Complexity Sciences Research

The Fundamentals of
Unicist Research
& Innovation

THE UNICIST
RESEARCH INSTITUTE

Discovering New Frontiers

The Unicist Research Institute
Pioneers in Complexity Science Research since 1976

Thomas A. Edison laid the groundings for
"Product Development Laboratories."
But Nikola Tesla laid them for
"Innovative Research Laboratories."

The Fundamentals of
Unicist Research
& Innovation

This document is based on the researches led by Peter Belohlavek
at The Unicist Research Institute.

Contents

"Discovery consists of seeing what everybody
has seen and thinking what nobody had
thought"

Dr. Albert Szent-Györgyi
Nobel in Physiology & Medicine 1937

The Unicist Theory: A Paradigm Shift in Science

The Unicist Theory, developed by Peter Belohlavek, is a paradigm shift of the scientific approach to complex adaptive systems. It substituted empiricism by a pragmatic, structuralist and functionalist approach and replaced knowledge falsification processes with destructive testing processes. This theory provides an approach to complexity based on the use of the unicist logic that emulates the intelligence that underlies nature. It integrated complexity sciences with systemic sciences in a unified field. The Unicist Theory allowed understanding and influencing the evolution of living beings and artificial complex adaptive systems. Access a summary on the Unicist Theory: http://www.unicist.org/pdf/what-is-the-unicist-theory.pdf

A Conceptual Approach to Research and Innovation

To enter the world of complexity research we recommend getting acquainted with the nature of innovation and research.

The nature of "things" is defined by their ontology. To enter the nature of "things" it is necessary to read each paragraph as a unit, comprehend it, and then continue with the next.

For those who are not accustomed to reading abstract approaches, we recommend entering directly into the debate.

The Unicist Approach to Research and Innovation

To understand the roots of growth it is necessary to understand innovation, which is the energy conservation component of the essential concept of growth. Only innovative societies have a stabile growth. Growth in non-innovative environments is conjuncture depending and therefore unstable.

While innovation is the consequence of research, the purpose of research is to find new ways to influence reality. That is why research must be considered within the context of the approach to innovation.

The Unicist Ontology of Research

The essential concept of research

Innovation is the essential purpose of research. Research is developed to be able to innovate within a given reality. This influence may consist in building, curing, developing, repairing, or whatever human needs require.

ESSENTIAL CONCEPT OF RESEARCH

f (vital)
Innovation

Research Truth

f (verbal)
Build Foundations

f (adverbial)
Explain Facts

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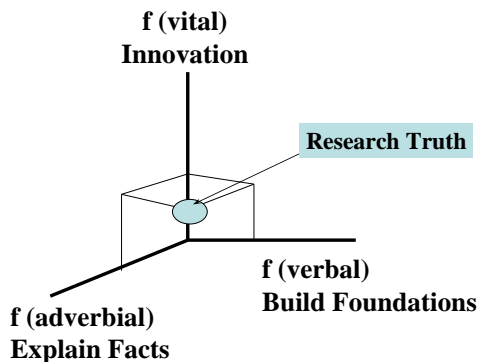
The essential concept of research is to find innovations to improve the value added. In order to do so, research builds foundations and explains the facts of that reality.

When researching truth, in a non-religious sense, there is a great difficulty to develop "real" research, being limited by the capability to understand facts.

That means there is no possibility for a person who has the talent of researching beyond the accepted limits of knowledge to develop researches based on non-accepted knowledge.

The personal histories of Galileo, Newton, and Tesla are examples of this assertion.

To understand the process of research one has to know the limits of one's knowledge to be able to accept evidences without being able to comprehend their groundings.

Description of the Functional Concept of Research

The functional purpose of research is to build the groundings that sustain the knowledge of a given reality. To do so the drivers are functional experiments based on universal secure knowledge.

The limits of acceptance of research are given by the capacity to explain facts based on artificial experiments that are sustained by specific secure knowledge.

But if the limits of acceptance prevail research becomes fallacious.

STRUCTURE OF THE CONCEPT RESEARCH
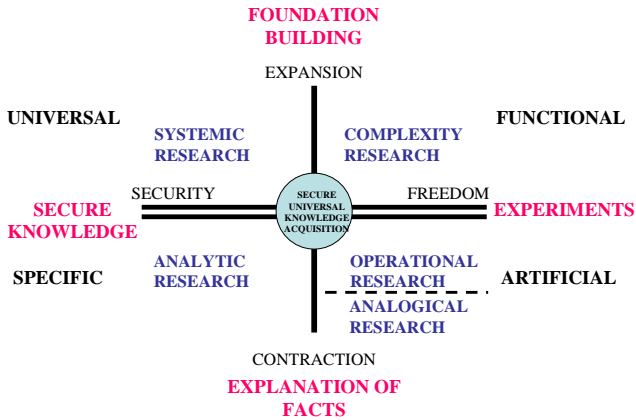
There are four basic segments of research and a pseudo-research approach.

Analogical Research – Pseudo research approach

This research is based on the comparison of a fact with analogical examples, opinions, or components. Its basic research tool is statistics, and its validation is given by the consistency between the analogy and the homology of the data being considered as valid in the research.

Operational Research

This research is based on finding the cause-effect relationship between the facts being researched and their immediate causes.

Descriptions, statistics, mathematical inferences, and syncretic language are the tools of this research.

This research is functional in fields where corrective actions are functional and possible to achieve goals. When corrective actions are not possible or dysfunctional this research approach is valueless.

Analytic Research

This research is based on the logical and mathematical relations between the facts researched and their causes in a restricted field.

Analysis is based on dividing a reality into its components until finding a secure knowledge.

After secure knowledge is found, the reconstruction of the wholeness of facts enters the world of probabilities. Logic, mathematics, and analytic language are the tools of this research.

Systemic Research

This research is based on finding the variables of a given reality and making all the functional experiences to secure the knowledge of facts.

Descriptions, analysis, cause-effect relations, mathematics, and factual language are the research tools of this approach.

This research is functional in the field of materialistic researches where probabilities are functional to approach reality. Where probabilities are not good enough, this approach is dysfunctional.

Complexity Research

This research is based on finding the ontological structure of a given reality to access its "know why."

Descriptions, analysis, cause-effect relations, reflections, mathematics, and synthetic language are the inputs to find the ontological structure of a given reality.

This research is functional in the field of knowledge where the comprehension of its wholeness is necessary. This research is functional to integrate the preceding research approaches to secure conclusions on complex realities.

Conclusion

All these approaches must be used to build secure knowledge about unknown facts. That is the meaning of the Unicist secure knowledge acquisition.

The Unicist Ontology of Innovation

Introduction

Innovation is the basis for economic growth. Essentially, countries, cultures, institutions, and individuals grow only in the fields where they are open to innovations.

There might be innovation builders or innovation users. While in both cases the growth effect is similar in the short run. In the long run, stable expansion is based on the capacity to innovate.

The essential concept of innovation describes it as a way towards growth based on the capacity to overcome scarcity sustained by the social capital reinforced by the innovation.

It must be said that ideologies are changed by the introduction of new technologies.

That is why many cultures are so reluctant to innovation. The introduction of the Internet is an example of influence on the development of democracy.

Description

The purpose of innovation is to overcome scarcity. Only people or cultures that have the will, find the way to overcome scarcity. This is the cultural context that fosters innovation.

The driver of innovation is human creation. The word creation is used in the sense of recreation. Humans create based on the existing energy.

The homeostatic function of innovation is freedom. This sounds paradoxical, because we define freedom as the path towards security to innovate. Innovation is sustained by internal and external freedom.

Cultures only develop innovations in the fields where such freedom exists. Censorship or self-censorship inhibits research and innovations.

Social capital, defined as the strength of the bonds between the members of a society, sustains innovations.

That is why there are cultures where innovations are centered on arts or technologies, without entering the field of scientific innovation.

The ontological structure of innovation is:

STRUCTURE OF THE CONCEPT INNOVATION
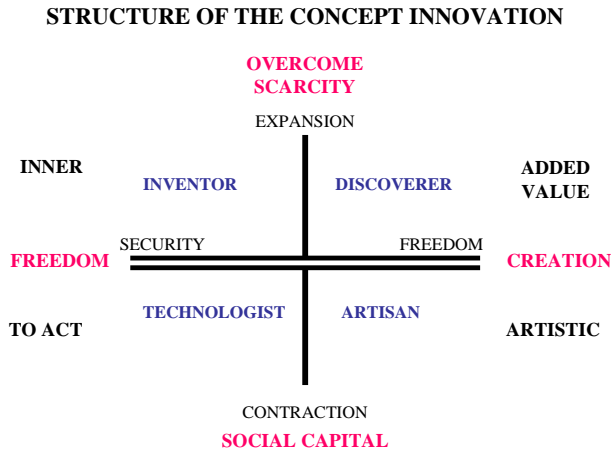
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The segments of innovators are described as:

Artisans

An artisan is an innovator based on his personal talent in developing artistic innovations within the limits of acceptance of a culture.

Artisans need social recognition to exist as innovators. When they are not accepted they disappear as innovators. Their deeds are "proof" of their existence.

Technologists

They are innovators who develop original solutions based on existing technologies.

They are focused specialists finding solutions to add more value to the environment they live in.

Most registered patents worldwide were developed by technologists. They consider their deeds exist because of their patents.

Inventors

Inventors integrate homologous fields to develop original solutions to add value to an environment. Inventors are such when they add value. If not, they are hobbyists.

A high level of inner freedom is required to invent useful things. Their inventions exist because they break existing paradigms adding more value.

Discoverers

Discoverers are those who go beyond the limits of existing knowledge and are able to find a new solution and transform it into a useful invention.

Discoverers are those who research the roots of things, and after they found them they search for the roots of the roots.

The deed of discoverers is:
   a) Knowledge – which is not patentable
   b) Inventions – which are patentable

The anti-concept of innovation

Only by understanding the anti-concept of innovation is it possible to understand the irregular success of innovation.
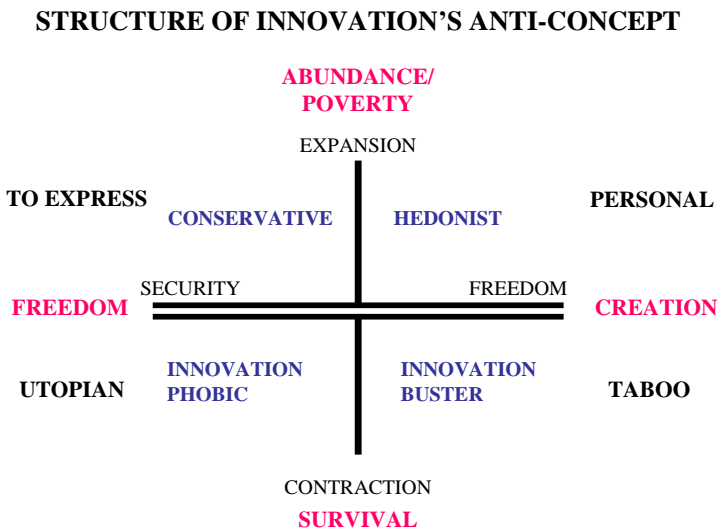
The anti-concept of innovation is driven by the feeling both of abundance or poverty.

Abundance makes innovation unnecessary and a menace to the status quo. Poverty implies a lack of energy to influence the environment and therefore innovation is perceived as a utopia.

On the other hand, when the dominant ethic of an environment is the ethic or survival, which is sustained by the need to "own" things, innovation implies an uncontrollable situation. The introduction of innovation changes the existing perception of ownership.

That is why survivors only use traditional solutions to survive. Innovation is a menace for them.

The structure of innovation's anti-concept is:

STRUCTURE OF INNOVATION'S ANTI-CONCEPT

ABUNDANCE/
POVERTY

EXPANSION

TO EXPRESS   CONSERVATIVE   HEDONIST   PERSONAL

SECURITY   FREEDOM

FREEDOM   CREATION

INNOVATION   INNOVATION
UTOPIAN   PHOBIC   BUSTER   TABOO

CONTRACTION
SURVIVAL

The anti-conceptual segments are:

Hedonists

They are those who are looking for the simplest way to do things. They do not have the inner energy to implant innovations.

Conservatives

Conservatives use the freedom to express ideas as a substitution of innovation. They innovate in their intentions, considering that the context is not given to implant innovations. Their reasoning to do so sounds reasonable, but is fallacious.

Innovation-phobics

They are those who are conservatives but have a utopian perception of themselves. Innovations imply a menace to their self-image.

Innovation-busters

They are hedonists who enjoy destroying taboos. They use innovations to destroy other existent solutions. They let "the innovations" down as soon as the existent solutions are destroyed.

Operational conclusions

New Technologies necessarily include aspects of discoveries, inventions and innovations.

"There are three kinds of species within the body of an innovator".

The inner discoverer is always going beyond. His goal is to find the truth. The inventor is the one who wants to materialize the knowledge the discoverer found.

The innovator wants to make something useful with the knowledge found.

1) If the discoverer prevails, we are in front of a knowledge addict.
2) If the inventor prevails, we are in front of a huge stock of inventions.
3) If the innovator prevails, we are in front of a pioneering businessman.

Conceptual Foundations of Complex Systems Research

Complex Systems Research Design

The purpose of this synopsis is to provide a list of actions (an action guideline) to design the research that would permit to diagnose complex problems.

The final goal of all diagnosis is to influence upon the reality under study. To do so the researcher needs to explain it, but the explanation is only a comprehension framework to exert influence on the environment under study. The research that merely tries to explain a situation becomes an end in itself and therefore tends to be fallacious.

The "unified field" to study

All reality that operates as a complex system needs to be approached as a unified field. The unified field is not susceptible to division into variables. Division is only possible when dealing with a non-complex system. A complex system can only be studied as a unit.

A very strict methodology, forecast and validation/falsification are required to avoid falling into fallacies that will lead into erroneous diagnoses.

The researcher needs to know the unified field to be studied directly or through homology. If it is not understood then neither its amplitude nor its depth can be acknowledged. Both elements i.e. amplitude and depth, tend to be known generically as amplitude.

The understanding of a culture when making a country diagnosis calls for a depth that allows reaching the concept of the culture and an amplitude that permits to encompass economic, social, political, technological, religious, cultural and linguistic aspects.

To understand a global scenario implies, on the other hand, enlarging the unified field to understand the relative functionality of several cultures.

The unified field is a Unicist anthropology research topic.

The risk of falling into fallacies

Fallacies are mechanisms used by the human being to see the facts of reality and build ideas on it in a way that these would satisfy his/her own beliefs or needs.

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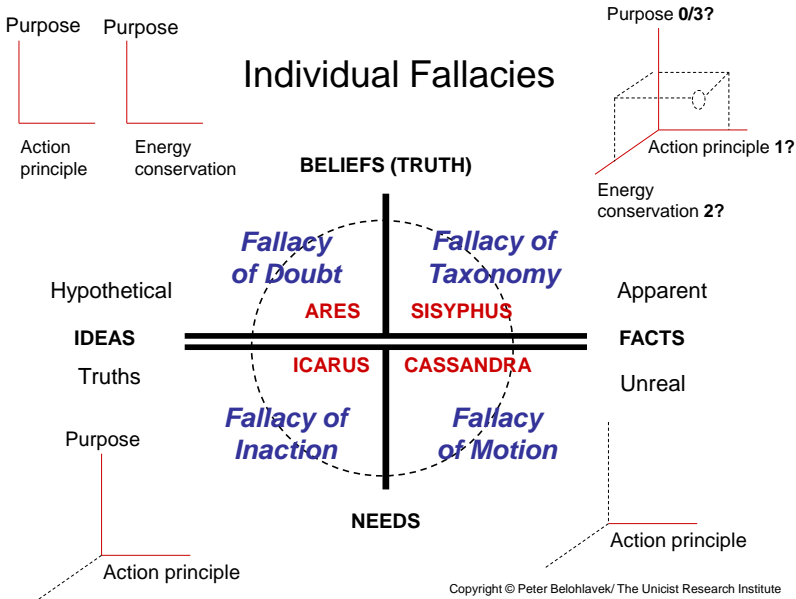
This graph shows the different types of fallacies that individuals fall into in the research process. Everybody can fall into any type of fallacy although the prevailing ones are those corresponding to the strategic stereotypical style that each individual has.

Fallacies are avoided in the processes of experimentation and pilot application to each reality in order to prove a diagnosis valid.

In addition to the fallacies that individual fall prey to, there are fallacious myths in the culture that operate as "secure knowledge" (axioms) of the said ones. These fallacious myths exert a significant influence to the extent of destroying research.

Research cannot be carried out in a culture that has created fallacious myths because the conclusions drawn of the diagnosis or the resulting foundations break up these myths and the researcher and his/her research are rejected or "denied" in such environment.

Research Design

In order to design research it is necessary to define the following:

1) The object of research
2) The secure knowledge or axioms one count with
3) The experimentation fields, be them analogous or homologous.
4) The research protocol
5) The conclusions' field of application
6) The research team
7) The inference rules and logical derivation

The Objective of Research

Complex systems, by mere definition, are those whose variables are not susceptible to being individualized and therefore escape the possibility of being influenced.

Research on complex systems seeks to transform a complex system into an operable one. To transform it into an operable one implies

finding a simple solution. Simple means that both the variables and their operation are known.

Complex systems are very hard to limit. That is why their limitation is functional and somehow arbitrary.

Let us consider the following cases as examples:

A) Attempt at carrying out research on men's behavior regarding their relationship to addictions.
B) Attempt at carrying out research on men's and women's behavior regarding their relationship to addictions.
C) Attempt at carrying out research on adults' behavior regarding drug consumption.

All these definitions are different and bear direct consequences on the research design. It is precisely these definitions the ones that determine the possibility to have secure knowledge to start the research.

Secure/certain Knowledge

Knowledge can be secure to a larger or lesser extent (more or less "reliable"). They must be reliable on the basis of their level of foundation. When they cover all the levels of foundation we say that we are in light of secure/certain knowledge.

Research needs to count on secure knowledge on which to build the quest for the foundation of the field under study. Foundations are explanations that make the conclusions of a research reasonable, understandable and verifiable.

All research concludes when it manages to incorporate a new piece of secure knowledge to the library of cognitive objects.

Secure knowledge has the format of a cognitive object.

A cognitive object is a structured piece of knowledge to define universal actions with essential foundation (which make it certain or secure).

Knowledge begins as of an opinion, based on causal foundations, and is applicable to special actions. Universal knowledge can only be built on the basis of the research that enables the discovery of concepts.

The beliefs, fantasies, truths applied to reality and the "dehumanization" of actions are different formats that the anti-concept of a cognitive object assumes. Taking these into account implies the destruction of the research process.

The definition of secure knowledge structured as cognitive objects allows establishing more efficient research design since the homologies are implicit in their own definition.

Experimentation fields, be them analogous or homologous

The research of complex systems demands the development of experiences that permit verifying the hypothesis by means of the repetition of their operation.

When doing research on very ample fields, for instance, the behavior of a country's government, experimentation becomes very hard.

In these cases it is possible to resort to homologies which, when well defined and described, permit the construction of highly reliable knowledge even though it is not a secure one. Knowledge is secure only when it has been experimented in its own field that is subject to investigation.

If we proceed with the example of research posed, regarding the government, we will define some special characteristics in order to be able to determine the possibility of building a homology.

Let us suppose that we are dealing with the government of a developing country where the State function is not separated from the government function. In this case we can suppose that the government will behave like an archetypal family from such country.

The family can be considered the basic organization of a society. If we consider the concept of family, describing it and experimenting on archetypical families we will have a very close knowledge regarding the expected behavior from the government.

The research methodology of "analogous and homologous" is usually used in the research on complex systems since it permits construction of validation and falsification cases that are very helpful to avoid fallacies.

If the family were researched and the conclusions drawn in the research contradicted the facts observed in society the following alternatives could take place:

a) That the conclusions are wrongly determined or inferred
b) That the family or families chosen are not archetypical of such culture
c) That the facts observed are apparent and not real
d) That the statement that governments that do not separate from state operate like large family structures is false.

The selection of the research fields is related to the possibility to do the research and to the real availability of such fields.

Research protocol

The research protocol is the guideline of its procedures. It simply describes all the elements required by the research methodology. To include the quality assurance in the guideline is what still remains complex.

To do so a quality assurance system is designed, on the basis of inferences and logical derivations based on the Unicist Logic, which detects the cognitive incompatibilities.

When there is a cognitive incompatibility the research goes into an overall review process to determine whether there is an error or whether a redefinition is necessary.

The conclusions' field of application

When a research process is started there has to be a clear definition as to the added value of its conclusions. The fact of defining the field of application of its hypothetical results a priori determines research amplitude and depth.

The more ample it is the more analogous fields of application it has. The deeper it is the more homologous fields of application it has.

The research team

The research team must be composed by individuals who are adapted to the environment. This adaptation refers to the unified field under study.

One of the differences between research on complex systems and simple systems is that simple systems have defined and accepted var-

iables. Therefore, research on simple systems does not imply facing ambiguity.

Complex systems are ambiguous by definition and are therefore perceived as chaotic by all individual that is not adapted to them. The one who is adapted flows with them and does not have any perception of chaos.

What the research does is to make the adaptation process conscious, which until then contained intuitive elements that could not be explained.

The research team needs that the leader knows the environment under study or a homologous environment thoroughly. The other team members may be experts from different disciplines according to the function of the object under study.

Inference rules and logical derivation

The research of complex fields was possible thanks to the discovery of the structure of concepts that regulate their evolution and to the existence of the rules of inference and logical derivation that regulate concepts' evolution.

Let us take the example of a rule applied to external gravitational forces that exert influence on countries:

"When a gravitational force is dominating, it defines the structure of the purpose of the one dominated. Domination is perceived by the lack of freedom of action of the verbal function of the one dominated."

In any situation in which there are asymmetric relationships between countries it is necessary to validate forecasts on the basis of rules that correspond to them, as, for example, the one mentioned earlier.

Functional conceptual structure of the complex systems research

Complex systems are studied seeking the foundation through experimentation based on preexisting secure knowledge.
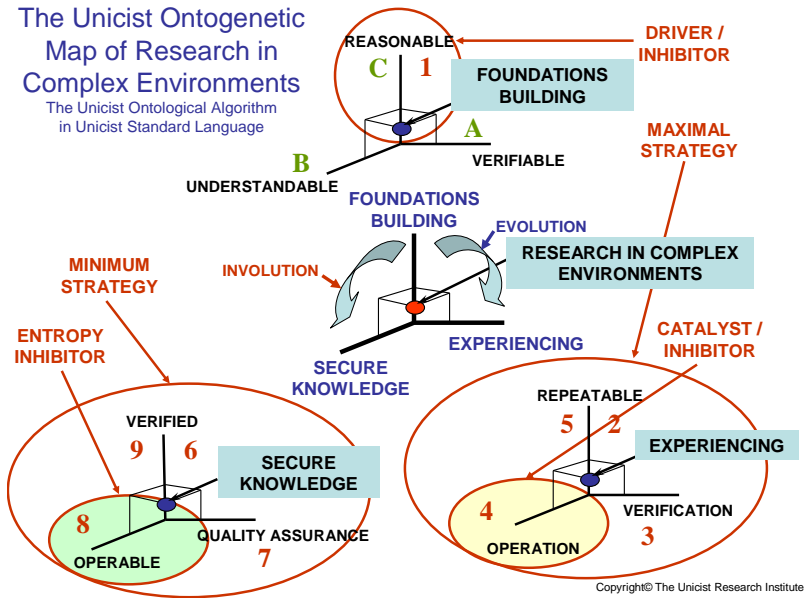
This implies that the purpose of research work is to build foundations that will eventually be used in the diagnosis in order to exert influence on a given reality.

Research necessarily implies experimentation, which must allow repetition. That is to say, regardless of the number of times that the experience is carried out the result should always be the same.

Results from experimentation must be verifiable, that is, they have to able to be measured objectively, subjectively or through forecast.

In addition, the experimentation of the complex system under study must "work", that is, this should be a real activity that produces a result for which such system has been designed. To work means an actual activity that cannot be simulated.

All research is based on preexisting secure knowledge. This knowledge must have quality assurance, be operable and verified.

Research on complex systems cannot be built on the basis of hypothetic knowledge. When there are only hypothesis then real foundations cannot be reached, instead, hypothetical foundations are built.

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 actions 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

Unicist approach to complex systems

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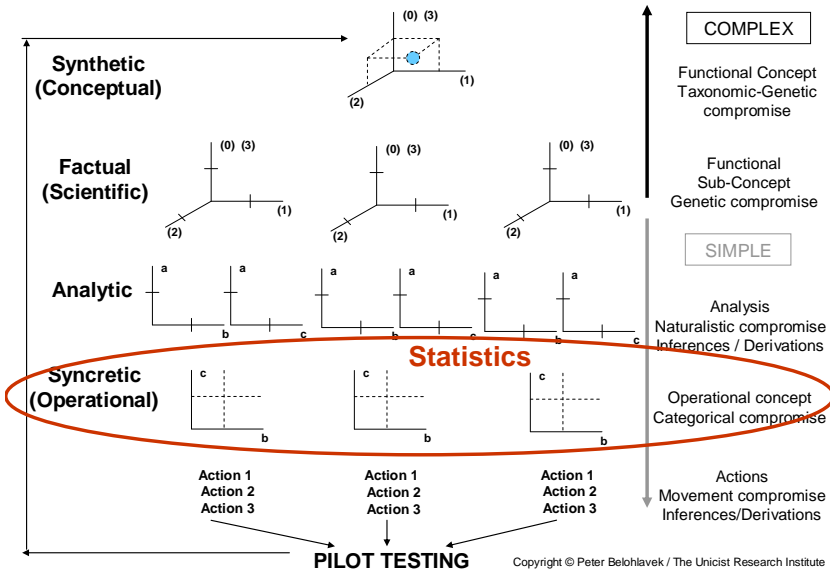
The generic approach:

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 on-tological 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

Access the application of the
Unicist Logical Approach to Complexity:

Books by Peter Belohlavek that refer to Complexity Sciences and their application:

1. Australia's archetype
2. Brazil's archetype
3. Butterfly Companies & their cure
4. Complexity Science: Unicist Research & Design of Human Complex Adaptive Systems
5. Design of complex systems research
6. Development of Consciousness through Action
7. Dualistic Logic vs. Unicist Logic
8. France's archetype
9. Fundamentalism
10. Germany's archetype
11. Globalization: the new tower of Babel?
12. Growth Crisis 2008-2010
13. Influencing Nature
14. Innovation
15. Institutionalization
16. Introduction to the nature of perception and credibility
17. Introduction to the unicist ontology of evolution
18. Introduction to Unicist Business Therapeutics
19. Introduction to Unicist Diagnostics
20. Introduction to Unicist Econometrics
21. Introduction to Unicist Market Segmentation
22. Introduction to Unicist Object Driven Entrepreneuring
23. Introduction to unicist thinking
24. Knowledge, the competitive advantage
25. Mind Traps that hinder personal evolution
26. Natural Organization of Outsourcing and Insourcing
27. Ontointelligence
28. Peopleware: The Integrator of Hardware and Software
29. Real Diagnostics vs. Paradoxical Diagnostics
30. RobotThinking
31. Social Critical Mass in Business
32. Sweden's archetype
33. The Book of Diplomacy
34. The Ethic of Foundations
35. The Nature of Big Change Management
36. The Nature of Democracy
37. The Nature of Developed & Developing Countries
38. The Nature of Diplomatic Power

39. The Nature of Dissuasion Power
40. The Nature of Doers
41. The Nature of Economic Power
42. The Nature of Ideologies
43. The Nature of Social Power
44. The Nature of Unicist Business Strategy
45. The Nature of Unicist Object Driven Business Growth
46. The Nature of Unicist Object Driven Change Management
47. The Nature of Unicist Object Driven Institutional Immune Systems
48. The Nature of Unicist Object Driven Leadership
49. The Nature of Unicist Object Driven Management
50. The Nature of Unicist Object Driven Marketing
51. The Nature of Unicist Object Driven Organization
52. The Nature of Unicist Reverse Engineering for Object Design
53. The Ontogenesis of Evolution: The Unicist Ontology of Evolution
54. The Ontogenesis of Knowledge Acquisition: The Unicist Ontology of Human Learning
55. The Origin of Human Fallacies
56. The Path of the Architect
57. The Power of Nations
58. The Unicist Approach to Businesses
59. The Unicist Ontology of Ethical Intelligence
60. The Unicist Ontology of Evolution
61. The Unicist Ontology of Family Businesses
62. The Unicist Ontology of Human Capital Building
63. The Unicist Ontology of Network Building
64. Unicist Anthropology
65. Unicist Business Architecture
66. Unicist Business Diagnostics: The Compendium of Ontologies for Business Diagnostics
67. Unicist Business Objects Building: An Ontology based and Object driven Technology
68. Unicist Business Strategy
69. Unicist Business Strategy: Ontology based and Object driven Business Strategy
70. Unicist Business Therapeutics: Ontological based and Object driven Therapeutics
71. Unicist Confederation: Cooperation in Diversity
72. Unicist Country Archetypes
73. Unicist Country Future Research
74. Unicist Country Scenario Building: Ontology based Country Scenario Building
75. Unicist Future Research
76. Unicist Logic and its mathematics
77. Unicist Marketing Mix
78. Unicist Marketing: Ontology based and Object driven Marketing
79. Unicist Mechanics & Quantum Mechanics
80. Unicist Mechanics: Business Application
81. Unicist Object Driven Diagnostics
82. Unicist Object Driven Learning
83. Unicist Object Driven Management
84. Unicist Object Driven Marketing
85. Unicist Object Driven Negotiation
86. Unicist Object driven Strategy
87. Unicist Ontogenetic Algorithms to solve business problems
88. Unicist Ontogenetic Intelligence of Nature
89. Unicist Ontology of Evolution For All
90. Unicist Ontology of History: Unicist Methodology for Historical Research
91. Unicist Ontology of Language
92. Unicist Ontology to deal with Adaptive Systems
93. Unicist Organization: Object Driven Design
94. Unicist Organization: Ontology based and Object driven Organization
95. Unicist Organizational Cybernetics
96. Unicist Personalized Education
97. Unicist R&D of Adaptive Systems in Business
98. Unicist Reflection to focus on solutions
99. Unicist Reflection: The path towards strategy
100. Unicist Standard for Adaptive System's Pilot Testing
101. Unicist Standard for Business Benchmarking
102. Unicist Standard for Business Growth
103. Unicist Standard for Business Objects Building
104. Unicist Standard for Critical Mass Building
105. Unicist Standard for Human Adaptive Behavior
106. Unicist Standard for Ontological Business Diagnostics
107. Unicist Standard for Ontological Business Modeling

The Unicist Research Institute

Peter Belohlavek is the creator of the Unicist Theory and the founder of The Unicist Research Institute, a private global research organization specialized in complexity sciences, that has an academic arm and a business arm.

He was born on April 13, 1944 in Zilina, Slovakia. His basic education is in Economic Sciences. To apprehend "reality" as a complex unified field he completed his education with research driven guided studies in Psychology, Epistemology, Anthropology, Economy, Education, Sociology, Life Sciences and Management.

The Unicist Theory made adaptive systems manageable and gave an epistemological structure to complexity sciences. This theory established a new starting point in science which expanded the possibilities of human influence in adaptive environments. This is a new stage like the stage that was opened by the Theory of Relativity.

This theory allowed managing the adaptive aspects from Life Sciences to Social Sciences. Its application provided the four scientific pillars to develop the unicist technologies: Conceptual Economics, Conceptual Anthropology, Conceptual Psychology and Conceptual Management.

As it is known, the management of complexity has been an unsolved challenge for sciences. Science dealt with complexity using multiple palliatives but without achieving consensus of what complex systems are.

This challenge has been faced in 1976 at The Unicist Research Institute, which became a pioneering organization in the development of concrete solu-

tions to manage the complex adaptive systems by developing a logical approach that uses the Unicist Theory.

He discovered the intelligence that underlies nature, which gave birth to the Unicist Theory, and the ontointelligence that defines the roots of human intelligence. These discoveries and developments expanded the possibilities to upgrade education, to influence social and institutional evolution and to deal with markets.

The unicist logical approach expanded the boundaries of existing sciences. The Unicist Theory was used to develop applications in Life Sciences, Future Research, Business, Education, Healthcare and Social and Human behavior. Now complex adaptive systems became manageable and complexity science received its epistemological structure.

Among other roles, he leads the Future Research Laboratory of The Unicist Research Institute. It is a space to give access to information on country archetypes, future scenarios and trends to the worldwide community.
(More information: http://www.unicist.org/peter-belohlavek.php)

The Unicist Research Institute was the pioneer in complexity science research and became a private global decentralized leading research organization in the field of human adaptive systems.
http://www.unicist.org/turi.pdf