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## **Cultural Adaptiveness as a Complex Adaptive System**

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## Cultural Adaptiveness as a Complex Adaptive System

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### Complexity Science Research

Complexity Sciences are defined as the scientific approach to deal with complex adaptive systems. The unicist theory expanded the frontiers of sciences making the scientific approach to complex adaptive systems possible without needing to use arbitrary palliatives to transform complex systems into systemic systems in order to be able to research them.

The Unicist Standard for Complexity Research was developed based on the characteristics of adaptive systems considered in their complexity.

Some of the characteristics of such systems are:

- Open boundaries
- Bi-univocity of its components
- The existence of conjunctions without disjunctions
- The inexistence of observers

The consequence was the substitution of an epistemologically invalid approach to complex problems, dividing them into variables, which are inexistent, by a unicist ontological approach driven by objects, in which objects are integrated as subsystems in adaptive systems, following the rules of the ontogenetic intelligence of nature.

The development of the unicist ontological research methodology allowed discovering the unicist ontogenetic maps and ontogenetic algorithms of human adaptive systems making them reasonable, understandable and predictable.

The unicist approach to complexity sciences integrates ontology, science and actions in a unified field. Therefore the research on human complex adaptive systems cannot be done through artificial experiments or simulations. It has to be done in an environment of real action. In the unicist approach doing and researching are integrated in a unified field.

The unicist ontological research model enabled the definition of the field of possibilities of an adaptive system and to enter then in the field of probabilities of the occurrence of events. The concepts of falsification and validation, applicable to systemic sciences, were replaced by the use of destructive and non destructive pilot tests.

The presentation of the knowledge of complex adaptive systems includes two different levels of information:

- a) The synthesis: that includes the discoveries of the unicist ontological structures and the ontogenetic maps written in unicist standard language.
- b) The research process: that describes the steps of the research process.

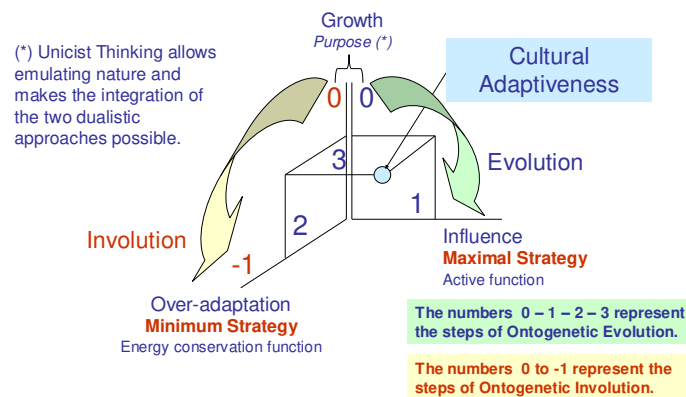


## Discovery of the Unicist Ontology of Institutional and Cultural Adaptiveness

The objective of this research was to find the structure of adaptiveness in order to use it to organize institutions, whatever their size, from countries to human groups, to generate stable growth.

Cultural adaptiveness is the central gravitational force that fosters expansion. It is homologous to institutional expansion processes. The core of the adaptive behavior is to make growth in an environment possible.

Unicist Ontogenetic Map of Institutional and Cultural Adaptiveness  
The Unicist Ontology in Unicist Standard Language



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The unicist ontological structure of adaptiveness includes counterintuitive elements that make it difficult to apprehend because of the pre-concepts people have. The final purpose of cultural adaptiveness is to achieve growth using influence on the environment to produce it.

Over-adaptation works as a driver for cultural degradation but also as an energy conservation function in adaptive environments, a fact that can be considered counterintuitive. That is why over-adaptation can only be apprehended if it is experienced.

### The Ontogenetic Map of Institutional and Cultural Adaptiveness

To deal with the nature of adaptiveness it is necessary to apprehend the essential structure that has been discovered and applied in multiple institutions.

The final objective of adaptive behavior is to grow. It is self-evident that if a system grows it is because it appropriates more energy than the energy the system consumes.

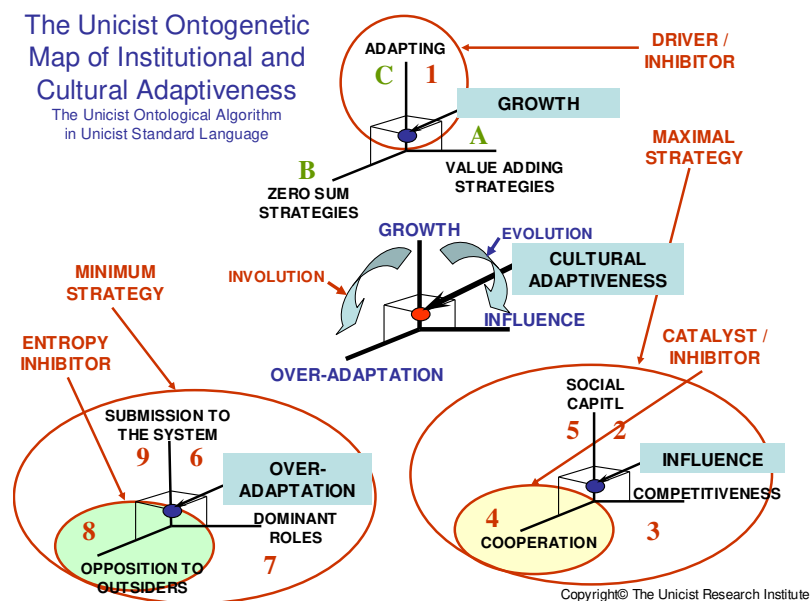


This concept of growth needs to be understood in order to be able to differentiate the cost of things from their value. Value judgments need to be left aside in order to apprehend the concept of growth.

This differentiation allows developing adaptive processes where the value that is delivered is higher than the cost consumed to produce it. This makes the difference between subjective value and objective value.

It is necessary to be adapted to an environment in order to manage the growth equation in an equilibrated way making an institution grow based on the added value and not only on the appropriated value.

Value adding differentiation requires the use of technology and innovation. That is why cultural adaptiveness drives naturally towards the development of technologies and the fostering of innovations.



The first step to manage the purpose of cultural adaptiveness is the definition of the value adding strategies. These types of strategies are maximal strategies to expand the boundaries of an institution or culture, by adding additional value to the environment and profiting from the counterpart.

It implies necessarily going beyond existing boundaries which is a basic characteristic of the actions that drive towards growth.



This requires necessarily knowing the scenario where the expansion is taking place, the possibilities the environment offers and their evolution. Adaptive growth requires having a future scenario of the context and not only being driven by reactive actions.

Value adding strategies require having the necessary critical mass to influence the environment. Without having the necessary critical mass to influence, an adaptive growth process cannot begin.

The next step is to define the minimum strategy that allows achieving the adaptive process by providing the necessary complements to make it possible.

Minimum strategies are, by definition, zero sum strategies because their goal is not to add value but to survive. As such, they need to make the necessary trade-offs and pay the necessary prices to ensure the functionality of their solutions.

Zero-sum strategies are functional when they follow the development of value adding strategies. When they are independent they generate the implosion of any institution or culture.

Their goal is to ensure the appropriation of value, which is legitimate after the maximal strategies have worked to add value to the environment and illegitimate if there was no value adding process.

Zero sum strategies are the core aspect that ensures that the energy that is appropriated exceeds the energy that is consumed in adaptive processes.

When this process ended, the final definition of adapting can be given. It implies knowing what can be achieved within a context where the institution or culture is able to influence the environment while it is influenced by it.

## The Maximal Strategy of Adaptiveness

The adaptive process begins when the maximal strategy has been defined. The goal of the maximal strategy is to influence the environment. To do so it is required that the necessary social capital be developed. The social capital defines the strengths of the bonds between the members of an institution or culture. The development of social capital allows the generation of synergy that makes the influence on the environment possible.

This social capital is triggered towards action by the competitiveness of the members of a culture. This competitiveness is fruitful when it is based on the produces of the members and not on their intentions.

When competitiveness is based on produces it generates an upgrade of the institution or culture while it opens new spaces for their members and sustains the technology of the culture in order to generate growth.



It has to be considered that the integration of technology, monetary circulation and competitiveness within a context of scarcity is what defines the fundamentals for growth.

Competitiveness can only sustain social capital when it takes place within the limits of social cooperation. Social cooperation implies defining the limits of the vital space the members of a culture are willing to share and also the boundaries they reserve for their private use.

Cooperation establishes the common law, the unwritten rules that define the shared myths and accepted habits of a culture. Cooperation produces paradoxical results when it prevails over competitiveness.

In this case, cooperation generates welfare habits in an institution or culture that drive to its implosion. In this context cooperation is necessary to ensure that competitiveness sustains the building of social capital in order to adapt to the environment and grow.

In this case, the culture loses synergy, cannot expand and is driven towards over-adaptive behaviors that lead to implosion or explosion. The absence of the necessary level of cooperation works as an inhibitor for adaptive behavior.

The final stage of the maximal strategy is to confirm the existence of the necessary social capital in order to influence the environment.

## The Minimum Strategy of Adaptiveness

The minimum strategy includes a particular over-adaptive behavior. It is a conscious adaptive behavior that requires accepting to behave within the rules of a system, assuming influential roles and opposing to the outsiders.

It begins by accepting the submission to a system. This requires defining the system in order to be able to make a conscious decision to submit to it. When the definition has been done, the individuals need to define active dominant roles where they can exert influence using their freewill within the limits of the system.

These dominant roles allow individuals to evolve personally and expand within an institution and culture. After the dominant roles have been functionally integrated the spirit de corps of the culture opposes to the outsiders.

Outsiders are all those who do not belong to the group, institution or culture and intend to profit from it. Every culture has outsiders, but the outsiders that are attacked in adapted environments are those who work against the system.

The opposition to outsiders is the entropy inhibitor for adaptive processes. It allows institutions and cultures to deperate from the members who do not add value to them.



The final stage is the confirmation of the system that has to prevail over personal interests, and the attack to the outsiders or any other threat that might exist. The submission to a system is sustained by the spirit de corps that represents it.

Institutional and national archetypes structure this spirit de corps and provide the necessary ethics to transform it into the foundational aspects of the system where people are integrated.

## Types of adaptiveness in cultures

Four segments of adaptive behaviors have been identified. These segments are:

1. Doers – Doing driven
2. Members – Belonging driven
3. Leaders – Sharing driven
4. Innovators – Expanding driven



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### 1) Doers

Adaptiveness is solution driven. Adaptive processes imply being able to integrate the environment with the individual in a value adding relationship.

That is why it generates a spontaneous solution approach that is the basic driver for doers. They accept to deal within the system of a culture assuming a dominant role in order to adapt through their actions.

The segment of doers is driven by their integration through their deeds. They are naturally value generation driven and profit from their counterpart. They naturally tend to marginalize those who tend to profit from the environment.



Doers seek for the expansion of the vital space through the prevalence of the culture as a system and the influence through actions.

## 2) Members

Their concept of belonging drives them naturally towards the exclusion of outsiders.

This is not a racist feeling they have but the feeling that all those who do not share the spirit de corps of a culture need to be excluded from the system.

This exclusion is not necessarily an active action but it always includes the establishment of the limits between those who belong and those who do not.

They are the conservative members of an establishment that foster the maintenance of the original values that are included in the institutional or cultural archetypes.

Their submission to the system is based on the existence of barriers that separate the people that belong to the establishment from those who do not.

Their behavior is fully institutionalized to foster the development of the culture in order to expand its vital space.

## 3) Leaders

This is the segment within an adaptive institution or culture that fosters its expansion based on developing the power of its social capital and the cooperation among its members.

The goal of these leaders is to expand the power of a culture to influence the external environment.

They develop their actions within a conservative context representing the values that are implicit in the institutional or cultural archetype.

They are participative, being able to share their vital space to foster the development of the social capital.

They represent the nationality of an institution or culture and are the leaders of their spirit de corps to expand the vital space.

## 4) Innovators

They are the members of an institution or culture that foster the evolution of the archetypes of such culture in order to increase its vital space in the environment.





They are driven by competitiveness in order to make the expansion of the vital space through the introduction of innovative actions possible.

They propose new technologies that naturally influence the evolution of the dominant ideology and the dominant ethics of a culture.

These innovators are the natural heroes in the cultures and succeed if they are able to structure the innovations within the system.

They are the generators of the innovations that empower the social capital. This segment is accepted based on the expansion of the vital space it produces. Their role in the system is the expansion of its boundaries which happens when they accept the limits of the cooperation in the institution or culture.

## Conclusions

Adaptiveness has naturally a high level of entropy. The level of entropy is high because it needs to work within a complex adaptive system where the needs of the institution or culture and its environment need to be integrated.

Institutions and cultures need to establish the system that defines their structure. It can be said that the basics of countries considered as adaptive systems are given by their constitutions and the basics of institutions are given by their visions.

Constitutions and visions are functional when they are consistent with their real archetypes. They produce the conditions for a structural over-adaptation when they are not consistent.

We will expose the example of four countries that use different solutions to foster the adaptation of their cultures: USA, Germany, Japan and Brazil.

USA is based on the development of a multi-community adaptation. This implies that people integrate in different communities that allow them to adopt proactive roles at a personal level and compete within them to evolve.

Germany is based on the development of a strict institutionalization where the members formally belong to institutions that assume the responsibility to allow them to be proactive.

Japan is based on the development of a strong collective intelligence that generates the necessary environment to establish individual roles that are submitted to the collective intelligence.

Brazil is based on the development of an organized consensus that generates the acceptable rules for the members of the culture.



When an institution decides to work as an adaptive culture, it needs to be organized as an adaptive system that provides the places that work as communities where the members have the opportunity of finding an adaptive role.

Adaptiveness implies forecasting the future to adapt to, develop the strategies to do so and build the architecture of the system to manage it.

### **Future Research**

Adaptiveness requires influencing while being influenced in an environment. This requires knowing the expected evolution of the environment in order to adapt to it. Therefore future research is “a must” for adaptive behavior.

### **Strategy**

Adaptiveness requires having long term strategies in order to ensure the permanence of a culture or institution. These long term strategies are based on the information of the future trends and materialized in long term action plans that need to be followed by the culture.

### **Architecture**

Adaptiveness has a high level of entropy. Therefore the architecture of the system of an institution or culture has to be designed based on the establishment of the necessary entropy inhibitors to ensure its adaptive behavior.

## **Complexity Science Research Methodology**

There is a general research methodology that has to be followed to define the validity of an ontological structure that is needed to deal with complex adaptive systems.

The basic steps are:

- 1) Develop the hypothetical structure of the ontology.
- 2) Analyze the ontology and divide it into sub-ontologies following the laws of complementation and supplementation (only when necessary and possible).
- 3) Define observable results that need to be considered to validate the ontology.
- 4) Define the application fields of the ontology to validate its functionality.
- 5) Develop the applications beginning with destructive and non-destructive pilot tests to forecast reality.
- 6) Develop at least five experiences in the application field differing completely one from the other.
- 7) Develop forecasts of at least three periods with full certainty.
- 8) Restart the research process every time a deviation occurs.