The 4ᵗʰ Industrial Revolution
Established the Era of Functionality

Unicist
Binary Action Building
The Functionalist Approach to Business

Strategy & BI

Information Technology

Organization & Management

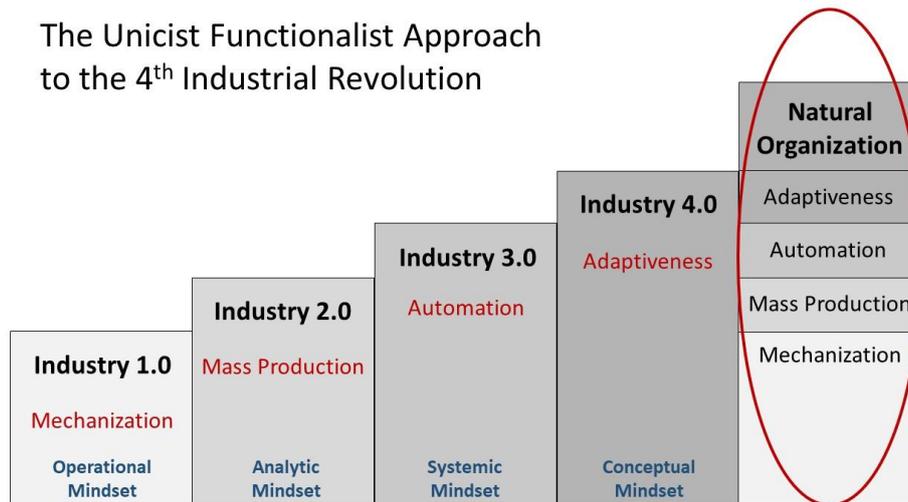**Marketing & Sales**

The 4th Industrial Revolution
Established the Era of Functionality

**The Unicist Functionalist Approach
to the 4th Industrial Revolution**

				Natural Organization
				Adaptiveness
			Industry 4.0	Automation
		Industry 3.0	Adaptiveness	Mass Production
	Industry 2.0	Automation		Mechanization
Industry 1.0	Mass Production			
Mechanization				
Operational Mindset	**Analytic Mindset**	**Systemic Mindset**	**Conceptual Mindset**	

The Mindset of the 4IR

Industrial Revolutions foster and establish dominant mindsets to fulfill their purposes. The 4th industrial revolution is based on improving the adaptiveness of processes by being fully consumer oriented and increasing the productivity, which implies improving the quality to become fully reliable.

The different industrial revolutions established different mindsets:

1. Operational thinking is the dominant mindset in the 1st Industrial Revolution.

2. Analytical thinking is the dominant mindset in the 2nd Industrial Revolution.

3. Systemic thinking is the dominant mindset in the 3rd Industrial Revolution.

4. Conceptual thinking is the dominant mindset in the 4IR to manage the functionality of businesses.

The Use of Binary Actions in Everyday Life

They are based on the functionality of processes and are composed by two synchronized actions where the first one opens possibilities and the second one ensures results. The management of adaptive environments requires developing two actions that aim at the same purpose: one action to influence the environment and a second action to achieve results.

The Unicist Theory of Functionality affirms and demonstrates that there is nothing in the universe, which is part of a system, that does not work with a purpose, an active function, and an energy conservation function. (*)

This triadic structure works through synchronized unicist binary actions (UBA) that produce the functionality of any entity or process, whatever its kind. This synchronization requires beginning with the action of the active function and following with the action of the energy conservation function.

Binary Actions are a Natural Human Approach

The use of manipulation, threats, and chantage are negative ways of using binary actions to obtain benefits. Here you can find a series of binary actions to generate value that are evident, which are benchmarks you might use to adopt this way of thinking and working:

1) Learning + Teaching = Knowledge acquisition
2) Productivity + Quality = Value generation
3) Marketing + Selling = Generating revenue
4) Punishment + Rewards = People management
5) Root Causes + Triggering Causes = Solutions
6) Efficacy + Efficiency = Effectiveness
7) Empathy + Sympathy = Influence building
8) Participation + Power = Leadership
9) Processes + Objects = Organization
10) Desirability + Harmony = Aesthetics

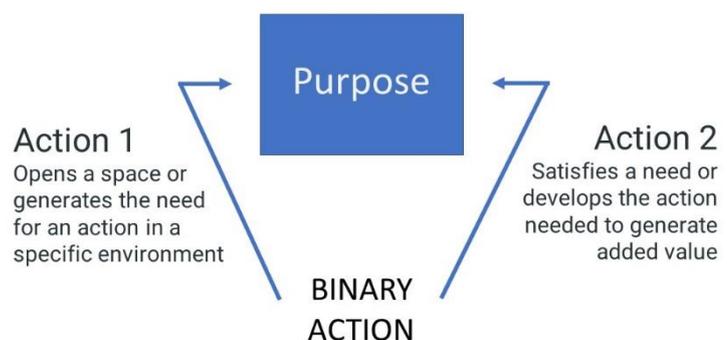## Value Generation is driven by Binary Actions

Binary actions are two synchronized actions that aim at the same purpose. This implies that the real-world functions are based on binary actions. Therefore, their use is not optional, it is necessary to ensure the generation of results.

The use of univocal actions only works if the environment provides the second action that sustains it. This applies to all fields of human actions. The functionalist approach is the pathway to this new stage in the world.

Binary Actions in business are two synchronized actions that aim at the same propose to achieve results

Purpose

Action 1
Opens a space or generates the need for an action in a specific environment

Action 2
Satisfies a need or develops the action needed to generate added value

BINARY ACTION

The use of a functionalist approach in everyday life increases the value generated by people and, therefore, their adaptive behavior.

(*) This paradigm shift in science was developed by Peter Belohlavek at The Unicist Research Institute.

The Triadic Functionality & Binary Actions
of the Real World

Influencing adaptive environments requires the development of synchronized binary actions to influence each adaptive function of the environment.

As it was mentioned, they are based on the functionality of processes and are composed by two actions where the first one opens possibilities and the second one ensures results.

It requires defining the ontogenetic maps of the functions that are involved and their maximal and minimum strategies, as well as developing the consequent binary actions to ensure the generation of results.

The use of unicist logic allows emulating the structure of adaptive systems to develop binary actions to manage their dynamics and evolution.

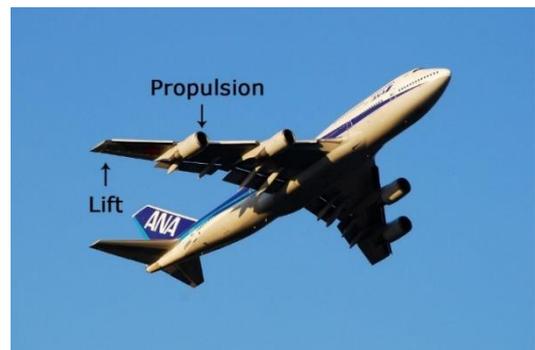## Examples of the Triadic Structure & Binary Actions of Things:

Some examples of the functionality of things allow grasping intuitively the functionality of their triadic structure and binary actions. It only requires having the specific operational knowledge.

The Triadic Functional Structure & Binary Actions of Airplanes

The purpose of flying an airplane can be considered to move from one airport to another.

The active function is given by their propulsion and the energy conservation function is given by the lift provided by the wings.

The **binary actions** to make an airplane fly begin by producing the propulsion that generates the necessary speed of the airflow on the wings of the airplane to then generate the lift.

The Triadic Functional Structure & Binary Actions of a Safety Match

A safety match is a short, thin stick made of wood or cardboard and covered with a special chemical at one end that burns in a controlled way when rubbed firmly against a rough surface.

The purpose of the triadic structure is the generation of a flame that is functional to its use. That is why there are different sizes of matches according to their use.

The active function is defined by the existence of a flammable substance on the head of the stick and the existence of an igniter. The energy conservation function is given by a stick that works as the fuel to maintain the flame burning.

The first **binary action** consists of rubbing a section of the stick containing a mixture of an oxidizing substance and a flammable substance against a rough surface impregnated with red phosphor. The second **binary action** is given by the burning of the stick that keeps the flame burning in order to be used.

The Triadic Functional Structure & Binary Actions of Bicycles

The purpose of riding a bicycle is to travel from one place to another.

The active function of the riding of bicycles is given by the actions on the pedals while the body of the rider is the energy conservation function that sustains the balance to ensure their functionality.

The **binary actions** of riding a bicycle begin by producing the propulsion to then be able to balance on it.
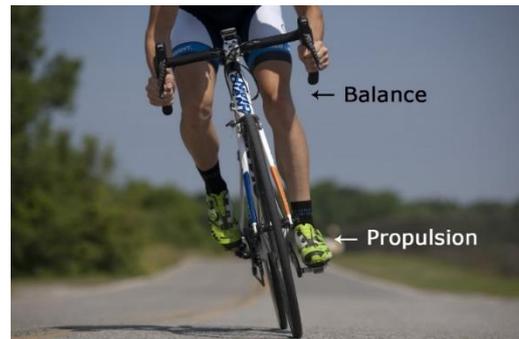
The Triadic Functional Structure & Binary Actions of an Electric Motor

The purpose of an electric motor is to convert electrical energy into the mechanical energy. DC motors and AC motors are based on the same essential principles that define their triadic structure.

Their active function is based on transforming electrical energy into magnetic energy.

The energy conservation function transforms the magnetic energy into mechanical energy.

The **binary actions** of the process are, on the one hand, the transformation of electrical energy into magnetic energy and, on the other hand, the transformation of the magnetic force into mechanical energy.

These processes happen within the rotor and the stator of an electric motor.

The Triadic Functional Structure & Binary Actions of a Written Sentence

Unicist semantics deals with the meaning of words and sentences by understanding and managing their functionality. It defines that a sentence is a system, that has a purpose, an active function, and an energy conservation function.

In semantics, the purpose is given by the substantive function of the sentence, which includes the noun.

The active function is defined by the verbal function, which includes verbs, and the energy conservation function is defined by the adverbial function, which includes adverbs and adjectives.

The first **binary action** integrates the verbal function with the substantive function, proposing an action. The second **binary action** closes the circle using the boundaries introduced by the adverbial function.
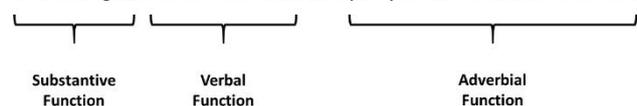
Unicist Functional Design & Binary Actions
In the 4th Industrial Revolution

The Unicist Functional Design allows developing solutions in adaptive environments. It uses the knowledge of the unicist ontology of business functions that allows managing their root causes. It is based on a unicist ontological approach that allows managing the functionality and operation of adaptive systems.

The Use of Unicist AI

The Unicist Artificial Intelligence is integrated by data-based AI and fundamentals-based AI.

The data-based AI is supported by the fundamentals-based AI to avoid having subjective biases. When the quantity of data does not suffice, data-based AI is replaced by the use of fundamentals-based AI.

The fundamentals-based AI is based on the use of the ontogenetic maps of the concepts and fundamentals that drive the functionality of the process involved and the use of pilot tests to learn from the environment.

## Unicist Functional Design to Build Binary Actions

The unicist functional design is based on the use of the ontogenetic maps that define the functionality of adaptive entities whatever their kind. The input to any functional design is the conceptual structure of the functionality of the entity that is being designed and the output is the definition of the operational design that includes the definition of the necessary binary actions.

The unicist functional design is sustained by the knowledge of the triadic structure of the concepts of business functions using binary actions, business objects and catalysts to ensure results. Unicist functional design is the unicist ontological approach to design solutions in adaptive environments.

Functional design introduced an upgrade in the design of adaptive business processes. While empirical design is based on the knowledge of the know-how of businesses, functional design is based on the integration of the know-why with the know-how.

Application Fields of Functional Design

Strategies & Business Intelligence
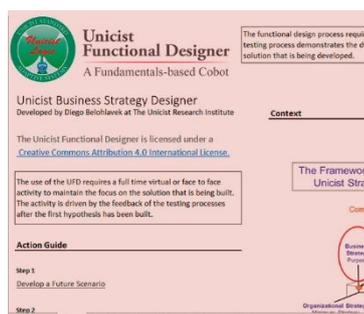
The unicist strategy designer is focused on the generation of value, although it always includes the development of competitive strategies. It is based on the management of the concepts and fundamentals of businesses.

The core aspects of the development of unicist strategies are the use of binary actions to ensure results, the use of objects to optimize processes and the use of catalysts to open new possibilities and accelerate processes.

Marketing & Sales

The designer uses a segmented approach to the market because it requires finding the segments where the first choice is feasible. In marketing it is rare to find products or services that have a universal first choice position.

The purpose of the first-choice strategy is to achieve the perception that a superior subjective value is being proposed. This superiority needs to be proven through the differentiation of the value propositions and be confirmed through the satisfaction of the needs of the client.

Organization & Management

The unicist organizational design is based on emulating nature in organizations.

An extremely effective organization can be developed integrating both structural aspects that sustain evolution and incidental aspects that allow dealing with conjunctures.

The design of business objects structures the timing and synchronicity of business processes. It also provides the necessary speed and acceleration to achieve the necessary critical mass.

Information Technology

The unicist functional design cobots provide the knowledge of the structure of business functions and the methods to transform the knowledge into processes and binary actions.

They provide the structure of the class diagram of IT systems and are the direct input to develop applications.

The operation is based on functional design groups integrated by designers, builders and users that include the roles of an ombudsperson, a coordinator, and a fallacy shooter.

The Use of Binary Actions

Binary actions are two synchronized actions that expand businesses while they ensure their results. They were developed to manage the evolution of adaptive environments by managing actions to install maximal strategies to grow and minimum strategies to ensure results.

The functionality of any adaptive system and environment (living being or artificial construction) is driven by binary actions.

Some examples will help to grasp the idea:

1. The maximal strategy and the minimum strategy implicit in the natural intelligence of a tree drive its growth and survival.
2. Lift and propulsion make airplanes take-off and fly.
3. The cover and the back-cover define the functionality of the packaging of a book.
4. The music and the lyrics of a song define its aesthetics.

The cover and back cover define the packaging of a book

The music and the lyrics define a song

The Method to Build Binary Actions

The definition and use of specific binary actions require having in mind the concepts and the generic binary actions and their synchronicity.

This process is simplified using the "Guiding Idea Application" that is developed based on the synthetic ontogenetic map of the project that is being managed.

As an example, you will find the guiding idea of bestsellers and the access to its description at: https://www.unicist.net/marketing/the-unicist-functional-design-of-bestsellers/

Guiding Idea for Best Seller Building
Conceptual Functionality and the basic Unicist Binary Actions

Example

Concept Description

Fundamental	Description
Brand of the Author	It is defined by the functionality of the attributes of the brand of the author.
Critics & Word of Mouth	It is defined by the functionality of the resources you have to influence the market.
Best Seller	It is defined by the critical mass of best sellers based on the segment they aim at.
Introjection of the good	It is defined by the power of the energy focused on increasing the self-esteem of readers.
Pastime Language	It is defined by the readability and understandability of the book by the segment of readers.
Projection of the bad	It is defined by the catharsis the reading provokes in the segment of readers.

Binary Actions Description

Name	Description
UBA 1a	Organize a network and a campaign to enhance the attributes of the content of the book and its author.
UBA 1b	Organize pre-launch activities to reinforce the attributes of the author in the target segment.
UBA 4a UBA2a-UBA2	Ensure that the content of the book uses pastime language that appeals to the emotions of readers.
UBA 4b UBA3a-UBA3b	Ensure that the characters of the book allow introjecting what people need and projecting what people dislike.

This guiding idea includes the description of the concept and the description of the basic binary actions that need to be developed. This guiding idea needs to be transformed into synchronic action processes to achieve the objectives that have been established.

Every person who manages the functionality of processes needs to develop the conceptual guiding idea of what is being done with the people who participate to confirm that the actions are aligned and synchronic. It ensures the generation of value and minimizes entropy. The participation in the design of the guiding idea ensures that all the officers involved in a project have the same concept of what needs to be done.

The use of binary actions to manage adaptive environments significantly increases results.

Intelligent Applications based on Binary Actions:

The functionalist approach to business is empowered by the use of intelligent applications that are built to manage specific business processes. These intelligent applications provide the binary actions that are needed to achieve results.

These applications are developed using the unicist designers that manage the fundamentals, technical and operational aspects to build the binary actions that are needed to ensure the generation of results.

The unicist intelligent applications for business functions are based on the knowledge of the concepts and fundamentals of the business processes involved, which allow defining the binary actions that need to be managed to ensure results.

The development of intelligent applications is materialized using different platforms according to the needs of the solution. These applications include unicist logical rules to manage the binary actions and, when needed, use Unicist AI to manage the adaptability of processes. Cobots (collaborative robots) are a special type of intelligent applications.

The Building of Unicist Cobots

Unicist Cobots are collaborative robots that manages the functionality of business processes. They are based on human-robot interaction. Cobots have been used for decades in the industrial field and the unicist functionalist approach enabled introducing them in the rest of the business processes. They are extremely valuable to introduce adaptability and customer orientation in business processes.

The business application of Cobots became possible due to the development of the fundamentals-based AI and of the binary actions that ensure the generation of results.

Business Cobots enhance efficacy. According to their use, they include different levels of adaptability. Based on their functionality, there are different types of Cobots:

1. Research Cobots
2. Diagnosing Cobots
3. Design Cobots
4. Solution Building Cobots
5. Business Objects Building Cobots
6. Operational Cobots

All types of Cobots include the delivery of the necessary functional knowledge. There are four application fields of Cobots: Industrial, Marketing, Management and Operation.
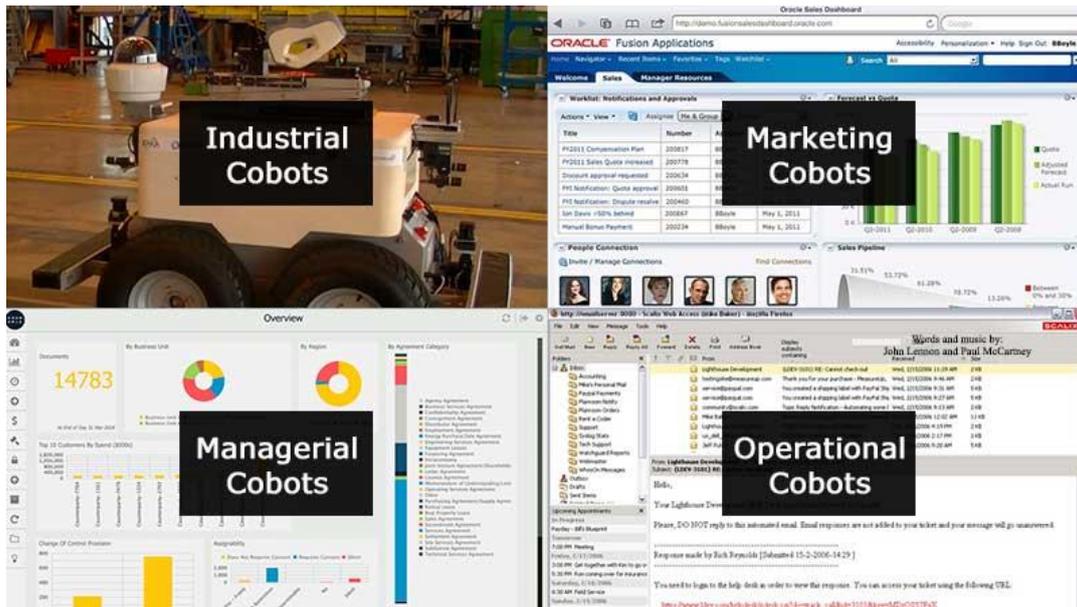
The use of concepts and fundamentals allowed managing the functionality of business processes and enabled the development of collaborative robots to provide the resources - including functional knowledge- that are needed to manage business processes. They interact with people to ensure the functionality of processes and the generation of results.

Roles in Functional Design Groups:

Unicist Groups Enhance Collective Intelligence

All the unicist groups that deal with the development of solutions in adaptive environments have the same structure to enhance their collective intelligence. They have a coordinator, a fallacy-shooter, and an ombudsperson. The complementation and the supplementation of these roles enhance the collective intelligence of groups. They expand the efficacy of the participants by introducing the core aspects of the functionality of a group.

The Members of the Groups

The members of the design group that participate in the development of solutions as well as the members of the testing group that test the solutions assume a differentiated responsibility within the group, taking one of the following roles:

1) **The "Coordinator"** is responsible for guiding the group towards the objectives that have been defined. The coordinator has the full responsibility for the diagnoses and for achieving the results that have been defined as being possible to be achieved. The participants also have full responsibility for the results after they agreed that such results are possible.

2) **The "Fallacy-Shooter"** is responsible for assuring the quality of the foundations and justifications in the decision-making processes. The "Fallacy-Shooter" is the person responsible for guiding the action-reflection-action process in order to improve the accuracy of the diagnoses and of the work processes.

3) **The "Ombudsperson"** is responsible for monitoring the value generation of the design processes. The "Ombudsperson" is responsible for monitoring that the proposals respond to the functional needs of the solutions that are required; s/he guarantees results. The ombudsperson represents the "user" and is responsible for generating value to the environment.

Developing solutions requires having diagnosed their implicit concepts. The triadic structure of unicist concepts defines the functionality of any kind of entity. All that is part of a system has a

concept, which makes it part of that system. The process of developing solutions requires developing binary actions to ensure results.

Main Markets

• Automobile • Food • Mass consumption • Financial • Insurance • Sports and social institutions • Information Technology (IT) • High-Tech • Knowledge Businesses • Communications • Perishable goods • Mass media • Direct sales • Industrial commodities • Agribusiness • Healthcare • Pharmaceutical • Oil and Gas • Chemical • Paints • Fashion • Education • Services • Commerce and distribution • Mining • Timber • Apparel • Passenger transportation –land, sea and air • Tourism • Cargo transportation • Professional services • e-market • Entertainment and show-business • Advertising • Gastronomic • Hospitality • Credit card • Real estate • Fishing • Publishing • Industrial Equipment • Construction and Engineering • Bike, motorbike, scooter and moped • Sporting goods

Country Archetypes Developed

• Algeria • Argentina • Australia • Austria • Belarus • Belgium • Bolivia • Brazil • Cambodia • Canada • Chile • China • Colombia • Costa Rica • Croatia • Cuba • Czech Republic • Denmark • Ecuador • Egypt • Finland • France • Georgia • Germany • Honduras • Hungary • India • Iran • Iraq • Ireland • Israel • Italy • Japan • Jordan • Libya • Malaysia • Mexico • Morocco • Netherlands • New Zealand • Nicaragua • Norway • Pakistan • Panama • Paraguay • Peru • Philippines • Poland • Portugal • Romania • Russia • Saudi Arabia • Serbia • Singapore • Slovakia • South Africa • Spain • Sweden • Switzerland • Syria • Thailand • Tunisia • Turkey • Ukraine • United Arab Emirates • United Kingdom • United States • Uruguay • Venezuela • Vietnam.

Contributions of the Functionalist Approach to Sciences

In Scientific Research - 1980: Development of a unicist ontological methodology for complex systems research, substituting the systemic approach to research adaptive systems. **2014:** The integration of the unified field of macro and micro behavior. **2015:** Development of the destructive and non-destructive tests to research adaptive environments.

In Life Sciences - 1988: Discovery of the functional structure that regulates evolution and the unicist ontological structure of living beings as a unified field. **2006:** Discovery of the unicist ontological algorithm of evolution and involution. **2008:** Discovery of the two types of integration, complementation and supplementation, of elements in complex adaptive systems. **2012:** Discovery of the unicist ontology of biological entities. **2013:** Confirmation of the unicist ontology of viruses. **2014:** Discovery of the ontological structure of chronic diseases. **2014:** Discovery of the structure of therapeutics. **2015:** Discovery of the ontological structure of health. **2016:** Development of the Scientific Foundations of Medicine.

In Complexity Sciences - 1998: Development of the unicist ontology emulating the ontogenetic intelligence of nature. **2003:** Discovery of the anti-concepts that work as antimatter. **2006:** Development of objects to manage human adaptive systems emulating the structure of nature. **2011:** Discovery of the unicist ontology of complex adaptive systems. **2014:** Discovery of the behavior of objects in complex adaptive systems. **2015:** Discovery of the essential opposition but operational complementation between the active function and the energy conservation function of concepts. **2017:** Discovery of the unicist ontology that integrates the wide and restricted contexts. **2017:** Discovery of the origin of root causes in adaptive environments.

In Information Sciences - 2002: Development of unicist ontogenetic based ontologies replacing the empirically structured ontologies. **2014:** Development of unicist adaptive robotics. **2015:** Development of prototypers. **2016:** Discovery of the nature of conceptual design. **2018:** Discovery of the ontogenetic map to emulate the unified field of adaptive environments. 2018: Development of the unicist cognitive systems. **2019:** Development of XD-Expert Systems

In Future Research and Strategy - 1984: Modeling of the ontological structures that allow inferring the evolution developing the ontogenetic maps of human adaptive systems. **2014:** Confirmation of the functionality of ethical intelligence in future research. **2015:** Discovery of the unicist ontology of personal strategies. **2016:** Discovery of the nature of entrepreneurial strategies. **2017:** Discovery of the double dialectical tactics. **2019:** Discovery of business catalysts.

In Logic - 1986: Development and formalization of the integrative and the unicist logic. 2013: Functionality of Dualistic Logic in complex environments. **2013:** Discovery of the structure of aprioristic fallacies.

In Anthropology - 1986: Discovery of the "invariables" of human behavior. **1997:** Discovery of the double dialectical behavior. **2008:** Discovery of the anthropological lifestyles. **2010:** Discovery of the institutional and social viruses. **2012:** Discovery of the integration of ontogeny and phylogeny. **2012:** Discovery of the stagnant survivors' role in societies. **2012:** Discovery of the unicist ontological structure of aptitudes, attitudes and intentions. **2013:** Development of the unicist ontology of cultural adaptiveness & over-adaptiveness. **2014:** Synthesis of Conceptual Anthropology. **2014:** Discovery of the Cultural, Institutional, Individual and Social Archetypes. **2015:** Discovery of the functionality of rationalism and subjectivism as social and individual addictions. **2016:** Discovery of the nature of innovation processes. **2017:** Discovery of the context of social dysfunctional utopias. **2019:** Discovery of Social Catalysts.

In Economic Science – 1989: Discovery of the unicist ontological structure of Economics. **1998:** Discovery of the unicist ontological algorithm of the price elasticity of demand. **2004:** Discovery of the ontogenetic structure of economic models and their functionality. **2011:** Discovery of the ontology of currency and inflation. **2012:** Discovery of the ontology of the industrialization level. **2012:** Discovery of the unicist ontology of the overcoming of scarcity. **2012:**

Pricing of Futures and Options. **2012:** Discovery of the unicist ontology of speculative manipulation. **2014:** Synthesis of Conceptual Economy. **2015:** Discovery of the unicist ontology of economic freedom.

In Political Science - 1990: Development of the ontological algorithm and the ontogenesis and phylogeny of ideologies and their functionality. **2013:** Development of the unicist ontology of Social, Economic and Political Democracy.

In Social Sciences - 1993: Discovery of the collective unconscious and the unicist archetypes of cultures. **2012:** Discovery of the role of stagnant survivor elites in the stagnation of segments or cultures. **2016:** Discovery of the nature of social networks. **2020:** Discovery of the unicist ontology of evolutionary constructivism. **2020:** Discovery of the nature of counter cycle building.

In Linguistics - 2004: Discovery of the unicist ontological algorithms of natural, ambiguous and figurative languages and the unicist ontology of words. **2014:** Development of semantic objects. **2015:** Discovery of the ontological structure of subliminal communication. **2020:** Discovery of the Unicist Ontology of the Evolution of Languages.

In Mathematics - 1996: Development of the conceptual basis of interdependent, dependent and independent variables. **2014:** Development of the mathematical foundations of reality indicators.

In Philosophy - 1994: Development of the unicist ontology integrating philosophy, science and action in a unified field. **1997:** Refutation of Hegel's and Marx's dialectics and the formulation of the laws of the double dialectics.

In History - 2000: Development of a historical analysis methodology based on the unicist double dialectics.

In Cognitive Science - 2001: Development of a methodology to construct knowledge with existing information through an integrative logic. **2002:** Development of the unicist reflection methodology to deal with the nature of reality. **2006:** Discovery of the object driven organization of mental processes and the development of cognitive objects. **2008:** Development of the ontological algorithms of fundamental analysis. **2013:** Development of the unicist ontology of erudition and wisdom (observers vs. participants). **2014:** Discovery of the structure of the emulation of reality. **2015:** Discovery of the unicist ontology of conceptualization. **2018:** Discovery of the triadic functionality of conscious intelligence. **2018:** Development of the Unicist Artificial Intelligence. **2020:** Discovery of the Unicist Ontology of Functional Knowledge

In Education - 1979: Discovery of the ontogenetic algorithms of learning which has given scientific sustainability, amongst others, to Piaget. **2014:** Discovery and development of learning objects. **2015:** Development of Reflection Driven Education. **2016:** Discovery of the nature of learning by teaching.

In Psychology - 1984: Discovery of human ontointelligence to deal with adaptive systems. **2003:** Discovery of the unicist ontological structure of fallacies, the functionality of anti-intelligence and anti-intuition. **2004:** Discovery of the double dialectical thinking process. **2005:** Discovery of the unicist ontology and evolution laws of human essential complexes. **2011:** Discovery of the ontology of conscious behavior. **2012:** Discovery of the ontology of complementation of thinking processes. **2012:** Discovery of the unicist ontology of psychopathy. **2014:** Discovery of the structure of subliminal decision-making. **2014:** Synthesis of Conceptual Psychology. **2015:** Functionality of concepts as behavioral objects. **2016:** Discovery of the nature of human metamorphosis. **2016:** Discovery of the functionality of thinking processes. **2017:** Discovery of the context of personal dysfunctional utopias. **2017:** Discovery of the nature of self-criticism.

In Semiology - 2012: Discovery of the unicist ontology of semiosis as a complex adaptive system. **2015:** Development of semiotic role objects. **2017:** Development of the semiotic research groups.

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Websites
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