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Volume 4
Fundamental Generation Systems

Computer Science and Artificial Consciousness, the Informational Field of Generation of the Universe, the Sixth Sense of Living Beings

Alain Cardon and Abdelkhalak El Hami

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coordinated by
Abdelkhalak El Hami

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Preface

There are many different ways of generating representations. This includes representations generated by living beings while comprehending reality in order to act; representations generated by the Universe during its extensive unfolding, creating physical elements and living beings; and, the direct representation of elements through an animal's sixth sense. To this list we must now add the creation of artificial consciousness, which generates representations that resemble the mental representations of humans. These representations allow robotic systems to communicate directly with each other.

In our research, we have stated that the Universe, with all its material elements, in addition to the living organisms on Earth, was generated and then organized on a strictly informational substrate. This informational substrate – which is a set of virtual processes and relations – founds space, time and the elements of the Universe. The Universe is founded on a set of informational fields that constitute its foundation and deployment. It is not a set of elements that randomly structure themselves on available nothingness forming space, but a system that is conceived and generated, strictly autonomous and in self-organized development.

Today, computer science, along with artificial intelligence, is moving towards total communication between all humans and between all computerized systems, which is a transposition of the sixth sense in the field of sophisticated techniques. In addition, there is the generation of artificial consciousness systems that allow robotic systems to communicate directly with one another, generating shared or even common artificial mental representations, which goes beyond the sixth sense in animals.

In Chapter 1, we present systems and their designs. We explore the modeling of systems, traditional systems, complex systems, systems of systems, autonomous systems, multi-agent systems and finally organisms and systems.

Chapter 2 presents the reliability of autonomous systems. It highlights the reliability of a system, its general concepts, the failure and repair rates, the average estimators and some methodological tools for modeling the reliability of systems (serial, parallel, mixed) and finally the complex systems.

Chapter 3 presents computer science, artificial intelligence, communication systems and artificial consciousness. Today, computer science is a core discipline in science and society due to the innumerable uses of software that constantly communicate. We will trace its history, show how significant artificial intelligence has become and witness the move towards a distributed, highly communicating and autonomous artificial consciousness. These continuous communications between humans through computerized systems come from a tendency to communicate, which human technology has strongly developed and whose source comes from the informational substratum of the Universe, which is essentially communicational.

Chapter 4 presents the informational substrate of the Universe and the organizational law. We present the Universe as an organizational system generating space and physical elements. The Universe was created by a very specific soliciting element, which produced informational elements that created space and structured elements in a continuous way with spatial and temporal stability. We have therefore shown that the Universe is an organized emergence with informational components, whose role is to aggregate into physical elements on an *informational substratum* that carries out a *self-control incentive*. This generation is achieved by following an organizational law that operates at the level of the informational substratum. The model we have presented allows us to consider the Universe as the continuous generation of a self-organizing system that creates its space, the matter of its physical elements, based on specific and absolutely continuous informational communications.

Chapter 5 presents the informational interpretation of the living. In particular, the origin of life with a ramification of the organizational law, the

informational action of reproduction of life with morphological patterns and the human species in the organizational evolution of life. We can consider that all living organisms on Earth are stabilized structures of informational fields that are part of a general multi-scale organization, localized in the geographical areas that make up the terrestrial ecosystem, in order to behave and develop there by generating multiple species. It is thus put forward that all living things on Earth are immersed in an informational domain that comes from the informational substratum of the Universe, which is based on a considerable set of informational fields that make it possible to structure the organisms by incentives to their organizations, with control over their generation. All living organisms are therefore the very finely organized material realizations of the reifications of these informational fields.

Chapter 6 is devoted to the representation of human consciousness with its senses. It presents the interpretation of neuronal aggregates, the systemic layer and the regulators, including the informational regulator. The neuronal system operates in terms of parallel production of multiple neuronal signals which, by their associations and aggregations, form a very complex whole that can be interpreted as a structure of dynamic forms that combine with one another. This is a structure made up of activities and informational exchanges that carry sensitive and cognitive indications at a certain level.

Chapter 7 is devoted to the informational understanding of living organisms: the sixth sense. This sixth sense is unlike the five usual senses, because it is a global and organizational comprehension of elements that are outside the understanding of the five usual senses. We will show how this sense is a comprehension of elements of the informational network that forms the organization of all elements on Earth, by developing what this informational comprehension of communicating informational envelopes is, which is completely different from a visual comprehension of a world of objects with measurable positions in space. In addition, we will explain the notion of magnetism used by healers.

February 2023

Introduction

We therefore assume that the informational substratum of the Universe is generated from a generative component that produces innumerable informational components, each one also producing others, according to a general organizational law that enables the generation and expansion of our whole Universe. Each created component either becomes an element with neutrality of activity, and is therefore an element of space, or is an element with permanence of activity and is a basic quantum element. The active elements can generate others according to the organizational law and the context. These transformations are therefore subject to an organizational law that allows the organized generation of the Universe with all its elements. The Universe has been created from a generating component with informational energy and, by continuous generation, has produced informational components that reproduce themselves according to the underlying organizational law, and constitute space and quantum particles. According to the general tendency defined by the organizational law that drives the substratum, these particles will aggregate to form molecules and then physical material elements, in a specific time-frame, which will be the speed of the unfolding of the Universe in generation. The physical Universe is thus an extensive unfolding, which is self-organized by an informational system.

All the generated informational components are elements whose role is to form aggregations, following the organizational law that drives the formation of the Universe. The structured physical elements created will each have an informational envelope, a specific informational field, which will indicate their specificities and current states, and which will connect them to the other elements by informational links that are fields, in order to

continue the aggregations and proceed towards the formation of massive elements. The notion of materiality is thus based on the informational substratum of the Universe that makes all the elements exist, producing structured aggregates that have structural stability.

The organizational law is the cause of the evolutionary living on Earth, which benefited from favorable conditions: stability and the existence of water. All living organisms have an informational envelope enabling their generation, organization and organically coherent functioning. This envelope is the reason for the formation of new species in an informational management of reproduction. This physical informational envelope is the synthesis of the informational envelopes of each organ, which allows coherence in the functioning network of any living organism. The general envelope of the organism describes the general state of the organism, whether it is in good or bad condition. Living beings, including all animals, use this envelope to directly and immediately understand the situation of certain other living beings that they know and are interested in: they make use of their sixth sense.

Human thought is complex. Placing ourselves within the framework of constructing an ideal multi-character representation that is generated and felt, in addition to the use of language, and under multiple simultaneous constraints, to think is to construct a series of mental representations on themes. Constructions and reconstructions produce the sensation of thinking by their existence and characters. We can define what this system is capable of producing as a set of forms that can be manipulated, while considering the depth and richness of the experience that allows us to define them, with tendencies expressing the ability to abstract, formulate, open up to the knowable external world and the five senses, which are always usable.

Today, it is generally agreed that animals are endowed with a sixth sense, which is an ability leading to the production of sensitive and conceptual representations, expressing the situations and movements of particular individuals or the approach and state of known physical places, but which are not apprehensible by the five usual senses. We will develop a theory presenting the function of this sixth sense, as well as its origin, something which has not yet been done, and we will call this sixth sense the “sense of informational comprehension”. This sense will be conceived as an ability to use the informational substratum of the Universe, with a specific cerebral domain which exists in all animals. There is therefore a very particular

cerebral domain in the brain, which makes it possible to communicate through the informational links of the substrate. This sixth sense is of considerable importance in the living world, as it causes a tendency in all these organisms towards living in groups and forming associations by systematically using the informational envelopes of the participants in the groups. Using this sense, animals are able to directly understand the general state of other organisms and their spatial location, by accessing their informational envelopes. In humans, it is their tendency to form organized groups. It is therefore a very important ability for a human being at the social level to voluntarily and socially develop their use of this sixth sense, as it enables each human to carry out direct informational communication with a great many other humans, by understanding their organizational states, their proximities or their distances, and thus using this informational immersion to move towards ethical sharing, peace and the organizational unification of all living beings.

Present-day computer science, along with artificial intelligence, is moving towards total communication between all humans and between all computerized systems, which is a transposition of the sixth sense in the field of sophisticated techniques. In addition, there is the generation of artificial consciousness systems that allow robotic systems to communicate directly with one another, generating shared or even common artificial mental representations, which go beyond the sixth sense in animals.

1

Systems and their Designs

1.1. System modeling

A system is normally designed to provide services. It consists of hardware, software and human resources to meet a specific, clearly defined need. The history of science is full of such systems. Their manufacturing methods have evolved over time as a result of the experiences acquired, the evolution of technologies and the modeling approaches. Various notions can intervene in the description of a system. They concern its components and their groupings, their interactions and the interactions with the environment of the system.

Generally, the notion of a system implies interdependent entities, whose functionalities are fully specified. The system is clearly defined according to an equational and functional approach, in a top-down or bottom-up iterative process. It is top-down when the approach is analytical and allows each part to be broken down into sub-parts, which are sub-systems in their own right. The reverse iterative process – bottom-up – is instead oriented towards the construction of sub-systems from the more basic ones. The implementation of the system and its possible evolution are predetermined in a narrow and precise field, the functionalities being able to relate to various and varied fields: electrical, electronic, data-processing, mechanical, etc.

With the evolution of systems and the progress made in information and communication technologies, we can observe a trend of building large systems with an increasing number of strongly interconnected elements and handling very large amounts of data.

There are different types of systems, but we will only consider two separate classes here: traditional systems and complex systems.

1.1.1. *Traditional systems*

The so-called individual or traditional systems are those whose inputs/outputs are completely specified, in the sense that everything has been designated for them at their origins. They form the vast majority of the systems we encounter. This is the case of a management application, scientific calculation or musical creation, for example. The elements constituting these systems are determined to carry out a specific process for which the system was formatted. This processing produces actions or results to be exploited, which is the purpose of the system. Even though a system is operational but still evolving, as long as it has a project manager, it is a traditional system. Everything is framed for such systems. An example would be an ATM. All the conditions of use must be clearly defined and supervised to allow it to function normally, in order to meet the demands of the customers and the bank. Operation in a degraded mode or in the case of unforeseen events must also be considered.

The development of computer networks contributes to the evolution of these traditional systems, by increasing the possibilities of exploiting their resources and by enriching their possibilities of interaction. This also contributes to the complexity of these systems, but without changing their basic nature: they remain traditional. Service-oriented architecture (SOA) is one example. The development of cloud computing from the perspective of the services offered is an illustration. The accumulation of systems for the accumulation of services offers systems that also remain traditional as long as the services obtained can be deduced from the sum of the services of the systems that make them up. The integration of systems to produce new desired services produces a new traditional system, by its functional description. Malfunction situations are normally also managed.

1.1.2. *Complex systems*

The literature describes many types of systems, with a particular interest in complex systems, mainly because of the non-predictability of their behavior. They generally concern fields where multidisciplinarity is expressed (economy, neuroscience, insect societies, etc.).