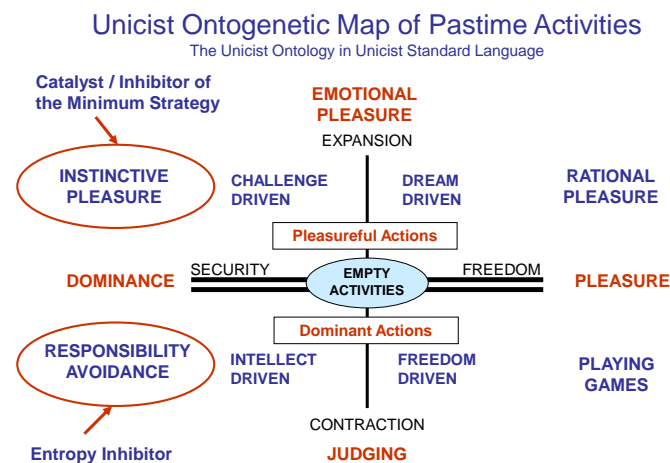
The use of Internet provides these individuals with places where they assume the role of “virtual fundamentalists” which makes them feel as part of a community. Basically, they access pleasure addictions and spiritual/rational addictions in order to have their role in the world.

The pastime space included in the internet provides the possibility of developing actions that bring subjective fulfillment to those who participate in them. Pastime activities always include the integration of pleasure and dominance that allow participants to increase their feeling of self-esteem.

The integration of a space for addictions, for pastime is only meaningful if there is a work space that justifies the use of internet. The integration of these spaces emulates reality creating a place where people consider that they can transfer these experiences to the real world.

## The Concept of Pastime Activities

A paradigmatic example of pastime activities is the concept of social networks that integrates all the segments of pastime activities. To understand this phenomenon it is necessary to manage the concept of pastime activities.



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Pastime activities are time consuming actions that have no value adding purpose but the achievement of pleasure in an environment of dominance. This means that they are empty activities with no specific goals which allow avoiding responsibilities.

Pleasure is the consequence of the satisfaction of a need; therefore it has to be considered that the instant of pleasure is followed by the feeling of needing to satisfy another need that arouse from the first action.





## Conclusions

The Internet became an extreme exponent of democratic development with its strengths and weaknesses. This implies that has become an emulation of the world providing equal opportunities for all the participants.

The paradox is that these equal opportunities can only be taken by those who are able to deal with the three basic conditions that are implicit in a democracy:

- Transparency
- Ethics
- Reliability

It is expected in the next ten years, within the trend of emulation, that the Internet will have developed the necessary common law that rules the non-institutionalized organizations, to sustain the rights of the owners of intellectual property of the contents that are used and to avoid the destruction or downgrading of the Internet by those that are threatened by its power (as a technological tool, as a service provider, as a marketplace and/or as a commercial catalyst).

The core of this new stage is to be able to build segmented objects that allow focusing on the micro-minorities that participate in this “artificial world”.

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## Annex

# About Complexity



## The Unicist Logical Approach to Complexity (a unicist ontological approach)

### **The unicist logical approach to complex problems**

The most primitive complex problem is given by two elements that have a biunivocal relation (loop). For example:

- The lack of credibility of an innovation inhibits its use and the absence of use impedes credibility.
- The absence of production causes inappropriate distribution and dysfunctional distribution causes a lack in productivity.

Until the appearance of the solution given by the unicist approach, there were four palliatives:

- Intuition
- More or less subjective arbitrary models
- Fallacies to avoid the perception of complexity
- Ceteris paribus

Complexity is self-evident in the field of social, institutional and individual evolution. It can be said that evolution is a complex problem itself.

Complexity is implicit in the core of the business world. Those who can apprehend it and influence the environment are successful. Those who cannot influence complexity, fail. The unicist approach is necessary for those who need to manage complex problems to transform them into simple solutions, easy to be implemented.

The Unicist approach transforms complex problems into simple solutions, and these simple solutions into “easy” actions.

We define a complex system as an open system, which determines the functionality of a unified field through the conjunction of objects and/or subsystems.

A complex system has the following characteristics:

- 1) It is an open system, meaning that the energy flows to and from the system itself.
- 2) The external limits of the unified field (its globality) behave as the ones of a fuzzy set.
- 3) Functionality is determined by the “conjunction” of elements that influence each other, generating “loops” of cause-effect relations.
- 4) The “disjunction” does not exist in a complex system.
- 5) The sum of the results of the subsystems is not equal to the result of the total complex system.
- 6) Relationships among subsystems are not linear; they respond to the double dialectics laws (purpose-antithesis / purpose-homeostasis).

- 7) Complex systems generate their own energy transformation using their own energy and the energy from the environment.
- 8) Complex systems are composed of subsystems, which are also composed of other subsystems, until reaching a descriptive level that is functional to their purposes.
- 9) Complex systems cannot be observed. The observer is part of the system.
- 10) Complex adaptive systems can only be measured in their results.

“The Unicist Theory of Evolution”, the “Unicist Logic” and the “Logic of Fallacies and the Anti-concepts”, made the conceptual modeling and operation of complex adaptive systems possible.

Some examples of complex adaptive systems can be found in the social, economical, political and cultural aspects of reality as well as in management, marketing, strategy (of countries, institutions and individuals), learning processes, continuous improvement and interpersonal relations.

Transforming complex systems into simple systems is making them operational in a univocal way, with cause-effect relations that permit to influence the environment. This means transforming strategy, which, by definition, is a complex system, into operational tactics.

Transforming them into an easy task implies materializing these tactics through well defined actions, using a language that could be understood by all participants and the proper tools that could be used by all of them.

Nevertheless, even though we operate with simple solutions, in their essence, these problems remain complex.

## The Unicist Logical Approach to Applied Complexity Sciences

The complexity of a specific aspect of reality is objective. This means that it is impossible to deal with it using cause-effect research without changing its functional nature. This indicates the existence of complexity.

The unicist approach to complexity sciences implies the discovery of the ontological structure of a reality and the objects that integrate it, defining the ontological algorithm and then the actions that can be done to influence such reality.

This approach starts with the finding of the nature of a specific element of reality and ends with the definition of the actions that can influence such reality.

The unicist ontology is a specific type of ontology that is structured emulating the ontogenetic intelligence of nature. It considers that the nature of living beings and their ac-





tions is defined by a purpose, an active principle and an energy conservation principle which are integrated following the rules of the supplementation law (between the purpose and the active principle) and the complementation law (between the purpose and the energy conservation principle).

The ontology of a functional aspect of reality is unique, being therefore timeless and cross-cultural. Its application integrates unicist ontology, with unicist logic and the unicist ontology of evolution.

Things in real life might have different functionalities. Each of these functionalities has its ontology. For example, the same type of boat can be used as a fishing boat or a survival boat. A fishing boat has “one” ontology and the survival boat has another.

## Human Complex Adaptive Systems

Human individual, institutional, businesses and social behavior are also paradigmatic complex adaptive systems. The application fields of the unicist approach to complexity science are the human complex adaptive systems.

### Examples of Human Complex Adaptive Systems:

#### Cultural Behavior and Archetypes

Cultures have to be considered as a unified field, which implies that they have a structure of taboos, utopias and myths to face the external reality in a defined way that has to be considered as a limit for any human complex adaptive system.

#### Economic Models

As economic models have to be redundant with the social values included in a cultural archetype, the use of non-consistent economic rules will produce paradoxical effects because it cannot be recognized as valid.

#### Educational Models

One of the objectives of an educational model is to socialize people’s behavior making it consistent with a cultural archetype. The introduction of alien educational models produces necessarily paradoxical results.

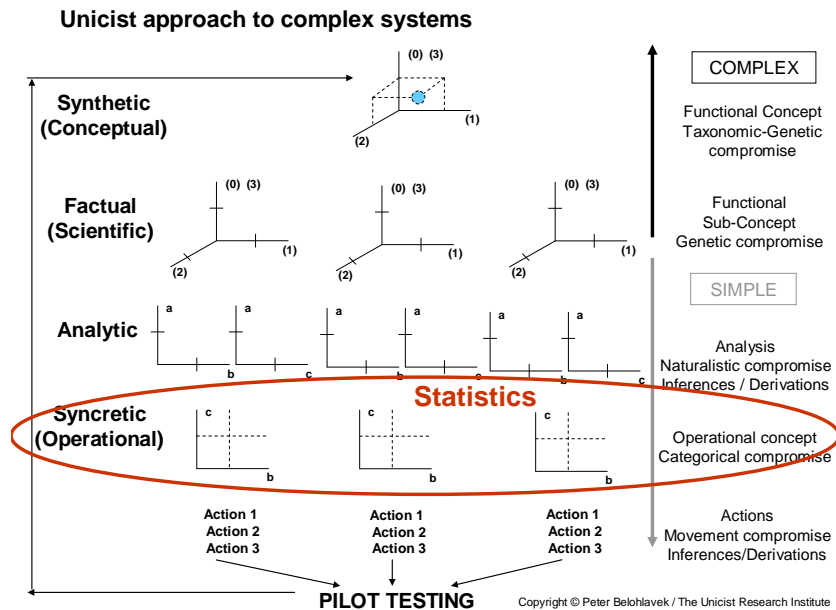
#### Businesses

Businesses are, by definition, complex systems that need to deal with the market, going beyond the present boundaries of the activity. Therefore they need to be defined considered as part of the unified field of the market they work with.

#### Conscious Personal Development

Personal evolution depends on the capacity of individuals to adapt to the environment they decided to live in. Thus it depends on the individual’s capacity to apprehend the unified field of that environment and influence it.

## Necessary Compromises to Manage Complex Adaptive Systems



The generic approach:

- 1) Human adaptive systems are in permanent motion. To establish a fixed point based on their oneness the ontological structure needs to be discovered. This definition includes limiting the boundaries of the system.
- 2) A taxonomic-genetic compromise needs to be done to transform the oneness into the elements that integrate its ontogenetic structure.
- 3) A genetic compromise is needed to deal with the sub-ontologies or objects included in the ontogenetic structure.
- 4) A naturalist compromise is necessary to divide the objects of the ontogenetic structure into the double dialectical elements and make the consequent inferences on their behavior.
- 5) A categorical compromise needs to be done to define the ontological categories at an operational level.
- 6) A motion compromise has to be done to define the actions that allow influencing the adaptive system.

This approach implies transforming a human complex adaptive system into a manageable system making the necessary compromises to transform its oneness into operational actions to generate results.

The knowledge of an ontological structure of a unified field defines the existence of the possibility to exert influence on it. Mathematically, a possibility exists or not (1 or 0). The success of influential actions belongs to the field of probabilities because of the multiple compromises that have been done.

## The Use of Statistics in Complex Problem Solving

Statistics are only valid if the “variables” they manage describe the ontological structure of a reality. This means that the knowledge of the ontology of a complex problem must pre-exist before statistics can be used.

From an ontological point of view statistics are necessary to enter at an operational concept level to define the sizes of the segments that might be relevant.

## Comparison of the Approaches to Complexity Sciences

Aspect	Peter Belohlavek's approach to Complexity Sciences (*)	Preexisting approaches: Bateson, Förster, Lorenz, Maturana, Morin, Prigogine and others
Field of Study	Complex adaptive systems	Complex adaptive systems
Approach	Pragmatic - Structural - Functionalist	Empirical
Definition of the field of study	A specific reality as a unified field that includes the restricted and wide contexts and the emergence of the system	Based on the emergence of the system
Possibility of external observation	Inexistent	Inexistent
Research method	Unicist Ontological Research	Systemic research
Boundaries of the system	Open	Open
Self-organization	Concepts – analogous to strange attractors	Strange Attractors / undefined
Structure	Double Dialectics Dynamics Purpose - active function - energy conservation function	Variables
Relationship between the elements	Following complementation and supplementation laws	Undefined
Evolution / Involution	Based on the evolution/involution laws of the ontogenetic intelligence of nature	Undefined
Processes	Object driven processes	Undefined
Certainty	Dealing with possibilities and probabilities	Dealing with probabilities
Demonstration	Real applications	Real applications
Emulation in mind	Double dialectical thinking (using ontointelligence)	Complex thought
Emergence	Results	Results
Chaos	Inexistent	Existent
Influence on the system	Based on actions and driving, inhibiting, entropy inhibiting, catalyzing and gravitational objects.	Based on actions
Validation	Destructive and non-destructive tests (real applications)	Systemic research validation methods