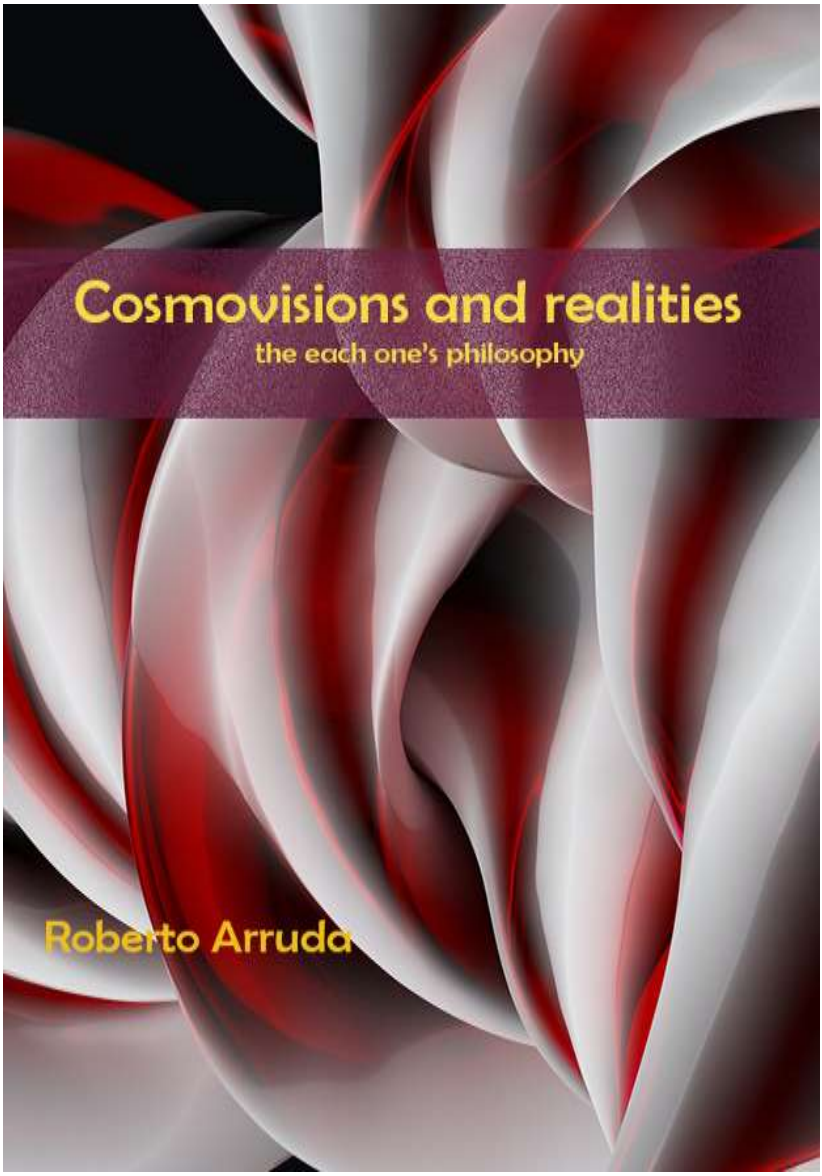

Cosmovisions and realities
the each one's philosophy
Roberto Arruda

Cosmovisions and Realities

the each one's philosophy

second edition

Roberto Thomas Arruda, D.Phil - 2023

ISBN 9798376963418

Other recent editions by the Author :

" Moral Archetypes– Ethics in Prehistory" (2019) PDF format https://philpapers.org/rec/ARRMAI - edited book, 146 pages.

"The Blind Shadows of Narcissus – a psychosocial study on collective imaginary."(2020) PDF format https://philpapers.org/rec/THOTBS-3, edited book, 243 pages.

"Early Buddhist Concepts - in today's language " (2021)- PDF format: https://philpapers.org/rec/THOEBC-2. Edited book, 226 pages ;

The author is a member of :

The American Philosophical Association (APA).
The British Society for Ethical Theory (BSET).
The Ancient Philosophy Society (APS).
The Metaphysical Society of America (MSA)
The Philosophical Society of England
The Social Psychology Network
The International Association of Language and Social Psychology
The Society for Study of the History of Analytical Philosophy

Index

The abstract

Cosmovision is a term that should mean a set of foundations from which emerges a systemic understanding of the Universe, its components as life, the world we live in, nature, the human phenomenon, and their relationships. It is, therefore, a field of analytical philosophy fed by the sciences, whose objective is this aggregated and epistemologically sustainable knowledge about everything that we are and contain, that surrounds us, and that relates to us in any way. It is something as old as human thought, and, in addition to using elements of scientific cosmology, it encompasses everything in philosophy and science that refers to the universe and life.

A cosmovision is not a set of ideas, hypotheses, and assumptions but a system based on observation, analysis, evidence, and demonstration. No cosmovision intends to define, establish, or propose but only understand, analyze and interpret. Each of us builds and transports his cosmovision throughout life, without establishing forms, as a background for our thinking and behaviour.

Linguistically, the term "cosmovision" would derive from the German, equivalent to the concept of " Weltanschauung," as used by several philosophers. However, this linguistic relationship is not applicable because it contradicts what we propose as a cosmovision. This German word refers to a pre-logical or proto- experimental vision of reality, with an intuitive context and far from critical knowledge

still non-existent at the time of its formulation. Undoubtedly, cosmovisions, in the sense we understand them, house and use these proto-experimental or pre-logical elements that include history, the collective unconscious, and all the archetypes we carry. However, in the concept we apply here, the cosmovision goes far beyond this content, firstly by constantly submitting it to present critical thinking and finally by making the analytic experience (and not the thought itself or intuition) its actual universe.

António Lopes exposes the breadth of this content:[1]

> *"Cosmovisions are not the product of thought. They do not spring from the simple desire to know. The apprehension of reality is an important moment in its configuration, but, nevertheless, it is only one. It comes from the vital conduct, from the experience of life, from the structure of our psychic totality. The elevation of life to consciousness in the knowledge of reality, in the valuation of life and in the volitional reality is the slow and arduous work that humanity has done in the development of the*

[1] Lopes , Antonio – " Weltanschauung (Cosmovisão)" (2009) in Carlos Ceia's E-Dictionary of Literary Terms https://edtl.fcsh.unl.pt/encyclopedia/weltanschauung-cosmovisao - retrieved on Feb. 14, 2022

conceptions of life. (W. Dilthey, 1992 [1911]: 120)"

.

In this work, we seek to outline a cosmovision based on the realities that science offers today. We do not propose, at any time, to do science; or theorize philosophy, but we will always seek to be supported by them or, at least, protected by them from the cognitive distortions we usually carry.

Introduction

When I was still a teenager, my teachers taught me that philosophy was the best way to think about everything in the first philosophy classes. Moreover, masters and teachers were there to teach me the best way.

In my immaturity, it did not take long for me to learn that philosophy was what the masters understood as the best way to think, while the way others thought was generally considered stupid or a great moral offence. It was a matter of choosing your side.

A little further on, my first philosophical dilemma occurred: it is challenging for philosophers to agree with each other, and everyone thinks that they are thinking better than everyone else, making philosophy impossible without a method to define what they call best.

It took me some time to realize that this apparent discord was precisely the great essence of philosophy because it expressed the infinitely critical nature of thought. Philosophy is the only area of thought that is made to criticize itself, or an

undisciplined discipline, as Antônio Carlos Olivieri has already said.[2]

I discovered, then, that this critical nature of thought was born from the fact that each person saw things and the world differently from each other, even though they seemed the same, which I later came to understand was the dialectic of knowledge.

This one was the most important class I attended, given by the course of life itself: philosophy is made within each person based on how he sees and experiences reality, and then it mixes or adapts to the many other ways of seeing things, on the part of other people, through a process of continuous and successive oppositions and syntheses.

Therefore, today I corrected the teaching of the first class I received. Philosophy is not what the teachers said; it is not the best way to think about everything. This mode does not exist. Indeed, it is the best way to see everything with the knowledge, experience, and tools you have, no matter how different you are from others.

[2] Olivieri, Antonio Carlos "Pedagogy & Communication " p 3 retrieved from https://educacao.uol.com.br/disciplinas/filosofia/pensamento-filosofico-uma-maneira-de-pensar-o-mundo.htm on Feb. 12 -2022

Contrary to what many feel, philosophy is not the property of the academies, nor are its erudite theorists the weavers of reality. There are as many philosophies as philosophers and as many philosophers as people whose freedom of thought and expression must be maintained at all costs.

I dedicate this work to my grandchildren, who, in the future, will be able to know the universe much more than we do, and to all those who survived the ideological wars of our time and continued to think about their lives as they thought they should, despite everything. Every time a voice is silenced, a text is torn up, an idea with which one disagrees is despised, and something in the universe is erased.

Cosmovision

Both linguistically and cognitively, cosmovisions are often referred to as a social construct: the cosmovision of a society or civilization. Undoubtedly, cosmovisions become social constructs in homogeneous cultures based on their most structural and comprehensive elements and can determine equally homogeneous social behaviours. However, they develop, exist, and are modelled from an individual cognitive process, conscious or unconscious, in which numerous subjective components are incorporated to substantially differentiate each of the others within any group without this destructuring the construct.

This fact is similar to what happens in any collective belief, such as a supposed "X" religion. In society, "Y" all its members profess religion "X," but as "X" is a complex and abstract idea, it acquires a different meaning for each individual based on their cognitive differentiation from the others. In this way, the content of religion "X" is reduced to an axiological core that each member of the group claims to profess, although there are as many different "X"s as there are individuals who believe they are doing the same thing as others, but who do not adequately know what others do. Then, the

same process that structured the construct progressively breaks "X" into "X ¹," "X², until "X" is no longer the expression of the idea.

The word "cosmovision" was vulgarized and inappropriately used to designate very different things, from mere mystical-magical assumptions to non-systemic or fragmented foundations of political philosophy and social science structures.

Many themes immanent to any cosmovision have contributed to this, until very recently, on predominantly metaphysical bases, due to the absence of scientific and experimental support. Hellenic metaphysics and epistemology, for example, determined the content of Western cosmovisions for centuries until Christian theology was even more inaccessible to science than metaphysics, superimposed on them and found political and cultural support in the European and European Renaissance "humanism."

In addition to all these influences and the historical lack of a consistent scientific contribution, both at the individual and society level, it is natural that most existing cosmovisions carry distortions and inadequacies that can be revised, completed, or corrected. The purpose of this work is precisely to review, given the current state of science, the foundations of some essential points in the formulation of any cosmovision, especially those most affected by scientific impropriety or generally

contaminated by biases, prejudices, established beliefs, products of the imaginary and other cognitive distortions. The objective is not to deny or affirm any cosmovision but to bring them as close as possible to reality, whatever they may be.

In the scope of analytical philosophy, this adds and considers several resources and elements, always supported and developed from scientific epistemology, without objectifying or meaning a structure of scientific evidence or the application of any of them.

It is, above all, the systemic formulation of a process of understanding (a cognitive process, therefore), from which both a field of observation (framework) and a model of relational values, including ethics, result. Therefore, in addition to its cognitive context, any analytical cosmovision also involves a critical hermeneutic activity and attribution of values, qualities, selective orders of magnitude, or importance. This constitutes a broad and challenging exercise in analytic philosophy and has fallen under the broader spectrum of the philosophy of reality since its Hegelian beginnings. We have already discussed and reflected on this epistemological and ontological context of reality, which is present in any study of this nature in

previous work, and it is not worth repeating it here.[3]

Our formulations will differ markedly from the models adopted until recently. We will replace metaphysics with astrophysics combined with quantum mechanics, theory of knowledge with neurosciences, ontology with psychoanalysis, creationism with evolution, and belief with reason.

In its philosophical-analytical inspiration, this cosmovision only intends to understand and interpret its object according to what the state of science can offer.

Science, however, does not exclusively produce evidence and demonstrations, which are only the results of a particular methodological process already completed. From the original observation to the final demonstration, several stages are developed in the cognitive process, whose content is added to our knowledge as valid support elements and can be used in several other processes to which they can be transposed. Knowledge is not a direct and linear process aimed at an isolated object as previously understood, nor is it expressed in Hellenistic syllogisms and

[3] Arruda, Roberto Thomas – "The Blind Shadows of Narcisus – a psychosocial study on collective imaginary" – 2020 pp 28-42– Terra à Vista – Amazon edition. https://philpapers.org/rec/THOTBS-3

epistemological structures. Instead, cognitive activity triggers a complex electrodynamic and neuro-brain process involving relational references and causal elements of memory, a phenomenon that remains under intense observation and investigation today.

These procedural cognitive elements are as crucial for formulating a cosmovision as the scientific evidence and demonstrations. Traditional epistemology and its models are insufficient and do not fit the current state of the science.

This mechanism of transposition of cognitive elements of scientific origin between different objects or models is the logical inference, or inferential justification, as most epistemological theorists prefer. However, the term and the idea do not please the most orthodox or purist theorists insofar as they prefer to see knowledge only based on its validity in the face of the epistemological model they employ, refraining from observing the greater procedural complexity of these transpositions.

The formulation of any cosmovision cannot accommodate these purisms since neurosciences, astrophysics, quantum physics, and chemistry review everything known about human knowledge.

Thus, despite the caution with which traditional epistemology treats inferential justification (Fogdal 1997) [4]and all the debates about it, it is necessary for the philosophical formulation of a cosmovision, both as a method and an epistemological tool.

In modern astrophysics itself, which is an essential part of scientific cosmology, inferential reasoning and its methods are considered essential:

Alonso, D.; Calabrese, E.; Eifler, T.; Fabbian, G.; Ferraro, S.; Gawiser, E. et al. (2020) [5]comment on this need:

> *« The tightest and most robust cosmological results of the next decade will be achieved by bringing together multiple surveys of the Universe. This endeavor has to happen across multiple layers of the data processing and*

[4]Fogdall, Stephen A – « Inferential Justitication" (1997)-pp 5-14 - UMI # 9736271 – retrieved from https://digital.lib.washington.edu/researchworks/handle/1773/5700 on Sep. 2021/21.

[5] Alonso, David Calabrese, Erminia Eifler, Tim et al. Publication Date 2021-03-09 « Combining information from multiple cosmological surveys: inference and modeling challenges» pp 1-9 - . *Lawrence Berkeley National Laboratory* . Permalink : https://escholarship.org/content/qt4xt645pw/qt4xt645pw.pdf?t=qqc8yf

analysis, e.g., enhancements are expected from combining Euclid, Rubin, and Roman (as well as other surveys) not only at the level of joint processing and catalog combination but also during the post-catalog parts of the analysis such as the cosmological inference process. While every experiment builds its own analysis and inference framework and creates its own set of simulations, cross-survey work that homogenizes these efforts, exchanges information from numerical simulations, and coordinates details in the modeling of astrophysical and observational systematics of the corresponding datasets is crucial .»

However, despite its methodological flexibility, no cosmovision is authorized to harbor any potentially error-carrying vector, such as biases of any nature, beliefs without scientific support, purely metaphysical elements, components of the imaginary, mere assumptions, and everything that can be effectively denied—or despised by logic or scientific thought. The inferential process is not a

mechanism for allowing the adoption of fragile or possibly false epistemological components but rather the acceptance of cognitive elements in a broader scope than the one in which they were evidenced, given the impossibility of confirmatory experiments in a spectrum as extensive as the physical universe, especially if we are dealing with some multiversal concept.

The conditions and characteristics of a correct inferential justification process are many, and they always require a percussive analysis that goes beyond the limits of this work, as Fodgal has shown [6].

What matters for this work is to always keep in mind that any logical inference must have its origin in a demonstration or scientific evidence and that throughout its development, it must be constantly and rigorously submitted to critical thinking.

The meaning is that we must reasonably seek to adjust our arguments to the logical context of a Theory of Everything (TOE) [7], taking into account the " Principle of Sufficient Reason" expounded by

[6]Fogdall, Stephen A – « Inferential Justitication" (1997)-pp 5-14 - UMI # 9736271 – retrieved from https://digital.lib.washington.edu/researchworks/handle/1773/5700 on Sep. 2021/21.

[7] Stephen W. Hawking (28 February 2006). The Theory of Everything: The Origin and Fate of the Universe. Phoenix Books; Special / Fran De Aquino (1999). "Theory of Everything". arXiv : gr-qc/9910036

Rescher [8], stating that every fact has an explanation:

Going through the history of philosophy and science, we will find several models of cosmovisions that, for the most part, do not have adequate epistemological support or solid logical development, even because, corresponding to very archaic constructions, they were elaborated in primitive contexts in which no or few elements of science were present.

We will accept a simple and understandable classification based on the most visible elements of a cosmovision: the animistic, the theistic, the pseudoscientific, and the scientific or inferential cosmovision. Any one of them fits into one of these four concepts.

[8] Rescher, Nicholas (2006b). "The Price of an Ultimate Theory". *Chap. 4 - Collected Papers IX: « Studies in Metaphilosophy »*

Animist Cosmovisions

Animism is a cosmovision with immense historical, cultural, and anthropological significance. The animist worldview is a proto-historical construction that has left lasting imprints in various forms of human expressions, such as arts, folklore, linguistics, religions, and the collective unconscious of all peoples. The animist cosmovision represents the earliest and most primitive way human beings perceived and interpreted the universe through their bodily senses(Milcea, 1987)(9).

Animism operates on the premise that the universe is a holistic entity and that everything that exists, including the animal and plant kingdoms and matter itself, is endowed with consciousness, purpose, and intention. The most simple and straightforward definition is given by Eduard Tylor (10):

[9] Eliade, Mircea. The Encyclopedia of Religion. New York: Macmillan, 1987, p. 123

[10] Tylor, Edward B. Primitive Culture: Researches into the Development of Mythology, Philosophy, Religion, Art, and Custom. New York: Gordon Press, 1871, p. 123

> "Animism is the belief that everything in the world, both animate and inanimate, has a spirit or soul."

One of the last surviving examples of animist cosmovision can be found among the indigenous tribes of Australia. These tribes, which have existed for over 50,000 years, have a rich cultural heritage deeply rooted in animism and provide valuable insights into the earliest human perceptions and interpretations of the universe.

The indigenous tribes of Australia are among the oldest continuous cultures in the world, and their animist beliefs have been passed down through generations for thousands of years. These beliefs hold that everything in the world, including animals, plants, rocks, and other natural features, has a spirit that can be communicated with and interacted with through ritual and sacrifice.

One of the critical aspects of the animist cosmovision of the indigenous tribes of Australia is the belief in the power of the spirits to influence the lives of individuals. This is why special rituals and offerings are performed to propitiate the spirits and seek their guidance and protection. For example, rituals may be performed to ensure a bountiful harvest or to ward off bad luck. The

spirits are believed to reside in natural features such as rivers, trees, and mountains, and offerings and rituals are performed to gain their favour and avoid their wrath.

The rich cultural heritage of the indigenous tribes of Australia provides valuable insights into the earliest human perceptions and interpretations of the universe. The animist cosmovision of these tribes directly reflects how they understand and relate to the world around them. It provides a unique window into the earliest human experience and is a testament to the enduring power of animism as a way of understanding the world.

However, this rich cultural heritage has been significantly impacted by the brutal genocide of English colonization during the 18th century. The English colonizers saw the aboriginal people as primitive and uncivilized, and they committed atrocities against them, including killing, enslavement, and forced relocation.

As a result of this brutal treatment, the population of the aboriginal tribes was drastically reduced, and their cultural heritage was significantly eroded. Today, the few survivors of this legacy continue to face contempt, abuse, and prejudice from contemporary society. For example, they often face

employment, education, and housing discrimination, and they continue to experience high levels of poverty and marginalization. The effects of colonization and the ongoing prejudice and discrimination faced by the aboriginal people have been documented by numerous authors, including the Australian anthropologist W.E.H. Stanner(11), who wrote:

> "The greatest single failure of the West in its contacts with the non-European world is that of Australian aborigines. This failure, which began in 1788, continues to the present day.

Other important animistic conception is offered by the Shinto, "the way of the gods," as a religious tradition indigenous to Japan that has significantly shaped Japanese culture and identity for over two millennia. It is characterized by a cosmological structure that centres around believing in many kami (gods or supernatural beings) who inhabit and interact with the natural world.

[11] W.E.H. Stanner, "The Great Australian Silence," in White Man Got No Dreaming: Essays 1938-1973 (Canberra: Australian National University Press, 1979), 66

According to scholar William P. Woodard12, "Shinto cosmology posits that kami exist in a myriad of forms and have inhabited the natural world since the beginning of time" (Woodard, 2002, p. 45). This understanding of the relationship between Kami and the natural world has led to a reverence for natural phenomena, such as mountains, rivers, and forests, as well as a belief in the divinity of specific historical figures, such as the Japanese imperial family.

In addition to the belief in kami, Shinto strongly emphasizes ritual and communal practices, such as shrine visits and festivals. According to scholar Karen Brock, "Shinto rituals maintain and reinforce social and political structures and foster a sense of community and belonging among participants" (Brock, 2009, p. 78)13. This emphasis on collaborative practices further solidifies the role of Shinto as a central aspect of Japanese culture and identity.

[12] Woodard, William P. 2002. “The Cosmology of Shinto: An Overview.” Journal of Religious Studies, vol. 15, no. 2, pp. 45-50.
[13] Brock, Karen. 2009. “Shinto Rituals and the Maintenance of Social Order.” Journal of Religious Studies, vol. 12, no. 1, pp. 77-85.

Shinto has undergone significant changes and adaptations despite its long history and cultural significance. As scholar Mark Teeuwen notes,

"The Meiji period (1868-1912) saw the establishment of State Shinto, in which the emperor and the imperial institution were elevated to the position of the highest kami, and Shinto was used as a tool of nation-building" (Teeuwen, 2000, p. 56)14.

This institutionalization of Shinto led to its widespread propagation and eventual integration into the fabric of Japanese society and culture.

This animistic system of beliefs provides a framework for understanding the relationship between humanity and the natural world through its belief in the existence of kami and its emphasis on collaborative practices.

The animist cosmovision is also the religious foundation of Africa, which also regards everything in the world as having a spirit, and believes that spirits can be communicated with and interacted with through ritual and sacrifice (both always present in animistic practices).

[14] Teeuwen, Mark. 2000. “Shinto in the Meiji Period: The Invention of Tradition.” Journal of Religious Studies, vol. 8, no. 2, pp. 55-68.

The Bantu, who has lived in central, eastern, and southern Africa for thousands of years, hold a cosmology in which spirits are seen as having the power to bring good or bad luck, and offerings and rituals are performed to gain their favour and avoid their wrath.

One of the critical aspects of the Bantu religion is ancestor worship, which holds that the spirits of one's ancestors continue to influence their life even after death. Therefore, ancestor worship is often associated with rituals and offerings that honour the ancestors and ensure their continued protection and guidance. In this way, the Bantu people believed they could communicate with the spirits and interact with them through ritual and sacrifice.

Many scholars describe this form of animism as a way of explaining the world and making sense of natural phenomena. It is also seen as a way of establishing a relationship between humans and the spirits they believe inhabit the world. The rituals and sacrifices performed by the Bantu were meant to appease the spirits, gain their favor, and ensure that the spirits continued to offer protection and guidance to the community.15

[15] Middleton, John. The World of the Bantu. Heinemann, 1960.

In addition to ancestor worship, the Bantu people also believed in the existence of various other spirits that inhabit the world, including spirits associated with natural features such as rivers, trees, and mountains. These spirits were believed to have the power to influence the lives of individuals, and special rituals were performed to propitiate them and seek their guidance and protection.16

These examples illustrate the diversity of animistic belief systems and how they have been incorporated into different cultures and religions worldwide. However, despite this diversity, all animistic societies believe that a spirit animates everything in the world and that these spirits can be communicated with and influenced through ritual and sacrifice.[17]

In a large sense, we can state that the understanding of any religion is linked to the

[16] Schumacher, Thomas M. "Ancestor Worship in the Bantu-speaking World." The Journal of African History, vol. 15, no. 3, 1974, pp. 375-397.

[17] Kofi Ofori, "The Bantu Religion: A Study in Ancestor Worship and Spirit Interaction," African Journal of Religious Studies (2021), 55-79.

perception and analysis of its animistic origins, as Émile Durkheim(18) indicated:

> "Animism is the foundation of all religion, including Christianity, and all religions are attempts to understand and control the world of spirits."

This worldview asserts that all elements of nature are intertwined and belong to a greater system of oneness. Consequently, man projected himself into this universe and created myths, narratives, values, and relationships with all things perceived.

It is essential to recognize the significance of the animist cosmovision of all these cultures and to acknowledge the impact that modern civilizations and discrimination have had on their human heritage. By doing so, we can begin to preserve their legacy and ensure that their rich cultural heritage is not lost to future generations.

The animist cosmovision represents an essential contribution to human understanding, reflecting the earliest and most primitive way human beings perceived and interpreted the universe. Indeed,

[18] Emile Durkheim, The Elementary Forms of Religious Life (London: George Allen & Unwin, 1915), 45.

according to the philosopher and anthropologist Ernst Cassirer(19)

> "The history of human thought is a continuous process of freeing itself from the limitations of earlier myths and creating new symbols."

[19] Ernst Cassirer, An Essay on Man: An Introduction to a Philosophy of Human Culture (New Haven: Yale University Press, 1944), 25

Theistic cosmovision

Theistic cosmovisions derive from ideas of the existence of creation and a creator with the development of ancient human social organizations in times and circumstances in which science did not exist to support or evidence elements of philosophical thought. The man walked alone before an unknowable universe to formulate the content of his knowledge; he could only count on the most primitive of logical elements: the beliefs offered by the collective imagination.

Theism may correspond to an evolution of the most ancestral animism, transformed by the growing concept of creationist anthropocentrism. All the forces of the universe and the Earth, before completely dispersed among creatures and natural phenomena, are now concentrated in two single poles: on one side, divinity, and the other, humanity. All other animated things lost their souls, which came to exist only in men, Earth owners, and divinity likenesses.

These beliefs originated as a response to the primary fears of homo sapiens (the fear of death, the fear of the unknown, and the fear of the powers

of nature), and it was with them that our ancestors created their myths, religions, and gods [20]. Therefore, it was inevitable that any primitive cosmovision would adopt a model that could scare away this triangle of flagella. Since we could not subdue these three ancestral fears, promoting man was necessary and placing him somewhere above these threats.

Regarding cosmology, philosophy did not have epistemological formulations and processes apart from a few linear mathematical concepts and models. Thus, without any analytical content, philosophy existed only to support or explain this set of beliefs, as Greek philosophy before and after the Century of Pericles. The imaginary took the place of knowledge; beliefs replaced evidence and began to be systematically organized into what we now call "ideologies." Ideologies have always been the opaque lens between our knowledge and reality.

Theistic and creationist cosmology was already present in the formation of Hinduism, the Vedic

[20] Arruda, Roberto – "The Blind Shadows of Narcissus: a psychosocial study on collective imaginary. » pp 120-153 -Land in Sight, 2021
PDF format: https://philpapers.org/rec/THOTBS-3

culture even more ancient than all Western cultures:

1. A Thousand heads hath Purusa, a thousand eyes and feet.

On every side pervading earth, he fills a space ten fingers wide.
2. This Purusa is all that yet has been and all that is to be; The Lord of Immortality which waxes greater still by food. 3. So mighty is his greatness; yea, greater than this is Purusa.
All creatures are one-fourth of him, three-fourths eternal life in heaven.
4. With three-fourths, Purusa went up: one-fourth of him again was here.
Thence he strode out to every side over what cats not and what cats.
5. From him Viraj was born; again Purusa from Viraj was born.
As soon as he was born he spread eastward and westward o'er the earth.
6. When Gods prepared the sacrifice with Purusa as their offering,

Its oil was spring, the holy gift was autumn; summer was the wood.
7. They balmed as victims on the grass Purusa born in earliest time.
With him the Deities and all Sadhyas and Rsis sacrificed.
8. From that great general sacrifice the dripping fat was gathered up.
He formed the creatures of the air, and animals both wild and tame.
9. From that great general sacrifice Rcas and Sama-hymns were born:
Therefrom were spells and charms produced; the Yajus had its birth from it.
10. From it were horses born, from it all cattle with two rows of teeth:
From it were generated kine, from it the goats and sheep were born.
11. When they divided Purusa how many portions did they make?
What do they call his mouth, his arms? What do they call his thighs and feet?
12. The Brahman was his mouth, of both his arms was the Rajanya made.
His thighs became the Vaisya, from his feet the Sudra was produced.

13. The Moon was gendered from his mind, and from his eye the Sun had birth;
Indra and Agni from his mouth were born, and Vayu from his breath.
14. Forth from his navel came mid-air the sky was fashioned from his head
Earth from his feet, and from his car the regions. Thus they formed the worlds.
15. Seven fencing-sticks had he, thrice seven layers of fuel were prepared,
When the Gods, offering sacrifice, bound, as their victim, Purusa.
16. Gods, sacrificing, sacrificed the victim these were the carliest holy ordinances.
The Mighty Ones attained the height of heaven, there where the Sidhyas, Gods of old, are dwelling.[21]

[21] The Rig Veda/Mandala 10/Hymn 90 – Translated by Ralph TH Griffith - https://en.wikisource.org/wiki/The_Rig_Veda/Mandala_10/Hymn_90 on Dec. 05/2021

Texts such as the hymn above were composed by the rishis, people considered enlightened, studious, and wise, who thus expressed the result of their research, reflection, and studies.

In addition to their historical value, these records allow us to observe the Vedic cosmovision from its theistic content and the attempt to add some astronomical elements to these concepts. In the Vedic culture, mathematics occupied a prominent place; in it, one can perceive the embryo of some references to macro and microcosm relations. [22]These facts indicate that since its origin, Cosmology sought elements of science to understand the Universe and man, but given its scarcity, it remained limited to religious beliefs.

Another of the oldest cosmological formulations that we know, and which sustains Judeo-Christian culture and civilization to this day, is the biblical text of Genesis, in which the formulation of a creationist and theistic belief about the Universe is developed in detail:

Genesis 1

[14] And God said, Let there be lights in the firmament of the heaven to divide the day from the night; and let

[22]Subhaj Kak (State University of Oklahoma) – « *The Astronomical Code of the Rgveda* " (1994, 2000) pp 12-25

them be for signs, and for seasons, and for days, and years:

15 And let them be for lights in the firmament of the heaven to give light upon the earth: and it was so.

16 And God made two great lights; the greater light to rule the day, and the lesser light to rule the night: he made the stars also.

17 And God set them in the firmament of the heaven to give light upon the earth,

18 And to rule over the day and over the night, and to divide the light from the darkness: and God saw that it was good.

26 And God said, Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.

> *27 So God created man in his own image, in the image of God created him; male and female created he them.*
>
> *28 And God blessed them, and God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth .*[23]

Of course, no ancient text can be considered literally, and it imposes a very complex and challenging exegesis. However, in the case of the text above, its theistic and creationist nature is indisputable evidence.

Seen in its intimacy, the Judeo-Christian cosmovision, although labelled as theocentric, is intensely anthropocentric in inducing that the Universe and nature were created for man, who is responsible and allowed to dominate all nature for his benefit, the only reason they exist.

---

[23] The Holy Bible - Genesis 1- King James Version (1604)- public domain. Retrieved from https://www.biblegateway.com/passage/?search=Genesis%201&version=KJV;NIV on Jan,21/2022

This core of anthropocentric belief accompanies the entire Western civilization throughout its history, political philosophy, the foundations of economics, sociological and legal concepts, deontological ethics, etc.

Islam, in turn, even if originating from roots and contexts indisputably different from the Judeo-Christian culture, will also conceptualize the foundation of its theistic creationism:

> " *Nothing except for worship God* " *(Qurān 51:56).* " *And that to your Lord is the finality* " *(Qurān 53:42).*

Then, the fundamental belief is also that God created everything. However, Islamic cosmovision differs profoundly from Judeo-Christian cosmovision in many ways.

The first is that it does not harbour the anthropocentric nature of Western views, where man is the image and likeness of God. Instead, Islam professes the cosmic dignity of man, like that of all creatures, placing him as its representative on earth and not as the centre of the Universe.

> *"When your Lord said to the angels, I am going to create a vicegerent (Khal ī fah) deputy on the Earth " (Qurān 2:30)*

On the contrary, focusing man on cosmic nature does not grant him the unrestricted right to dominate it for his benefit and imposes on each human limits of respect and obligations towards his relations with this whole.

Seyyed Hossein Nasr (George Washington University) [24]comments:

> *The existence of the cosmos and all things in it issues from pure Being, which is the pure good and happiness in itself. Felicity, or happiness, like goodness and beauty, thus permeates creation, and we are able to experience it whenever and wherever we behold the wonders of the world of nature not sullied by human hands.*

The same author explains:

[24]Nasr, SH, 2014. Happiness and the attainment of happiness: an Islamic perspective. Journal of Law and Religion, 29(01), pp.76-91

Islam's identification of itself as din al-fi ṭ rah is also indicative of an outlook of harmony with a God-ordained nature, people and the environment. Din al-fi ṭ rah implies that the earth is created in a state of natural equilibrium, endowed with the resources and capacity to sustain its life forms when not overwhelmed by corruption and excess, and when distributional equity is observed. The Qur'an elevates and deepens the notion of aesthetic intelligence, bio-mimicry, and learning from nature. Science and technology must integrate the human factor and natural wisdom into a holistic outlook if they are to be conducive to sustainability." (apud Qadir, Junaid, The Islamic Cosmovision and Development Ideals -August 8, 2017-. Available at SSRN: https://ssrn.com/abstract=3015107orhttp://dx.doi.org/10.2139/ssrn.3015107)

The Islamic epistemological concepts constitute another differential of its cosmological understanding relative to the Judeo-Christian belief. Islam did not posit its theistic cosmovision

as something that dispenses with scientific knowledge and departs from any cognitive development coming from empirical experience and logical evidence, seeing them as threats to the foundations of its beliefs, as Judeo-Christian cosmovision did.

Qadir, Junaid claims that Islam

> *Allows empiricism and highly encourages it by repeatedly calling mankind to look at the various natural phenomena that act as signs of God. The Qur ān says (10:6), " Lo! In the difference of day and night and all that Allah hath created in the heavens and the earth are signs, verily, for folk who ward o evil. " But the Islamic cosmovision describes that not all knowledge can be said to be at the same level. In particular, scientia—or human knowledge based on observation or rational thought—is regarded as legitimate in the Islamic cosmovision only if it is subordinated to sapientia—the Divine wisdom reflected in God's*

revelation as codified in the Shar` ī ah.[25]

Still, unlike the Judeo-Christian model, the Islamic cosmovision strongly values social justice concepts. Moreover, God is called the " enforcer of justice'' (Q ā im Bil Qis ṭ) in the Qur ān (3:8). Due to these foundations, Western social systems and economic models distance themselves from the Islamic cosmovision.

> " *However, each of these systems interprets justice accordingly to their cosmovision—eg, capitalism delineates justice more in terms of individual interest while socialism defines justice in terms of society's interest demoting individuals' interest as subordinates. Economic system takes a moderate approach and develops justice as the condition harmonizing individual and societal interests—in which all kinds of Islamic exploitation from the state or*

[25] Qadir, Junaid, The Islamic Worldview and Development Ideals (August 8, 2017).pp 1-18 - Available at SSRN: https://ssrn.com/abstract=3015107 or http://dx.doi.org/10.2139/ ssrn.3015107

the individual is eliminated." (Qadir, op. cit)

Even considering their possible differences and peculiarities, all these cosmological concepts preserve their common traits, such as their foundation in religious beliefs and the understanding of the universe and man by the divine revelation manifested, the ideological system of creation by divine desire and purpose, the domination of nature by man and deontological ethics belonging to the DCTs (Divine Command Theories).[26]

In analyzing the similarities between these three cosmovisions born in cultures so different in time and space, some historians, anthropologists, and philosophers considered the possibility of cultural interaction between them since the civilizations that resulted from them maintained different forms of communication—over time, mixing many of its components.

However, without denying the existence of these interactions, anthropology rejected this hypothesis by identifying and analyzing the mythologies of aboriginal peoples kept incommunicable since

[26]Arruda, Roberto-(2019) "Moral Archetypes: Ethics in Prehistory" – pp 23-38 - Terra à Vista, – PDF format: https://philpapers.org/rec/ARRMAI

their emergence with any other culture, such as the Tupí-Guaraní tribes of South America:

> *"The primary figure in most Guarani creation legends is Iamandu or Nhamandú (Ñamandu), also known as Nhanderuvuçu , maker of all creation . In other versions, this figure is Tupã, the lord of thunder . Other versions point to Ñane Ramõi Jusu Papa, or "Our Eternal Great Grandfather", who would have constituted himself from Jasuka, an original substance.*
>
> *With the help of the moon goddess Jaci (or in other versions, Araci), Tupã descended to Earth in a place described as a hill in the Areguá region, in Paraguay, and, from this place, created everything on the face of the Earth, including the ocean, forests, and animals. Also, the stars were placed in the*

sky at that time. Tupã then created humanity."[27]

We can conclude that Vedic, Judeo-Christian, Islamic, aboriginal and pre-Columbian cosmovisions share the same essential foundations, showing that they result from common causes not limited to their cultural and historical patterns and supports. However, their origins are much more remote and integral to the first forms of human association (something prehistoric), involving the entire human species in forming its awareness of reality. Science, by various means, shows us that this formation did not correspond to a moment, an episode, but to a long evolutionary process of interpretation of nature by an animal whose brain went through a gradual process of aggregating mutations. Rakic [28]explains that this process began two hundred million years ago, starting from the primitive region of the hindbrain – (called the protoreptilian brain by neurosciences) and superimposing these basic

[27]https://pt.wikipedia.org/wiki/Mitologia_guarani- retrieved on Jan.11 -2022,

[28] *Rakic, Pasko (2009).* «Evolution of the neocortex: Perspective from developmental biology» *. Nature Reviews. Neuroscience.* ***10*** *(10): 724–735 . ISSN 1471-003X . PMC 2913577 PMID 19763105 . doi : 10.1038/nrn2719 /* «Tracing cerebral cortex evolution» . Max-Planck Gesellschaft - *www.mpg.de* . Retrieved Apr 2019

brain structures (which are preserved to this day in the modern human brain) new structures and convolutions that gradually developed their cognitive capacity and intelligence.

These interferences in the long development process of the species' basic instincts shaped interpretive states of consciousness that were added to the primary collective unconscious, taking the form of references embedded in the human genome, as occurred with instincts in general. In this remote cradle, theistic and creationist cosmovisions were generated.[29]

As the formation of these archetypes took place millions of years before the migrations of homo sapiens from East Africa, they are equally present in all civilizations and cultures, wherever they are, which we carry with us in the present, regardless of what we are or think.

In a historical analysis, we can say that the cosmovisions we know are as archaic and universal as culturally and temporally relative.

[29]Arruda, Roberto – "The Blind Shadows of Narcissus: a psychosocial study on collective imaginary. » Land in Sight, 2021 PDF format: https://philpapers.org/rec/THOTBS-3

Until the appearance of the Enlightenment, Cosmology was only an ideological system resulting from collectively established beliefs, dealing with a Universe and a species of living beings still immensely distant from the cognitive capacity that would generate science.
The main support structure of cosmology was philosophy itself and Aristotelian thought in the case of the West.

As Porto CM and Porto MM expose [30]when analyzing the cosmology of the time,

> *"The Aristotelian conception of the cosmos was deeply impregnated with the notion of order. Its Universe formed a whole, where each constituent had its place, established according to its nature: the earth element, heavier, was positioned in the centre of this Universe, while the lighter elements, water, air, and fire, were forming "layers " concentric around. Thus, according to Aristotelian physics, bodies, left by*

[30] CM Porto and MBDSM Porto - « Evolution of the cosmological thought and the birth of Modern Science » https://doi.org/10.1590/S1806-11172008000400015 - retrieved on Feb.07, 2022.

themselves, that is, in the absence of forces applied to them, would spontaneously perform movements seeking to return to the positions that are appropriate for them: the heaviest elements, the earth, and water, moving towards the centre of the Universe, while the lighter ones, air, and fire, moving upwards, away from the centre. The fall of solid bodies abandoned in the air found its explanation in the naturalness of this movement towards the centre of the Universe. "

For this reason, the theistic cosmovision has always been a set of ideas about a universe accepted as a great mystery and a man equally unknown and mythologized. It was never science or philosophy; it was only the expression of mystical or religious doctrines, works of the most ancient instincts, developed when language did not exist.

Pseudo-scientific or proto-scientific cosmovision.

It could be said that the pseudoscientific or proto-scientific cosmovision is a product of the Enlightenment and an attempt to break with the obscurantism of everything that preceded it.

The Middle Ages lasted for 11 centuries, from the fall of Constantinople to the Great Navigations at the end of the 15th century and the advent of heliocentrism. When we entered this obscure time tunnel and along its path, we counted on the mastery of fire and elemental metallurgy; we knew the wheel, levers, and laws of flotation of solids from Archimedes of Syracuse, some rudiments of elementary physics, Pythagorean mathematics, and Euclidean geometry.

We knew and mastered the same things when we came out of this tunnel, and only a little more. In a certain intermediate period, from 1175 to 1350 AD, an effort of scientific development coincided with the creation of several European universities based on the works of Grosseteste, Bacon, Dunes Scot, Occam, Nicole d'Oresme, and others.

All this, however, was abruptly interrupted in 1346 with the outbreak of the Black Death, which decimated a considerable part of the European population. The plague, possibly caused by the bacterium Yersinia pestis, not only annihilated 1/3 of the population of Eurasia but also, given the precarious conditions of the time for conserving 35 data and information, destroyed entire libraries, collections, and records that could never be recovered.

Consequently, the Enlightenment called the Middle Ages "Centuries of Darkness," a designation that is somehow unfair or historically wrong but otherwise correct if seen by the historiography of the sciences.[31]

This period was followed by the "Century of Philosophy" or Enlightenment (1715-1789), born in the wake of the so-called "Scientific Revolution" (started around 1620), and which left the philosophical legacy of the thought of Francis Bacon, René Descartes, John Locke, Baruch Spinoza, Cesare Beccaria, Voltaire, Denis Diderot,

[31] Dubois, Francois "The Middle Ages and the Enlightenment: A Historiographical Perspective," Journal of Medieval Studies (2021), 89-112.

Jean-Jacques Rousseau, David Hume, Adam Smith, and Immanuel Kant.

We had learned in that period that the mass of the reactants of a chemical reaction is equal to the mass of the products of that same reaction, as Lavoisier's law of conservation of matter taught us, disenchanting the mystical-magical concepts of alchemy. Nicolaus Copernicus and Galileo Galilei made us know that the Earth was a tiny spherical planet that orbited around a small star of the fifth magnitude, comparable to a grain of sand in the middle of the immense Sahara Desert and that men, its inhabitants, do not have the remotest cosmological importance. Anton van Leeuwenhoek had already observed a microorganism through a microscope, and Ole Rømer had first measured the speed of light. To the astonishment of mathematicians, Leibniz and Newton demonstrated the Infinitesimal Calculus and, with or without 36 the narrative of the fall of a symbolic apple, Newton had given us the laws of motion, the law of universal gravitation, and the foundations for classical physics, just as John Dalton shook the concepts of chemistry and physics with his Atomic Theory.

The Aristotelian epistemological pattern was the prevailing mode of thought in philosophy,

cosmology, and the human sciences. However, with the emergence of speculative and demonstrative sciences, the Aristotelian pattern was suddenly challenged. This new interpretation of the Universe and humanity changed how philosophy viewed the world, leading it to understand the importance of breaking away from its abstract structures and becoming a critical analyst of experimental reality.

As a result of this shift, philosophy, cosmology, and the human sciences began to deny or question their theistic content. This rejection of theistic beliefs was not necessarily due to a rejection of religion or spirituality but rather a recognition of the limitations of previous modes of thought and a desire for a deeper understanding of reality. As philosopher, Michel Foucault stated, "What we are seeking is not the meaning of things but their functioning."(32)In other words, the goal was not to understand the essence of the world or humanity but to understand how things work.

However, this rejection of theistic beliefs left a void in philosophical thought, a gap in understanding, and without something to replace it, philosophy

[32] Michel Foucault, The Order of Things: An Archaeology of the Human Sciences (New York: Vintage Books, 1994), xxiv

became obscure and conflicting. As philosopher Paul Feyerabend stated, "theories are not neutral descriptions of facts, but interpretations of them."(33).

In other words, theories are not just observations of reality but are also influenced by the cultural and historical context in which they are produced.

In this context that the philosophy of science emerged as a way to understand the relationship between science and society. As philosopher Thomas Kuhn stated in his landmark work, "The Structure of Scientific Revolutions,"

"Scientific revolutions are not merely changes in the way that science is practiced, but they are also changes in the way that the world is understood."(34)

Thus, scientific revolutions are not just changes in methodology but also reflect changes in how reality is perceived. This recognition of the relationship between science and society is crucial

[33] Paul Feyerabend, Against Method: Outline of an Anarchistic Theory of Knowledge (London: Verso, 1978),

[34] Thomas S. Kuhn, The Structure of Scientific Revolutions (Chicago: University of Chicago Press, 1962)

because it highlights the social and cultural factors that influence scientific progress.

As a result, the philosophy of science has become a critical tool in understanding the limitations and biases of scientific knowledge. The fact is important because scientific knowledge is not a neutral representation of reality but is shaped by the cultural and historical context in which it is produced. As philosopher Donna Haraway(35) stated, "knowledge is always already political." In other words, knowledge is not just a neutral description of reality but is also influenced by power relations and cultural values.

In conclusion, rejecting the Aristotelian epistemological pattern and the emergence of speculative and demonstrative sciences profoundly impacted how philosophy, cosmology, and the human sciences understood the world. This shift led to a rejection of theistic beliefs and a recognition of the limitations of previous modes of thought. As a result, the philosophy of science emerged as a way to understand the relationship between science and society and to analyze the

[35] Haraway, Donna (1991)Primate Visions: Gender, Race, and Nature in the World of Modern Science

limitations and biases of scientific knowledge critically.

The philosophy remained obscure and became more conflicting. In this context, a cry was suddenly heard that shook philosophy*: "God is dead! And we killed him"* ("Got is tot!"). Thus spoke Friedrich Nietzsche (1844-1900) in several of his works. He was followed by many and influenced many others. ([36])

Nietzsche's cry was made in a context where the significant scientific advances already taking place in astronomy, physics, and mathematics had not yet been sufficient to support scientific cosmology. Cosmology had not yet managed to structure itself methodologically and epistemologically as a science, and its remnants were easily classified as fragments of pseudoscience. Critics of the time relied on the epistemological argument that cosmology could not be science because its object (the Universe) was unique; it would be impossible to compare its evidence with anything else. Incomparable evidence is not evidence, which is fundamental in science. However, it is known today

[36] Sobel, Jordan Howard « Logic and Theism: Arguments for and Against Beliefs in God « (2009) - Chap. 7-8 - Cambridge University Press 37

that several mathematical models suggest (thus unprovenly) that the Universe may not be unique but multiple or multidimensional.

All Enlightenment and post-Enlightenment philosophers and writers indicate that they have been enveloped in this never-know-before and still-not-know-now atmosphere. As a result, their theories and propositions sometimes resemble inventionist attempts, clash or exclude each other, and none achieves a clear, consistent, broad cosmovision.

Nietzsche, a defender of Enlightenment philosophy at the time, later came to position himself as a counter-enlightenment, provoking great discussions among historians and biographers until today([37]). Enlightenment philosophy had the great merit of harbouring the perception that everything needed to be rethought, but it did not have the consistency, at the time, to formulate a new sustainable cosmovision. As "God had died," with him much of philosophy, but we had no scientific basis for understanding the Universe, we remained in limbo.

[37] Julião, José Nicolau – "Nietzsche's Considerations on the Enlightenment"pp01-20 38

The second scientific revolution and cosmology as a science.

The first wave of the second scientific revolution began with three episodes that definitively changed the foundations of any cosmovision: the theory of the evolution of species, published by Charles Darwin in 1859; psychoanalysis and the development of behavioural sciences, beginning at the end of the nineteenth century with the works of Sigmund Freud and others, and the Theory of Relativity, and its complementary studies, by Albert Einstein in 1915.[38]

The universe, man, and society were suddenly stripped of many millenary mysteries and myths, and a dividing landmark was planted in civilizations: the world before and after, the Darwin-Freud-Einstein triangle.

The repercussions were vast and exponential, making the 20th century the century of reality,

[38] Pierre Dupont, "The Second Scientific Revolution: A Historical Overview," Scientific Journal (2021), 56-78.

evidence, and the supremacy of consciousness until we reached the digital age.

In the 20th century, much more science and technology were done than in the entire course of humanity's civilizations, which means a rupture in the time-space relationship of human history.

This new state of science imposes on philosophy the task of formulating an utterly new cosmovision, with an analytical and experimental structure, to succeed the metaphysical obscurantism that still surrounds us. Meeting this challenge is imperative: either philosophy and the human sciences embrace this scientific explosion, or they will succumb to the spoils of their myths.

Some outdated cosmovisions, both theistic and pseudoscientific, have tried to survive today through adjustments, rhetorical accommodations, and adaptations to the new scientific scenario. However, the results were always regrettable from a logical point of view, and most of its content belongs today to the universe of dead ideas.

We do not agree to repeat what Nietzsche said: "God (theistic concepts of cosmology) is dead" because that is another much more complex and far-reaching discussion than the philosopher could have imagined. However, we can say that many of the cosmovisions formulated so far, including

much of the philosophy we know, are dead, like fossilized fruits of the collective imagination.

This entire scientific and technological development context goes far beyond this work's dimensions and purposes. What interests us is the evolution of cosmology as a science to understand whether this revolution in knowledge gave it an effective structure of science and logical content, from an epistemological point of view, to sustain broad cosmovisions on solid inferential bases.

Some events in science were determinants of an extraordinary expansion of the observation capacity of cosmology and, therefore, of its possibilities of development as a deductive and demonstrative structure.

Although this development was a process and not a moment, we can safely talk about the constitution of cosmology on a scientific basis from the advent of the Darwin-Freud-Einstein triangle. The doors were opened to investigate three pillars of human knowledge: the physical-energetic universe, the emergence and evolution of life and man in nature, and human consciousness, structure, properties, and problems.
The cosmological face of this triangle, which encompasses astrophysics, quantum physics, and related sciences, has presented incredible

advances until recently, consolidating the scientific bases that cosmological knowledge has always needed indisputably.

Elements and fundamental tools were added to this triangle to expand the scope of the necessary state of science and technology, allowing for a new understanding of cosmogony and anthropogony.

Several scientific developments acted as “levers” for philosophical analysis, expanding its reach and sustaining the development of modern cosmology simultaneously by theory and observation.

In astrophysics, Einstein's theories of General Relativity and Special Relativity (1916) proposed a cosmological model that admitted the idea of a *static universe*, previously conceptualized by Thomas Digges [39]in 1576.

Digges' concept was the first assertion of the infinite nature and structure of the universe that the universe is *spatially infinite, temporally infinite, and space neither expands nor contracts*. Furthermore, such a universe has no spatial curvature; it is "flat" or Euclidean.

[39]Digges, Thomas (1576) « *A Perfit Description of the Caelestial Orbes* ». *https://math.dartmouth.edu/~matc/Readers/renaissance.astro/5.1.Orbs.html - retrieved on Jan. 25 - 2022*

While initially adopting Diggs' static concept, Einstein formulated an infinite but spatially finite temporal model and provided a unified description of gravity as a geometric property of space and time[40]. For him, in this static universe, space is finite but devoid of borders or edges (like a sphere with a finite area but devoid of limits), and some perturbations can occur in it that determine spatial changes, such as expansions or contractions.

The study of these cosmological events showed that Einstein's model was correct and found experimental demonstrations but did not eliminate many other solutions.

Later, Einstein found something was missing in his universal model since the gravitational force would bring matter closer to the universe. Looking at the mathematical formulation of his theory, he then found that introducing a constant term would compensate for the force of attraction of gravity in a static universe. This mathematical element was called the *cosmological constant*, and it expressed itself as follows:

[40] Williams,Matt in https://www.universetoday.com/139701/einstein-was-right-again-successful-test-of-general-relativity-near-a-supermassive-black-hole/- retrieved on Feb.28-2022

$$R_{\mu\nu} - \frac{1}{2} R\, g_{\mu\nu} + \Lambda\, g_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu}$$

(where R and g belong to the structure of spacetime, T belongs to matter, and G and c are conversion factors).

It is important to emphasize, for a good understanding of what was said above, that Einstein introduced, and adopted in his cosmological constant, a concept of gravity very different from the one that was in use, which was limited to the shape of a force deflecting bodies from their inertial positions because of their masses and distances. Smeenk [41]explains this concept:

> *"General relativity introduced a new way of representing gravity: rather than describing gravity as a force deflecting bodies from inertial motion, bodies free from non-gravitational forces move along the analog of straight lines, called geodesics, through a curved spacetime geometry.* [3] *The spacetime curvature is*

[41] Smeenk, Christopher and George Ellis, "Philosophy of Cosmology", The Stanford Encyclopedia of Philosophy (Winter 2017 Edition) - par. 1.1, Edward N. Zalta (ed.), https://plato.stanford.edu/archives/win2017/entries/cosmology/

related to the distribution of energy and matter through GR's fundamental equations (Einstein's field equations, EFE). The dynamics of the theory are non-linear: matter curves spacetime and the curvature of spacetime determines how matter moves, and gravitational waves interact with each other gravitationally and act as gravitational sources. The theory also replaces the single gravitational potential, and associated field equation, of Newton's theory, with a set of 10 coupled, non-linear equations for ten independent potentials ».

This concept is known as « space-time geometry.»

A contemporary of Einstein, the Russian cosmologist Alexander Friedmann, proposed a universe model that, although obedient to the equations of general relativity and the cosmological principle, could expand or contract and whose geometry could be open, flat, or flat or closed. It means a universe in expansion and contraction in any geometric structure.

Friedmann's equations that introduced this concept of a geometrically free expanding universe, and its offshoots, continued after he died in 1925 at the age of thirty-seven. In his honour, the classical solution of Einstein's field equations, which describes a homogeneous and isotropic universe, is called the Friedmann–Lemaître–Robertson–Walker metric, or *FLRW*.

This is the boundary between classical cosmology and scientific cosmology in all respects.

In the face of the study of the phenomenon of life, Darwin awakens and challenges the natural sciences, biophysics, and its evolutionary processes, which were captive and imprisoned in the dungeons of religious obscurantism for offending creationist myths and beliefs. As a result, Darwin's evolutionary anthropogony started one of the most turbulent ideological disputes in the twentieth century.

Captain Robert FitzRoy, one of those who commanded the ship "Beagle" on Darwin's long expeditions, living with him and his ideas and notes, was fervently religious and, sometime later, publicly expressed his enormous sense of guilt for having participated in these expeditions since the research done offended the sacred scriptures. Many historians understand that the guilt he

carried for his approach to evolutionary theory was one of the several reasons that led him to suicide on April 30, 1865, at the age of 59. Religious imagery suffocated science.[42]

This birth of natural history and biophysics, revealing the complex processes of the emergence and evolution of life on Earth, overcame all ideological walls and finally led science to the domain of genetics and all that it means technologically for humanity today.

Finally, in the face of behavioural sciences, Sigmund Freud preceded the revolution in the knowledge of the phenomenon of consciousness and the principles of psychology. His daughter Ana Freud, Carl Jung, Lacan, and many others were followed. These scientific developments provided the framework of a cosmovision with an indispensable understanding of the characters who play the role of life on Earth, from which all philosophy, science, ethics, and law emerge.

[42] Sarah Brown, "Religion and Science: The Tragic Story of Captain Robert FitzRoy," Journal of Scientific History (2021), 34-58.

Inferential Reasoning and Inferential Cosmology

To understand the universe, we should consider inferential reasoning and inferential cosmology.

Inferential reasoning is the process of drawing conclusions based on observations and existing knowledge. This process is central to scientific inquiry and is used by scientists to test hypotheses, make predictions, and gain a new understanding of the world around us.

Let us remember that nothing is denied that science demonstrates, nor is anything affirmed that science can deny. Everything else in knowledge is logic and critical thinking. Anything beyond that is mere guesswork.

Smeenk and Ellis [43]exemplify the epistemological models that we will try to employ:

> *"Recent debates regarding the legitimacy of different lines of research in cosmology reflect different*

[43] Smeenk, Christopher-« Philosophy of Cosmology-« par. 4.1 in https://plato.stanford.edu/entries/cosmology/ retrieved on Dec.23-2022

responses to this challenge. One response is to retreat to hypothetical-deductivism (HD): the hypothesis receives an incremental boost in confidence when one of its consequences is verified (and a decrease if it is falsified). Proponents of inflation argue, for example, that inflation should be accepted based on its successful prediction of a flat universe with a specific spectrum of density perturbations. Some advocates of the multiverse take its successful prediction of the value of ΛΛ as the most compelling evidence in its favor. »

In cosmology and its applications, such as the formulation of cosmovisions, inferential reasoning plays a critical role in understanding the evolution and structure of the universe. Modern cosmology uses observational data and theoretical models to make inferences about the early universe, the distribution of dark matter and dark energy, and the nature of cosmic microwave background radiation, among other things.

As a methodology, inferential reasoning is based on physics, mathematics, and observational

astronomy principles and seeks to understand the universe. Such reasoning is essential in cosmology because it allows scientists to make predictions and draw conclusions based on observational data and theoretical models.

Inferential reasoning also plays a crucial role in many specific deep questions, such as studying dark matter and dark energy, which are believed to make up over 95% of the universe's total mass-energy content.

The existence of these mysterious substances was first inferred based on their gravitational effects on visible matter. Further observations and measurements, such as those obtained from the Planck satellite, have confirmed the presence of dark matter and energy and provided new constraints on their properties. These inferences have led to new theories about the nature of dark matter and dark energy, such as the idea that dark energy is a cosmological constant that drives the universe's acceleration.

Despite their importance, dark matter and dark energy are still poorly understood, and their properties are only known indirectly through their gravitational effects on visible matter. Cosmic microwave background radiation (CMB) is one of the most important sources of information about

the early universe. This radiation is a faint glow that permeates the universe and is believed to have been produced by the hot and dense plasma that existed in the early universe

Using inferential reasoning, cosmologists can infer the distribution and properties of dark matter and dark energy based on their gravitational effects on visible matter, such as galaxies and clusters of galaxies, temperature, density, and other physical properties.

Such discoveries provided strong evidence for the Big Bang theory, which states that the universe began as a hot and dense plasma and has been expanding and cooling ever since. The CMB also provided the first direct evidence for the inflationary phase of the universe, which is believed to have happened in the first fraction of a second after the Big Bang. Inflation is thought to have smoothed out the universe and seeded structure formation, such as galaxies and clusters of galaxies.

Inferential reasoning is also critical for testing and refining cosmological models. By making predictions based on theoretical models and comparing these predictions to observational data, cosmologists can determine the validity of

different models and make refinements as necessary.

The standard model of cosmology is one of these cases, also known as the Lambda-CDM model, and is based on the idea that the universe is composed of dark matter, dark energy, and baryonic matter (visible matter). This model has successfully explained many observations, such as the formation of large-scale structures and the observed anisotropies in cosmic microwave background radiation. However, it also faces some challenges, such as the coincidence problem (why dark energy and dark matter densities are similar today) and the absence of observed counterparts for dark matter particles. Thus, inferential reasoning plays a critical role in determining the validity of the standard model and developing new models that better explain the observations.

Therefore, Inferential reasoning is a crucial component of scientific inquiry and plays a significant role in cosmology. Making predictions and drawing conclusions based on observational data and theoretical models has allowed cosmologists to advance our understanding of the universe. The discoveries and insights from inferential cosmology have provided new understandings of the universe, its structure, and evolution. By continuing to use inferential

reasoning to test and refine our models, we can continue to make discoveries.

Taking all these resources in our investigations, we can build the most varied models of cosmovisions from the current state of science, varying in amplitude, intensity, and object, all of them logically supported and valid, coherent and complementary to each other, which makes them something far beyond the mere and fragile beliefs of the collective imagination, limited, unstable, unsustainable and mutually exclusive.[44]

A cosmovision may contain some projective models of reality based on elements demonstrable in the present. However, this does not mean it can see the future since it exceeds our time-space dimension. The future only exists in the imagination, where predictions and guesswork reside. The cosmovision model we have formulated is linear and straightforward and can complement simpler models or be deepened or expanded without limit. This model is built on five interrelated fields concentrating on the essential objects of observation in analytic philosophy.

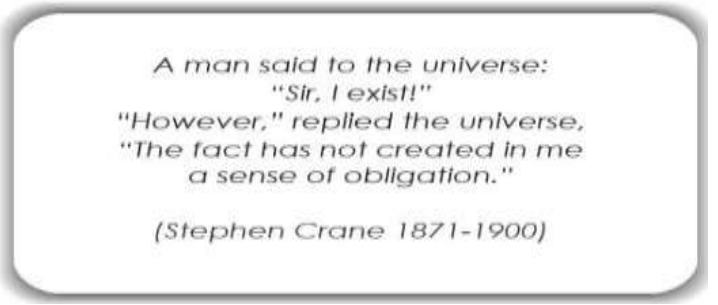
[44] Rodriguez, Juan "Models of Cosmology: The Advancement of Science and Beyond," Scientific Review (2021), 89-112.

On the other hand, we cannot underestimate imagination as a tool of human intelligence since the logical principles of critical reasoning are respected. The cosmovision models discussed in this work should not be limited by the knowledge we have in the present, but the imagination allows for the possibility of expanding and evolving our understanding. The imagination provides a space to make predictions and guesswork about the future, which may lead to further discoveries and advancements. Albert Einstein[45] claimed:

> *"Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution."*

[45] Einstein, Albert. "Cosmological Considerations in the General Theory of Relativity." Sidelights on Relativity. New York: Dover, 1983.

First framework: the physical universe.



46

Current View

Less than 200 years ago, our grandparents moved from point A to point B, at a speed X<40km/h, on carts with two or four wheels, generally, and in most places, by horses and other equines, or even elephants in Southeast Asia and enslaved people in the Americas and the Caribbean. Locomotion could also be done without the carts, that is, by riding the said animals. Since ancient times, this

[46] Crane, Stephen - "War Is Kind and Other Poems" - Dover Publications (2016) - ISBN-10: 0486404242 / ISBN-13: 978-0486404240

has been done until the first steam locomotive was built in 1804 by Richard Trevithick.

Today, after two generations, we travel to other planets in our solar system and practice scientific research by observation and experimentation "in loco" hundreds of millions of kilometres away, with equipment at 692,000 km/h speeds.[47]

In no more than two generations, many of our descendants will be inhabiting other planets and will likely break through the boundaries of our solar system.

There is no remotest possibility of thinking and understanding the universe, man, and life as our grandparents did. We know the universe and ourselves much better than they do, and we cannot carry their myths, legends, beliefs, rites, fantasies, fears, and mistakes with us.

We are invited to look at the cosmos with our own eyes, even if it involves the fear and suffering of leaving our past and what we thought was our identity along the way. The generations before us did not have to go through this rupture and could do everything, including understanding the universe, as their ancestors did, without further

[47] The Parker Solar Probe Mission - https://www.nasa.gov/content/goddard/parker-solar-probe - retrieved on Jan, 30- 2022.

questioning. We cannot have the same comfort because we have been transported to another world never seen before, and we must know it for what it is. We must understand that we are an evolutionary life form and that "evolution is a process that involves blind variation and selective retention ." [48]We are mutants, and, through us, homo sapiens, a new species is being born that we could call "homo digitalis," which is as different from us as we once were to the Neanderthals.

the physical structure of the universe

We repeat here that a cosmovision does not make science; it feeds on it in the search for the best way of thinking about the immensity in which we are immersed, which is nothing more than the axial object of philosophy itself.

To begin our journey, we need to briefly review the most recent history of the evolution of astrophysics and astronomy in the post-Einstein-Friedman period because all the observation and understanding of the universe that we can currently formulate starts from it.

[48] TD Campbell "Variation and Selective Retention in Socio-cultural Evolution," in HR Barringer, BI Blanksten, and RW Mack, eds., Social Change in Developing Areas New York: Schenkman, 1965. – 32.

We can take as a starting point the year 1910 when Vesto Slipher discovered the redshift of spiral nebulae, which indicated that they were moving away from Earth [49]. Despite the misinterpretation of this discovery at the time, it was the way to establish the existence of other galaxies besides the Milky Way, of which there was still no evidence.

In 1927 Georges Lemaître [50]revised the FRSW (finite range scattering wave function) equations, adopting the concept of the redshift of Slipher spiral nebulae [51]. With this, he observed its recession, concluding that the universe's origin was the explosion of a single and primitive atom, which occurred approximately twenty billion years ago. This became the primordial atom or "cosmic egg" hypothesis [52], referencing most of the later research and discoveries developed by Gamow's studies.

---

[49] Way and D. Hunter, *Origins of the Expanding Universe: 1912-1932* Astronomical Society of the Pacific, San Francisco, 2013), ASP Conference Series, 471

[50] Lemaître, Annales de la Société Scientifique de Bruxelles 47, 49 (1927).

[51]Slipher, Proceedings of the American Philosophical Society 56, 403 (1917).

[52] G. Lemaître, *The Primeval Atom – an Essay on Cosmogony* , D. Van Nostrand Co, 1946

Gamow's model [53], starting from the primordial atom proposed by Lemaître, established an initially minimal, hot, and dense universe, which began to expand and cool at a given moment. At the initial instant, the volume would be close to zero. This came to be called the " initial singularity ": all existing matter would be concentrated in a point of infinite density. Therefore, space and time did not yet exist, as they are concepts that presuppose an atomic architecture of matter in physics.

Indeed, the original denomination of primordial "atom" was incorrect, given that this point of infinite density could not, in principle, have atomic structure. However, by assumption, the "cosmic egg" was proto-atomic, like a pure proton aggregate, whose explosion caused exponential protonic emissions that produced all existing matter and its atomic models.

To be sure, the structure of the primordial atom could never be observed phenomenologically, although quantum physics is firmly committed to better understanding this protoatomic structure through research in particle accelerators.

[53] Henrique, Alexandre Bagdonas (2011). «Discussing the nature of science from episodes in the history of cosmology» . Accessed March 4, 2021 apud https://en.wikipedia.org/wiki/George_Gamow

Next, Edwin Hubble laid the foundations and observational tools for Lemaître's theory, demonstrating that spiral nebulae were galaxies existing far beyond the Milky Way. In the studies and calculations of distances, locations, movements, and intergalactic distributions, a relationship between distances and their speeds of departure was verified. As Friedmann claimed, these assertions supported the universe's idea.

Lemaître's expansionist model has been challenged by several theories of the static universe, notably Fred Hoyle's steady-state model, which states that matter is created as galaxies move away from each other. The universe does not present expansions and retractions in this model, remaining static.

These clashes gradually dissipated over time, strengthening the idea that the universe was initially dense and hot.[54] Finally, in 1965 the cosmic microwave background was discovered, safely supporting Lemaître's expansionist theory, which came to be definitively called the "Big Bang Theory," gaining substantial prevalence among scientists.

[54] Way and D. Hunter, *Origins of the Expanding Universe: 1912-1932* Astronomical Society of the Pacific, San Francisco, 2013), ASP Conference Series, 471

In the same decade, Roger Penrose and Stephen Hawking demonstrated that the universe began at a singularity, confirming the Big Bang Theory under the principles of general relativity.[55]

The adoption of this theory registers a moment of paramount importance in astrophysical observation. As associated with current technological resources, it opens up possibilities for directed and systematized investigations, unlike the exploration of isolated or fragmentary phenomena or aspects, as was the case before.

At the same time that astrophysics, on the one hand, advanced towards the knowledge of an expanding universe, a new field of knowledge, even broader than astrophysics, appears to offer new paths: Quantum Theory.

All our scientific cosmology invariably sought the observation of our macrocosm, whose starting point was the atom (the most minor and indivisible particle of matter) and whose limit was infinite. Under this atomic concept of matter, which was given to us through Greek philosophy, we spent our entire history observing only one side of the universe: that is, everything that was equal to or greater than the atom (macrocosm), giving the

[55] Hawking on the Big Bang and Black Holes: 8 - World Scientific Pub Co Inc (1993)ISBN-10 : 9810210795/ISBN-13 : 978-9810210793

back to another universe, as vast, complex and infinite as this one, and composed by the physics of sub-atomic particles (microcosm).

The cosmological understanding that the atom was the smallest part of the matter in the universe was a huge mistake.

Quantum physics came to open the doors of this unknown universe and start the observation and experimentation of a cosmic context governed by its laws, different from the laws of macrocosmic physics but capable of interacting with them. These discoveries have even greater scientific value for cosmology and other fields of knowledge than the emergence of heliocentrism for astronomy at the end of the Middle Ages.

This branch of science is currently known as Quantum Mechanics, and the name comes from the Latin (quantum), meaning quantity. This branch of physics uses a basic unit called "quanta," which is considered an "energy packet" constitutive of a particular pattern in molecular, atomic, and subatomic systems.

The development of quantum science began in the mid-twentieth century and brought together the work and experiences of Albert Einstein, Max Planck, Niels Bohr, Richard Feinman, and Pauk Dirac, among many others.

The primary particles of quantum physics are neutrinos, electrons, quarks, gluons, weak force bosons, photons, and gravitons. In the particles of macrocosmic physics (atoms and molecules), what identifies and differentiates them are the mass configurations. In the particles of microcosmic or quantum physics, in the absence of mass, what characterizes them is energy and its functions.

Quantum physics came to keep company with macrocosmic astrophysics, searching for answers about the cosmic egg and the universe's origin. Hence, the continuous research of the so-called "Higgs boson," today dubbed by scientists as the "God particle," means a substantial challenge. Without the Higgs-boson particle, matter particles (such as quarks and electrons) would have no mass, allowing the formation of atoms, essential to the existence of matter.

Proof of the existence of the Higgs Boson[56] occurred in 2013 by the Large Hadron Collider (LHC), determining a scientific effort rarely seen and which may lead us to observe an image of the moment of the birth of everything.

[56]a)https://en.wikipedia.org/wiki/Higgs_boson
b)Sutton, Christine – "Higgs Boson, in - https://www.britannica.com/science/Higgs-boson - retrieved on Jan, 14 - 2022

In the face of this enormous collection coming from the most diverse areas of science, it is necessary to establish standards of concepts and methods that allow the understanding and correct use of these resources. It is a model reference that establishes compatibility between the available data.

Currently, the universally accepted standard is called the *Standard Model,* as expounded by Smeenk[57]

> *The development of a precise cosmological model compatible with the rich set of cosmological data currently available is an impressive achievement. Cosmology clearly relies very heavily on theory; the cosmological parameters that have been the target of observational campaigns are only defined given a background model.*
>
> *The strongest case for accepting the SM rests on the evidence in favor of the underlying physics, in concert with the*

[57] Smeenk, Christopher and George Ellis(2017) -"Philosophy of Cosmology" par. 1.4-The Stanford Encyclopedia of Philosophy Edward N. Zalta(ed.), https://plato.stanford.edu/archives/win2017/entries/cosmology/-

overdetermination of cosmological parameters. The SM includes several free parameters, such as the density parameters characterizing the abundance of different types of matter, each of which can be measured in several ways.

Therefore, the Standard Model should be the platform to base our inferences.

Many ideas and theories differ from the Standard Model by extrapolating their contents and unsubstantiated inferences, thus losing their scientific consistency.

This is the case of multiverse theories, proponents of several parallel universes and dimensions coexisting in the same spatiotemporal conditions, which became popular in fiction literature.

We will not consider these concepts as components of our cosmovision until they are reconciled with the Standard Model structure.

Behaviour of phenomenology

Within the scope of a cosmovision, however, and considering everything that science can tell us

about the universe, we are still faced with an essential question that has always divided science and philosophy: "considering the structure of the universe, what is the model or behaviour of cosmic phenomenology?" In other words, is the universe a deterministic system in causal chains, or is it an indeterminate random process subject to the principles of probability and deviations from errors and successes?

The vast differences between the two models cause multiple clashes of inferences.

Steven Gimble adequately lays out the foundations of determinism [58]:

> *« The first assumption is that the universe is deterministic. This means that the state of the universe at any given time is completely determined by the state of the universe immediately before. If the universe is in state A, then it will always transition*

[58] Gimbel, Steven - Ph.D. , Gettysburg College (2020).« Understanding the Universe: From Probability to Quantum Theory » From the lecture series: Redefining Reality: the Intellectual Implications of Modern Science – in https://www.thegreatcoursesdaily.com/ understanding-the-universe-from-probability-to-quantum-theory/- retrieved on Jan, 17, 2022

to state B. The second related assumption is that the rules have steady-state solutions. That means that the development of states over time is well-behaved and follows a simple pattern.

The third assumption is the stability of those steady-state solutions: that a small difference in initial the state makes only a small difference to the next state.

The fourth is predictability. The idea is that if we know the rules and the data, we can predict what is to come. »

On the other hand, defenders of the random nature of cosmic phenomenology, supported by observations of quantum mechanics, strongly support the idea of a cosmic structure characterized by *indeterminacy* and *incompleteness*, where probability becomes a central element of reality's process.

Michael Starbird [59], from the University of Texas – Austin, talks about the meaning that can be given to probability in modern cosmology:

[59] Starbird , Michael, "Our Random World—Probability Defined » - From the lecture series: What are the chances? Probability made

« It would be nice to say, "Well, our challenge in life is to get rid of uncertainty and be in complete control of everything." That is not going to happen. One of life's real challenges is to deal with the uncertain and the unknown in some sort of an effective way; that is where the realm of probability comes in.

Probability gives us information that we can act on.

Probability accomplishes the amazing feat of giving a meaningful numerical description of things that we admit we do not know, of the uncertain, and the unknown. It gives us information that we actually can act on. If you repeat those trials many, many times and look at them in the aggregate, that's when you begin to see glimpses of regularity. It is the job of probability to put a meaningful numerical value on

clear. (2017) https://www.thegreatcoursesdaily.com/random-world-probability-defined/ retrieved Jan, 15-2022

the things that we admit we don't know. »

These two cosmological concepts are inferential and are equally supported by elements of science. A rich and well-elaborated literature can be found regarding both models.

In conclusive terms, we can infer that everything that exists and happens in the cosmos can result from a firm determination of a chain of causes, or it can be a phenomenological event of an incomplete nature and subject to all the random alternatives of the laws of probability.

They are very different things and can interfere intensely with structuring a cosmovision. Of course, adopting inference as the only expression of the truth has the same epistemological value, but this can result in elements that are difficult to adapt to any model of cosmovision correctly.

For this reason, and like several other authors, we understand that both ideas share valuable observation and analysis elements, but neither prevails. Both are antagonistic models but not exclusive, which allows us to understand that many things are rigorously determined by a causal chain in the universe, while others are incomplete and driven by the principles of probability and action. Consequently, we cannot correctly establish a single, stable model for cosmic phenomenology.

Each cosmovision is a product of each person's cognitive ability and structure: it is how we see the universe, and none of us is obliged to see the universe with one eye if we have two.

This knowable immensity before us profoundly changes several aspects of our observation and understanding of the whole. It became inappropriate to persevere in naive beliefs that we still hold, such as the Aristotelian view that the Earth can be the centre of the universe, and others that see it as having been created by a deity to house a species similar to it, or made to represent it: man, centre, and lord of the Earth. It is no longer possible to carry anthropocentrism, the brother of medieval geocentrism, as the depository of our ignorance and the myth as the cloak of our obscurity.

We can now understand that the cosmos is not a romantic landscape for man to contemplate, counting stars and drawing constellations, as we used to watch it. Instead, it has much more than that to reveal to us.

Undoubtedly, the laws of physics, whether atomic or quantum, are impersonal and allow us to know the cosmic origin and development intimately. Moreover, these laws stamp the reality that the universe has no actors or scripts, nor does it

contain anything other than mass, energy, and interactions.

The universe is an immense mathematical model, a cauldron of possibilities governed by games or combinations of probabilities to which countless factors contribute, many precisely determined and others simply random, occasional, or opportune.

In this gigantic casino where "God does not play dice," as Einstein said, man is unimportant. Man is cosmologically insignificant. We are just a tiny mathematical possibility, more or less likely according to the circumstances, Nothing else.

These inferences lead us to understand that the universe is impersonal and amoral: it is just mass, energy, and time interrelated, as we have already said. Value judgments are not cosmic elements but only fragile and unstable products of our minds. There are no adjectival qualities; everything else that is supposed about it is an indemonstrable abstraction.

Cosmic phenomenology is violent. It consists of transformations of immense proportions in nanoseconds and develops sudden mass and energy disaggregating processes that presuppose the total and immediate destruction or rupture of forms, aggregates, and bodies, in addition to

gigantic energetic transmigrations. Nothing is stable or permanent in the cosmos; everything is constantly changing. Cosmic phenomenological causality is a ballet of instability and violence, and everything structurally constituted in this dance is destined for destruction: everything is subject to it; everything that is added is heading toward rupture. Everything structured carries the seeds of demolition; everything that lives will die, and everything that is is nothing.

Cosmic phenomenology does not harbor purposes, projects, values, purposes established orders. Methodologically, the universe is chaotic, on the one hand, inevitably determined, and, on the other hand, unpredictable and fortuitous.

However, as much as these governing laws of the universe are visible and understandable to us, and as insignificant as we are for the cosmic immensity, there is a phenomenon that goes beyond the mass-energy relationship and torments philosophy and sciences for not being visible to the eyes of physics: life and, in it, consciousness.

Discussing the phenomenon of life will always encounter the same epistemological difficulty that cosmology has always encountered: it is a unique phenomenon whose structure only allows partial

observation and does not allow comparative methodology with anything else. Faced with the cosmic phenomenon of life, we are still in the field of inferences.

This circumstance, however, does not necessarily distance us from reality, nor does it prevent us from facing the attempt to understand this phenomenon that only we, living beings, can experience and, perhaps, understand.

The Chaos Theory

The concept of chaos has been a subject of fascination for centuries, inspiring scientific investigation and artistic expression. As a complex and multidisciplinary study, chaos theory encompasses mathematics, physics, biology, and even psychology. The central idea of chaos theory is that ***seemingly random and unpredictable behaviour can arise from simple underlying rules.***

Regarding the formulation of a cosmovision, the most relevant contribution brought by the Chaos Theory is the total abandonment of the traditional and unsustainable belief of mutual exclusion in the dichotomy "random-deterministic," persistent in most understandings about the universe and all its phenomenological causal-effect relations.

The British mathematician and physicist Ian Stewart[60], who has also made significant contributions to the study of chaos, stated:

[60] Ian Stewart, Does God Play Dice? The Mathematics of Chaos (Oxford: Blackwell, 1989), p.

"Chaos theory says that, in some sense, everything is deterministic. Nevertheless, in another sense, everything is random."

This straightforward and provocative presentation is sufficient to declare a pervasive revolution in the ways we understand and interpret the universe and all its phenomenology, introducing relevant influence and questionings not only in sciences but also in humanism, ethics, psychology, and even religions.

The Chaos Theory is multidisciplinary in its structure and as relevant as highly complex in its formulations and conclusions. We intend not to go further with a mathematical or physical understanding of the theory. Some of its statements, however, can not be despised in the construction and development of any cosmovision, primarily those accepting the inferential reasoning once its basic principle is the foundation pillar for many cosmovisions, including the one we formulated in this work.

The earliest and most influential theorist in the field was the French mathematician Henri Poincaré,[61]who wrote:

> *"It is never the same river that we step into twice, and this is because it is never the same man who steps into the river twice."*

These straightforward words hide a very new and challenging perception of how the universe works or can work. Poincaré was referring to the idea that even though the underlying laws of nature are deterministic, the tiny variations in initial conditions can cause vastly different outcomes over time. This idea became known as the **butterfly effect** (because of the example he took for the model) and is a central concept in chaos theory.

Before the proposition of the Chaos Theory, the French mathematician gained notoriety during the last quarter of the Nineteenth Century by solving an old mathematical challenge called "the three-

[61] Henri Poincaré, Science and Method (New York: Dover Publications, 1952), p. 127

body problem," awarded by the King of Sweden for this outstanding achievement that before had defeated Euler, Lagrange, and Laplace.

The problem was proposed by Newton, who proved that

> *The paths of two planets orbiting around each other would remain stable. However, even the addition of just one more orbiting body to this already simplified solar system resulted in the involvement of as many as 18 different variables (such as position, velocity in each direction, etc.), making it mathematically too complex to predict or disprove a stable orbit"*[62].

Poincaré used a series of "***approximations of the orbits***." to achieve his solution.

[62] Ian Stewart(1989) "Does God Play Dice?" Apud "Story of Mathematics" in https://www.storyofmathematics.com/19th_poincare.html/, retrieved on Jan 07,2023

However, despite the notoriety of his achievement, Poincaré further found that some possibly influent elements of his mathematical solution had been ignored, whose inclusion would substantially modify the results. In other words, the equations of the approximation of the orbits could offer only a partial solution to the problem.
Alain Chanciner[63], however, argues the following:

> "*Having probably in mind the periodic solutions of the planetary or lunar type, in particular the Hill solutions of the lunar problem, and having maybe forgotten his 1896 note, he writes in the introduction that '...it is not to the geodesics of the surfaces with opposite curvatures that the trajectories of the Three-Body Problem may be compared; it is on the contrary to the geodesics of convex surfaces. Hence I took up studying the geodesics of convex surfaces; unfortunately, the problem is much harder than the one solved by Mr. Hadamard [the case of surfaces with opposite curvatures]. I had to be content with*

[63] Apud https://perso.imcce.fr/alain-chenciner/Poincare_Barcelone_2004_en.pdf

> *some partial results, essentially on closed geodesics, which play here the role of the periodic solutions of the Three-Body Problem".*

Facts like these, starting complex discussions, are why some scholars say the Chaos Theory was born from a mistake.[64]

In this scenario, many other scientists have aggregated notable contributions to the theory up to the present day in such a way that presents its dismemberments in the fields of mathematics, physics, geometry, cosmology, and other sciences are uncountable.

A straightforward example of the Chaos Theory's influence can be seen in Fermat's Principle:

> *"Light travels between two points along the path that requires the least time, as compared to other nearby paths."*

From Fermat's principle, one can derive (a) the law of reflection [the angle of incidence is equal to the

[64] Apud "Story of Mathmatics" in https://www.storyofmathematics.com/19th_poincare.html/, retrieved on Jan 07,2023

angle of reflection, and (b) the law of refraction [Snell's law]

More recently, and considering Fermat's Principle, R.P. Feynmann[65] commented:

> *"Instead of saying it is a causal thing, that when we do one thing, something else happens, and so on, it says this: we set up the situation, and light decides which is the shortest time, or the extreme one, and chooses that path. But what does it do? How does it find out? Does it smell the nearby paths and check them against each other? The answer is, yes, it does in a way."*

The American mathematician Edward Lorenz was another essential contributor to the development of chaos theory[66]. In a 1963 paper, Lorenz described a simple mathematical model of

[65] R.P. Feynmann QED The strange theory of light and matter (Alice G. Mautner lectures) Princeton University press (1988), traduction fran¸caise Lumi`ere et mati`ere Le Seuil (1992)

[66] Edward Lorenz, "Deterministic Nonperiodic Flow," Journal of the Atmospheric Sciences, vol. 20, no. 2 (1963), pp. 130-14

atmospheric convection that exhibited seemingly random behaviour. He famously wrote:

> *"One meteorologist remarked that if the theory were correct, one flap of a seagull's wings would be enough to alter the course of the weather forever."*

The bruising simplicity of Poincaré's intuition starting the grounds of Chaos Theory is shown by Hadamard[67]

> "*Faced with a discovery of Hermite, one is inclined to say: – Admirable to see how a human being could arrive at such an extraordinary way of thinking! But, reading a memoir of Poincar'e, one says: – How is it possible that one has not arrived much earlier to things so deeply natural and logical ?."*

[67] Hadamard, Jacques (1865-1963),Poincaré i la teoria de les equacions diferencials"/ conferències per J. Hadamard ; recollides per E. Terradas i B. Bassegoda

These are the right words: everything is deeply natural and logically fits adequately in a cosmovision.

Second framework: life and consciousness

In the same way that we had to move away from our beliefs to observe the physical universe, we now have to move away from our imagination to observe the phenomenon of life in its cosmic amplitude.

Life in the cosmos is the raw material of most of the fervent manifestations of science fiction that, although it occasionally seeks rational anchors for its ramblings, remains fiction and nothing more.

First, let us define what we mean by "life" since we are almost always trapped in the concept of "my, or our life," as if human life centralized the meaning of the phenomenon or represented its most significant expression. As a result, we tend to see life through ourselves, a tiny, blind starting point.

From the beginning, we will establish some simple, although fundamental, concepts that science offers us.

a) Life is an integral element of the phenomenology of the physical universe, and it should be studied with the same instruments and processes applied to the physical sciences.

b) By its nature, life is not epiphenomenal; it is not a secondary phenomenon that occurs alongside a primary phenomenon. Instead, life is immanent in the cosmos.

c) Life presents itself as an event initially present and presently possible throughout the universe.

d) All life forms, from the micro to the macro universe, are subject to the same laws and principles.

e) Life is a systemic cosmic process and constant evolutionary transformation, not a phenomenological episode that can be understood separately. On the contrary, all the countless manifestations of life, from unicellular beings to the most complex organisms, are phenomenologically interrelated, from their causes to their development, in a complex system like a network or web, within the same spatiotemporal dimension.

e) In the continuous evolutionary process of the various manifestations of life, a constant can be observed: the presence of the processing of the phenomenon of consciousness at different levels of amplitude and complexity. Life appears to exist as a phenomenon to participate in consciousness processing.

f) The hypothesis that the universe can express consciousness today is one of the great questions of quantum science.

g) In the whole evolutionary process of life, another constant is observed: The system does not establish any means of conservation of any living being but only preserves the forms of life itself and its evolutionary mutations. The individual is a temporary and disposable agent as soon as he has contributed to the systemic effort, which is limited to his reproduction, adding to the genome the capacities he has developed. Henceforth, individual lives no longer have a cosmic purpose, and the many other natural elements of the system are responsible for destroying them.

h) Planet Earth is not the only, biggest, or best laboratory of the phenomenon of life. As much as one day we discovered that we were not the centre of the solar system, we need today to understand that the cosmic dimensions of life do not fit on our tiny planet and to understand that the forms of life we know are not the only ones that exist or can exist.

These findings that science can offer us immediately raise the most crucial questions we have tried to unravel throughout history through

philosophy. Faced with these statements, we are led to ask (i)Whether life, as a cosmic system, has an intentional content. (ii)Whether cosmic phenomenology, in this case, would harbour processes of a pragmatic nature, such as stimulating and seeking the development of consciousness. (iii) Whether there could be a cosmic consciousness, a consciousness of the whole; (iv)Whether this eventual awareness of the whole would be predominantly deterministic or random. (v) Whether, in the case of this consciousness being finalist, what would be its teleological object? Finally, (vi)If we could accept the existence of cosmic consciousness, would we also accept a "panpsychism"?

All these questions go beyond science's current state, and we still do not have genuinely sustainable answers for them. Some theories claim to have, many thinkers claim to know, but invariably all the answers we know do not go beyond fragments of knowledge, still incapable of transforming these intense debates into a scenario of factual claims.

In formulating our cosmovision, we cannot let ourselves be overwhelmed by these endless ongoing questions. Instead, we must continue on our methodological path with the tools we have

and try to answer the many questions that have already been adequately visited by science. Undoubtedly, these insoluble issues must be constantly observed and monitored in their development.

The first of the questions we have to face concerns the nature and origin of the phenomenon of life.

Biochemically, in an effortless way, life results from a complex association of proteins, enzymes, and other elements that, under specific energetic conditions, transforms inorganic matter into organic matter and, through various processes, into organisms.

This remarkable phenomenon has captivated the minds of scientists and philosophers for centuries. From a biochemical perspective, life results from a complex association of various organic and inorganic elements that interact to create the conditions necessary for life to exist and thrive. This work will examine the biochemical processes that transform inorganic matter into organic matter and living organisms.

Inorganic to Organic Matter Transformation

Transforming inorganic matter into organic matter is a complex process that is not yet fully

understood. However, it is widely accepted that this transformation results from the interactions between energy, enzymes, and other environmental elements. Enzymes are proteins that catalyze chemical reactions and are essential for forming organic molecules. In addition, these enzymes act as intermediaries, facilitating the transfer of energy and matter between different species, thereby promoting the growth and replication of living organisms.

One of the most well-known examples of transforming inorganic matter into organic matter is the process of photosynthesis, which occurs in plants. In photosynthesis, light energy from the sun is absorbed by pigments in the plant cells, and this energy is used to drive the reaction between water and carbon dioxide to form glucose, an organic molecule. This process is essential for the survival of plants as it provides them with the energy they need to grow and reproduce.

From Organic Matter to Organisms

Once organic matter has been formed, it can undergo further transformations that result in the formation of living organisms. This process is known as biological evolution and is driven by natural selection, genetic drift, and mutation.

Natural selection is the process by which certain traits are passed on from generation to generation because they are advantageous in the environment. Genetic drift refers to the random changes in gene frequency that occur over time, and mutation refers to the permanent alteration of the genetic material in a cell.

Over time, these processes result in the evolution of new species and the extinction of others. For example, over millions of years, the evolution of mammals from reptilian ancestors has resulted in the development of a wide range of species, each adapted to different environments and lifestyles.

We may conclude that life results from a complex biochemical process involving transforming inorganic matter into organic matter and living organisms. This process is driven by the interactions between energy, enzymes, and other environmental elements and is facilitated by natural selection, genetic drift, and mutation. However, further research is needed to fully understand this process's intricacies and better understand the origins of life on our planet.

In any place or time, as it happened on our planet, this transformative process meant a gigantic movement, immersed in the engineering of

unimaginable complexity, which requires the advancement of experimental processes that allow us to come to understand it in its origins and development, even obscure to our knowledge.

The dimensions of this jump are commented on by James Trefil, Harold J. Morowitz, and Eric Smith (68)when referring to life on Earth:

"Because we perceive a deep gap when we think about the difference between inorganic matter and life, we feel that nature must have made a big leap to cross that gap. This point of view has led to searches for ways large and complex molecules could have formed early in Earth's history, a daunting task."

The steps of this journey constitute one of the most significant challenges of science until today.

Charles Darwin had already proposed the existence of a mixture of ammonia with phosphorus salts subjected to specific conditions of temperature, pressure, luminosity, and electrical charge, which would result in proteins with a more complex structure composing living organisms.

[68] James Trefil , Harold J. Morowitz , Eric Smith – " The Origin of Life" (article) https://www.americanscientist.org/article/the-origin-of-life- retrieved on Feb.07,2022

Subsequently, Alexandre Ivanovich Oparin (1894-1980) studied the possible conditions for the evolution of these proteins from the point of view of Darwinian principles of competition and selection in a still prebiotic environment.

Around 1920, and still, in the Darwinian universe, Oparin, together with John BS Haldane, nicknamed "Jack" or " JBS " (1892 – 1964), and a few others, based on astronomical observations and other elements, proposed the heterotropic theory of the origin of life. The theory claims that the first living organisms would have been heterotrophic bacteria that could not produce their food but obtained organic material present in the prebiotic environment. This material would be an aqueous compound of organic compounds existing on the surface at brief moments of the planet's geological development and received a jocular nickname whose use became widespread: "The Primordial Soup." Such a compound would result from endogenous abiotic syntheses and the extraterrestrial delivery by cometary and meteoritic collisions, from which some have assumed that the first living systems evolved.69

[69] Henderson James (Jim) - Pinti, Daniele L.- Quintanilla, José Cernicharo- Rouan, Lazcano, Antonio- Gargaud, Muriel- Irvine, William M. - Amils, Ricardo - Cleaves, Daniel- Spohn, Tilman - Tirard, Stéphane- Viso , Michel-

Studies carried out since 1953 have demonstrated the existence of these simple organic molecules in several migratory celestial bodies such as meteorites, comets, and interstellar clouds, showing that they are naturally transported through cosmic space like seeds thrown in the wind, some of which will germinate wherever and whenever they find favourable conditions. Therefore, understanding life as a phenomenon whose causal chemical conditions are spread throughout the cosmos by nomadic bodies, opens the door to its observation as a random event whose possibility is subject to countless variables. "God does not play dice," Einstein repeated from the height of his determinism, but indeed the cosmos throws its seeds at random, its dice to be played.

Indeed, and given the scope of the subject, the heterotropic theory of Oparin-Haldane found its opponents and left its doubts. However, as expressed by Trefil, Norowitz, and Smith:70

(2015)- "Primordial Soup" - Encyclopedia of Astrobiology – 2014 -Springer Berlin Heidelberg - SN - 978-3-662-44185-5
Retrieved from https://doi.org/10.1007/978-3-662-44185-5_1275 - Feb.2022

[70]Op.cit.

"The essential legacy of the Primordial Soup was twofold: It simplified the notion of the origin of life to a single pivotal event, and then it proposed that event—the step that occurred after the molecules were made—was a result of chance. In the standard language, life is to be seen, in the end, as a "frozen accident." In this view, many fundamental details about the structure of life are not amenable to explanation. The architecture of life is just one of those things. Although many modern theories are less extreme than this, frozen-accident thinking still influences what some of us ask about the origin of life and how we prioritize our experiments. «

Later, the discovery of catalytic RNAs, called ribozymes, by Sidney Altman and Thomas Cech (1989 Nobel Prize in Chemistry) demonstrated that not only proteins could function as catalysts for the chemical reactions involving the origin of organic molecules, expanding the framework of experiments and researches on the origin of life.

We can observe this expansion of the investigative field of science in the commentary by Patrick Forterre and Simonetta Gribaldo :71

[71] Forterre , Patrick and Gribaldo, Simonetta – "The origin of modern terrestrial life"- HFSP J. 2007 Sep; 1(3): 156–168.Published online 2007 Jul

« We definitely know, from the resolution of the ribosome structure, that modern proteins were “invented” by RNA (Steitz and Moore, 2003). This means that, once upon a time, RNA was the master of life, covering both the genetic and catalytic properties today performed by DNA and proteins, respectively. However, the formation of a bona fide ribonucleotide has never been successfully achieved in the laboratory, and the formation of oligoribonucleotides from monomers is extremely difficult to achieve.»

Therefore, in science, the concept of the emergence of life as this set of chemical reactions requires us to leave the observational field of cosmic phenomenology to expand the experimental approach to these processes. The study of the origin of life covers many areas of expertise and requires a multidisciplinary contribution from several fields of science. Today's research fields constitute neonate sciences such as exobiology or astrobiology, astrophysics, and geophysics.

25. doi: 10.2976/1.2759103 retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2640990/ on Feb.07,2022.

These findings and demonstrations support our initially exposed view of life as a cosmic phenomenon resulting from transforming inorganic matter into organic molecules. The transformation process involves simple components existing anywhere in the universe, disseminated through sparse and migrating physical material (bodies, fragments, dust, and other materials) capable of finding the conjunction of appropriate environments and specific conditions for this transformation. In these terms, life is an integral physical part of cosmic phenomenology, sown to develop where there are sufficient conditions, a physical process, therefore subject to the laws of probability.

In its essence, human life is no different from any other form of life and occurs or fails to occur according to the same principles and phenomena." This idea is central to the interconnectedness of all things in the natural world. Once the process of life is established, it becomes part of a cosmic system where everything is interrelated and is driven by mutations and evolutionary movements. As a result, we find blind variations and selective retentions, determining elements alongside variable probabilities.

This assumption highlights the essential nature of the relationship between the human phenomenon and the more extensive cosmic system in which it exists. By recognizing the interconnectedness of all things and the fundamental principles that govern the universe, we can better understand our place in the world and our relationship to the environment.

As much as the physical universe, the biological universe is violent in expressing its intrinsic antagonisms. This assumption that the biological universe is violent in expressing its intrinsic antagonisms can be supported by various philosophical and scientific theories, as well as the works of European authors.

One critical philosophical theory supporting this assumption is Friedrich Nietzsche's concept of the "Will to Power." Nietzsche argued that all living beings are driven by a primal urge to exert power and control over their environment. This drive for power often results in conflict and violence as individuals and species struggle to dominate each other. In his book "Thus Spoke Zarathustra," Nietzsche writes:

"What is good? Everything that heightens the feeling of power in man, the will to power, power

itself. What is evil? Everything that is born of weakness."72

Similarly, the biological concept of "survival of the fittest," described by Charles Darwin in his theory of evolution, also supports this assumption. Darwin argued that species compete for limited resources, and those better adapted to their environment are more likely to survive and pass on their genes. This competition often leads to violence as species fight to secure their survival. In "The Origin of Species," Darwin writes:

"The struggle for existence inevitably follows from the high rate at which all organic beings tend to increase."73

In conclusion, both Nietzsche's Will to Power and Darwin's survival of the fittest demonstrate that violence is an inherent part of the biological universe. Whether driven by a desire for power or survival, living beings are constantly in conflict, and

---

[72] Friedrich Nietzsche, "Thus Spoke Zarathustra," trans. Walter Kaufmann (New York: Viking Press, 1954), 69.

[73] Charles Darwin, "The Origin of Species," 6th ed. (London: John Murray, 1872), 126

violence is a natural expression of these intrinsic antagonisms.

Life must feed life itself in a primary selective chain in which all species and forms serve each other, making possible the system's quantitative (population) balance and the survival of the various biological models. In these complex equations formed by biological systems, life has a finalist empirical nature, in which a constant we call competition prevails to benefit organisms whose evolution has given them more excellent resistance, fitness, adaptability, and, therefore, the ability to generate consciousness. From the microscopic universe to the realm of the most complex and developed organisms, life carries this violence where the less apt forms are subjugated to feed the organic processes of the forms that have become more apt and the other forms that do not develop an adaptive capacity to these infinite battles. As a result, they are despised: and extinguished as useless and failed experiments of nature.

Everything in the biological universe expresses this dialectical antagonism. The simple fact that we eat a lettuce leaf for lunch has the exact cosmic origin of a tragic world war. In both cases, it is about life-feeding life or life-promoting death by the same

competitive movements of the survival of the fittest. The same engineering that sustains life with the same simplicity promotes death.

All of us living beings are alone in this world of violent antagonisms. From when some inorganic elements crossed their atomic barriers to create an organic cell to our current forms, we have all been participants in this inexorable evolutionary process, whose only territory is experiencing, and the only weapons are constant adaptation and resistance. For life, as for the physical universe, there is no pre-established roadmap, project, or antecedent engineering. Life develops by itself; everything is created at every moment, and everything is invented in every movement, as much as everything dies in its own time so that the cosmic dynamics can continue.

In all its forms, we said that life is a system that presents itself as a productive process of consciousness. In this sense, life is just a process; the cosmic phenomenological object is consciousness.

We will not commit here the anthropocentric sin of understanding consciousness as property or quality of living beings, as homo sapiens presents in its evolutionary state. We will not be talking

about the consciousness of living beings on our planet, which means just one of the countless forms of consciousness, more and less complex, that we can find in the universe. Instead, we will constantly be referring to consciousness as a primary cosmic element spread throughout the universe, phenomenologically being able to happen or not anywhere, according to the exact probabilities that govern life, as one thing is a consequence of the other.

Therefore, the inferential principle is that wherever there is life, it will evolve towards the production of consciousness, starting from elementary organisms to reaching the most complex and specialized, according to the movements of the evolutionary dialectic.

Over the last few centuries, philosophy and science professed that consciousness was an epiphenomenon. This principle was generally based on the claim that consciousness arose long after the universe's beginning. We can find this meaning in ancient philosophy in the works of Hegel and other contemporaries.

The transcendentalist view of consciousness strongly influenced Western cultures and thought, starting from the claim that it constituted an

epiphenomenon transcending current reality and the world itself.

Maldonado 74summarizes this meaning as follows:

“In other words, consciousness transcends itself to find itself in reality – whatever that means. There is an “ultimate” reality beyond appearances where consciousness is to find and realize itself.”

And then he completes his argument:

“Transcendentalism entails a sense that the everyday world (the life world – Lebenswelt) lacks a deep sense of meaning and argument, and consciousness (= existence) is condemned to a sort of doomsday beyond which a real reality is to be found. By and large, transcendence has been the dominant cosmovision in western civilization's history.»

Under these concepts, until the recent past, we believed that the phenomenon of consciousness is

[74] Maldonado, CE – “Quantum physics and consciousness: a (strong) defense of panpsychism” p. 101-118, 2018Trans/Form/Ação, Marília, v. 41, p. 101-118, 2018, Special Edition.
https://www.academia.edu/38186752/Quantum_Physics_and_Consciousness_A_Strong_Defense_of_Panpsychism_pdf

only possible given the dimensions and functional capabilities of the human cerebral cortex. We understood that the cerebral cortex of animals is markedly different and less developed, not allowing for the production of states of consciousness. “Man is the only animal endowed with a conscience. Only man is capable of thinking”, so said our grandparents.

However, in 2012, during the Francis Crick Memorial Conference 75, held at the University of Cambridge, England, a manifesto was issued signed by a dozen world-renowned researchers, including Phillip Low and Stephen Hawking, declaring the existence of the psycho-cognitive phenomenon we call consciousness in several animals, mainly (but not only) vertebrates. Institutions such as the Max Planck Institute and MIT participated in this declaration by their representatives:

The First Annual Francis Crick Memorial Conference, focusing on "Consciousness in Humans and Non-Human Animals," aims to provide a purely data-driven perspective on the neural correlates of consciousness. The most advanced quantitative techniques for measuring

[75] https://fcmconference.org/ - retrieved on Jan 02,2022

and monitoring consciousness will be presented, with the topics of focus ranging from exploring the properties of neurons deep in the brainstem, to assessing global cerebral function in comatose patients. Model organisms investigated will span the species spectrum from flies to rodents, to birds, elephants to dolphins, and will be approached from the viewpoint of three branches: anatomy, physiology, and behaviour. However, until animals have their own storytellers, humans will always have the most glorious part of the story, and with this proverbial concept in mind, the symposium will address the notion that humans do not alone possess the neurological faculties that constitute consciousness as it is presently understood .76

The final terms of the statement are emphatic and do not represent the views of individuals we can trust, more or less. Though, the text is an energetic proclamation of all science:

"...at the leading edge of one of the biggest modern-day shifts in human thought. In July 2012, a prominent group of scientists released the

[76]ibidem

'Cambridge Declaration on Consciousness,' a formal acknowledgement that many non-human animals, including mammals, birds, and cephalopods, also possess 'the neurological substrates that generate consciousness. "77

The foundations of this statement have their origins at the beginning of the 20th century with Carr 78(1927) and extended with Burghardt (1985) 79and Colin (2011) 80, resulting in the central aspect that is of interest to this work.

Low and Hawking's work demonstrated that the cerebral cortex is not a causal element of consciousness, throwing away the anthropocentric concepts that supported science until then, and showing the reality that the brains of countless other animals are equally capable of developing different types and levels of consciousness, including "self-awareness," awareness of death, and fear in the face of danger.

---

[77]ibidem

[78] Carr, H (1927) "The interpretation of the animal mind". Psychological Review, p. 94. **34** : 87–106.

[79] Burghardt, Gordon M (1985) "Animal awareness: Current perceptions and historical perspective" *American Psychologist,* **40** (8):905-919 . doi :10.1037/0003-066X.40.8.905

[80] Colin, Allen. Edward N. Zalta, ed. «Animal Consciousness» . Stanford Encyclopedia of Philosophy (Summer 2011 Edition)

Cognitive behaviours of single-cell organisms were found even beyond these findings. For example, protozoans like Paramecium can swim, find food and mates, learn, remember and have sex without synaptic computation (Sherrington, 1857 - 1952). 81. In other words, the brain cannot be considered the only consciousness processor. More recently, experimental studies such as those developed by Jaak Panksepp (1943 – 2017) 82have established essential relationships between animal consciousness and emotional manifestations.

All these and other scientific advances have cast severe doubt on the transcendentalist concept of consciousness and the linear and anthropocentric notions of its breadth and scales of complexity.

A completely new way of understanding consciousness has emerged and has overcome these barriers that have held back the advancement of knowledge for so long.

---

[81]https://www.jpgmonline.com/article.asp?issn=0022-3859;year=2004;volume=50;issue=3;spage=238;epage=239;aulast=Kusurkar#cited - retrieved on Feb, 10.2022.

[82] Panksepp, J (1992). «A critical role for "affective neuroscience" in resolving what is basic about basic emotions.». Psychological Review. 99: 554–60. PMID 1502276 . doi : 10.1037/0033-295X.99.3.554 / Panksepp, Jaak; Biven, Lucy (2012). *The Archeology of Mind: Neuroevolutionary Origins of Human Emotions (Norton Series on Interpersonal Neurobiology)* [Sl]: WW Norton & Company. ISBN 978-0-393-70731-1

Confronting the concepts of transcendentalism and based on elements of the quantum sciences, the theories of immanence came to open new paths of observation and investigation of consciousness.

Consciousness does not transcend reality; both are broadly and deeply intertwined as equally primary elements of and immanent in cosmic phenomenology.

There is the same inseparable and immanent interconnection between life and consciousness. Nature is not an environment external to living beings and differentiated from them, which they can visit to integrate reality: this integration exists "by itself."

The universe cannot be understood without life, just as life is not understandable without consciousness. They are not epiphenomena that can manifest themselves in a divergent or disassociated way.

Within this immanence, the Universe, in itself, can manifest consciousness, or at least be endowed with what Penrose (1989; 1994) 83came to refer to

[83]Apud Maldonado, op.cit.

as the possibility of the existence of a "panprotopsychism," in which cosmic elements could be capable of participation in experimental activities.

The major cognitive problem is that we can only observe and experience the phenomenon of consciousness to a limited extent in the forms of life that we know and in which it is possible to verify this evolutionary process.

The studies and experiments on consciousness are innumerable and have never managed to quiet the anxieties that the subject causes in our minds. We can take the most different paths in this investigation. In terms of evidence, we will not go much further than the observation that consciousness, in higher animals, is a neuro-brain state resulting from electrodynamic cognitive processes of perception computed with elements of selective memory. Maldonado recalls:

« All in all, the world's reality depends on our observation. It is the theory what determines what we can see (Einstein). Observation is conscious, and consciousness transforms data into information and information into knowledge. The physical reality of an object depends on how we

choose to observe it (GILDER, 2009). Shortly said, we create our own reality (op. cit -112)."

However, our need to understand the phenomenon of consciousness constantly pushes us beyond the knowledge we have mastered. We know subliminally that it is not a mystery, not an enigma or a miracle; it is just a phenomenon whose structure we have not yet sufficiently unravelled. We resort to everything to understand it, and finally, we delve into the universe of quantum physics in search of what traditional science does not offer us.

Meijer and Raggett well explain this foray into the quantum realm:84

« The Descent into the Quantum World supposes one were to ask for a scientific description of your hand. Biology could describe it in terms of skin, bone, muscles, nerves, blood, etc., which might seem completely unsatisfactory. Then, you might

[84] Dirk KF Meijer and Simon Raggett – « Quantum Physics in Consciousness Studies » pp 08-09 Review/Literature compilation: The Quantum Mind Extended https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.676.3120&rep =rep1&type=pdf – retrieved on Feb.08,2022

ask what the muscle, blood etc., were made of. Here you would descend to a chemical explanation regarding molecules of protein, water etc., and the reactions and relations between these. You would have to descend into the quantum world if you were still unsatisfied with this. At this level, the solidity and continuity of matter dissolves. The molecules of protein etc., are made up of atoms, but the atoms themselves are mainly vacuum. Most of the mass of the atom lies in a small nucleus, comprised of protons and neutrons, which are themselves made up of smaller particles known as quarks. The rest of the atom's mass resides in a cloud of electrons orbiting around the nucleus. «

Many were these incursions in search of answers.

In this context, the theory of "orchestrated objective reduction " ("Orch OR"), proposed by the Nobel Prize in Physics 2020, Roger Penrose, physicist, mathematician, and philosopher of science at the University of Oxford, together with Stuart Hameroff, gains importance.85

[85] Penrose, Roger and Rameroff, Stuart- "Consciousness in the Universe: Neuroscience, Quantum Space-Time Geometry and Orch OR Theory » Journal of Cosmology, 2011, Vol. 14.99 pp 04-33 JournalofCosmology.com, 2011 – retrieved from https:/ /thejournalofcosmology.com/PenroseCHG.pdf on Feb 08 -2022

Unlike the conventional belief that consciousness results from connections between neurons, the theory proposes that it originates at the quantum level inside neurons. This implies an "objective reduction" quantum process orchestrated by cellular structures called microtubules.

Thus, while current theories claim that consciousness arises from the computational complexity developed by brain neurons, the Orch Or theory maintains that it is based on a non-computational quantum processing developed by qubits in cellular microtubules, which is greatly amplified in neurons.

According to the authors of the theory, this difference in structure and physical-quantum process is significant for understanding various manifestations of consciousness and its observation and experimentation at the neuro-brain level, among them the conformation of free will (Hameroff, 2012) 86. However, the Orch OR theory received some opposition regarding the processes employed and other points, so its authors revised it in 2011.

[86] Hameroff, Stuart (2012). "How quantum brain biology can rescue conscious free will" . *Frontiers in Integrative Neuroscience* . **6:93** . doi : 10.3389/fnint.2012.00093 . PMC 3470100 . PMID 23091452

Regardless of its incredible complexity and extension, we can extract from the theory some clear concepts capable of supporting a logical understanding of some aspects of consciousness.

Penrose 87highlights the existence of approaches generally employed in the analysis of the origin and situation of consciousness in the universe:

Consciousness is not an independent quality but arose as a natural evolutionary consequence of the biological adaptation of brains and nervous systems. The most popular scientific view is that consciousness emerged as a property of complex biological computation during evolution. Consciousness as evolutionary adaptation is commonly assumed to be epiphenomenal (a secondary effect without independent influence), although it is frequently argued confers beneficial advantages to conscious species (Dennett, 1991; 1995; Wegner, 2002).

Precursors of consciousness have always been in the universe; Biology evolved a mechanism to convert conscious precursors to actual consciousness. [...] Precursors of consciousness, presumably with proto-experiential qualities, are

[87] Op.cit .

proposed to be the potential ingredients of actual consciousness.

These observations achieved by the Orch OR theory fit perfectly with the most current concepts about the physical universe. Just as the existence of proto-atomic particles that preceded the formation of matter is admitted for the latter, the existence of precursors of consciousness in the universe, prior to the biological processes that developed it, is also admissible.

This confirms our original claim that consciousness has existed in the universe since its origin, on the condition of a probability that it came to develop and evolve with the first biological elements.

From our human point of view, the phenomenon of consciousness shifts our cosmological observation to understanding brain structure and functions and its causal relationships, in which consciousness is processed in phenomenology.

The rapid development of neurosciences has resulted in a vast and secure scientific knowledge of human perceptual, psychological, and brain processes related to the phenomenon in question: the brain-mind-consciousness triangle and its causal and intentional elements.

However, although it explains the evolutionary process of consciousness in its biological bases, it does not fit into our study, which has a cosmological character. Moreover, it is scientifically verified that even unicellular beings (evidently lacking a brain) can develop forms of consciousness, making no sense to observe this phenomenon from its occurrence in the human brain and mental structure, the most complex we know.

We are more attentive to original causes and forms than current effects resulting from prolonged evolutionary processes in cosmological thinking. Nevertheless, as cosmological concepts should be, we understand that consciousness allows live beings to process their own reality in this context and in inclusive terms. It is an attribute inherent to the phenomenon of life and related to how it manifests itself in cosmic phenomenology.

Third Framework: the man before himself

If the physical sciences can show us the best way to see the universe to build a cosmovision close to reality, the same cannot happen when we look at ourselves.

We will find the most significant difficulties in structuring a scientifically acceptable and logically robust cosmovision in this field.

We develop knowledge about ourselves through a complex biopsychosocial process that constitutes our childhood. [88]We define our identity three-dimensionally, where the individual, society, and species are interrelated during this period. The result of this process is unique: the unmistakable individual personality from which we will see ourselves, others, and society as a whole.

Our identities, however, are constructed through reflective images of the world that surrounds us, in a process subject to various deformations.

[88] Lacan, Jacques - " Écrits : The First Complete Edition in English » 2007 ISBN13:9780393329254 -Norton & Company, Inc., W.W

Identity is a multifaceted concept that has been extensively studied in various fields, such as psychology, sociology, and philosophy. While some scholars view identity as an innate characteristic, others argue that identity is a socially constructed phenomenon subject to change and transformation. Therefore, we should explore the idea that our identities are constructed through reflective images of the world surrounding us and that this process is subject to various deformations.

One of the key arguments in this perspective is that we see ourselves through imperfect lenses and mirrors that inevitably generate distorted images if we take reality as a parameter. This means several factors, including our beliefs, experiences, and emotions, influence our perceptions and interpretations of the world. As a result, the image we see reflected in us is not an accurate representation of who we are but rather a distorted reflection shaped by our perspectives.

This concept is best illustrated by the famous French philosopher Jean Baudrillard[89], who wrote,

[89]Jean Baudrillard, "The Mirror of Production" (St. Louis: Telos Press, 1975), p. 89.

> *"The mirror reflects reality, but it also distorts it. The same applies to our self-image. It is a reflection of the reality that surrounds us, but it is also distorted by our perception and interpretation of that reality."*

Baudrillard's statement highlights the importance of recognizing that our understanding of ourselves and the world is not objective but shaped by our subjective experiences.

Furthermore, it is essential to note that our self-image is not static but is constantly changing and evolving as we interact with the world. Our identities are not fixed but are malleable and subject to external factors, such as our relationships, cultural norms, and social expectations.

In conclusion, the idea that our identities are constructed through reflective images of the world surrounding us highlights perspective's importance in shaping our self-understandings. We must recognize that the image reflected in us does not accurately represent who we are but rather a distorted reflection shaped by our perspectives and experiences. By acknowledging

the influence of perspective on our self-image, we can strive to gain a more nuanced and accurate understanding of ourselves and the world.

Today, the behavioural sciences and, in particular, psychoanalysis offer a comprehensive understanding of this process of personality development and what each of us takes as a reality or causal element of our behavioural models.

These perceptual or cognitive deviations will determine different effects on each individual. However, due to their interrelation and the multiple possible similarities, they will begin to integrate cultural structures, behavioural models, and systems of attribution of values until they reach the level of beliefs and references housed in the collective unconscious.

We can identify many ideological and political contexts that interfere in our cosmovisions, falsifying its content and harming its solidity. These distorted views of the man about himself can be investigated through history, cultures, arts, social and political organization, and, most of all, behavioural models.

We cannot forget how we see ourselves as the starting point for our vision of others, society, and the whole. In other words: any cosmovision is

preceded by an “egovision,” which makes it essential to identify and understand the inadequacies of how we perceive our individuality before developing a social or cosmological perspective.

The most considerable deviations that move our “ego visions” away from the plane of reality are today well known in anthropology, psychoanalysis, and social psychology, including through investigative experiments, which allows us to analyze and improve their structure critically.

The essential causal elements of cognitive distortions in our perception of ourselves stem from two inseparable partners: narcissism and anthropocentrism, which we carry throughout the history of the species.

Once contaminated by both, we tend to see ourselves, consciously or unconsciously, with a grandeur that we do not have. Our cultures elect us like images and likenesses of the divinities we create with our imagination. Submerged in these cultures, we began to incorporate and repeat textual statements in this sense, considered to be written by the gods, which we call “revelations.” We see ourselves as the centre of the cosmos, lords of all nature, worthy of anthropomorphic gods' attention and individual dedication, deserving of

all rewards, especially a splendid eternity of abundance and unshakable happiness. In these terms, we designed our images throughout history to create our religious beliefs, social structures, anthropocentric visions, and cultures of domination.

Taken by the blindness of narcissism, such views come to be adopted by us as sufficient for our deformed cognitive processes. In us, they remain protected from critical thinking and dispense with approaching science and living with reality due to their imagined superiority. This is how sectarianism, fanaticism, and negativism are born, states of cognitive dysfunction in which we cannot formulate any cosmovision.

Within the scope of this contaminated "ego-vision," which is frequent among us, we cannot see anything other than an idea called "me" Whether we are beautiful or ugly, fat or thin, black or white, tall or short, male or female, whether we love or hate each other, this idea will prevail over all things that exist, even over ourselves, like a curse that enslaves most humans.

Narcissism, which is the concept and process of this distortion, is in human nature. If we look at the different stages and content of a child's personality

development, whether by Lacanian principles or[90] other models, we will see the inexorable presence of this characteristic without which our personality and identity cannot develop and mature. None of us choose to be that way; we are naturally made that way. We create our identity by mirroring ourselves in others and in the other things surrounding us until we finally take possession of them in one way or another. We do not decide to be this way but can decide what to do.

It so happens that we carry on throughout our lives the mirror image of our infantile narcissism; it does not dissipate with time, nor does existence consume it. We have to live with it, which is a task that is often not successful. We are forced at every moment of our realities to seek a balance between ourselves and others, between the "me" and the "not me," and, among so many mistakes and successes, failures, pleasures, and pains, we are discovering a behavioural scenario complex that we call ethics, in an atmosphere composed of attachment and contempt, of love and hate, compassion and indifference, of knowledge and ignorance.

[90]- Lacan, Jacques – « Écrits : a Selection » (2002) - Norton & Company, Incorporated, WW 2 - « The Four Fundamental Concepts of Psychoanalysis » (1988)

In this cradle, all human grandeur and smallness are born, of which we are characters and interpreters simultaneously. In it, we choose the roles we will play and the roles we will fill, so we move forward in multiple directions until the lights go out.

However, our imaginary grandiosity prevents us from realizing that we have no cosmic importance, as we have already seen. In the continuous transformation of the universe, our meaning approaches zero in any respect. We are just one among billions of life forms on a tiny invisible planet in cosmic immensity, which can explode, freeze, and be sucked into a black hole without anything changing in the evolutionary path of the universe and its infinite symmetries. We are just "dust in the wind," as Kerry Livgren sang in the 70s.

However, how the falsified “ego visions” are formulated in each of us and why they are independent of our states of consciousness stands still. The explanation is that anthropocentrism and narcissism are not causing but rather consequences of two other primal and archaic phenomena: the fear of death and the concept of the immortal soul. Anthropocentrism and narcissism are just defensive responses, defence mechanisms against these frightening shadows, developed by our minds to remove from them the

suffering of the consciousness of human smallness before the universe. We are narcissists because our tiny dimensions humiliate us before the contemplation of the universe, and we imagine ourselves eternal because we cannot bear the death sentence with which we were born, inexorably transforming our precious egos into absolutely nothing, without existence, without identity, without traces.

Because we know ourselves to be tiny and ephemeral, carrying the consciousness and horror of death, we were only primitively left as a refuge to create a grandiose image of ourselves in our minds. In our imaginary, we were seen as the likeness of divinities more potent than the nature we feared and still endowed with an essence untouchable by natural forces, ethereal, divine, and immortal, even having to abandon the body in which it would always have existed: a soul, daughter of the gods.

Only in this way, and from the first caves we inhabited, were we able to walk along our evolutionary paths, enduring the pain imposed on us by the cruel and misunderstood conjunction of consciousness with our smallness, fragility, and impermanence. Literature has named this conjunction "human tragedy," which George

Santayana described as lyrical in its ideal essence, tragic in its fate, and comic in its existence.[91]

In this way, the fear of death and the idea of an eternal soul go together as attentive guardians of our "self," mitigating its suffering and preventing us from reaching a degree of consciousness that allows us to build an image of ourselves that get closer to reality. Nevertheless, we are more afraid of reality than of death itself.

If we want to advance in any way in our knowledge before the universe, we need to approach the discussion of these facts and concepts, to which humanity has remained irreducibly clinging at all times, in all cultures, places, and states of science and civilization. It is necessary to review this immense defence mechanism that we have built, through which the existential infinity of the individual has become, in homo sapiens, the belief that shapes his life and defines his conscience: a kind of cloak without which man cannot bear to cross the life.

This review is harsh since the fear of death, which nourishes this anaesthetic imaginary in us (the "afterlife"), has become invincible before all

[91] Santayana, George – "The Sense of Beauty" (1896)

cultures, in all times and places, remaining immanent to the species' behaviour.

This fear is not unique to our species but only in us that acquires a pathological and deforming texture of consciousness and behaviour. All these other organisms, whose consciousness is sufficiently complex to process the perception of their mortality, live their lives without us being able to observe psychic disturbances caused by this consciousness, which remains in them within the scope of instinctive responses that require a current factual trigger. On the other hand, we make it a constant torment resulting from our highly developed capacity for mental projection: imagination. In us, primal fears have much greater dimensions: they interpenetrate our sleep, our dreams, our expectations, and our institutions, harass our imagination and fantasies, and torment our beliefs, relationships, and feelings. Unlike all other animals, man is the only one who is invariably compulsive and thanatophobic due to the stress and depression syndromes resulting from the non-harmonized confrontation between our instincts and conscience.

The state of our psychological disturbance in the face of the idea of death is that it is no longer a question of whether or not man is afraid of death but rather the fact that man does not admit death,

despite its evident inevitability. This fear has a paradoxical nature that subtracts its consistency: the fear of not existing anymore is the fear of nothingness. Such a conclusion takes us back to Seneca's (c. 4 BC) philosophy and his assertion that the perspective of future nothingness should never become suffering to those who never existed before.

It is not because we have a conscience or are supposedly more intelligent than other animals (which also have a conscience) that we suffer so much in the face of death and carry it with us in every moment of life. This suffering plagues us and darkens our existence because we misuse our conscience and intelligence to deal with our primal instincts. Instead of seeking to understand the universe and psychologically adapting to its phenomenology, we want the universe to understand us and adjust to our desires. Death offends our narcissistic identity, and we do not know how to deal with this conflict. Here we repeat our understanding that we do not choose to be this way but can decide what to do.

This "egovision," which harbours the idea of an endless existence of the "self," takes refuge entirely in the imaginary because, outside it, it does not hold up in the face of a realistic and percussive

analysis of everything that science already offers us.

Carl Gustav Jung [92], one of the most profound researchers of the human mind, considers that this fear of the disappearance of the "self" intensifies in the final part of life when the proximity of death starts to afflict more intensely. In this situation, he considers the maintenance of a belief in immortality to have a positive therapeutic effect, allowing the person to continue nourishing some idea of tomorrow, some compelling vision of the future: an effective defence mechanism.

> *"Well, you see I have treated many old people and it's quite interesting to watch what their conscious is doing with the fact that it is apparently threatened with the complete end. It disregards it. Life behaves as if it were going on and so I think it is better for old people to live on, to look forward to the next day as if he had to spend centuries and then he lives happily. He gets stiff, and he dies before his*

[92] « CG Jung Speaking – Interviews and Encounters « Editors William McGuire and RF,C Hull. Princeton University Press; Reprint edition (February 1, 1987) pp 424-440 - ISBN-10 : 0691018715

time, but when he's living on, looking forward to the great adventure that is ahead, then he lives. And that is about what your conscious is intending to do. Of course it is quite obvious that we're all going to die and this is the sad finale of everything, but nevertheless, there is something in us that doesn't believe it, apparently, but this is merely a fact, a psychological fact. that it proves something. It is simply so. For instance, I may not know why we need salt, but w and prefer to eat salt, too, because we feel better. And so when you think in a certain way, you may feel considerably better. And I think if you think along the lines of nature, then you think properly."

As any concept of the afterlife boils down to the permanent continuity of the "self," its arguments will come up against the insurmountable problem of **memory.** This complex system contains all the records and experiences of an individual's identity and existence.

Memory (not merely energetic and supposes a physical-chemical structure that stores data) keeps and preserves everything that refers to a person's identity, experiences, and personality. Without memory, the concepts of individual and consciousness dissolve into emptiness.

It turns out that memory cannot be “eternalized”, a hypothesis that science today can deny. Before the current state of science, philosophy spoke freely about “immaterial essences,” “monads,” “abstract bodies,” “perispirits,” “divine breaths,” "ectoplasmic structures," imaginary elements, and similar abstractions. Today, these things cannot be repeated with simple naivety because they show, in the face of scientific knowledge, that they are fantasies elaborated by the mind to make the fear of death bearable: a defense mechanism that is undoubtedly efficient and that even psychoanalysis accepts as a therapeutic element, even knowing how to be the fruit of the imagination.

We know that the memory of a human individual corresponds to a molecular and neural brain structure of extraordinary complexity endowed with specific electrodynamic capacity. Therefore, it is possible to demonstrate by various scientific means that the death of the human body, involving the cell death of the brain, definitively destroys this

structure that enables and houses memory and its records, that is, that define and differentiate one individual from another, a personality on the other, an existential experience of another, a "me" of another "me," as Klein [93]explains:

> *Memory is at the heart of the way most people think about personal identity. It is because remember my first kiss that I think I am the same person as that awkward teenager. If I had no memory of past experiences, the sense that I existed in the past would be dramatically compromised. Memory is also at the heart of philosophical discussions of personal identity. Perhaps the most prominent account of personal identity. Attributed to Locke, holds that these kinds of memories are (part of) make me the same person I was in the past. Memories of past actions go towards constituting personal identity*.

[93] Klein, SB, & Nichols, S. (2012). Memory and the Sense of Personal Identity. *Mind* , *121* (483), 677–702. http://www.jstor.org/stable/23321780 - retrieved Dec. 08/2021

In the same way that science demonstrates that memory does not exist without a complete brain structure, the study of the electrodynamics of the brain and its complex neuro-functional network demonstrates that the elements and contents of memory are not transmissible to another supposed receptor system, be it a physical or just energetic structure. Through traditional chemistry and physics, also used by neurosciences, we know that the brain activities of human memory do not find interrelationships with other mnemonic systems external to their structure.

We can experimentally connect an organ to another organ in another body or transport it from one body to another as long as it has the same structure and maintains its functional capacity. However, we cannot connect memories or transport them because they are not organs but systems.

With the death and inactivity of the brain fields that involve memory, all its content disappears, and with it, what we can call "individual identity" is a condition of the existence of the other.

However, the question of memory does not exhaust the field of observation of the formation and collapse of the "self." Memory is just the

aggregate whose integrity is a “sine qua non” condition for any concept of the afterlife. Many other elements must be considered in this scenario that scientific research is intensively visiting.

It is certain that, further on, the achievements of quantum physics and the models of theories of the whole, based on the continuous symmetries of the universe (which at the moment are multiplying), may even reveal that the energetic aggregate of memory, and the other components of the “self” dissipated by death, can be reassembled in some process of conservation or transformation unknown today. However, even if that were the case, nothing would change regarding the disappearance of the individual's identity during the corresponding process. In the case of these supposed advances, only an application of the energy conservation laws, typical of the continuous symmetries of the universe, would be demonstrated, and not the recomposition of the memory and identity of the individual “X,” whose brain was degraded in the transformative process of cell death.

Leaving this analytical terrain and seeking a purely philosophical and contemporary position regarding the idea of the immortality of the individual, we will find an ocean of endless and insoluble discussions and conflicts since this is one

of the questions that philosophy does not have to solve alone (although some philosophers feel that theories answer all this). It is an effort of significant proportions, and the results are always doubtful.

Recently, one of the positions much debated and popularized is the simplistic and pragmatic argument of the undesirability of immortality, supported by Bernard Williams [94]and several other thinkers.

Felipe Pereira and Travis Timmerman [95], Department of Philosophy, Seton Hall University, New Jersey, in their study devoted to discussing Williams' argument, made the following comment:

> *« Williams' anti-immortality argument has spawned an entire subliterature in the philosophy of death. In its simple form, Williams' may be understood as posing a dilemma. An eternal existence, for creatures like us, would either result in the exhaustion of all of our categorical desires, thereby leading to an interminable boredom or result in us acquiring completely new categorical*

[94] Williams, B. (1973). Problems of the self. New York: Cambridge University Press

[95] Pereira, F and Timmerman, »The (un)desirability of immortality » (article) – Wiley (Dec. 2019) -Philosophy Compass. 2020;e12652. https://doi.org/10.1111/phc3.12652

desires, thereby leading to the loss of our identity (either literally or figuratively). Neither option is good for us. Williams' argument is interesting and historically important, though there are good reasons to be skeptical that it is sound »

Undoubtedly, as the cited authors comment, Williams' philosophical argument was and continues to be the object of numerous contestations that place it as a proposition without solidity.

Even so, and within the scope of an inferential cosmovision, Williams' argument highlights evidence that analytical thinking should not overlook. By Williams' argument, besides immortality, it does not find support and meaning in the current state of science and is becoming useless at some point. Hence we can understand that its discussion is useless since it would not change anything. Everything we do or fail to do, on account of an idea of eternity, in one way or another, constitutes, like the idea itself, a useless waste of some part of our lives.

For all these mishaps, we are still incapable of developing a broad self-perception that places us in front of all the other things., We remain prisoners of ourselves, often insane, almost always

unhappy, and contradictorily tormented by the idea of inexorably coming to cease to exist within this prison without ever having left it. Without the domain of our conscience and intelligence to overcome the weight of our instincts, we fail to emerge and grow.

For all that science currently exhibits about us, and putting aside the restraints of our narcissism, we can, here, reach some inferences aiming to bring our “ego visions” closer to reality.

The first is that the views we may have of ourselves, which interfere in our cosmovisions' constitution, will be all the more deformed and imperfect the more they harbour elements contaminated by anthropocentrism and narcissism that are historically integral to the behaviour of our species. The further we move away from the knowledge that science gives us about our dimensions and our place in the universe, the further we will be from a sustainable cosmovision, and the closer we will get to fantasy or even delusion.

The second inference is that the first will only be possible to the extent that we can move away from its true causes: our primal fears of nature and death, the pathologies arising from them, and their defense mechanisms that, although they mitigate

suffering, uselessly consume a significant portion of our existence.

It is fair to say, in short, that we will only be able to formulate a cosmovision close to reality when we understand: a) that nature and knowledge support the idea that we are impermanent like absolutely everything in the universe; b) that we are not as important as we would like to be; c) that we are neither the reason for being nor the owners of the Earth; d) that we will only know how to live when we learn to die; e) that we will only know ourselves when we stop looking at our image; f) that we want to be eternal, but we do not even know how to be temporary: we waste most of our lives on insignificant things, starting with our "self."

Fourth framework: the man before nature and other men

From this point on, our work changes markedly in features and direction. While analyzing the physical universe, life, consciousness, and the man in front of himself, we were walking through the terrain of cosmology and ontology, where the tools of astrophysics, quantum physics, mathematics, astrobiology, natural history, and philosophy supported us. We spoke of man as a consequence of the universe, without his intentionality and free will having any causal value.

When we turn our eyes to man before nature and other men, we open the doors of the human behavioural universe, free will, and complex universe of choices, facing the arid realm of ethics. So we left the physical sciences and turned to the behavioural and social sciences, replacing quantum theories with theories of value and experiences with history.

First, in this chapter, we purposely bring together the ethics of man and the ethics of nature to remove any trace of the blind (or malicious) dualism that has always dominated this subject. There is no man here and nature there, as separate and distinct things: both are involved in the phenomenology of life. This false dualism, like an

anthropocentric veil, infected philosophy and science for centuries and founded the stupid ethics that often shadowed civilization.

Here, man ceases to be a cosmic supporter and becomes the active character, the cause, and no longer the consequence.

All human behaviour constitutes an ethical phenomenon. The way we live, how we eat, how we reproduce, and especially how we structure and practice our interactions constitute what we call an ethical behavioural model. It results from the human coexistence experience since its most remote evolutionary origins and is recorded in the species' genome, constituting part of our collective unconscious. Ethics is a product of man, developed throughout his historical experience through free will, choices, and dialectical processing in a given social structure. Man is solely responsible for ethics: it is not offered to us by the heavens or dictated by divinities to scribes who engraved it on parchments. It is done by ourselves every day and in every situation.

Therefore, we will no longer be concerned with what the universe presents but with what man has done and is doing from this point on.

In analyzing the relationship between man and nature, the centre of our observation should, in

theory, have an ontological content; however, given the elements of reality and the objective of this work, the core of our analysis shifts to a predominantly ecological behavioural, relational, and causal content.

The scenario remains the same: the biome of the universe in which we exist.

The cosmological knowledge that exists today indicates that the balance of a biome, like the one that exists on our planet, can only be sustained from the sharing and interaction of the elements that compose it, its resources, and processes, in a way considered by the different needs, among all how life manifests itself in this system. In the absence of these characteristics, the tendency of any living system is an imbalance, fragmentation, and disappearance in a scenario like the one we are witnessing in our environment today.

Let us bring these concepts to our minor planet, as far as our eyes go.

Balance and sharing are two concepts that we can identify in the evolutionary system of life on Earth as components of the content of our natural history, from the formation of food chains to the complex migratory and mutational processes of species.

Our species were part of nature from our origin until the end of the Paleolithic period. We were animals in an accelerated process of evolution that had already developed different capacities, lived nomadically in small family groups that interrelated for hunting and also for procreation, used nature in a way compatible with their survival needs, and conserved their supplies, when surpluses, to consume them in times of scarcity.

All individuals participated to the extent of their abilities in the struggle for survival. Surviving did not involve interpersonal competition or exclusion among the group members, and the small population of humans, about one million individuals, did not harm nature to continue existing. We were nature, and the principles of balance and sharing were the culture that life experience taught us.

We were like this for 150,000 years, gradually evolving, improving our skills, developing language knowledge, and honing our instincts in a constant adaptation to the environments, even when natural catastrophes devastated this system.

This description may seem like a romantic, popular, and poetic image of Paleolithic society lost and submerged in an unattainable past. However, it is not exactly that; the experience of our ancestors

left traces, and science is getting closer to them every day.

In his work "Archeology of Violence" (2004), French anthropologist Pierre Clastres[96] criticizes the traditional view of primitive societies as limited by a hostile natural environment allied to low technological development. According to Flávio Gordon, [97]observing primitive South American societies, for example, the author notes that " *the minimalist economy and its 'dispersed' social organization are not the effects of a natural external limitation, nor of historical-evolutionary archaism, but rather they result from a movement inherent to the very being of these societies: philosophical voluntarism rather than ecological or historical determinism."* Finally, Gordon (op, cit) comments on the foundations observed by Clastres in these societies:

> *"The author abstracted an ideal model of "primitive society": the latter would have its raison d'être in the refusal of internal division, in the desire for sociopolitical autonomy*

[96] Clastres, Pierre. 2004. *Archeology of Violence "* São Paulo: Cosac & Naify. 325pp

[97] Flávio Gordon - "Archaeology of violence: research in political anthropology" https://www.scielo.br/j/mana/a/mWz9rBBwNnjnC9N9xj5q9py/?lang=pt – chap. 5

and in a certain historical "conservatism."

If today we close this curtain of time and observe modern man and the interdependent systems that structure life on Earth, we will find indisputable evidence of severe ruptures in this complex and delicate balance of our biome caused by the forms of relationship between humans and nature.

On this dark threat, the most abundant scientific literature in the fields of physical, natural sciences, and biology is available to any interested party, demonstrating and warning about the proportions of these ruptures and their catastrophic consequences. The "red alert" about the risks that today weigh on the possibilities of continuing life on the planet has already been given by various means and is no longer a scientific issue to reach the level of global socio-political emergency. The relationship between us and nature, the biome in which we exist, has reached a critical level of aggression, and some catastrophic results are already considered irreversible.

During the 80s and 90s of the 20th century, when this phenomenon started to present greater amplitude and to be studied and documented by science, a negationist culture appeared notably in the economically dominant countries that tried to

remove these scientific findings insofar as constituted a political-cultural threat to the "status quo" of these countries, responsible for most of the destructive activities in our biome.

However, this convenient look, always limited to the concise term, was overcome by science and by the wide dispersion of its findings, undeniably exposing the causes and responsibilities for the nefarious process of the devastation of the conditions of life on the planet.

The facts are now clear and exposed: we are destroying life on Earth, including our species. Adopting Low's expression, "W*e can no longer say that we did not know."*

The first question here is purely logical: how a complex and evolutionary biome, like the one existing on earth, has maintained its intrinsic balance for many millions of years, now moving rapidly and in a short time, towards its structural rupture?

The answer is also purely logical: we must identify the beginning of the imbalance process to assess the causes and circumstances involved in answering this question. Science allows us to trace this path and, in a way, establish a referential dating,

There was a moment in our history when, from apparently simple facts, the man took directions never before experienced, and that would lead him to situations and results as unforeseen as irreversible, which are at the root of the threats that today shadow civilization and the species.

Anthropological history calls this period "the great Neolithic revolution," approximately 10,000 years ago. If these events had not taken place over an entire period but had taken place on a specific date on a calendar, we could call this date "the day when man excluded himself from nature."

The history of the Neolithic revolution is extensively developed and documented and is now part of the school bibliography at different levels.

What interests us here are some essential points that constitute causes of the process of degradation of our biome, insofar as, if primitively they corresponded to answers to the pressing needs of civilization under construction, today they continue to produce their harmful effects in a civilization that can be dying.

The most important feature of the Neolithic revolution, as is well known, is that it determines the moment when the human population progressively leaves its nomadic life to settle in

territorially defined settlements, adopting new behavioural models and social structures, introducing new technology, and establishing the agricultural production to supply their needs.

These profound changes were the causal elements of many of the problems faced by civilization to date, for which efficient solutions were never developed.

Larsen [98]presents these facts as an environmental catastrophe whose constant and uninterrupted expansion we can quickly analyze today.

The main aspects that emerge from this Neolithic revolution and that interest the structure of a current cosmovision are:

a) From a user of a balanced biome, man becomes an explorer of this biome, interfering with its natural structure disastrously since its beginning. For agricultural exploitation, aggressive deforestation became part of the technological set while strongly reducing food quality for the populations. Compared to the nomadic life, the diet of Neolithic

[98] Larsen, Clark Spencer (2006-06-01). "The agricultural revolution as environmental catastrophe: Implications for health and lifestyle in the Holocene". pp 12-20 in https://doi.org/10.1016/j.quaint.2006.01.004 - retrieved on Nov. 07, 2022

settlements was richer in carbohydrates, but it became much poorer in fiber, micronutrients, and vitamins because supplies no longer came from diversified coexistence with nature. Technology was highly restricted when man started to farm his food in the settlements. This production capacity also faced the difficulties of seasonality, climatic variations, and the frequent wars of conquest that began in the period. In its beginning, the settlements resulted in a considerable food crisis. This food insufficiency persists as one of the most severe features of civilization.

b) Initially, there was a decrease in the population growth rate due to food crises, wars, and communicable diseases. However, the ways of life and interpersonal relationships within populations in Neolithic villages created conditions that stimulated population growth to the point where it reached exponential rates after some time (which are persistent to this day).[99]

c) Therefore, as a fateful binomial, excess population and hunger are two interrelated conditions humanity has maintained since its first settlements. As an insatiable

[99] Bocquet-Appel, Jean-Pierre (July 29, 2011). "When the World's Population Took Off: The Springboard of the Neolithic Demographic Transition". *Science* . **333** (6042): 560-561. Bibcode: 2011Sci...333..560B .

explorer of nature and an efficient reproducer, homo sapiens becomes an uncontrolled predator whose excessive and ever-growing population makes him a threat even to himself: a kind of autophagic plague.

d) The Neolithic revolution also resulted in decisive consequences that would mark civilization with its darkest ingredients: the practice of domination, not only of nature but also of men themselves, through exploitation, enslavement, exclusion, and extermination. With the first settlements, we developed the excluding concept of property, territory, class and ethnicity, state and social and political organization ethnocentric and egocentric. We create the civilization of the "dominant self," and, through the behaviours it admits, we come to worship power as the centre of our existence and practice the summary ethics of the strongest.

With these antecedents of the relationship with nature and other men, our behavioural tendencies are domination, irreducible competition, hostility, and excluding everything threatening our egocentrism. Everything revolves around this "dominant self," where power and possession are the only values effectively practised. We believe

ourselves to be social animals, but we act among ourselves like misanthropic beasts. The man seems to hate the man. We multiply wars and genocides by the simple compulsion of power and domination. The collective, for us, is only instrumental and to the exact extent that it is necessary or proper to our individual conveniences, which are insatiable.

"*Homo homini lupus,"* the realist phrase of the Roman playwright Plautus (254-184 BC), is still a reality. That is how we see other humans as prey, so we manage to become our worst enemy. Aggression among animals is manifested by rage, which is transient, cathartic, and dissipates. It is not cathartic in us: it settles down and remains forever. Grudges, hatred, and cruelty only exist in humans and do not correspond to any instinct: they are insane products of our minds.

Of all these historical causes and situations, the most intense, involutive, and destructive is power.

Today, psychology and neurosciences repeatedly demonstrate that the phenomenon of power and its consequences (domination, submission, exclusion, control, discrimination) constitutes pathological elements of human behaviour. Power is a severe disease in social structures, ethical content, and man's psychological and biological

universe, determining neuro-cerebral dysfunctions, emotional and hormonal disorders, and cognitive disturbances with irreversible consequences. Power and psychopathy often walk together.

The "Hubris Syndrome" [100]identified by David Owen and Jonathan Davidson is one of the contemporary studies that shed light on many of these pathologies, demonstrated in different experiments, and evidence their perverse ambivalence: the pathological effects of power affect with equal intensity, although in different ways. This is why the dominant and the dominated and, finally, the social group are equally affected.

Therefore, the content of the relationships between man, nature, and their peers in today's societies is a mutilated product of these models, behaviours, cultures, and actions that we feed and carry for millennia. Our obscure and often absurd historical path, where violence, hatred, stupidity, narcissism, and indifference are the seasoning of an involutionary broth, can lead to the disappearance of our species.

---

[100] Khalily, MT (2009). The Hubris Syndrome [Review of *The Hubris Syndrome: Bush, Blair and the Intoxication of Power* , by D. Owen]. *Policy Perspectives* , *6* (2), 177–180. http://www.jstor.org/stable/42909244

In the last ten thousand years, our species has demonstrated a significant development of its cognitive abilities, visible in the increasing states of science and technology, which today are surprising. However, during these many millennia, in terms of social, natural, and cosmic evolutionary performance, we have always done the same things and kept the same models and behaviours, even though we may have changed some of their forms.

Marx and Engels argued that human history was summed up in the chronicle of man's domination by man. To a certain extent, this powerful statement makes sense. However, we cannot fully accept it because, as it is presented, it becomes a simplistic statement, incompatible with the complex human historiographical chronicle. Of course, we can say that human historiography records the continued presence of domination and exploitation, but it is not restricted to that, nor is it defined based on that.

From a cosmovision point of view, we can observe this constant in the almost paradoxical parallelism between technology and war.

Hypothetically, in an evolved civilization or an evolutionary march, the entire scientific and technological development effort aims to produce

an evolutionary effect to benefit that civilisation's quality.

It happens, however, that the most significant portion of the human technological effort is destined for war or is a result of war, which constitutes an involutive behaviour. Martin Van Creveld, [101]in his study " Technology and War: From 2000 BC to the Present" (2010), considers that:

> *"As an extreme example, consider the problem of 'irrational' technology. These are devices that do not derive their usefulness from the 'work' that they do, nor do they operate on the basis of the laws of nature. Though irrational technology appears strange to the modern mind, it did not appear extraordinary to the Greeks who coined the original term.»*

Adopting the concept expounded by Van Creveld and observing the comparative historical data, we will conclude that, throughout the history of humanity, the volume of irrational technology produced by our civilization often exceeds the technological acquisitions aimed at producing an

[101] Van Creveld, Martin – « Technology and War: From 2000 BC to the Present » Simon and Schuster, May, 11. 2010 - 352 pg .

evolutionary effect. The conclusion is that even rejecting the extremism of the Marxist view on the subject, there is no doubt that our civilization continually exhibits more involutionary than evolutionary movements; that is: we are going backwards as a cosmic phenomenon, despite the enormous advance of our cognitive abilities and the splendour of our technology. Moreover, we are using our ability more for domination, war, and destruction than for the benefit of life.

Domination, violence, excess population, exclusion, misery, and hunger are present in every chapter of our history. Nevertheless, on the other hand, our evolutionary process toward cosmic phenomenology remained stagnant or regressed. We are a species endowed with a complex consciousness level but remain evolutionarily paralyzed when not involuting.

Faced with continuous conflict, as is modern civilization, we usually use ethical concepts to analyze reality. It is still a useless path since all codes and concepts of ethics, political and social philosophy, state structures, forms and practices of power, politics, and government that we know do not survive the critical confrontation with human reality, whether in its historical time or the present. Many aspects indicate that all these elements and

structures harbored failed ideas, our fatal disease in the service of some form of power.

Man has excluded himself from nature and, therefore, from life. In this situation, and in terms of the analysis of human behaviour, we are led to accept an elementary ethical concept: the nature of actions in the light of the principles of evolution. Such behaviour can be stated quite simply: all actions that aim to maintain or help the principles of the evolution of life and species constitute a positive ethical precept. Conversely, all actions capable of hindering or preventing the realization of the principles of evolution are harmful or counter-evolutionary. All other behavioural codes are toxic rhetoric.

How to know what these principles are in the case of humanity? The only way is to think of humanity in terms of the process of life.

In broader terms, this is what Valentim [102]considers when analyzing the thought of Lévy-Strauss:

> *"Humanity is not intelligible by itself, but only on the condition that it is thought from the point of view of*

[102] Valentim, Marco Antonio –"Humanity and Cosmos According to Lévi-Strauss" Das Questões, Vol.8, n.2, April 2021. p. 302-310 in https://periodicos.unb.br/index.php/dasquestoes/article/view/37668 - retrieved on Feb.03, 2022

> *life, and is known from the point of view of its inherence in the cosmos. Likewise, human history can only be understood from the perspective of the "deep history" of life on the planet (Chakrabarty 2013: 14-15)".*

It is necessary to understand that no socio-economic-cultural model has any meaning or importance in this profound life history on the planet. None of these models ever guided the evolution of man. Any political-economic-social ideology is a pseudo-ethics, a speech in the wind. Truth needs no dissertations; it simply exists in nature as part of life. In his analysis of the thought of Lévi-Strauss, Valentim adds:

> *"This is, moreover, the profound meaning of 'well-ordered humanism' that Lévi-Strauss advocates in the final lines of The Origin of Table Manners: 'puts the world before life, life before man, respect for other beings before self-love' (2006: 460) – being, therefore, the subversion of the 'cursed cycle' of modern humanism, humanism 'corrupted from birth' that, by imposing 'mutilations' on nature and establishing 'borders' between*

peoples , has made 'self-love its principle and notion' (2013: 53)."[103]

In short, in formulating a cosmovision, everything that refers to man's relations with nature and other men will only make sense if it is contained in the evolutionary history of our biome and the process of life as a cosmic phenomenon. Man cannot be understood by his actions; we are just a chaotic and unhealthy species in this realm. We can only be understood from what we mean cosmologically.

In any cosmovision, it is necessary to remove the patterns and false concepts that admit man as a manager of nature, as all modern cultures have intended to date. This man does not exist; we are counter-evolutionary predators. The Earth does not belong to us; it is nature that makes life possible, and therefore man too, and both life and man exist according to cosmic phenomenology.

Lévi-Strauss (op. cit.) thought that the concept of harmony between the human phenomenon and its surrounding biome is essential to his inferential cosmovision. As he states,

"It is necessary to dissolve man in life and life in the cosmos' (op. cit).

[103]Op.cit

> *This idea highlights the interconnectedness of all things and the need for a holistic understanding of the world in which we live".*

In a similar vein, Lévi-Strauss writes,

> *"Man must understand his place in the world and his relationship to the cosmos in order to live in harmony with his environment. This requires a deep and intuitive grasp of the underlying principles that govern the universe, as well as a recognition of the interdependence of all things" (op. cit.),*

Here, the author underscores the importance of a spiritual and philosophical connection to the world and the practical implications of such a connection for individual and collective well-being.

Through these quotes, Lévi-Strauss emphasizes the centrality of understanding our place in the world and the importance of harmony with our environment. These ideas have far-reaching implications for how we live and interact with the world around us.

Hence it can be deduced that human experience does not define man, even because it contains significant counter-evolutionary content. Therefore, it is necessary to "dissolve" the realities of this experience, to dilute this empty human identity created by its deformed history, so that man can find the universal content of life, very different from the egocentric content to which he clings, thus being able to incorporate himself into evolutionary contexts, of cosmic phenomenology.

In the structure of a cosmovision, critical analysis of these value assignments is fundamental insofar as all of them must be coherent and harmonious, supporting the content of this structure with a consistent foundation.

The doctrine of Lévi-Strauss takes us back to the essential binomial of life: sharing and interaction within harmonious minimalism, and invites us to dissolve all the insane structures that support our history and civilization: domination, egocentrism, accumulation, competition, and violence.

For this, it is not enough to think or to observe; it must be subverted in its broadest sense. Like everything related to human behaviour, it is a process of choice, where a "druid" called free will resides, which tells us what to do with our lives and the lives of others.

When, however, we speak of subversion as proposed by Lévi-Strauss, we need to critically defoliate the scenario of current reality in front of us in order to know what must be subverted to establish our evolutionary relationship with nature within an "ethics of nature," or "deep ecology."

However, before any incursion into this field, we must understand what humans generally understand by "nature" since the term is used in multiple senses. Aparicio Cid [104]adequately presents the constituting factors of a general concept found in the social process:

> *"The meanings of nature in contemporary societies constitute a significant element of the civilizational paradigms that guide the ways in which human beings conceive of the world and how they relate to it. The cultural perspectives "provide the knowledge, assumptions, values, goals, and rationales which guide human activity"*

[104] Aparicio Cid, R. (2021). Perspectives, dimensions, and references that shape the notion of nature: A semiotic model based on socioecological relations. *Sign Systems Studies* . https://doi.org/10.12697/SSS.2

(Milton 1997: 491), which directly affect ecosystems (Rappaport 1971) and the planet in general. At the same time, human activity "yields experiences and perceptions which shape people's understanding of the world" (Milton 1997): 491) in a permanent dialectical process.2 Amid the prevailing global cultural diversity, each society (and each person within it) creates their meanings about nature based on the historical moment, cultural determinations, and the ways in which the society is linked to the environment (Descola 1996). The semiotic aspect of relationships between humans and nature could refer to, for instance, "the contexts-dependence of the valuation of natu re, differences in seeing and understanding it" (Kull 1998: 351). Anyhow, human-nature relationships are linked to deep cultural processes (Kull 1998). At same time, human activity "yields experiences and perceptions which shape people's understanding of the world" (Milton 1997: 491) in a permanent dialectical process.2 Amid the prevailing global cultural diversity, each society (and each

person within it) creates their meanings about nature based on the historical moment, cultural determinations, and the ways in which the society is linked to the environment (Descola 1996). "

Thus, in the contexts developed in societies to determine the meaning of nature, it seems clear that the subversion proposed by Lévi-Strauss has more of a sense of rupture than that of the conflict itself. In other words, the "dissolution of man" does not imply his destruction. On the contrary, however, his behavioural rupture and refusal to participate in the social models that destroy the biome: a subversion of values culminates in the progressive definition of new behavioural models.

However, the approaches to this problem are very recent and still fragmented, lacking greater analytical consistency.

The first modern structural and critical analysis of this rupture comes from the work, dated 1972, by Arne Naess (1912-2009), “The shallow and the deep, long-range ecology movement," where the author established the concept of deep ecology, eliminating the dualism with which it had always been treated.

For the author, deep ecology sees man and nature as manifestations of a single phenomenon: life. In contrast, the so-called shallow or superficial ecology is one that is always contaminated by anthropocentrism and whose object is not the conservation of nature as a whole but rather a discussion of the best ways for men to exploit this whole for their sole benefit.

These studies resulted in 1984 the declaration of eight principles of deep ecology [105], established in the work of Naess in company with Georges Sessions' " Basic Principles of Deep Ecology" :

"THE BASIC PRINCIPLES OF DEEP ECOLOGY
George Sessions and Arne Naess, 1984

1. Inherent value The well-being and flourishing of human and nonhuman Life on Earth have value in themselves (synonyms: intrinsic value, inherent value). These values are independent of the usefulness of the nonhuman world for human purposes.

[105]Sessions, George and Naess, Arn – "The Basic Principles of Deep Eccology" (1984)" https://www.uwosh.edu/facstaff/barnhill/ES-243/pp%20outline%20Deep%20Ecology.pdf – retrieved on Frb.20, 2022

2. Diversity Richness and diversity of life forms contribute to the realization of these values and are also values in themselves.

3. Vital Needs Humans have no right to reduce this richness and diversity except to satisfy vital needs.

4. Population The flourishing of human life and cultures is compatible with a substantial decrease of the human population. The flourishing of nonhuman life requires such a decrease.

5. Human Interference The present human interference with the nonhuman world is excessive, and the situation is rapidly worsening.

6. Policy Change Policies must therefore be changed. These policies affect basic economic, technological, and ideological structures. The resulting state of affairs will be deeply different from the present.

7. Quality of Life The ideological change is mainly that of appreciating life quality (dwelling in situations of inherent value) rather than adhering to an increasingly higher standard of living. There will be a profound awareness of the difference between big and great.

8. Obligation of Action Those who subscribe to the foregoing points have an obligation directly or

indirectly to try to implement the necessary changes".

Even more recently, and given the worsening of the adverse effects resulting from human activities on the biome, the concept of integral, or deep ecology, has definitively consolidated itself as the centre of global management with the emergence, in 2015, of one of the most critical cosmovision documents that have already addressed the subject: the Papal Encyclical "Laudato Si," authored by Pope Francis.

The document is as extensive as dense, which does not allow references based on small quotes, as these can take the text out of context. For this reason, we prefer the complete and literal transcription of six paragraphs of Chapter Four of the Papal Encyclical, where a philosophical framework for conceptualizing and understanding deep ecology is proposed, which is now accepted by the vast majority of philosophers and scientists in all their terms:

"ENCYCLICAL LETTER
LAUDATO SI'

OF THE HOLY FATHER FRANCIS
ON CARE FOR OUR COMMON HOME

CHAPTER FOUR
INTEGRAL ECOLOGY

137 . Since everything is closely interrelated, and today's problems call for a vision capable of taking into account every aspect of the global crisis, I suggest that we now consider some elements of an integral ecology, one which clearly respects its human and social dimensions.

I. ENVIRONMENTAL, ECONOMIC AND SOCIAL ECOLOGY

138. Ecology studies the relationship between living organisms and the environment in which they develop. This necessarily entails reflection and debate about the conditions required for the life and survival of society, and the honesty needed to question certain models of development, production and consumption. It cannot be emphasized enough how everything is interconnected. Time and space are not independent of one another, and not even atoms or subatomic particles can be considered in isolation. Just as the different aspects of the planet – physical, chemical and biological – are interrelated, so too living species are part of a

network which we will never fully explore and understand. A good part of our genetic code is shared by many living beings. It follows that the fragmentation of knowledge and the isolation of bits of information can actually become a form of ignorance unless they are integrated into a broader vision of reality."

139 . When we speak of the "environment", what we really mean is a relationship existing between nature and the society which lives in it. Nature cannot be regarded as something separate from ourselves or as a mere setting in which we live. We are part of nature, included in it and thus in constant interaction with it. Recognizing the reasons why a given area is polluted requires a study of the workings of society, its economy, its behaviour patterns, and the ways it grasps reality. Given the scale of change, it is no longer possible to find a specific, discrete answer for each part of the problem. It is essential to seek comprehensive solutions which consider the interactions within natural systems themselves and with social systems. We are faced not with two separate crises, one environmental and the other social, but rather with one complex crisis which is both social and environmental. Strategies for a solution demand an integrated approach to combating poverty, restoring dignity to the excluded, and at the same time protecting nature.

140. Due to the number and variety of factors to be taken into account when determining the environmental impact of a concrete undertaking, it is essential to give researchers their due role, to facilitate their interaction, and to ensure broad academic freedom. Ongoing research should also give us a better understanding of how different creatures relate to one another in making up the larger units which today we term "ecosystems". We take these systems into account not only to determine how best to use them, but also because they have an intrinsic value independent of their usefulness. Each organism, as a creature of God, is good and admirable in itself; the same is true of the harmonious ensemble of organisms existing in a defined space and functioning as a system. Although we are often not aware of it, we depend on these larger systems for our own existence. We need only recall how ecosystems interact in dispersing carbon dioxide, purifying water, controlling diseases and epidemics, forming soils, breaking down waste, and in many other ways which we overlook or simply don't know about. Once they become conscious of this, many people realize that we live and act on the basis of a reality which has previously been given to us, which precedes our existence and our abilities. So, when we speak of "sustainable use", consideration must always be given to each ecosystem's regenerative ability in its different areas and aspects.

141. Economic growth, for its part, tends to produce predictable reactions and a certain standardization with the aim of simplifying procedures and reducing costs. This the need for an "economic ecology" capable of appealing to suggest a broader vision of reality. The protection of the environment is in fact "an integral part of the development process and cannot be considered in isolation from it". [114] We urgently need a humanism capable of bringing together the different fields of knowledge, including economics, in the service of a more integral and integrating vision. Today, the analysis of environmental problems cannot be separated from the analysis of human, family, work-related and urban contexts, nor from how individuals report to themselves, which leads in turn to how they report to others and to the environment. There is an interrelation between ecosystems and between the various spheres of social interaction, yet again demonstrating that "the whole is greater than the part". [115]

142 . If everything is related, then the health of a society's institutions has consequences for the environment and the quality of human life. "Every violation of solidarity and civic friendship harms the environment". [116] In this sense, social ecology is necessarily institutional, and gradually extends to the whole of society, from the primary

social group, the family, to the wider local, national and international communities. Within each social stratum, and between them, institutions develop to regulate human relationships. Anything which weakens those institutions has negative consequences, such as injustice, violence and loss of freedom. A number of countries have a relatively low level of institutional effectiveness, which results in greater problems for their people while benefiting those who profit from this situation. Whether in the administration of the state, the various levels of civil society, or relationships between individuals themselves, lack of respect for the law is becoming more common. Laws may be well framed yet remain a dead letter. Can we hope, then, that in such cases, legislation and regulations dealing with the environment will really prove effective? We know, for example, that countries which have clear legislation on the protection of forests continue to keep silent as they watch laws are repeatedly being broken. Moreover, what takes place in any one area can have a direct or indirect influence on other areas. Thus, for example, drug use in affluent societies creates a continuous and growing demand for products imported from poorer regions, where behaviour is corrupted, lives

are destroyed, and the environment continues to deteriorate.[106]

When talking about behavioural subversion, however, we must be facing a critical study, as exact as it is extensive, of reality and the values to which subversion applies. If we do not have this study in hand, we may again elaborate on a dream's utopian or dystrophic theory.

This critical study is not an easy challenge. In the first place, as the cognitive process determines, its starting point is information, which builds the first obstacles. We are used to thinking about the world we live in, and even about ourselves, based on the most accessible information we have, which puts us in contact with the world: media information.

It so happens that media information has no value in philosophy and science, and by using it, we will constantly be formulating a useless, deformed, and caricatured cosmovision. Nevertheless, on the other hand, it is precisely based on media information that perverse ideologies, clumsy manipulations, and the most anomalous manifestations of the disease of power are constructed.

[106]https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.pdf

The first subversion is abandoning media information seeking scientific demonstration and philosophical analysis, or replacing convenient rhetoric with actual knowledge.

That done, there is still great difficulty in philosophy and science: it is the enormous multidisciplinarity imposed in the field of knowledge regarding the relations between man and nature and between men and their fellow men. This makes the research and analysis scenario seem like an encyclopedic task.

As we look for scientific and philosophical works that meet this need, we will find a great deal of effort, both academic and experimental, addressing most of these questions. However, the results of these works are segmented (given the natural limitation of their objects), and the absence of their interrelation imposes an effort similar to that required by a jigsaw puzzle to establish their reciprocal compatibilities in order to achieve a harmonious result, allowing us to formulate our cosmovision.

An admirable example of this effort is the Papal Encyclical Laudato Si, already mentioned in Chapters I, III, and IV.

It is an analytical and critical formulation of current reality based on philosophy and science, with substantial breadth, depth, interdisciplinarity, universality, and methodological rigour, facilitating the structuring of any cosmovision.

Fifth Framework: Hope, the wings of cosmovisions.

"Hope" is a fragile word whose content is as complex as controversial. However, as a philosophical and psychological concept, hope is the meeting point between logic and the imaginary, where the adjustment between these very opposite poles requires a process quite delicate.

For that reason, let us start by defining what "hope" means in this work. Hope is a rational expectation immanent in seeking the best plausible desired outcomes for a defined context.

Thus, essential elements of hope are:

a) A context is known as rational observation.

b) The plausible temporal projection of the context, obtained by studying the possibilities and probabilities it offers according to its variables.

c) The selection and election of the best possible and probable results.

d) The desire that the elected results come to fruition in the future.

e) The availability of participation and action to achieve the selected result.

The presence of hope in the context of any cosmovision is inevitable, making it a cognitive and critical structure and a projective and proponent one. After all, all human actions stem from a cosmovision principle and seek their pragmatic concretization when defined and in a temporal projection that gives them a practical nature in future scenarios. Every action corresponds to expecting the desired result in an imaginary and plausible future.

Unlike faith, belief, the idea itself, fantasy, and simple desire, hope is a rational expectation immanent in knowledge. It involves an exploratory and critical experimental process of reality and a process of selection and choice: a cognitive process that constitutes a challenge for theories of value and knowledge.

A hopeless cosmovision is reduced to a useless and straightforward historical formulation by the very principle of momentarily. Cosmovisions demand continuity, an extensive fluidity within the time-space relationship, to maintain their interrelationship with evolutionary phenomenology. As we conceptualize it, Hope is present in all human behavioural manifestations,

from the simplest to the most complex. Many of our actions, individual or collective, are not aimed at the present reality but at future contexts considered possible and probable. Any scientific research project manifests hope, starting from the current lack of knowledge of something whose knowledge is considered possible and probable, representing the plausible expectation of a desired result. There is no science without hope, culture without hope, or life without hope.

The frequency of systematic philosophical studies on hope in contemporary philosophy is limited for several reasons. One of the most significant reasons is the lack of consensus on what hope exactly is. As philosopher Charles Taylor explains in his book "Sources of the Self,"

> *"Hope is a complex and many-sided phenomenon, and its different facets have not been subjected to systematic philosophical analysis" (Taylor 1989, 33). This lack of consensus makes it difficult for philosophers to study hope*

> *in a systematic and comprehensive manner.*[107]

Another reason for the limited frequency of systematic philosophical studies on hope is the focus on other, more established areas of philosophy. As philosopher, Ernst Bloch notes in his work "The Principle of Hope,"

> "Philosophical inquiry has until recently concerned itself primarily with categories such as truth, justice, and freedom, leaving the concept of hope largely untouched."[108]

This focus on other areas of philosophy means limited time and resources available to study hope.

Thus, the limited frequency of systematic philosophical studies on hope in contemporary philosophy can be mainly attributed to this lack of consensus on what hope is and the prominent focus on other areas of philosophy. Until these

---

[107] Charles Taylor, Sources of the Self: The Making of Modern Identity (Cambridge, MA: Harvard University Press, 1989), 33.
[108] Ernst Bloch, The Principle of Hope, vol. 1 (Cambridge, MA: MIT Press, 1986), 12.

issues are addressed, the study of hope will likely remain limited.

However, this discussion is still necessary for terms of the content and forms of human behaviour, being ever present throughout the history of philosophy.

In Greek antiquity, hope was somewhat despised as it was confused as a way for people without knowledge to deal with their unsatisfied desires. This concept spreads throughout classical Greco-Roman literature.

However, in his Ethics of Nocomane, Aristotle shows that he is concerned with hope as one of the determining factors of human behaviour, especially in critical situations of decision and action. It followed from this thought that heroes were always full of hope in Greek culture and thus overcame the vicissitudes of critical moments, while cowards were always devoid of hope and accepted defeat as part of their pessimism.[109]

This theme was mixed with the theological concepts of the time throughout the Middle Ages,

[109] Bloeser, Claudia and Titus Stahl, "Hope", *The Stanford Encyclopedia of Philosophy* (Spring 2017 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/spr2017/entries/ hope/>. retrieved on Feb. 25,2022

giving rise to the most different interpretations of hope as a manifest phenomenon. However, the vast majority kept the traditional wish-belief binomial without realizing the cognitive plane of possibility-probability-tendency, purely rational elements that could be fully expressed in mathematics.

The Enlightenment treated hope with equal superficiality, seeing it as a non-cognitive, or even passionate, phenomenon, as did Descartes [110]and the vast majority of thinkers of the time.

The first philosopher to consider hope as a cognitive phenomenon was Immanuel Kant (1724-1804), who considered the complex relationship between hope and reason as a reasonable prospect of possible or probable future reality.

Further on, the theme of hope was the subject of a profound divergence between philosophical trends. Schopenhauer (1768-1860) and Nietzsche (1844-1900) denied cognitive and rational content to hope, while Kierkegaard (1813-1855) offered to philosophy the definition of hope as a rational expectation based on the assessment of possibilities:

[110]Decarcartes, René – "Passions of the Soul" (1649)

> *"To relate oneself expectantly to the possibility of the good is to hope" (Kierkegaard [1847] 1995: 249) "* [111].

From the beginning of the 20th Century, philosophical discussions on hope have become deeper, endless, and frequently conflictive. For this work, limited to the formulation of a cosmovision, we will adopt Kierkegaards' concept in its original simplicity and aggregate some contributions from the behavioural and cognitive sciences.

The American Psychological Association (APA) defines hope as *"the expectation that one will have positive experiences or that a potentially threatening or negative situation will not materialize or will ultimately result in a favorable state of affairs*." This definition results from several psychological pieces of research on human behaviour, which is generally accepted.

However, during the early 90s, the theme "hope" gained prominence in the behavioural sciences with the emergence of theories that gave rise to what is now called "positive psychology," supported by several aspects offered by analytical philosophy.

---

[111] Apud Bloeser, Claudia and Titus Stahl, "Hope", *The Stanford Encyclopedia of Philosophy* (Spring 2017 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/spr2017/entries /hope/>. retrieved on Feb. 25,2022

Charles Richard Snyder introduced the theory of hope [112], which, as he defines in his article "Hope Theory – Rainbows in the Mind,." is *" the perceived capability to derive pathways to desired goals and motivate oneself via agency thinking to use those pathways."*

According to Snyder, hope has cognitive and affective elements and is structured on three components:1) having goal-oriented thoughts, 2) developing strategies to achieve goals, and 3) being motivated to expend effort to achieve goals. Therefore, an individual's belief in realizing these components determines their likelihood of developing a sense of hope.

This quick visit to the fields of philosophy and psychology shows that however divergent the concepts and opinions may be, they all lead to our starting point in this chapter: hope is the meeting point between logic and the imaginary, and there is no how-to ignore the imposing existence of this encounter that occurs in each moment or state of science, behaviour, thought and life. In such an encounter, hope can offer its wings to our cosmovisions, without which they are useless.

[112] Snyder, C. (1994). The psychology of hope: You can get there from here. . New York, Free Press.

Once we became bipods, and today we can travel to outer space for the same reason: our behaviour was driven by hope, one of the seeds of evolution.

References and bibliography

Arruda, Roberto- "Moral Archetypes: Ethics in Prehistory" – Terra à Vista, 2019 – PDF format: https://philpapers.org/rec/ARRMAI and https://pt.wikipedia.org/wiki/Mitologia_guarani

Arruda, Roberto – "The Blind Shadows of Narcissus: a psychosocial study on collective imaginary." Land in Sight, 2021 PDF format: https://philpapers.org/rec/THOTBS-3

Barnes, LA, 2012, "The Fine-Tuning of the Universe for Intelligent Life", *Publications of the Astronomical Society of Australia* , 29(4):529–564.

Barrow, John D. and Frank J. Tipler, 1986, *The Anthropic Cosmological Principle* , Oxford: Oxford University Press.

Bloeser, Claudia and Titus Stahl, "Hope", *The Stanford Encyclopedia of Philosophy* (Spring 2017 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/spr2017/entries/ hope/>. retrieved on Feb. 25,2022

Bocquet-Appel, Jean-Pierre (July 29, 2011). "When the World's Population Took Off: The Springboard

of the Neolithic Demographic Transition". *Science* . **333** (6042): 560-561.

Bradley, B. (2009). Well-being and death. New York: Oxford University Press.

Buben, A. (2016). Resources for overcoming the boredom of immortality in Fischer and Kierkegaard. In M. Cholbi (Ed.), Immortality and the philosophy of death. (pp. 205–219).

Burghardt, Gordon M (1985) "Animal awareness: Current perceptions and historical perspective" American Psychologist, 40 (8): 905–919. doi :10.1037/0003-066X.40.8.905

Butterfield, Jeremy, 2014, "On Under-Determination in Cosmology", Studies In History and Philosophy of Science Part B: Studies In History and Philosophy of Modern Physics, 46(part A): 57–69. doi:10.1016/j.shpsb.2013.06.003

Carr, H (1927) "The interpretation of the animal mind". Psychological Review, p. 94. 34: 87–106.

« CG Jung Speaking – Interviews and Encounters « Editors William McGuire and RF,C Hull. Princeton University Press; Reprint edition (February 1, 1987) pp 424-440 - ISBN-10 : **0691018715**

Chappell, [SG]. (2009). Infinity goes up on trial: Must immortality be meaningless? European Journal of Philosophy, 17(1), 30–44.

Cholbi, M. (2016). Immortality, and the exhaustibility of value. In M.Cholbi (Ed.), Immortality and the philosophy of death. (pp. 221–236).

Clastres, Pierre. Archeology of violence: research in political anthropology.: Cosac & Naify (2000) 328 pages ISBN-10 : 854050702ISBN -13 : 978-8540507029

CM Porto and MBDSM Porto - « Evolution of the cosmological thought and the birth of Modern Science » https://doi.org/10.1590/S1806-11172008000400015 - retrieved on Feb.07, 2022.

Cohen, » *The Scientific Revolution »* (Chicago University Press, Chicago, 1994);

Cohen, Mark Nathan (1977) *The Food Crisis in Prehistory: Overpopulation and the Origins of Agriculture.* New Haven and London: Yale University Press. ISBN 0-300-02016-3 .

Colin, Allen. Edward N. Zalta, ed. «Animal Consciousness» . Stanford Encyclopedia of Philosophy (Summer 2011 Edition)

Combining information from multiple cosmological surveys: inference and modeling

challenges. Lawrence Berkeley National Laboratory. Retrieved from https://escholarship.org/uc/item/4xt645pw

Crane, Stephen - “War Is Kind and Other Poems” - Dover Publications (2016) - ISBN-10: 0486404242 / ISBN-13: 978-0486404240

Cosac Naify, 2011 [1977]. pp. 77-87. COSMOPOLITIC COLLOQUIUM II. Political archeologies of the future.

of the Issues. [Online] Nov 20 2020. Available at: https://www.youtube.com/watch?v=VME9n6bDHfM

Danowski, Déborah & Viveiros de Castro, Eduardo. Is there world to come? Essay on fears and ends. Desterro [Florianópolis]: Culture and Barbarism, Instituto Socioambiental, 2014.

Dirk KF Meijer and Simon Raggett Quantum Physics in Consciousness Studies Review/Literature compilation: The Quantum Mind Extended https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.676.3120&rep=rep1&type=pdf – retrieved on Feb.08,2022

Dürr, D., Goldstein, S., and Zanghì, N., 1992, “Quantum Chaos, Classical Randomness, and

Bohmian Mechanics," *Journal of Statistical Physics* , 68: 259–270.
Earman, J., 1984: "Laws of Nature: The Empiricist Challenge," in RJ Bogdan, ed., 'DHarmstrong', Dortrecht: Reidel, pp. 191–223.

Earman, J., and Norton, J., 1987, "What Price Spacetime Substantivalism: the Hole Story," *British Journal for the Philosophy of Science* , 38: 515–525.
1998, "Comments on Laraudogoitia's 'Classical Particle Dynamics, Indeterminism and a Supertask'," *British Journal for the Philosophy of Science* , 49: 123–133

Faust, Juliana. The cosmopolitics of animals. São Paulo: n-1 editions, 2020.

Fisher, J., 1994, *The Metaphysics of Free Will* , Oxford: Blackwell Publishers.

Fischer, JM (1994). Why immortality is not so bad. International Journal of Philosophical Studies, 2(2), 257–270

Fogdall, Stephen A – « Inferential Justitication" (1997) – UMI # 9736271 https://digital.lib.washington.edu/researchworks/handle/1773/5700 on Sep. 2021/21

Fogdall, Stephen A – « Inferential Justitication" (1997) – UMI # 9736271 – retrieved https://digital.lib.washington.edu/researchworks/handle/1773/5700 on Sep. 2021/21.

Forterre , Patrick and Gribaldo, Simonetta – "The origin of modern terrestrial life"- HFSP J. 2007 Sep; 1(3): 156–168.Published online 2007 Jul 25. doi: 10.2976/1.2759103 retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2640990/ on Feb.07,2022.

Freeman, W. and Vitiello, G. (2006) Nonlinear brain dynamics as a macroscopic manifestation of underlying many-body dynamics. Physics of Life Reviews 3: 93-118. Gazzaniga, MS (1995) The Cognitive Neurosciences. Cambridge, MA The MIT Press

Gettysburg College « Understanding the Universe: From Probability to Quantum Theory » From the lecture series: Redefining Reality: the Intellectual Implications of Modern Science(2020) https://www.thegreatcoursesdaily.com/understanding-the-universe-from-probability- to-quantum-theory/- retrieved on Jan, 17, 2022

Goddard, Jean-Christophe. White idiocy and cosmocide. In R@U,9(2), Supplement: 29-38, 2017. Available at:

http://www.rau.ufscar.br/wpcontent/uploads/2018/01/Suplemento-28-37.pdf. Accessed on: 02/25/2021.

Gómez-cruZ, N. Biological hypercomputation: a new research problem in complexity theory. Complexity, v. 20, no. 4, p. 8-18, 2015.

Gordon, Flávio - "Archaeology of violence: research in political anthropology" https://www.scielo.br/j/mana/a/mWz9rBBwNnjnC9N9xj5q9py/?lang=pt

Grigorenko, LV & Zhukov, MV Phys. Rev. C 68, 054005 (2003).

Hawking on the Big Bang and Black Holes: 8 - World Scientific Pub Co Inc (1993)ISBN-10 : 9810210795/ISBN-13 : 978-9810210793

Henderson James (Jim) - Pinti, Daniele L.- Quintanilla, José Cernicharo- Rouan, Lazcano, Antonio- Gargaud, Muriel- Irvine, William M. - Amils, Ricardo - Cleaves,

Hameroff, Stuart (2012). "How quantum brain biology can rescue conscious free will" . Frontiers in Integrative Neuroscience. 6: 93.doi : 10.3389/fnint.2012.00093 . PMC 3470100 . PMID 23091452

Henrique, Alexandre Bagdonas (2011). «Discussing the nature of science from episodes in the history of cosmology» . Accessed March 4, 2021 apud https://en.wikipedia.org/wiki/George_Gamow

https://fcmconference.org/ - retrieved on Jan 02,2022

Hofmann, Sigurd; Proton Emission Studies at GSI in the 1980s; Energy Citations Database - www.osti.gov

Hameroff, S. and Penrose, R. (2003) Conscious events as orchestrated space-time selections. NeuroQuantology 1: 10-35.

Heidegger, M. (1962) Being and Time, trans. by John Macquarrie & Edward Robinson. London: SCM Press.

Heisenberg, W. (1958) Physics and Philosophy: The Revolution in Modern Science, London: George Allen & Unwin.

Herrnstein, RJ (1985). Riddles of natural categorization. Phil. trans. R. Soc. London. B 308: 129-144.

Jackson, KP et al. Phys. Lett. B 33, 281–283 (1970)

Juha Äystö; Odd couple decays; Nature|Vol 439|19 January 2006 -www-linux.gsi.de

Kafatos, M. and Nadeau, R. (2000) The Conscious Universe. Springer.

Kafatos, M. and Kak, S. (2014) Veiled nonlocality and cosmic censorship. arXiv:1401.2180

Kak, S. (2000) Active agents, intelligence, and quantum computing. Information Sciences 128: 1-17

Kak, S. (2007) Quantum information and entropy. International Journal of Theoretical Physics 46, 860-876.

Kak, S. (2012) Hidden order and the origin of complex structures. In Swan, L., Gordon, R., and Seckbach, J. (editors), Origin(s) of Design in Nature. Dordrecht: Springer, 643-652.

Kak, S. (2014) From the no-signaling theorem to veiled non-locality. NeuroQuantology 12:1-9.

Kant, Immanuel. Anthropology from a pragmatic point of view. Translation by Clélia Aparecida Martins. São Paulo: Illuminations, 2006 [1798].

Khalily, MT (2009). The Hubris Syndrome [Review of *The Hubris Syndrome: Bush, Blair and the Intoxication of Power* , by D. Owen]. *Policy*

Perspectives , *6* (2), 177–180. http://www.jstor.org/stable/42909244

Klein, SB, & Nichols, S. (2012). Memory and the Sense of Personal Identity. Mind, 121(483), 677–702. http://www.jstor.org/stable/23321780 - retrieved Dec. 08/2021

Krenak, Ailton. Ideas for postponing the end of the world. São Paulo: Companhia das Letras, 2019.

Kusurkar - https://www.jpgmonline.com/article.asp?issn=0022-3859;year=2004;volume=50;issue=3;spage=238;epage=239;aulast= Kusurkar #cited - retrieved on Feb,10,2022.

Lacan, Jacques - " Écrits: The First Complete Edition in English » 2007ISBN13:9780393329254 -Norton & Company, Inc., W. W

Lacan, Jacques – « Écrits : a Selection » (2002) - Norton & Company, Incorporated, WW 2 - « The Four Fundamental Concepts of Psychoanalysis » (1988)

Lanham: Rowman & Littlefield. Cave, S. (2012). Immorality: The question to live forever and how it drives civilization. New York: Random House.

Lanza, R. Biocentrism: how life and consciousness are the keys to understanding the true nature of the universe. Dallas, TX: Benbella Books, 2009.

Larsen, Clark Spencer (2006-06-01). "The agricultural revolution as environmental catastrophe: Implications for health and lifestyle in the Holocene".
Lovelock, J. Gaia: a new look at life on Earth. 3rd ed. Oxford: Oxford University Press, 2000. (Original 1979).

Maldonado, CE Biological hypercomputation and degrees of freedom. In: López-ruiz, R. (ed.). Complexity in biological and physical systems: bifurcations, solitons and fractals. London: IntechOpen, 2017. p. 83-93.

Lemaître, *L'Hypothèse de l'atome primitif* , 1931G.

Lemaître, Annales de la Société Scientifique de Bruxelles 47, 49 (1927).

Lemaître, The Primeval Atom – an Essay on Cosmogony, D. Van Nostrand Co, 1946

Lévi-strauss, Claude. La Pensae Sauvage. Paris: Plon, 1962.

Lévi-Strauss, Claude. Structural anthropology two. Translation by Beatriz Perrone Moisés. São Paulo: Cosac Naify2013 [1973].

Lévi-Strauss, Claude. The origin of table manners: Mythological III. Translation by Beatriz Perrone-Moisés. São Paulo: Cosac Naify2006 [1968].

Lopes , António – " Weltanschauung (Cosmovisão)" (2009) in Carlos Ceia's E-Dictionary of Literary Terms https://edtl.fcsh.unl.pt/encyclopedia/weltanschauung-cosmovisao - retrieved on Feb. 14, 2022

Lorenz, Edward. "Deterministic Nonperiodic Flow." Journal of the Atmospheric Sciences, vol. 20, no. 2 (1963), pp. 130-141.

« Memories, Dreams, Reflections » - Vintage, revised edition – in https://carljungdepthpsychologysite.blog/2020/03/31/carl-jung-on-life-after-death-3/#.YdhhcP7MJPY – retrieved on Jan, 18- 202

Morowitz, HJ 1999. A theory of biochemical organization, metabolic pathways, and evolution. *Complexity* 4:39–53

Morowitz, HJ, and E. Smith. 2007. Energy flow and the organization of life. *Complexity* 13:51–59

Munitz, Milton K "The Primeval Atom," in., ed., *Theories of the Universe* , The Free Press, 1957

Naess (1972) "The Shallow and the Deep", Long-Range Ecology Movement: A Summary https://openairphilosophy.org/wp-content/uploads/2018/11/OAP_Naess_Shallow_and_the_Deep.pdf

Nasr, SH, 2014. Happiness and the attainment of happiness: an Islamic perspective. Journal of Law and Religion, 29(01), pp.76-91

Ortoli, S.; Pharabod, J.-P. El canto de la cuántica. Does the world exist? Barcelona: Gedisa, 2006

Panksepp, J (1992). «A critical role for "affective neuroscience" in resolving what is basic about basic emotions.». Psychological Review. 99: 554–60. PMID 1502276 . doi : 10.1037/0033-295X.99.3.554 /

Panksepp, Jaak; Biven, Lucy (2012). The Archeology of Mind: Neuroevolutionary Origins of Human Emotions (Norton Series on Interpersonal Neurobiology) [Sl]: WW Norton & Company. ISBN 978-0-393-70731-1

Paul, LA (2014). Transformative experience. New York: Oxford University Press.

Penrose, Roger and Rameroff, Stuart- "Consciousness in the Universe: Neuroscience,

Quantum Space-Time Geometry and Orch OR Theory » Journal of Cosmology, 2011, Vol. 14. JournalofCosmology.com, 2011 – retrieved from https://thejournalofcosmology.
com/PenroseCHG.pdf on Feb 08 -2022

Pereira, F and Timmerman, »The (un)desirability of immortality » (article) – Wiley (Dec. 2019) - Philosophy Compass. 2020;e12652. https://doi.org/10.1111/phc3.12652

Perrett, RW (1986). Regarding immortality. Religious Studies, 22(2), 219–233.

Philosophy of Cosmology- In https://plato.stanford.edu/entries/cosmology/ retrieved on Dec.23-2021 Copyright © 2017 byChristopher Smeenk < csmeenk2@uwo.ca > George Ellis < george.ellis@uct.ac.za >

Poincaré, Henri. Science and Method. New York: Dover Publications, 1952.

Pope Francis (2015) –"Laudato Si"- https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.pdf

Qadir, Junaid, The Islamic Cosmovision and Development Ideals (August 8, 2017). Available at

SSRN: https://ssrn.com/abstract=3015107 or http://dx.doi.org/10.2139/ssrn.3015107

Rakic, Pasko (2009). «Evolution of the neocortex: Perspective from developmental biology». Nature Reviews. Neuroscience. 10 (10): 724–735. ISSN 1471-003X . PMC 2913577

Rescher, Nicholas (2006b). "The Price of an Ultimate Theory".Collected Papers IX: Studies in Metaphilosophy

Rosati, C. (2013). The Makropulos case revisited. In B. Bradley, F. Feldman, & J. Johansson (Eds.), The Oxford handbook of philosophy of death (pp. 355–390). New York: Oxford University Press. .

Santayana, George – "The Sense of Beauty" (1896)

Sessions, George and Naess, Arn – "The Basic Principles of Deep Eccology" (1984)" https://www.uwosh.edu/facstaff/barnhill/ES-243/pp%20outline%20Deep%20Ecology.pdf – retrieved on Frb.20, 2022

Scarre, Chris (2005). "The World Transformed: From Foragers and Farmers to States and Empires" in *The Human Past: World Prehistory and the Development of Human Societies* (Ed: Chris Scarre). London: Thames and Hudson. for. 188. ISBN 0-500-28531-4

Schechtman, M. (2001). Empathic access: The missing ingredient in personal identity. Philosophical Explorations, 4(2), 95–111

Scheffler, S. (2013). Death and the afterlife. New York: Oxford University Press,

Slipher, Proceedings of the American Philosophical Society 56, 403 (1917).

Smeenk, Christopher and George Ellis, "Philosophy of Cosmology",The Stanford Encyclopedia of Philosophy(Winter 2017 Edition), Edward N. Zalta(ed.)
<https://plato.stanford.edu/archives/win2017/entries/cosmology />.retrieved on Jan, 18- 2022

Smith, E., and HJ Morowitz. 2004. Universality in intermediary metabolism. *Proceedings of the National Academy of Sciences of the USA* 101:13168–13173

Snyder, C. (1994). The psychology of hope: You can get there from here. . New York, Free Press

Snyder, CR (2002). Hope Theory: Rainbows in the Mind. *Psychological Inquiry* , *13* (4), 249–275. http://www.jstor.org/stable/1448867

Spohn, Daniel-, Tirard, Tilman -, Stéphane- Viso, Michel- (2015)- "Primordial Soup" - Encyclopedia of Astrobiology – 2014 -Springer Berlin Heidelberg

- SN - 978-3-662-44185-5 Retrieved from https: //doi.org/10.1007/978-3-662-44185-5_1275 - Feb.2022

Sobel, Jordan Howard « Logic and Theism: Arguments for and Against Beliefs in God « (2009) - Cambridge University Press

Srinivasan, V., and HJ Morowitz. 2009. The canonical network of autotrophic intermediary metabolism. *Biological Bulletin* .

Starbird, Michael, "Our Random World—Probability Defined - From the lecture series: What are the chances? Probability made clear. (2017) https://www.thegreatcoursesdaily.com/random-world-probability-defined/ retrieved Jan, 15-2022

Stephen W. Hawking (28 February 2006). The Theory of Everything: The Origin and Fate of the Universe. Phoenix Books; Special / Fran De Aquino (1999). "Theory of Everything". arXiv : gr-qc/9910036

Stewart, Ian. Does God Play Dice? The Mathematics of Chaos. Oxford: Blackwell, 1989.

Subhaj Kak (State University of Oklahoma) – « The Astronomical Code of the Rgveda "(1994, 2000)

Sutton, Christine – "Higgs Boson, in https://www.britannica.com/science/Higgs-boson - retrieved on Jan, 14 – 2022

TD Campbell "Variation and Selective Retention in Socio-cultural Evolution," in HR Barringer, BI Blanksten, and RW Mack, eds., Social Change in Developing Areas New York: Schenkman, 1965. – 32.

The Holy Bible - Genesis 1- King James Version (1604)- public domain. https://www.biblegateway.com/passage/?search=Genesis%201&version=KJV;NIV on Jan,21/2022

The Rig Veda/Mandala 10/Hymn 90 – Translated by Ralph TH Griffith https://en.wikisource.org/wiki/The_Rig_Veda/Mandala_10/Hymn_90 on Dec. 05/2021

The gravitational field in a fluid sphere of uniform invariant density according to the theory of relativity ; Note on de Sitter Universe ; Note on the theory of pulsating stars (PDF), Massachusetts Institute of Technology. Dept. Of Physics, 1927

The Parker Solar Probe Mission - https://www.nasa.gov/content/goddard/parker-solar-probe - retrieved on Jan, 30- 2022.

«Brain tracing cortex evolution» . Max-Planck Gesellschaft -www.mpg.de. Retrieved Apr 2019

Valentim, Marco Antonio –"Humanity and Cosmos According to Lévi-Strauss" Das Questões, Vol.8, n.2, April 2021. p. 302-310 in https://periodicos.unb.br/index.php/dasquestoes/article/view/37668 - retrieved on Feb.03, 2022

Van Creveld, Martin – « Technology and War: From 2000 BC to the Present »
Simon and Schuster, May, 11. 2010 - 352 pg .

Walker, Mark Alan (March 2002). "Prolegomena to Any Future Philosophy" . *Journal of Evolution and Technology* Vol.

Way and D. Hunter, Origins of the Expanding Universe: 1912-1932 Astronomical Society of the Pacific, San Francisco, 2013), ASP Conference Series, 471-10

Williams, B. (1973). Problems of the self. New York: Cambridge University Press

Xiong, Daguo – « Natural Axiom System of Probability Theory, The: Mathematical Model of the Random Universe - Mathematical Model of the Random Universe »- World Scientific Publishing Company -

https://doi.org/10.1142/5307 | May 2003