INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON THE DIALOGUE BETWEEN SCIENCES & ARTS, RELIGION & EDUCATION

MCDSARE 2021

IFIASA

Ideas Forum International Academic and Scientific Association

Number 5, Year 2021,
17-18th July & November 27-28th, Târgovişte, Romania 2021.

INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON THE DIALOGUE BETWEEN SCIENCES & ARTS, RELIGION & EDUCATION

INTERNATIONAL SCIENTIFIC COMMITTEE

Conference Chair(s): Marin **BUGIULESCU**, Oana Celia **GHEORGHIU**, Alexandru-Corneliu **ARION**

EDITOR IN CHIEF

Marin **BUGIULESCU**, Prof. PhD., President of IFIASA, Ideas Forum International Academic and Scientific Association, ROMANIA

Ideas Forum International Academic and Scientific Association

Web: https://www.mcdsarejournal.com/

Email: ifiasa@yahoo.com

CONFERENCE PROCEEDINGS CONTENTS

MCDSARE 2021

INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC CONFERENCE ON THE DIALOGUE BETWEEN SCIENCES & ARTS, RELIGION & EDUCATION

17-18th July & November 27-28th, Târgovişte, Romania 2021

Proceedings Volume MCDSARE 2021

The Proceedings Volume of the 5th International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education MCDSARE 2021 contain scientific articles in the social sciences and humanities fields, without a precise disciplinary border.

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2021, e-ISSN: 2601-8403
p-ISSN 2601-839X

https://doi.org/10.26520/mcdsare.2021.5.9-10

MCDSARE: 2021
EDITORIAL - International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

Marin Bugiulescu (a)*
(a) President of IFIASA, Ideas Forum International Academic and Scientific Association, Professor, PhD. Member of Dumitru Stăniloae Scientific and Interdisciplinary Research Center, Valahia University, Târgoviște, Romania, email: m_bugiulescu@yahoo.com

Abstract

In the context of the current international framework, *Ideas Forum International Academic and Scientific Association* - IFIASA Journals and Conferences joins the effort in bringing together researchers and scientists from all over the globe, facilitating the professional development and encouraging dialogue, creativity and exchange of ideas. Together we went through a very unusual and, in many aspects, dificult 2020. Even though we met mostly online - during our new virtual sessions, we can see, that our bond became stronger. The Covid-19 pandemic forced that our Conference become virtual and on-line. Covid 19 has provided an opportunity to rethink our scientific Conference.

Keywords: IFIASA; Ideas Forum International Academic and Scientific Association; researchers, international scientific conference, transdisciplinarity; life; world;

INTRODUCTION

Ideas Forum International Academic and Scientific Association (IFIASA) provides a platform for the latest scientific, multidisciplinary research, encouraging the Dialogue between Sciences & Arts, Religion & Education.

The 6th edition of *Ideas Forum International Academic and Scientific Association* - IFIASA was an event with multidisciplinary character, whose general objective was to promote scientific excellence, encouraging original research.

Since 2015, International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education by Ideas Forum has become one of the prestigious conferences on social sciences and arts in Romania and more that, in the international academic level. This year's theme is THE LIMITS OF SCIENCE AND HUMAN KNOWLEDGE. The conference has current topics, presenting contemporary authors that influence scientific research in the field of humanities.

The academic content presented in the International Multidisciplinary Scientific Conferences on the Dialogue between Sciences & Arts, Religion & Education 2021 offers the opportunity to examine the LIMITS OF SCIENCE AND HUMAN KNOWLEDGE. I have to extend many thanks to all participants, speakers, and virtual lectors, readers of new proceedings conferences, each member of the Ideas Forum community.

Conferences organized by IFIASA:

The 6th IFIASA International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education MCDSARE / Romania, ON-LINE, 17-18th July & November 27-28th, Târgoviște, Romania 2021, Theme of the Conference: *THE LIMITS OF SCIENCE AND HUMAN KNOWLEDGE*;

The 5th IFIASA International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education MCDSARE / Romania, ON-LINE, 17-18th July & November 27-29th, Galati & Târgoviște, Romania 2020, Theme of the Conference: *HARMONY OF SCIENCE. THE FUNDAMENTAL CONSTANTS AND EMPIRICAL SPECIFICITY*;

The 4th *International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education*/ Theme of the Conference: *QUESTIONS, LIFE AND HAPPINESS- QLH FOR YOU 2019*, May 22-23th, Galati, 20-21th June, Târgoviște, Romania 2019;

The 3rd *International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education*/ Theme of the Conference: *IDENTITY, HARMONY AND REALITY- IHR FOR YOU* May/June, 2018, Targoviste/Galati, Romania, Volume 2/2018;

The 2nd *International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education*, Theme of the Conference: *RELATIONSHIP BETWEEN MAN, WORLD AND TECHNIQUE* / 20-21th November, 2017, Targoviste, Romania, Volume 1/2017;

The 1st *International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education*, Theme of the Conference: *RELATIONSHIP BETWEEN MAN AND COSMOS FROM SCIENCE AND RELIGION PERSPECTIVES*/ 10 May, 2016, 1st virtual session 20th June, 2015, Targoviste, Romania, Volume in journal *Icoana Credintei*.

The scientific papers in this book provide a paradigm on the relationship between different branches of science, the relationship between religion and science, or between religion and education. The current publishing volume only invites to a presentation of the importance of these links among different scientific or artistic branches, the argumentation of each participant regarding his position in his own field, a greater deepening of the connection between different scientific fields, the trans disciplinary approach of some themes or theories that may seem scientific but are also part of a type of art (such as, for example, the work of a theologian, or philosopher or thinker).

IFIASA

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2021, e-ISSN: 2601-8403
p-ISSN 2601-839X

https://doi.org/10.26520/mcdsare.2021.5.11-20

MCDSARE: 2021
International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

PHILOSOPHICAL *PATHOS* IN MARÍA ZAMBRANO AND ARTHUR SCHOPENHAUER

Encarnación Ruiz CALLEJÓN

Department of Philosophy II, Faculty of Philosophy and Letters. La Cartuja Campus. University of Granada, Granada, Spain, ruizencarnacion@ugr.es

Abstract

This work first analyses María Zambrano's reflections on the limits of philosophy, based on the suspicion of its vanity and the ambivalence of its origins. Zambrano explores the genealogy of the traditional conception of the origin of philosophy as wonder, a wonder that she would share with poetry. She postulates a horizon of the conjunction of philosophy and poetry, to respond to the wonder at reality, but she also refers to the possibility of rescuing a more venerable form of philosophy. Secondly the work examines whether Schopenhauer's philosophy, with its proverbial pessimism and its conception of philosophical admiration as dismay, could be regarded as an example of this venerable form of philosophy and, finally, whether aspiring to create this conjunction with poetry is still philosophy.
Keywords: history of philosophy; intuition; pessimism; poetry; *thaumazein*

1. INTRODUCTION: THE VANITY OF PHILOSOPHY

In one of her youthful letters, María Zambrano confesses to Gregorio del Campo, her boyfriend at the time, her lack of interest in science and her predilection for philosophy and art: the former only puts her in contact with ordinary life and does not arouse her curiosity, but art and philosophy illuminate and enrich life, allowing her to look into another world, adopt another perspective (Zambrano, 2012: 125). Years later, she would argue that not only philosophy and art, but also religion and science, are the creations of a being such as Man who "has an incomplete birth" and therefore cannot limit himself to living naturally: his place has to be found in the world and he is "incessantly giving birth to himself and the reality that houses him" (Zambrano, 2016a: 500). María Zambrano opted for philosophy, but it was not an uncritical adherence. Throughout her works she questions the excesses of arrogant reason born of Cartesian rationalism because it would have reduced the individual to mere consciousness and banished feelings, the body and spirituality to the dark side of reason. But in reality it would not only be about the excesses of a specific philosophical current: "to every movement rich in philosophy a voice in a serious tone, sometimes bitter, and sometimes mocking, always responds, denouncing its vanity, showing something more humble, even sordid, but indissoluble" (Zambrano, 2016a: 479). Vanity is arrogance and

presumption, but it also refers to the expiration of the things of this world; the word also means the useless or insubstantial. Vain is that which lacks entity or substance and therefore solidity and foundation. It is also fruitless. But how can 'the love of wisdom' be said to be arrogant or useless or fruitless? Is all philosophy so? Why then engage in this cultivation of vanity? As a result of these disturbing questions raised by the statements of María Zambrano, that is, by a philosopher, this work analyses: 1) What is the vanity to which the author refers. 2) What philosophy is possible once mockery and / or bitterness take the floor and from what emotional tone should philosophy be undertaken from then on. As we know, María Zambrano postulates with respect to this last question a turning or transformation of philosophy towards a poetic reason to clarify and accept the finitude of the human being, which remains in the shadows because it cannot be rationalized, that is, fully catalogued, explained and justified. This article does not address the concept of poetic reason, a subject that has been widely analysed, but rather the contribution to reflection on the humble and indissoluble from the pessimism of Arthur Schopenhauer. Between 1922 and 1924, again in a letter to Gregorio del Campo, Zambrano mentions Schopenhauer among the authors that she is reading (Moreno Sanz, 2014: 51). In her writings there is no explicit dialogue with the author and in principle it would not seem that pessimism actually helps to rationalize existence. This then is the third question that I intend to consider: 3) In what sense is the pessimism of the German philosopher a reflection on the vanity of a philosophy that, nevertheless, sustains our existence, illuminates and enriches life and allows us to adopt other perspectives and look into another world, as the young Zambrano demanded.

2. DISMANTLING PHILOSOPHICAL WONDER

2.1 A GRAVE VOICE SOMETIMES BITTER AND SOMETIMES MOCKING

The grave voice, sometimes bitter and sometimes mocking, that accuses every great philosophical proposal of vanity is “the nakedness of man”, everything that surrounds his complete finitude, without ornament or false illusions. Finiteness cannot be hidden or made invisible, it cannot be dissolved and even less overcome, and it always emerges as if in rebellion, forcing a philosophical system to show its credentials and test its results, putting it on the ropes in both aspects. Zambrano, without any pretense of outlining a history of philosophy according to these rebellious voices, does mention some examples: Thomas de Kempis would respond to Thomas Aquinas, Epictetus to Aristotle, or Kierkegaard to Hegel. She does not refer to mocking voices, but they could be cited, also only by way of example: Lucian of Samosata, Erasmus, Montaigne or Nietzsche, who is very present in the work of Zambrano.

Lucian of Samosata, whom Erasmus translates and appreciates, as do other contemporaries (Marsh, 1988) derides philosophers because they are either impostors or they betray their science. They are theorists and experts in words and they do not practice what they preach (Lucian of Samosata, 2002: 17), although facts and actions are the only thing that every sensible man can trust (Lucian of Samosata, 2002: 18). In *The Fugitives*, Philosophy itself complains about its impersonators, although the reader can clearly see that on many occasions they are only taking themselves seriously and putting into practice the absurd or impossible proposals of the science they serve (Lucian of Samosata, 2002e: 210). In *The fisherman* Parresíades does not hide his disappointment: these hypocrites of philosophers use their knowledge as a trade, not as a vocation and a compass for life, and they are sycophants of the rich (Lucian of Samosata, 2002c: 78) or satellites of these, as we hear in *Philosophy of Nigrinus* (Lucian of Samosata, 2002a: 41). The *Auction of Lives*, nothing less than philosophical lives are put out to tender, but there is no way to sell them: they are unviable, useless or even repulsive, like the one proposed by Diogenes to a potential buyer who, after hearing it, angrily dispatches him with: “Get out. You say foul things unfit for a man” (Lucian of de Samosata, 2002b: 38).

The last philosopher up for auction is Pyrrho who proclaims as the culmination of his doctrine “ignorance and not hearing or seeing (...) being indecisive, insensitive and not differing in anything from a worm” (Lucian of Samosata, 2002b: 52). These characteristics are only of interest to someone who merely wants a slave, and so the buyer states “precisely for that reason you are worth buying” (Lucian of Samosata, 2002b: 52). Philosophers also pride themselves on being able to lead man to truth and happiness, but philosophy has never performed such wonders, as Licinus explains to Hermotimus. This unhappy man has already wasted at least twenty years devoting body and soul to his study and is on the verge of losing his health (Lucian of Samosata, 2002f: 26, 84).

Menippus, faced with the evidence that there are as many philosophies as there are philosophers, that they can defend anything, that they do not practice what they preach and that, despite their excellent science, they exhibit the weaknesses and vices of any neighbour's son, concludes that philosophy is something useless so he goes to Hades to find the truth from the wise Tiresias. This is the first thing Tiresias advises him to do: forget about philosophy and simply "live the present in a good way, laughing at most things and not taking anything seriously" (Lucian of Samosata, 2002d: 255).

Folly, as portrayed by Erasmus, mocks the grandiosity of the philosophers and their affectation. They behave like walking oracles yet all they know is verbal terms and subtleties (Erasmus, 2011: 86, 125). Among philosophers it is not to be expected to find men of action or useful citizens. They underestimate human nature by always harassing man to renounce what he is, as if it were a misfortune "to be faithful to one's own species" (Erasmus, 2011: 86). They are blind to their own follies and do not seem to understand that follies are what preserve society, lighten our existence and make human relationships bearable. Philosophers insist on imposing reason, but not on guiding the human being in the comedy of life (Erasmus, 2011: 76, 80). They do not take into account that "removing the illusion is to ruin the drama" and that you cannot live without some balm (Erasmus, 2011: 79).

The unintended and fortuitous philosopher referred to by Montaigne would have preferred to portray himself naked and aspires to paint not the being but the moment (Montaigne, 2006: 787). We are condemned to develop relative and provisional knowledge, only useful according to the individuals and circumstances. It is dogmatic, but also madness, to believe that reason captures reality, defines our nature with its fixed concepts and can guide us with absolute judgments and values: everything mortal is constantly flowing and revolving. Nor is there any science that can free us from suffering the life that corresponds to us as mortals; in any case, it increases our sensitivity to evils. The common man seems to have more resources for living than the speculative sage.

Montaigne is absolutely graphic when he summons man to finally inhabit his being, to seek the measure of his wisdom and not to forget what, whether he wants it or not, is his most palpable foundation: "It is absolute perfection and as divine to know how to loyally enjoy one's own being. We look for another condition because we do not know how to use ours, and we go out of ourselves because we do not know how to be inside (…) Even on stilts we have to walk with our own legs. And on the highest throne in the world we continue to sit on our buttocks" (Montaigne, 2006: 1057).

The Nietzschean hammer collapsed values and ideals, including the truth: "What, then, is truth? An army of metaphors, metonymies, anthropomorphisms in motion, (…) a sum of human relationships that have been enhanced, extrapolated, poetically and rhetorically adorned and that, after prolonged use, seem to the people to be fixed, canonical, obligatory: the truths are illusions that have forgotten that is what they are, metaphors that have been worn out and without evident force" (Nietzsche, 2016: 623). Nor did he leave standing the idiosyncrasies of the philosophers whom he accuses of being idol worshippers, of filling existence with their fictions, of not wanting to know anything about the genealogy of their dead structures (Nietzsche, 2016c: 630).

In their own way, they have also falsified life for fear of the depth that lies behind it, hence their taste for supposedly pure forms (Nietzsche, 2016b: 336). Whoever, like the 'free spirit', decides to see clearly what he is, without ceremony, has also to be willing to dissect his characteristics as a thinker and test the scope of his criticism and liberation: "Do not remain united with any person: although he is the most loved, each person is a prison, also a corner. Nor be united to any country: even if it is the one that suffers the most and the most in need (…) Nor be united to any compassion (…). Nor be united to any science: even if it attracts us with the most precious discoveries (…) Nor be united to our own detachment (…). Not be united to any of our virtues or become, as a totality, the victim of any of our individualities" (Nietzsche, 2016b: 325). It is true that Nietzsche qualifies: these tests "we carry out in front of ourselves as witnesses and before no other judge" (Nietzsche, 2016b: 325).

Therefore, if philosophy does not reach the truth or offer happiness, if it proposes the impossible, if the philosopher only manages to be another ordinary man and is also incapable of practicing what he preaches, it is certainly not *episteme* but neither is it 'love of wisdom', unless that is destruction or vanity or deceit. The philosopher is a specialist in radical criticism, but it is a different thing to live with the consequences: that is, without one's feet on the ground, emotionally dry and dehumanized.

2.2. IN THE BEGINNING THERE WAS *PATHOS*

Nietzsche affirms that the 'mother of philosophy' is not a drive for knowledge but arises from the basic drives of human beings, which have all created philosophy at some point, so there is nothing pure or impersonal in the philosopher, and that in all philosophy without exception "there comes a point where the «conviction» of the philosopher enters the scene" (Nietzsche, 2016b: 301). María Zambrano perhaps goes further because she directly poses a genealogy of philosophical wonder (*thaumazein*). This is above all a state of mind (*pathos*) that is possible because the philosopher is someone with a new creed: a radical faith in reason that sets 'maximum wonder' in motion, thus turning it into enthusiasm (Zambrano, 2019: 99). That is why philosophy is a knowledge mediating from a new ignorance: "it is a delusion, an inspiration, an irrepressible possession, Plato tells us. A passion (…). An obedience" (Zambrano, 2019a: 445). The philosopher is the one who leaves everything and looks elsewhere for a being for himself and for things. This entails a new way of seeing oneself and seeing reality, ambitious and arrogant, which involves violence and self-violence, as Plato shows in the allegory of the cave and in the ideal city (515c-d; 515e; 515e-516a; 517d-e; 517a; 519c-d; 520b). Unity is "the causal magnet for philosophical violence" because it gives things existence by participating in them. The philosopher tries first to protect himself from appearances, to save himself, and then to save these, but resolving them and forcing them to be coherent with the invisible unity. In philosophy there is also desertion and abandonment: the philosopher uproots himself "from everything received" (Zambrano, 2019a: 442), also from his own being, and "frees himself from things" (Zambrano, 2015a: 689). The initial fascination, which should seduce him to want to remain eternally within what is given, is betrayed and things turn out to be a "pretext" (Zambrano, 2015a: 689). Hence, philosophy is "an ecstasy failed by a tearing apart" (Zambrano, 2015a: 689). Only by ceasing to see are system and abstraction made possible. The ideality that abstraction implies supposes a counterintuitive vision: the stunned philosopher flees from things. As for the system, it is the form of anguish and the power of someone desperate who tries to save himself by constructing. Thought is not contemplation here but the action of someone who has nothing else "to hold on to" (Zambrano, 2015a: 748). Anguish is the root of the flight par excellence in philosophy: metaphysics (Zambrano, 2015a: 747). The result, then, is that the philosopher renounces the gift of the immediate, does not do justice to things and fails to understand his own mortality.

Meanwhile, the other great figure of wonder, the poet, wants to stay entangled in things and in what they freely offer and he experiments with his senses. He listens to his inner world and erases the borders with the external (Zambrano, 2015a: 691). But for the philosopher the limits and hierarchies have to be increasingly clear (Zambrano, 2015a: 691). The poet chooses to live in appearance, in heterogeneity, "lives dispersed" (Zambrano, 2015a: 692). It is true that he also has "his flight" and "his unity and his other world" (Zambrano, 2015a: 692) because he depends on language and every word already supposes moving away from reality and a certain liberation of the speaker and "some kind of unity" (Zambrano, 2015a: 692). But according to María Zambrano, the poet achieves a unity that is present through the poem and his words, and expresses "the most tenuous, the most winged, the most different of each thing, of each moment" (Zambrano, 2015a: 694). On the other hand, the high flights of the philosopher do not end in triumph. They do not reach all individuals, unlike poetry (Zambrano, 2015a: 695). The philosopher dedicates his life to designing a world according to his reason for having to live in one "without reason and without measure" (Zambrano, 2016: 191). And it is poetry that reappears at critical moments because it is that which has the power to suggest truths that cannot be demonstrated (Zambrano, 2015a: 692).

And yet there is a need for both philosophy and poetry, because the human being does not only feel attached to things, but also rapt and deified, and in need of clarity. According to Zambrano, a horizon would be necessary to resolve the conflict (Zambrano, 2015a: 688; 728) but not through a reform of reason, nor by simply claiming immediacy, but through an integral reason: "capable of facing the irrational depth of the real, of *the other*, as the author called it, of that primal experience based on the intuition that occurs outside the discursive *logos*" (Gómez Blesa, 2018: 60). As the author points out in the letter to Rafael Dieste of November 1944: "something that is reason, but broader (…) Poetic reason… is what I have been looking for" (Gómez Blesa, 2018: 61). In this, the metaphor and the symbol replace the concept to "collect the immediate experience of the intuited reality" (Gómez Blesa, 2018: 61).

3. A PHILOSOPHY OF MISERY *TO SUSTAIN* THE WORLD?

3.1. THE DETERMINATION OF SISYPHUS

We have not yet considered the other extreme tonality of the deep voice that Zambrano refers to: the bitter voice that she knew from a very young age from reading Schopenhauer, who does not stop cultivating his ridicule precisely with respect to those who he did not consider authentic philosophers, either for profiting from philosophy, which for him can only be a vocation and not a way to earn a living, or for confusing thinking and expressing oneself with our own voice with repeating the speech of others and inventing words. Schopenhauer shares themes with María Zambrano such as the irrational basis of existence and with it of our being, the enigma that constitutes existence, interest in mysticism, the value of literature and art in general, to name just a few. Here we focus only on the task of the philosopher and the origin of philosophy. For Schopenhauer, philosophical wonder is dismay at the existence of suffering and death.

The first and authentic knowledge occurs in intuition. Genius and wisdom depend on intuition too. Thanks to intuition we capture new relationships between things, that is, we increase knowledge (Schopenhauer, 2003: 102, 105). Empirical intuition is sensitive and intellectual: "pure knowledge of the cause from the effect on the part of intellect" (Schopenhauer, 2004: 61). Intuition depends on the intellect; the concepts on reason. The task of the philosopher is to pour into concepts an intuitive perception of the world that has shaken it (Schopenhauer, 2006: 186). The concept makes this knowledge of the instant communicable and capable of being applied and avoids its loss (Schopenhauer, 2004: 103, 105). The philosopher does with the concept what the artist does with a work of art (Schopenhauer, 2003: 333): "reproduce what is captured through a reflective art and «fix in true thoughts what is suspended in the fluctuating phenomenon» (Goethe, *Faust I*)" (Schopenhauer, 2004: 240). Writing and discourse, as well as philosophy, attempt "to bring the reader to the same intuitive knowledge from which its author began" (Schopenhauer, 2003: 102). The important thing, then, is intuition. However, German idealism would invite us to explain words with words, to a certain indolence of the intellect: thinking would be to accumulate concepts and thus reduce this activity to lower faculties (Xhignesse, 2020: 102). The greater the abstraction, the less perception there is in its content, the more distance from it, the epistemic base being weaker (Xhignesse, 2020: 103). Through uncontrolled abstraction, a totally different world is created from the one to which the building material was supplied: a world of chimeras (Schopenhauer, 2003: 115).

The problem with intuition is that it cannot be preserved or transmitted except through substitutes. What can be transmitted is what the brain knows, not reality. If it is abstract, it is transmitted through concepts and words, if it is intuitive, it is necessary to resort to artifice (Schopenhauer, 2003: 225). Concepts "no matter how finely they are divided with proximate determinations, are always incapable of achieving the subtle modifications of the intuitive (…) intuition always remains its asymptote" (Schopenhauer, 2004: 107). Intuition itself does not perfectly fulfill what it promises since what it offers necessarily depends ultimately on what our brain can capture and interpret. We call that knowledge. The poet and the philosopher, especially the former, try to enrich the concepts: he combines them "in such a way that their spheres intersect without any of them being able to remain in their abstract generality but instead being substituted in fantasy by an intuitive representative". To limit generality, the poet uses epithets (Schopenhauer, 2004: 298).

According to the above, we cannot deny that philosophy aspires to collect the world. It does not attempt to run away from it. It aspires to collect the moment. However, Schopenhauer, with his gloomy meditations on human nature, society, death, suffering, crowned all of this with "blind desire, an impulse completely without foundation or motive" that is Will or the depth of the real (Schopenhauer, 2003: 403), and then with his thesis on the denial of the will, it does not seem that he ends up offering us a philosophy to sustain the world, but rather to flee from it. In fact, he has gone down in the history of philosophy as a pessimistic philosopher who proposes a kind of conversion and denial of the world. Pessimistic authors are often viewed as dissidents whose criticisms are appreciated, but they are not considered to be offering an alternative or to guide us in life (Dienstag, 2006: 3). And it is common to consider pessimism as closely related to cynicism, nihilism, despair or melancholy (Acquisto, 2021: 8). In any case, pessimism is considered the opposite of optimism, and our culture falls down on the side of optimism, as it implies

hope and progress. However, pessimism proposes "an adjustment of expectations based on the observed reality with which one is confronted, a mindset that allows one to cope with a situation rather than aspiring to something else, and crafting a livable reality from the situation by recasting the way in which one conceives it" (Acquisto, 2021: 8-9). It is not a mere affective state but an interpretation of the world that helps us to live in it, focusing, for example, on managing suffering and alleviating it when possible; in finding points of union between people; in paying attention to the meaning of life and in cultivating it (Acquisto, 2021: 10, 16).

In Schopenhauer's case, it is only after the 1870s that he is associated exclusively with pessimism; before that it had been with atheism and with Kantian philosophy (Acquisto, 2021: 93). The author himself did not use the term 'pessimism' until the second edition of *The World as Will and Representation*, that is, in 1844, in the chapter "On metaphysical necessity" and at the end of the text "On the theory of the negation of the Will". In both cases the context is religion (Janaway, 1999: 319). On the other hand, since the end of the 20th century there has been a change regarding the interpretation of his philosophy: descriptive rather than normative (Lemanski, 2020: 3). The normative interpretation assumes that Schopenhauer's philosophy is linear and implies a soteriological purpose of conversion and redemption. Descriptive interpretation came about in the Weigelt-Becker controversy that began in 1854. Becker argued that Schopenhauer did not intend to recommend asceticism or the denial of the will, but rather to describe the world and offer options, as Frauenstädt had already argued and Schopenhauer himself recognized (Lemanski, 2012: 159). But the normative and linear reading was continued by Eduard von Hartmann, Philipp Mainländer, and Nietzsche. Paul Deussen introduced it to academic philosophy.

Apart from the use of the term 'pessimism', Schopenhauer points out different options for life. Only the ascetic renounces the world. Neither the compassionate man nor the artist flee from it. The first, through compassion (justice and charity), rather repairs it, he reduces suffering and therefore experiences a certain joviality and equanimity (Schopenhauer, 2004: 435), as do the mystic and the artist. They are reconciled with the world through an intuition that is not empirical, but rather has dispensed with the "principle of sufficient reason". What is put into play is another form of consciousness, of action and even affective tonality, thanks to a certain idealism or distance: "considering things independently of the principle of reason" as opposed to everyday experience and science (Schopenhauer, 2004: 239). With this, they only escape from an interested consideration of reality, biased, fragmentary, dependent on the perspective of the subject who only sees objects at his disposal and refers everything to himself. But there are also individuals who, fully aware of what the world and existence are like, having meditated thoroughly on its most terrible side, affirm life as it is (Schopenhauer, 2004: 340). Schopenhauer also offers a collection of maxims in his latest work, *Parerga y paralipomena*, to promote an art of being the least unhappy in this world. And he maintains that we lose heaven and earth if we settle into continuous complaint and lament. Among other things, resignation is needed in this life, but not as an end, but to "regain courage" (Schopenhauer, 2004: 459). Nor does he identify *a universal feeling* that describes our state of mind in the world, since the same event will have a meaning depending on who captures it, their character traits and their faculties (Schopenhauer, 2006: 334). With regard to philosophy, it must always be theoretical, it must "investigate, not prescribe" (Schopenhauer, 2004: 327). And there is no doubt in his case: "My purpose can only be to describe both [affirmation and denial of will] and bring them to a clear knowledge of reason, not to prescribe or recommend one or the other" (Schopenhauer, 2004: 342).

The double consideration of the world as will and representation constitutes an interpretation based on the articulation, through an analogy, of the only thing that is given to us: the experience of reality as a set of phenomena and the experience of our interiority as desire and spontaneity (Schopenhauer, 2003: 699). At the time of the author it was also hoped to find an absolute book that would contain the whole world and that would guide human beings, once the Bible could no longer be such a text. Schopenhauer's work would be one of the possible answers in this search (Lemanski, 2012: 170). This is a metaphysical description that may be enough to respond to the need for meaning: to accept a double perspective of reality, to consider ourselves will and representation, that is, to think of ourselves as part of reality, but of the same essence as the whole. Wonder is not betrayed. Here there is neither a residue or a religious nostalgia, as Nietzsche claims (Nietzsche, 2017: 132), but an intuitive and ancestral metaphysics of humanity, shared by philosophies and religions and very close on the other hand to a more common consideration: accepting that we are part of the very cycle of nature and living accordingly.

3.2. EMPATHY AND THE PROVIDENCE OF SATAN

Until now we have pointed out that poetry is an original form of ecstasy and of relationship with the world, apparently opposite and superior to the philosophical one, but María Zambrano affirms something of vital importance regarding the first: "we know that it was called poetry and who knows if some other name was erased?" (Zambrano, 2015a: 690). She also tells us that one of those names could be religion, since this is: "to base life on deep, dark, irrational foundations, depths, superior to all reason" (Zambrano, 2015: 90). Poetry has been more sensitive to that depth or root of existence and has not broken the connection of things with it, but it is not the only possibility. What matters is recovering that lost art and knowing how to deal with that depth. That is why she also affirms that it is essential to determine the part of religion that there is in each philosophy and to rescue other ways of treating reality (Zambrano, 2014: 482). Piety would be "the primarily accessible form of the religious, the making of contact, indefinable (…). And this ineffable is, however, the foundation of the word, that there are things and names for things, since it rather resembles a space, a vital space where we live, move and become" (Zambrano, 2003: 52). "Piety is action because it is feeling, feeling" the other "as it is without schematizing it in an abstraction" (Zambrano, 2020: 255).

Although poetic reason seems to Zambrano to be the one in charge of cultivating the *religation* lost with that background, it would be necessary to address that *religious* root in philosophy. Moreover, there would be a *different* type of philosophy "-the most venerable- referring to the totality of things, not to get rid of them, but to affirm them; not to escape the world, but to sustain it" (Zambrano, 2015a: 768). This 'sustaining the world' has nothing to do with the subject of rationalism: "Thinking, inventing the very foundations of life, not wanting anything given (…)! To support himself -the man, poor cane who thinks-, and on his shoulders, the world" (Zambrano, 2015: 78). What we are dealing with is the affirmation of life that Zambrano finds in Nietzsche, but she does not consider that this affirmation is only to be found in Nietzsche's philosophy but in the venerable philosophy too (Zambrano, 2015: 75). Nietzsche refers - before men of pure knowledge or of "immaculate contemplation" - to the immaculate understanding of all things proper to "those who are happy to become": "not wanting anything from things except to lie before them as a mirror with one hundred eyes" (Nietzsche, 2016a: 145). 'Lying with things' like a mirror is what Zambrano points to as the reality of things without the manipulation that operates in them and in oneself, the subject who knows: to place oneself in "something previous in which they leave us their reality, in which the reality of things is given to us at the same time as mine" (Zambrano, 2015b: 60-61). A reminder of the form of consciousness that the mystic reaches. However, our author indicates *something more* with 'sustain'. It must be remembered that the poet does not want the whole of the philosopher because "he fears that in this whole there is not in effect each one of the things and their nuances; the poet wants one, each one of the things, without restrictions, without any abstraction or renunciation" (Zambrano, 2015a: 694). Poetic reality "is not only what there is, what it is; but also what is not; it encompasses being and not being (…) because everything has the right to be, even what has never been able to be. The poet draws from the humiliation of not being what groans in him; it draws nothing itself out of nothing and gives it a name and a face. The poet does not strive so that things exist, some are, and others do not reach this privilege, but rather works so that everything that is and what is not, reaches its fullness (Zambrano, 2015a: 696). The main question, then, is not to be a mere mirror, to lie before things, to let them be, or to achieve peace with them or between them. Neither is it restoring the world prior to the gaze of man. 'Sustain' means for Zambrano and for that most venerable philosophy that she mentions: *maintain and give encouragement and help without distinction*. Hence the great importance of the scene she takes from Louis Massignon as her opening motto for *Philosophy and Poetry*. It must be emphasized that Zambrano does not resort here to a concept or an argument, but to a powerful image to express the philosopher's task: a disciple of the great Sufi of the 9th century, Hallaj, intrigued by a sound in a street of Baghdad asks the teacher about it. Hallaj responds that it is the voice of Satan that cries over the world: "he wants to make it survive the destruction; he cries for the things that happen; he wants to revive them, yet they fall and only God remains. Satan has been condemned to fall in love with the things that happen and for that reason he cries" (Zambrano, 2015a: 679). Louis Massignon's text, "The methods of artistic realization in Islam", was published in the *Revista de Occidente* in 1932. María Zambrano read it in December 1933 (Moreno Sanz, 2014: 57). In the shortened version *of Hallaj's Passion. Mystical*

martyr of Islam is collected as a story by one of his former disciples, perhaps al-Qasri, relating it to ibn al-Azraq. The sound of the flute played by Iblis "made people cry with emotion". And Hallaj's response is: "It is Iblis who mourns the loss of this world" (Massignon, 1999: 235). If a horizon is needed where the disposition of the poet and the philosopher are given, as Zambrano claims, it would be necessary to imitate this unknown Satan who operates with extreme care and love for all things. Wanting to revive the things that happen, trying to avoid their inexorable shipwreck, Satan carries out the most authentic and complete providence: because he wants to save everything and does not exclude anything from creation, because he suffers with all things and because he accompanies them to their end. There is an *extreme form of ontological care* that is only possible with *affective identification*. Aid is given to what is irretrievably condemned to be, no longer rubble or dust, but nothing, something *vain*. This would be the extreme and noblest form of vanity. Creation in philosophy is another way of cultivating failure and even stubbornness in a futile effort.

4. CONCLUSIONS

The origin of philosophy unfolds in a complex, ambiguous and shared *pathos* that has little to do with the purity, rigor and truth with which philosophical activity and the discipline itself are traditionally presented. Paradoxically, it is through self-imposed and ascetic violence that the sophistication and growth of subjectivity, the creation of other worlds and perspectives and even protective resources in the face of a hostile or enigmatic reality, were possible, therefore we are not only dealing with a congenital defect of the metaphysical flight of the first philosopher. The genealogy of philosophical wonder shows the limitations of this *pathos*, its richness and its affinity with valuable forms of knowledge and experience that are not exclusively philosophical. Zambrano and Schopenhauer invite us to cultivate these and to consider that the mediation between forms of knowledge is enrichment. In original wonder there is also an attitude of listening to the world. Zambrano and Schopenhauer dignify, each in their own way, that depth, that experience prior to philosophy, poetry and religion and undertake to reread the history of philosophy from a broader reasoning, which is also cultural. But it is a chimera to aspire to a book of the world or a knowledge that encompasses them all and is the same thing. On the other hand, as long as we are beings who know and speak, it will never be possible for us to simply catch reality and we will always be working and living between interpretations, substitutes. Schopenhauer, the pessimistic philosopher not only faces finitude, but also describes options, one of them being, in this case his own, a new artifice: cultivating a double vision that he presents as intuitive and not exclusive to philosophy and that to which in fact, the common man usually subscribes when he simply observes nature. The philosopher could learn from Satan an *ethic of care and empathy* that he seems to forget when he articulates his concepts. However, it is neither possible nor desirable to remain in the immediacy. The art that brings philosophical reason into play prompts him to be *at the same time* a Sisyphus of concepts, a tireless creator and destroyer trying to understand and orient himself with some efficiency in the world, albeit with a modest and fragile knowledge that, even so, respects its signs of identity. And the philosopher should still face *other questions*: to unravel the nature of intuition and conceptualization and what is to be preserved and why from the radical criticism of which he usually presents himself as a champion. He must also make it clear if he does not harbor any faith in realism, that is, the conviction that, despite everything, philosophical reason does capture reality with rigor and therefore is preferable to literature.

Acknowledgments

This article is one of the results of my research derived from the project of which I am part "Women and peace dialogues. Origins and transformations in Western societies. Contributions from Andalusia" (B-HUM-058-UGR18).

BIBLIOGRAPHY:

[1] Acquisto, J. *Living Well with Pessimism in Nineteenth Century France*. Palgrave Macmillan; 2021.
[2] Dienstag, JF. *Pessimism. Philosophy, ethic, spirit*. Princeton University Press; 2006.
[3] Erasmus of Rotterdam. *Elogio de la locura (In Praise of Folly)*. Madrid: Alianza editorial; 2011.
[4] Gómez Blesa, M. Presentación a *Claros del bosque (Introduction to* Glades of the Forest*)*. In: María Zambrano. *Obras completas IV. Tomo I*. Barcelona: Galaxia Gutenberg; 2018. p. 55-70.
[5] Janaway, C. Schopenhauer's Pessimism. In: Janaway, Christopher, editor. *The Cambridge Companion to Schopenhauer*. Cambridge University Press; 1999, pp. 318-342.
[6] Lemanski, J. The Denial of the Will-to-Live in Schopenhauer's World and His Association between Buddhist and Christian Saints. In: Arati Barua, Gerhard, Michael, Koßler, Matthias, editors. *Understanding Schopenhauer Through the Prism of Indian Culture: Philosophy, Religion and Sanskrit Literature*. Berlin, Boston: De Gruyter; 2012. p. 150-183.
[7] Lemanski, J. (ed.). *Language, Logic, and Mathematics in Schopenhauer*. Cham: Springer; 2020.
[8] Lucian of Samosata. *Dos veces acusado (The double Idictment)*. Madrid: CSIC; 2000.
[9] Lucian of Samosata. *Hipias o el baño (Hippias or The Bath)*. Biblioteca básica Gredos; 2002.
[10] Lucian of Samosata. *Filosofía de Nigrino (Philosophy of Nigrinus)*. Biblioteca básica Gredos; 2002a.
[11] Lucian of Samosata. *Subasta de vidas (Auction of Lives)*. Madrid: Biblioteca básica Gredos; 2002b.
[12] Lucian of Samosata. *El pescador o Los resucitados (The Dead Come to Life or The Fisherman)*. Madrid: Editorial Gredos; 2002c.
[13] Lucian of Samosata. *Menipo o Necromancia (Menippus or The Descent into Hades)*. Madrid: Biblioteca básica Gredos; 2002d.
[14] Lucian of Samosata. *Los fugitivos (The Runaways)*. Madrid: Biblioteca básica Gredos; 2002e.
[15] Lucian of Samosata. *Hermótimo o Sobre las sectas (Hermotimus or Concerning the Sects)*. Madrid: Biblioteca básica Gredos; 2002f.
[16] Marsh, D. *Lucian and the Latins: humor and humanism in the early Renaissance*. University of Michigan Press; 1988.
[17] Massignon, L. *La pasión de Hallaj. Mártir místico del islam* (*The Passion of Al-Hallaj, Mystic and Martyr of Islam*). Barcelona: Paidós; 1999.
[18] Montaigne, Michel de. *Ensayos completos (Essays)*. Madrid: Cátedra; 2006.
[19] Moreno Sanz, J. *Cronología de María Zambrano (Cronology of Maria Zambrano)*. Galaxia Gutenberg; 2014. p. 45-126.
[20] Nietzsche, F. *Sobre verdad y mentira en sentido extramoral (On Truth and Lie in an Extra-Moral Sense)*. Madrid: Tecnos; 2016.
[21] Nietzsche, F. *Así habló Zaratustra* (*Thus spoke Zarathustra*) Madrid: Tecnos; 2016a.
[22] Nietzsche, F. *Más allá del bien y del mal (Beyond Good and Evil).* Madrid: Tecnos; 2016b.
[23] Nietzsche, F. *Crepúsculo de los ídolos (Twilight of the Idols)*. Madrid: Tecnos; 2016c.
[24] Nietzsche, F. *Humano, demasiado humano I (Human All too human I)*. Madrid: Tecnos; 2017.
[25] Plato. *República (Republic)*. Madrid: Gredos; 1988.
[26] Schopenhauer, A. *El mundo como voluntad y representación*. *Complementos* (*The World as Will and Representation II).* Madrid: Trotta; 2003.
[27] Schopenhauer, A. *El mundo como voluntad y representación* (*The World as Will and Representation*). Madrid: Trotta; 2004.
[28] Schopenhauer, A. *Parerga y paralipomena I*. Madrid: Trotta; 2006.
[29] Xhignesse, M. Schopenhauer's Perceptive Invective. In: Lemanski, J., editor. *Language, Logic, and Mathematics in Schopenhauer*. Cham: Springer; 2020. p. 95-107.
[30] Zambrano, M. *Cartas inéditas (a Gregorio del Campo)* (*Unpublished Letters to Gregorio del Campo*). Ourense: Ediciones Linteo; 2012.
[31] Zambrano, M. *Escritos autobiográficos. Delirios. Poemas (1928-1990)* (*Autobiographical writings. Delirium. Poems*). Barcelona: Galaxia Gutenberg; 2014.

[32] Zambrano, M. *Horizonte del liberalism* (*Horizon of Liberalism*). Barcelona: Galaxia Gutenberg; 2015.
[33] Zambrano, M. *Filosofía y Poesía* (*Philosophy and Poetry*). Barcelona: Galaxia Gutenberg; 2015a.
[34] Zambrano, M. *Unamuno*. Barcelona: Penguin Random House Grupo Editorial; 2015b.
[35] Zambrano, M. *El pensamiento vivo de Séneca* (*The Living Thought of Seneca*). Barcelona: Galaxia Gutenberg; 2016.
[36] Zambrano, M. *Hacia un saber sobre el alma* (*Towards a Knowledge of the Soul*). Barcelona: Galaxia Gutenberg; 2016a.
[37] Zambrano, M. *Notas de un método* (*Notes on a method*). Barcelona: Galaxia Gutenberg; 2019.
[38] Zambrano, M. *Los bienaventurados* (*The blessed*). Barcelona: Galaxia Gutenberg; 2019a.
[39] Zambrano, M. *El hombre y lo divino* (*The man and the divine*). Madrid: Alianza editorial; 2020.

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2021, e-ISSN: 2601-8403
p-ISSN 2601-839X

https://doi.org/10.26520/mcdsare.2021.5.21-25

MCDSARE: 2021
International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

THE BEGINNING OF THE UNIVERSE AS AN EPISTEMOLOGICAL FRONTIER- LEMAÎTRE TO GAMOW

João Barbosa
Center for Philosophy of Sciences of the University of Lisbon (CFCUL)
Faculty of Sciences of the University of Lisbon, Campo Grande, Edifício C4, 3º Piso, Sala 4.3.24
1749-016 Lisboa, Portugal, jlbarbosa@fc.ul.pt

Abstract

It was in 1922, when Alexandre Friedmann proposed some models for cosmic evolution, that modern cosmology faced for the first time in a scientific way the problem of the origin of the universe. It was the inaugural step of the big bang cosmology (usually known as the Big Bang Theory), to which several important cosmologists contributed over the following decades. Among these cosmologists, there were two who played a special role: Georges Lemaître, who proposed the primeval atom theory, and George Gamow, who later assumed the hot and dense primordial state of the universe which contemporary cosmology continues to admit. In this paper, I present and compare the perspectives of these two great cosmologists towards the idea of the beginning of the universe as an epistemological frontier, that is, as an unsurpassable limit to the physical knowledge of the universe, namely with regard to an explanation of what caused this beginning and how the primordial universe had come into existence. Both cosmologists assumed that the beginning of our universe is located before everything that physics can achieve, but we can identify one important difference: according to Lemaître, the beginning of the universe is located before space and time, and we can admit that is an epistemological beginning and also an ontological beginning; according to Gamow, the beginning of our universe may have been the result of a preexistent cosmological state of the universe which is just inaccessible to physics, and therefore is not an ontological but just an epistemological beginning.

Keywords: Epistemological beginning; Georges Lemaître; George Gamow; Ontological beginning; Origin of the universe; Limit of scientific knowledge;

1. INTRODUCTION

It was in 1922, when Alexandre Friedmann proposed three possible models for cosmic evolution, that modern cosmology faced for the first time in a scientific way the problem of the origin of the universe. Indeed, through a relativistic approach, Friedmann admitted a beginning for the universe and even proposed formulas to calculate the age of the universe (Friedmann, 1922). Regarding his variable universe models (a monotonous universe in expansion from a zero-initial radius, a monotonous universe

in expansion from non-zero initial radius, or an oscillating universe with cycles of expansion and contraction), Friedmann later wrote in a book addressed to philosophers (Friedmann, 1923):

> "This reminds certain mythological conceptions of the Hindus regarding "cycles of existence"; we could also speak of a creation of the universe from nothing. But all of this should only be taken as a curiosity (...)." (Friedmann and Lemaître, 1997, p. 275; original italics)

This Friedmann's remark touches on the big and unavoidable question never solved by cosmology: how the primordial universe had come into existence and, even more, what caused this existence, that is, what caused the beginning of the universe (Kragh, 2007, p. 240).

As a unique and unrepeatable event, the beginning of the universe later baptized "Big Bang" is experimentally inaccessible, but, in a certain way, we can say that it is possible to reach it from a theoretical point of view and through observations of traces of the primordial universe, such as the cosmic background radiation or the relative abundance of chemical elements such as helium. But, as important authors have noted, the inflation theory, the best explanation of the big bang cosmology about the beginning of the universe, "starts shortly the Plank time [10-43 s], but has nothing to say about earlier times, not to mention the magical moment of t = 0" (Kragh, 2007, p. 240).

Indeed, at quantum level, such as the earlies states of the universe would be, according to the big bang cosmology, the Planck time marks a limit for all physical knowledge, an epistemological limit for any scientific explanation of the beginning of the universe. This means that the state of the universe at the instant 10-43 s of its existence is a limit of the cosmological knowledge not because a better scientific explanation has not yet been achieved, but because it is an ultimate physical limit (or first physical limit, given the context!) for what cosmology can achieve.

Friedmann did not develop his remark and just considered it as simple curiosity, as we saw in the quote above, but, since he has proposed his cosmological models, the assumption of a beginning for the universe has always confronted cosmologists with an epistemological frontier, that is, an unsurpassable limit to the physical knowledge of the universe. Among these cosmologists, there were two who played a very special role in the construction of the big bang cosmology (usually known as the Big Bang Theory): Georges Lemaître, who was the first to relate the recession of galaxies with space expansion and proposed the primeval atom theory, and George Gamow, who later assumed the hot, dense primordial state of the universe that standard big bang cosmology continues to admit. It is pertinent to search and compare the perspectives of these two great cosmologists about the great question behind this epistemological frontier: how the primordial universe had come into existence and, even more, what caused this existence. And that for at least two significant reasons: Lemaître and Gamow were two of main founders of big bang cosmology; one of them (Lemaître) was also a Catholic priest, which raises a pertinent curiosity about the way he scientifically faced the question of what caused the beginning of the universe.

2. GEORGES LEMAÎTRE AND THE VEIL HIDING THE CREATION

According to Lemaître, the beginning of the universe is an entirely natural state (Lemaître, 1972, p. 9), but the physics is unable to reach that beginning because it is located before space and time, and therefore is something before and outside everything that physics can achieve. That is the meaning of these Lemaître's words, regarding his primeval atom theory, which defended the idea that all cosmic multiplicity results from an evolution which started from a single initial entity:

> "In absolute simplicity, no physical problems arise. The beginning of multiplicity really means the beginning of the very meaning of any notion that encompasses a large number of individuals. Space and Time are among such notions. The beginning is located even before the beginning of space and time, which progressively acquire meaning as the multiplicity grows sufficiently. As space and time are the indispensable instruments for any physical notion, the beginning is located even before Physics. It is the inaccessible foundation of space-time." (Lemaître, 1972, p. 9)

If the beginning of the universe is located before space and time, that is, before everything that can be studied by physics, then as it goes back in the cosmic history, cosmology is unable to reach and explain that beginning. We can say that the beginning of the universe is an epistemological limit, which is unattainable and even less unsurpassable. Or, in other words, the beginning of the universe is an epistemological beginning.

Acording to this Lemaître's vision, that it is not worth looking for explanations for the cause of the beginning through physics. Indeed, if the beginning is out of the reach of physics, even more out is any cause of this beginning. In spite of that, it is worth paying attention to one of the most important Lemaître's cosmological texts – "The Beginning of the World from the Point of View of Quantum Theory" (Lemaître, 1931). In this one single page article, Lemaître speaks briefly about the origin of the universe as quantum event and brings quantum indeterminism to the history of the universe, ending with this sentence: "The totality of matter in the universe must have been present from the beginning, but the story it tells us can be written step by step". However, it was later discovered that the manuscript paper contains this unpublished final paragraph, which Lemaître decided not to include in the published version of his text:

> "I think that everyone who believes in a supreme being supporting every being and every acting, believes also that God is essentially hidden and may be glad to see how present physics provides a veil hiding the creation." (cited by Godart and Heller, 1985, p. 73)

This unpublished paragraph, which ends the manuscript paper preserved at the Archives Lemaître, Louvain-La-Neuve (Lambert, 1999, p. 77), is very significant. As a Catholic priest, Lemaître was aware of the risk that his scientific ideas could be easily associated with his religious beliefs. Throughout his scientific career, Lemaître has always tried to separate cosmology from theology (Robredo, 2011, p. 87-94; Lambert, 1999, p. 97-98), and the decision not to publish this paragraph of his manuscript may be understood in the light of this attitude. However, as someone "who believes in a supreme being", Lemaître is implicitly admitting in the unpublished paragraph that the universe was created by God. And we can admit that Lemaître, in line with Christian theology, is implicitly recognizing that the beginning of our universe is a divine creation from nothing (as Friedmann also mentioned in the quote above), that is, a true ontological beginning of the physical and cosmological reality we know.

Adding this to the idea that the beginning of the universe is located before space and time, that is, before everything that can be studied by physics, we can admit that, according to Lemaître, the beginning of the universe is not only an epistemological beginning but also an ontological beginning.

3. GEORGE GAMOW AND THE IMAGINATION FLYING BEYOND ANY LIMIT

In 1948, in the article "The Evolution of the Universe", Gamow presents for the first time an idea about the origin of the universe. Sketching an explanation for the primordial state of matter and for the current expansion, Gamow imagines, not only the initial state of the universe, but also a hypothetical previous state. For this, Gamow has to, in his own words, "let the imagination fly beyond any limit":

> "According to this point of view, one must imagine the original state of matter as a very dense and superheated neutron gas that may have originated (if we let the imagination fly beyond any limit) as a result of a hypothetical collapse that preceded the current expansion. In fact, the extremely high pressures obtained near the point of complete collapse (singular point at t = 0) would have compressed the free electrons with the protons, transforming the matter into a superheated neutron fluid state." (Gamow, 1948, p. 680)

This imaginative exercise gives the hypothetical idea that the universe has, not only a history, but also a prehistory. Apparently do not remain any "archaeological records" that testify this hypothetical prehistory, unlike what happens to the subsequent history, "archeologically documented" by the relative abundances of some chemical elements (at this time, it was not yet known the cosmic background radiation). But this empirical emptiness did not stop Gamow from imagining an involution prehistory which would base a subsequent evolution history. This is an imaginative exercise about an inverted image of the initial history of the universe.

In this cosmogony we find an initial singularity that corresponds to a "complete collapse point" of matter (a "singular point") at time t = 0 in the history of the universe. We must note, however, that talking about t = 0 does not mean talking about the beginning of time, because that moment is just the transition from an involution era to an evolution era, from prehistory to history, and not a moment, therefore, of an absolute temporal beginning, such as 12 am of a day is nothing more than 12 pm of the previous day.

Later, in the book The Creation of the Universe, Gamow explicitly assumes himself as a supporter of the "hypothesis of a 'beginning'" for the universe, in line with the "imaginative Belgian scientist, Abbé Georges Edouard Lemaître" (1957, p. xii).

But, contrary to what the hypothesis of Lemaître's primeval atom, which, according to Gamow (1957, p. 57), provides "spectacular views" about the evolution of the universe, the beginning considered in the "hypothesis of a beginning" does not correspond to the beginning of the universe nor to any beginning of time and space. On the contrary, the beginning in Gamow's hypothesis is only the beginning of a cosmological era, the era in which we find ourselves, the era in which evolution has transformed a disorganized elementary material, highly compressed and hot, into everything we currently know in the universe. In other words, this beginning is only the beginning of the universe as we know it, it is only the beginning of our universe, which is built from existing raw material.

This beginning would have been the starting point of the expansion and evolution of our universe, but, according to Gamow, it would also have been the arrival point of a previous collapse process:

> "We can now ask ourselves two important questions: why was our universe in such a highly compressed sate, and why did it start expanding? The simplest, and mathematically most consistent, way of answering these questions would be to say that the Big Squeeze which took place in the early history of our universe was the result of a collapse which took place at a still earlier era, and that the present expansion is simply an "elastic" rebound which started as soon as the maximum permissible squeezing density was reached." (Gamow, 1957, p. 36; original italics)

Jacques Merleau-Ponty (1965, p. 372) considers that the initial state of the universe in Gamow's cosmogony functions as "an impenetrable screen to any attempt to know what was going on before it", which has an obvious similarity with the Lemaître's primeval atom. But, despite some similarity, there is an essential difference that seems to escape this idea of impenetrable screen: although we must recognize that it is impossible to know what would have existed before the Big Squeeze, we can talk about involution, collapse, destruction of entities that would be built with the elementary particles that would later constitute the Big Squeeze. Neutrons would have existed in this era and it is possible to imagine the organization and involution processes that would have led to the Big Squeeze, a material state that is in some kind of cosmological transition, rather than in some very first cosmological beginning. In other words, we still within the boundaries of physics if we try to explain by this way the before and why about the beginning of the universe we know. It is precisely about this epistemological possibility that Gamow talks when he says:

> "Most likely the masses of the universe were squeezed to such an extent that any structural features which may have been existing during the "pre-collapse era" were completely obliterated, and even the atoms and their nuclei were broken up into the elementary particles (protons, neutrons, and electrons) from which they are built." (Gamow, 1957, p. 37)

But this very short imaginative essay (of a sentence) is just a generalist idea. And in the next sentence, Gamow surrenders to the evidence of unknowability about the organization of the previous era and the details of its possible processes of compression:

> "Thus, nothing can be said about the pre-squeeze era of the universe, the era which may properly be called "Saint Augustine's era," since it was Saint Augustine of Hippo who first raised the question as to "what God was doing before He made heaven and earth"." (Gamow, 1957, p. 77)

The most distant past in the universe is thus assumed to be an inaccessible era to physics. At the conclusion of the book, Gamow adds:

> "In the dim pregalactic past we perceive a glimpse of a metaphysical "Saint Augustine's Era" when the universe, whatever it was made of, was involved in a gigantic collapse. Of course, we have no information about that era, which could have lasted from the minus infinity of time (…)." (Gamow, 1957, p. 134)

We see that, for Gamow, the cosmological era which preceded Big Squeeze is "metaphysical" in the sense that it is beyond the concrete reach of physics. It is only in this sense that we must interpret the use of the word "metaphysical" in this passage from Gamow, and not in a religious sense. Anyway, it is clear that the Big Squeeze is not an ontological beginning, but just an epistemological beginning, because, if physics cannot go further, this is the beginning of the universe which can be scientifically studied. Surrendered, Gamow would say (1954, p. 63) that "from a physical point of view we must completely forget the pre-collapse period".

4. CONCLUSION

Although Lemaître and Gamow both assumed that the beginning of our universe is located before everything that physics can achieve, we can identify an important difference: according to Lemaître, the beginning of our universe is located before space and time, before any physical existence, and, although he did not state it explicitly, we can admit that, in his point of view, the beginning of our universe is, not only an epistemological beginning, but also an ontological beginning of our universe; according to Gamow, the beginning of the universe we know may be the result of a cosmological previous state, a real but inaccessible state to physics, and therefore we cannot say that the beginning of our universe is an ontological beginning of the physical reality, but just an epistemological beginning.

Unlike Gamow, it seems that Lemaître did not need to look for any physical explanation for the origin of our universe. As a Catholic priest, we can think that perhaps it was personally satisfying for Lemaître the idea that the universe (namely the primeval atom he imagined) was created by God from nothing, outside the reach of physics, and behind, in his own words, "a veil hiding creation". Therefore, it may be tempting to admit the hypothesis that Lemaître´s belief in a Creator did not compel him to seek any physical explanations for the original state of the universe. But we do not know any Lemaître statements that point in this direction. On the contrary, Lemaître wrote that the Christian scientist must "abstract himself from his faith in his research" (Lemaître, 1936, p. 70) and did not appreciate the cosmological-theological concordism expressed by Pope Pius XII regarding the emergent cosmological ideas (Robredo, 2011, p. 92).

Regardless of this, it is clear that the origin of our universe was considered by both cosmologists, Lemaître and Gamow, as a physical frontier, a limit of scientific knowledge that stops physics to reach any satisfactory explanation for the creation of the universe. And it is the awareness of that frontier (at $t = 0$ s or $t = 10^{-43}$ s, it is indifferent) which is probably at the origin of an attitude of many cosmologists: to avoid the problem of the creation of the universe and to only focus on the evolution of the universe.

BIBLIOGRAPHY:

[1] Friedmann A. Über die Krümmung des Raumes. Zeitschrift für Physic. 1922:10:377-386.
[2] Friedmann A. Mir kak prostranstvo i vremya. Petrograd: Akademiya; 1923.
[3] Friedmann A, Lemaître G. Essais de Cosmologie. Paris: Éditions du Seuil; 1997.
[4] Gamow G. The Evolution of the Universe. Nature. 1948:162:680-682.
[5] Gamow G. The Creation of the Universe. New York: The New Library of World Literature; 1957.
[6] Gamow G. Modern cosmology. Scientific American. 1954:190:55-63.
[7] Godart O, Heller M. Cosmology of Lemaître. Tucson: Pachart Publishing House; 1985.
[8] Kragh H. Conceptions of Cosmos – From Myths to the Accelerating Universe: A History of Cosmology. Oxford, UK: Oxford University Press; 2007.
[9] Lambert D. Sciences et Théologie: Les figures d'un dialogue. Namur: Presses Universitaires de Namur; 1999.
[10] Lemaître G. The Beginning of the World from the Point of View of Quantum Theory. Nature. 1931:vol. 127:706.
[11] Lemaître, G. La culture catholique et les autres sciences positives. In: Actes du VIe Congrès Catholique de Malines;tome V; 1936. p. 65-70.
[12] Lemaître G. L'Hypothèse de l'Atome Primitif et le Problème des Amas de Galaxies. In: Lemaître G. L'Hypothèse de l'Atome Primitif. Neuchâtel: Éditions du Griffon; 1972. p.1-99.

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2021, e-ISSN: 2601-8403
p-ISSN 2601-839X

https://doi.org/10.26520/mcdsare.2021.5.26-31

MCDSARE: 2021
International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

GALILEO GALILEI´S THESIS EXPANDED

Walter Gomide,
Universidade Federal do Mato Grosso/UFMT-Brazil
waltergomide@yahoo.com

Abstract

In this short article, I try to show alternative maths to real numbers in such a way that these maths (especially Transreal Numbers by James Anderson and Arithmetic of Infinity by Yaroslav Sergeyev) can also be considered as legitimate instruments for presenting the structure of reality. I call this thesis of expanding the possibilities of understanding Nature mathematically the "Galileo Galilei´s thesis extended". As an example of the application of the thesis that the mathematics that is at the base of Nature must be extended to a better assessment of the scope of physical laws, here we present the Heisenberg´s Uncertainty Principle, approached in an alternative way from a mathematical point of view.

Keywords: Heisenberg Principle; Galileu Galilei; Real numbers- Tranreal Numbers – Arithmetic of Infinity;

1. INTRODUCTION

In his 1623 book, entitled "the Assayer"[1], Galileo Galilei, unanimously considered the creator of the modern methodology of theoretical physics, states that the book of Nature is written in mathematical characters.

At the time of Galileo, such a statement had a very clear meaning: Nature is structured mathematically in points, lines and volumes; the world of Nature is a great geometric structure (Euclidean, by the way) which must be studied from this observation.

However, if we place Galileo's postulate on the structure of Nature in what was developed mathematically in History of Mathematics and which today ended up in the term "Contemporary Mathematics", how can we understand Galileo's thesis?

2. PROBLEM STATEMENT

Most likely, any current physics student, well aware of the role that mathematical language plays in the development of physics as a theory, would say that the contemporary translation of the Galilean

[1] See Galileo Galilei, *The Assayer*, 1623. Translation from “Il Saggiatore” into English by Stillman Drake. In: http://web.stanford.edu/~jsabol/certainty/readings/Galileo-Assayer.pdf

saying is as follows: Nature is written, in its mathematical structure, with real numbers and, in some exceptional cases (as in Quantum Mechanics) an exception is made to complex numbers (if, and only if, the complex numbers can be reduced to real numbers - the concept of "observables", Hermitian operators defined in Hilbert spaces, is there to confirm this priority of the real numbers in relation to complex numbers in contexts of theoretical physics).

What may not cross the mind of a contemporary physicist student is the fact that, at the same time, there are several numerical systems or "grammars" that are alternatives to real numbers; and it should also not be known to most physics students at the most prestigious universities in the world that the thesis that Nature is written "with the real numbers" is a postulate known as Cantor's axiom, which was enunciated by Georg Cantor in 1883[2]. Therefore, to say that the mathematical structure of Nature coincides with the structure of real numbers, in its most varied forms of presentation, is not an empirical result, but rather the postulated "condition of possibility" of the mathematical expression of Nature itself; it is, therefore, a prior thesis on Nature, not an empirical one.

We can then ask ourselves whether Galileo's thesis understood today, that Nature is written in mathematical characters, leads us necessarily to the thesis that the mathematics underlying Nature's structure is based exclusively on real numbers and complex numbers, on what these ones have in common with the real numbers. For me, clearly Galileo Galilei's thesis that Nature is written in mathematical characters is not equivalent to the statement that the mathematics that underlies Nature is exclusively based on real numbers and their auxiliaries (complex numbers). I think that the mathematical character of Nature is not reduced to what is measurable or metrizable, to what is metaphorically associated with the use of rulers or compasses (if so, the real numbers - the "allegory" par excellence of the notion of measure or variation (deltas), would be enough); but this is not the case: Nature has a mathematical dimension that is of a metaphysical character[3], and this is revealed in statements of theoretical physics in which infinites or indeterminations appear; such statements are "intractable" by real numbers and, for this reason, are considerable meaningless or indicative of some physical limit of Nature.

3. RESEARCH QUESTIONS

But the limits are on the grammar of real numbers, not on Nature itself. For example, when we analyze Heisenberg's Uncertainty principle, we can conclude that it is impossible for an observer to accurately measure the position of a particle at any given moment. This impossibility is based on the fact that, if we consider the existence of an observer with such "epistemic power", then this same observer would verify in his/her measurements that the linear momentum of that particle would be completely indeterminate. Mathematically, according to Heisenberg's Uncertainty Principle, the conjunction of absolute precision of the position of a particle with the total indeterminacy of its linear momentum gives rise to the mathematical expression $0.\infty$, which does not refer to any real number, since it is an indeterminacy in the real numbers: there is no real number "accurate and unique" that is equal to $0.\infty$. But the Uncertainty Principle states that the joint consideration of the indeterminations of the measurements of the position of particle and its linear momentum must be a number that is not less than the real number

$$h/\,4\pi,$$

in which the symbol *h* represents Planck´s constant whose value is

$$6.62607004 \times 10^{-34}\ \mathrm{m^2\ kg\ /\ s}.$$

So, due to an impossibility inherent to the grammar of real numbers, since there is no real number equal to $0.\infty$, and therefore $0.\infty$ is not less than $h/\,4\pi$, then we infer that the interdiction given in real

[2] See EHRLICH, P. [1994]

[3] The “metaphysical character” of Nature is seen here as equivalent to the thesis that we cannot explain exhaustively Nature without appealing to infinity and to the Indeterminate, concepts that has no correspondent in the usual way we consider what is a measurement.

https://doi.org/10.26520/mcdsare. 2021.5.26-31
Corresponding Author: Walter Gomide

numbers is a physical interdiction: the limitation of the grammar of real numbers becomes a limitation of the physical world.

However, there are numerical systems in which $0.\infty$ it is not indeterminate. For example, in transreal numbers, the multiplication $0.\infty$ is equal to the number *Nullity*, which in turn is not less than $h/4\pi$.

1. Transreal numbers, symbolized by $\mathbb{R}^{T}$, consist of an extension of the real numbers[4]. Beginning with the real numbers, which can be seen as a line segment that grows indefinitely both to the right (positive real numbers whose magnitude can be as large as we like) or to the left (negative real numbers whose magnitude can be as large as we want), in which we can conceive 0 as the origin of the real numbers, transreal numbers arise by the introduction of three new numbers, namely:

a) $\frac{1}{0} = \infty$ (positive Infinity);

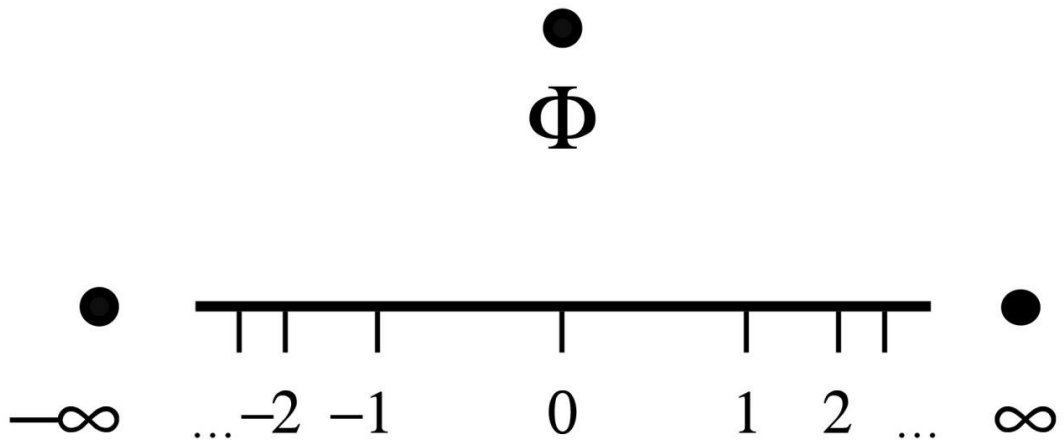
b) $-\frac{1}{0} = -\infty$ (negative Infinity);

c) $\frac{0}{0} = \Phi$ (Nullity).

Thus, transreal numbers are defined as a union between real numbers and the set composed of these three new numbers:

$$\mathbb{R}^{T} = \mathbb{R} \cup \{\infty, -\infty, \Phi\}$$

and can be viewed as follows:



In fact, Nullity, simbolyzed as **Φ,** is a number that does not maintain any order relation with any other transreal number: for any transreal number *x*, the following condition holds:

$$x \prec \Phi \text{ and } x \succ \Phi$$

[4] On Tranreal Numbers, see ANDERSON, J, GOMIDE, W & DOS REIS, T. [2015].

https://doi.org/10.26520/mcdsare. 2021.5.26-31
Corresponding Author: Walter Gomide

In transreal arithmetic, it is easily demonstrated that

$$\Phi = 0/0 = 0.\infty$$

Thus, according to the condition expressed above:

$$\Phi = 0.\infty \not< h/4\pi$$ [5]

Thus, if Nature were written with the grammar of transreal numbers, it would be plausible to affirm the possible existence of an observer who measured the position of a particle with extreme accuracy to the detriment of the complete indeterminacy of the linear momentum.

Even if we postulated the existence of an observer that measured the position of a particle with infinitesimal precision, say ε, things would not be better, since the multiplication of an infinitesimal quantity ε (given epistemically as actually existing, and not as a *metaphor* of limit process that tends to zero) by an absurdly large real number is not defined in the real numbers. Thus, we would continue to affirm that there is no epistemically omniscient observer based on the limits of the grammar of real numbers.

However, there are numerical systems, such as the Arithmetic of the Infinity created by Yaroslav Sergeyev[6], in which the multiplication of an infinitesimal quantity by a very large number or by an infinite quantity is defined.

Basically, the Arithmetic of Infinity postulates that there is a greater natural number, called *grossone* and represented as ①, in such a way that the set of natural numbers ℕ, in its entirety, can be presented as follows:

$$\mathbb{N} = \{1,2,3, ..., \frac{①}{2} - 1, \frac{①}{2}, \frac{①}{2} + 1, ..., ① - 2, ① - 1, ①\},$$

So, in the Arithmetic of Infinity, the natural numbers are divided into two disjoint sets: the finite numbers *n* and the infinite numbers of the form $j\,(\frac{①}{k}) \pm \boldsymbol{m}$, such that $j, k \in \mathbb{N}$, and $j/k < 1$; $m \in \mathbb{N} \cup \{0\}$. Every infinite number of the form $j\,(\frac{①}{k}) \pm \boldsymbol{m}$ is less than ①.

In Sergeyev´s system, the following identities link the *grossone* ① to the elements 0 and 1(see SERGEYEV, *Op. Cit*, p. 236):

[5] In one of its simplest ways to express it, the Heisenberg uncertainty principle states that the joint indeterminacies of the measures of two conjugate physical quantities are always greater than or equal to $h/4\pi$.
To be considered a true statement even in the borderline cases where we operate with joint indeterminacies equal to zero and infinity, within transreal arithmetic, the principle must be modified to its equivalent form which states that the joint indeterminacies are not less than $h/4\pi$.

[6] On Arithmetic of the Infinity, see Sergeyev, Y. [2017]

https://doi.org/10.26520/mcdsare. 2021.5.26-31
Corresponding Author: Walter Gomide
MCDSARE 2021 / e-ISSN 2601-8403 p-ISSN 2601-839X

1- $1.\ ① = ①.\ 0 = 0$
2- $① - ① = 0.$
3- $\frac{①}{①} = 1.$
4- $①^{0} = 1.$
5- $1^{①} = 1.$
6- $0^{①} = 0.$

Among the identities presented above, worthy of note is **3**: it states that the division of an infinite number, in this case ①, by an infinitesimal number, 1/①, is equals to 1.

Thus, by interpreting the uncertainty principle of Heisenberg from the arithmetical identities that are true in the Arithmetic of Infinity, *if we postulate that the particle position measurement is done with infinitesimal precision and the indeterminacy of the linear momentum is infinite and of grossone size* - the infinite unit present in the Arithmetic of Infinity that counts the totality of natural numbers -, then the multiplication of these quantities is equal to 1, which is obviously not less than $h/4\pi$.

Thus, if the mathematics of Nature were based on the Arithmetic of the Infinity and the treatment that this arithmetic gives to measurements is accepted, then would be plausible to have an observer who, according to Heisenberg's Uncertainty Principle, would be able to measure the position of a particle with complete precision, while verifying the total indeterminacy of the linear momentum of such particle.

4. CONCLUSION.

Thus, as a conclusion to this short article, I launch the following "metaphysical" hypothesis about Nature (an extension of Galileo's thesis):

The book of Nature is written in a Mathematics whose grammar does not dispense or render without physical significance quantities with infinite or indeterminate values; these infinite or indeterminate values are indicative that Nature, in its mathematical structure, is not reduced to what is actually measurable, but has something more than that - something "metaphysical", so to speak.

BIBLIOGRAPHY:

[1] ANDERSON, J & DOS REIS, T. "Construction of the Transcomplex Numbers from the Complex Numbers" in World Congress on Engineering and Computer Science 2014, San Francisco, USA, 22-24 October, [2014].

[2] ANDERSON, J & DOS REIS, T. "Transreal Calculus" , IAENG International Journal of Applied Mathematics, v. 45, n. 1, p. 51-63, [2015]

[3] ANDERSON, J. & DOS REIS, T. "Transdifferential and Transintegral Calculus" in World Congress on Engineering and Computer Science 2014, San Francisco, USA, 22-24 October, [2014], vol 1, pp. 92-96.

[4] ANDERSON, J & DOS REIS, T. "Transreal Limits and Elementary Functions" in Haeng Kon Kim; Mahyar A. Amouzegar; Sio-long Ao. Transactions on Engineering Technologies, World Congress on Engineering and Computer Science 2014. London: Springer, pp. 209-225, [2015].

[5] ANDERSON & DOS REIS, T, "Transreal Newtonian Physics Operates at Singularities". IN: Synesis, vol. 7, no. 2, [2014].

[6] ANDERSON, J & DOS REIS, T., "Transreal Limits Expose Category Errors in IEEE 754 Floating-Point Arithmetic and in Mathematics" in World Congress on Engineering and Computer Science 2014, San Francisco, USA, 22-24 October 2014, vol 1, pp. 86-91.

[7] ANDERSON, J, GOMIDE, W. & DOS REIS, T. "Construction of the Transreal Numbers and Algebraic Transfields" IAENG International Journal of Applied Mathematics, vol. 46, no. 1, pp. 11-23, [2016].

[8] ANDERSON, J & GOMIDE, W. "Transreal Arithmetic as a Consistent Basis for Paraconsistent Logics" in World Congress on Engineering and Computer Science 2014, San Francisco, USA, 22-24 October 2014, vol 1, pp. 103-108.

[9] ANDERSON, J, GOMIDE, W & DOS REIS, T. "Transreal Logical Space of All Propositions" in Haeng Kon Kim; Mahyar A. Amouzegar; Sio-long Ao. Transactions on Engineering Technologies, World Congress on Engineering and Computer Science 2014. London: Springer, pp. 227-242, [2015]

[10] CANTOR, G. "Beiträge zur Begrundund der Transfiniten Mengelhre" [1895-1897]. Contributions to the Founding of the Transfinite Numbers. Translated, and provided with an Introduction and Notes by Phillip E. B. Jourdain. Dover Publications, New York, [1941].

[11] CANTOR, G. " Cantor´s Grundlagen. IN: EWALD, W, ed, From Kant to Hilbert. A Source Book in the Foundations of Mathematics. Vol I. Clarendon Press. English Translation of the original on German: Grundlagen einer allgemeinen Mannigfaltigkeitslehre [1883];

[12] EHRLICH, P. "General introduction". Real Numbers, Generalizations of the Reals, and Theories of Continua, vi–xxxii. Edited by P. Ehrlich, Kluwer Academic Publishers, Dordrecht, [1994].

[13] GALILEO GALILEI, The Assayer, 1623. English translation by Stillman Drake. In: http://web.stanford.edu/~jsabol/certainty/readings/Galileo-Assayer.pdf;

[14] LOLLI, G. "Metamathematical investigations on the theory of Grossone". IN: Applied Mathematics and Computation, 255, 3 – 14,[2015];

[15] SERGEYEV, Y. "Numerical Infinities and Infinitesimals: Methodology, Applications and Repercussions on two Hilbert Problems". IN: EMS Suveys in Mathematical Sciences – European Mathematical Society, [2017]

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2020, e-ISSN: 2601-8403
p-ISSN 2601-839X

https://doi.org/10.26520/mcdsare.2021.5.32-36

MCDSARE: 2021
International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

MATHEMATICS, THE "BOOK OF NATURE" AND THEOLOGY: GALILEO GALILEI AND THE FOUNDATIONS OF MODERN SCIENCE

Ion CORDONEANU,
PhD, Philosophy Department of History, Philosophy and Sociology, Faculty of History Philosophy and Theology, University Dunarea de Jos Galati, Romania, theosisro@yahoo.com

Abstract

Starting from the cycle of letters known as The Copernican Letters (1613-1615) and following through to the 1632 Dialogue, I will attempt to outline the context in which Galileo Galilei's work is constituted as a veritable theory of nature research based on mathematics. Galilei rests on the principles of science to ground his choice for the Copernican model, as well as the separation of natural research from theology, but his concern for a unified philosophy of the natural world is intertwined in his work with the dignity of creation understood as "the great book of the world" by which divinity talks to man in the language of mathematics.

Keywords: Galileo Galilei; Foundations of Modern Science; Copernican model; scientific knowledge;

1. INTRODUCTION

On June 16, 1633, the Holy Congregation pronounced: "Sanctissimus decreed that said Galileo is to be interrogated on his intention, even with the threat of torture, and, if he sustains [the test], he is to abjure de *vehementi* [i.e., vehement suspicion of heresy] in a plenary assembly of the Congregation of the Holy Office, then is to be condemned to imprisonment at the pleasure of the Holy Congregation, and ordered not to treat further, in whatever manner, either in words or in writing, of the mobility of the Earth and the stability of the Sun; otherwise he will incur the penalties of relapse.

The book entitled *Dialogo di Galileo Galilei Linceo* is to be prohibited. Furthermore, that these things may be known by all, he ordered that copies of the sentence shall be sent to all Apostolic Nuncios, to all Inquisitors against heretical pravity, and especially the Inquisitor in Florence, who shall read the sentence in full assembly and in the presence of most of those who profess the mathematical art." (Giorgio de Santillana, *The Crime of Galileo*, 1955, pp. 317-318).

2. THE DIALOGUE CONCERNING THE TWO CHIEF WORLD SYSTEMS, PTOLEMAIC AND COPERNICAN

The Dialogue Concerning the Two Chief World Systems, Ptolemaic and Copernican, is considered Galileo's most important work; started in 1610, under the title *De sistemate seu constitutione universe* (*On the System or the Composition of the Universe*), the text had been published in Florence in 1632, having been finished in 1630, and after the request for publication license requested from the Holy Congregation, which Galileo obtained due to his friendship with Pope Urban VIII. Nevertheless, even though Galileo is put on trial by the Inquisition for this text, throughout his life, he had written works that had drawn the attention and thorough analysis of the Church authorities, the texts comprised in the *Copernican Letters* (*Lettere copernicane*) (1613-1615) being a telling example in this respect. It is not by hazard that the same Cardinal Bellarmino, who had instrumented in 1600 the trial against Giordano Bruno, is present in the "hermeneutic adventure" Galileo had embarked on with the *Copernican Letters*, through a letter dated April 12, 1615, addressed to Paolo Antonio Foscarini and through his appointment as the representative of the Inquisition in Galileo's trial.

What is the reason why, upon reading the sentence, the ones who practise maths are targeted? Can mathematics be suspected, so that the ones who study it need to be warned? Before Galileo, Copernicus had been considered a man of the Church and a scholar, but his system had been considered sooner an ingenious mathematic tool that could not pretend anything related to physical reality, and mathematics "was rated at the time as a thing for technicians and virtuosi, as they were called, with no claim to philosophical relevance" (Santillana, p. XXV). To Galileo's mind, mathematics could no longer be just an instrument. Archimedes had been translated into Latin, and the acquaintance with his works prompts Galileo to build a science of mathematics capable of studying the movement phenomenon the same way Archimedes had studied statics, and the Greek scholar becomes his "scientific model" (Santillana, pp. XXIV; Horia Roman Patapievici, *Preface* to Galileo Galilei, *Două lecții despre Infernul lui Dante [Two Lessons on Dante's Inferno]*, 2021, p. 18). Before initiating this lifetime-long project, Galileo throws himself (or is thrown) in an adventure: in the year 1587, he is invited at the Platonic Academy in Florence to solve the dispute between two ways of imagining Dante's Inferno. It is worth mentioning that young Galileo (he was only 23 years old at that time) is called in his capacity as a *mathematician*! Why adventure? Because during these two lectures, Galileo makes an error of which he becomes aware only later, which is, otherwise, the reason why the *Lessons* on *Inferno* stop being distributed. One more thing: nowhere in these *Lessons* is any mention of velocity or any indication of the temporal representation. We can regard the *Lessons* as a hermeneutic adventure because the Florentine model of the *Inferno*, that the Academy favoured, should have been considered more exact; but how comfortable was Galileo with applying mathematics – geometry – to the field of the imaginary (as dominant as it was at the time), we cannot know.

If Galileo developed, as early as in his youth, a natural philosophy based on mathematics, then he saw in Nicolas Copernicus' *De Revolutionibus Orbium Coelestium* a path opening towards a new cosmology. The Copernican text had been completed in 1530 and published a year before its author's death, in 1543, which means that it had been known for at least 50 years in the time of Galileo.

Once again, how did mathematics become responsible for the earthquake that hit the image of the world at the end of the 16th and the beginning of the 17th century? Galileo introduced himself in the *Dialogue*, through Salviati's voice, who was furthering his philosophy, as a "Pythagorean mathematician and philosopher", showing that "the human understanding can be taken in two modes, the *intensive* or the *extensive. Extensively*, that is, with regard to the multitude of intelligibles, which are infinite, the human understanding is as nothing even if it understands a thousand propositions; for a thousand in relation to infinity is zero. But taking man's understanding *intensively*, in so far as this term denotes understanding some proposition perfectly, I say that the human intellect does understand some of them perfectly, and thus in these it has as much absolute certainty as Nature itself has. Of such are the mathematical sciences alone; that is, geometry and arithmetic, in which the Divine intellect indeed knows infinitely more propositions, since it knows all. But with regard to those few which the human intellect does understand, I believe that its knowledge equals the Divine in objective certainty, for here it succeeds in understanding necessity, beyond which there can be no greater sureness." (Galileo, *Dialogue...*, 1967, p. 103). A daring speech, remarks the good Peripatetician Simplicio, one which Salviati summarizes unequivocally and

even more daringly: "These are very ordinary propositions and far from any shade of temerity or boldness. They do not detract in the least from the majesty of Divine wisdom, just as saying that God cannot undo what is done does not in the least diminish His omnipotence. But I question, Simplicio, whether your suspicion does not arise from your having taken my words equivocally. So in order to explain myself better, I say that as to the truth of the knowledge which is given by mathematical proofs, this is the same that Divine wisdom recognizes".

Mathematics represents, in Galileo's view, the human being's participation to divine knowledge (Marius Dumitrescu, *Geneza barocă a Filosofiei Moderne [The Baroque Genesis of Modern Philosophy]*, 2016, p. 361), but the foundations of the new natural philosophy and cosmology were mathematical – Galileo had joined Copernicus in the elaboration of this project, which had been affirmed in the *Copernican Letters*, where, in the letter to Benedetto Castelli (December 21, 1613) argued in favour of the heliocentric system to explain the cosmic phenomenon occurring during Joshua's fight with the five rival armies, when God stopped the Sun in the sky: "I hold that this openly confutes the Ptolemaic and Aristotelian system, while admirably agreeing with the contrary hypothesis of Copernicus" (Galilei, *Scrisori copernicane*, 2010, pp. 81).

Some theologians' suspicion was legitimate: in their opinion, this was an attack at the foundations of faith, which also included Ptolemy's cosmological model and Aristotelian philosophy. On April 12, Cardinal Bellarmino wrote to Paolo Antonio Foscarini: "First I say that it seems to me that your Paternity and Mr Galileo are proceeding prudently by limiting yourselves to speaking suppositionally and not absolutely, as I have always believed that Copernicus spoke. For there is no danger in saying that, by assuming the Earth moves and the sun stands still, one saves all of the appearances better than by postulating eccentrics and epicycles; and that is sufficient for the mathematician. However, it is different to want to affirm that in reality the sun is at the centre of the world and only turns on itself, without moving from east to west, and the earth is in the third heaven and revolves with great speed around the sun; this is a very dangerous thing, likely not only to irritate all scholastic philosophers and theologians, but also to harm the Holy Faith by rendering Holy Scripture false." (Finocchiaro 1989, pp. 67-69).

The history of that time recorded several events preceding the 1633 trial: on February 24, 1616, the Holy Congregation vets the two sentences referring to the stability of the Sun and motion of the Earth; on February 26, 1616, Cardinal Bellarmino summons Galileo, demanding that he should abandon the censored conception on the stillness of the Sun and motion of the Earth, and on March 3, 1617, Copernicus's *De revolutionibus orbium caelestium* is banned, pending corrections.

Galileo remains in search and formulation of that *mathesis universalis* also sought by his contemporary, René Descartes, who was sharing the Copernican view but who was more interested in not suffering because of his ideas. Descartes wrote to Mersenne in April 1634 about the fact that the Inquisition would not accept even a hypothetical discussion of the Copernican theory: "I'm astonished that an ecclesiastic should dare to write about the earth's motion, whatever excuses he may give. For I have seen official documents about Galileo's condemnation, printed at Liège on 20.ix.1633, which contained the words *quamvis hypothetice a se illam proponi simularet*, even if he pretended he was putting his view forward only hypothetically'; thus they seem to forbid even the use of this ·as a· hypothesis in astronomy. So I don't dare tell anyone any of my thoughts on the topic." (Descartes, *Correspondence*, 2017, p. 29).

After the *Copernican Letters*, the Florentine publishes, in 1623, *Il Saggiatore*, which explicitly reveals his preoccupation for a unified philosophy on the natural world. For Galileo, philosophy signifies science in general, that is more than "natural philosophy", and its object is "the great book of nature*": "La filosofia è scritta in questo grandissimo libro che continuamente ci sta aperto innanzi a gli occhi (io dico l'universo), ma non si può intendere se prima non s'impara a intender la lingua, e conoscer i caratteri, ne' quali è scritto. Egli è scritto in lingua matematica, e i caratteri son triangoli, cerchi, ed altre figure geometriche, senza i quali mezi è impossibile a intenderne umanamente parola; senza questi è un aggirarsi vanamente per un oscuro laberinto."* (Galileo Galilei, *Opere*, I, 1964, pp. 631-632). [Philosophy is written in this great book that is continually open before our eyes (I say the universe), but it cannot be understood unless one first learns to understand the language, and to know the characters, in which it is written. It is written in mathematical language, and the characters are triangles, circles, and other geometric figures, without which it is humanly impossible to understand a word; without these it is a vain wandering through a dark labyrinth.]

3. **CONCLUSION**

In the "Dedication" to Grand Duke Ferdinand II de Medici, at the beginning of the *Dialogue* (February 1632), Galilei affirms the same principle of a philosophy which, by dignity of its object, should be considered the most important in the order of human knowledge: "The constitution of the universe I believe may be set in first place among all natural things that can be known, for coming before all others in grandeur by reason of its universal content, it must also stand above them all in nobility as their rule and standard." (Galileo, *Dialogue*, 1967, pp. 3-4).

This is the philosophy which grounds, in Galileo's case, genuine research principles, since, in the *Copernican Letters* and not only, he circumscribes the field of scientific research to the area of those phenomena that can only be known with the help of the human mind's natural ability (*naturali apprensibili*), without the support of the divine revelation. In this way (as shown in the letter to Benedetto Castelli, December, 21, 1613, and in the most extensive one from 1615, to Cristina de Lorena), Galileo clearly distinguishes between scientific research and theological undertaking: "I think it would be more prudent to prevent anyone from using excerpts from the Scriptures, somehow forcing them to affirm some conclusions on nature, conclusion which, at some point, may be contradicted by senses and demonstrative and necessary reasoning." (*Scrisori copernicane*, p. 75).

At the same time, with the foundation of modern science, starting from Galileo, secularization opens the path towards the study of this world and reveals the "ingenuity of the creator" (Amos Funkenstein, 1998, p. 12) that the Florentine turned into a symbol of modernity never ceased cherishing.

BIBLIOGRAPHY:

[1] Giorgio de Santillana, *The Crime of Galileo*, Chicago University Press, Chicago, 1955.
[2] Galileo Galilei, *Două lecții despre Infernul lui Dante*, Editura Humanitas, București, 2021.
[3] Galileo Galilei, *Dialogue concerning the Two Chief World Systems – Ptolemaic&Copernican*, translated by Syllman Drake, foreword by Albert Einstein, University of California Press, Berkeley and Los Angeles, 1967.
[4] Marius Dumitrescu, *Geneza barocă a Filosofiei Moderne*, Editura Secom Libris, Iași, 2016.
[5] Galileo Galilei, *Scrisori copernicane*, Editura Humanitas, București, 2010.
[6] René Descartes, *Selected Correspondence of Descartes*, ed. by. Jonathan Bennett, https://www.earlymoderntexts.com/assets/pdfs/descartes1619_1.pdf. 2017.
[7] Galileo Galilei, *Opere*, volume primo, A cura di Franz Brunetti, Unione Tipografico-Editrice Torinese, 1964.
[8] Amos Funkenstein, *Teologie și imaginația științifică. Din Evul Mediu până în secolul al XVII-lea*, Editura Humanitas, București, 1998.
[9] M. Finocchiaro, *The Galileo Affair. A Documentary History*. Berkeley, CA: University of California Press, 1989,

IFIASA

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2021, e-ISSN: 2601-8403
p-ISSN 2601-839X

https://doi.org/10.26520/mcdsare.2021.5.37-57

MCDSARE: 2021
International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

SCIENTIFIC LINGUISTICS, A NEVER-ENDING HISTORY

Dr. Jacques COULARDEAU
Université Paris 1 Panthéon-Sorbonne, 8 rue de la Chaussée, 63880 Olliergues, France,
dondaine@orange.fr, (33)9 64 04 91 66

Abstract

1866 was a turning point in scientific linguistics when the Linguistic Society of Paris banned all papers and presentations on the origin of language. De Saussure locked up the debate with two concepts, diachrony and synchrony. I intend to examine the emergence of the hypothesis of a single origin of human articulated languages, in Africa first, and then Black Africa. The phylogenic approach of biological studies has today spread to linguistics. Sally McBrearty rejected the idea of a Neolithic revolution. Consequently, Black Africa became a major field of archaeological research. Yuval Noah Harari stating the existence of a symbolic revolution around 70,000 years ago, rejected Black Africa along with the Americas, and the Denisovans. Asia has become a major archaeological field. Julien d'Huy implements phylogenetic arborescent technique to the study of myths. The oldest form of a myth is not the origin of it. In oral civlizations some literate individual had to tell the story behind representations for the people to understand, appreciate, and remember them. I will then consider structural linguistics (Noam Chomsky & Universal Grammar). UG has never been able to develop semantics within its own system (Generative Semantics & George Lakoff). Science is always a temporarily approximate vision of what it considers. First, what any science explores is constantly evolving following phylogenic dynamics that are contained in the very objects of such scientific studies. Second, any new knowledge appearing in the field concerned causes a complete restructuration of what we knew before.

Keywords: Phylogeny, origin, diachrony, Black Africa, migrations, language families;

1. INTRODUCTION

When you extensively read in the field of sciences, all sciences, both hard sciences that include a lot of technology, soft sciences, and humanities alike, you come across two antagonistic trends, and the third proper one is missing. On one hand, you have those who oppose scientific and technological change and progress, considering most of the time that any supposed improvement comes along with something even worse that brings humanity down towards its own perdition. On the other hand, you have those who consider science is the only way, and we have to follow its guidance 100%. The present COVID-19 pandemic and the vaccination that might be one way – though not the only way – to get to herd immunity as fast as possible, reveal a strong opposition to any vaccination at all by principle with arguments that can be as extreme as "It's tampering with God's will," or in secular terms "It's tampering with nature." The most common argument on this side of the divide is that we have not tested the vaccines for side-

effects seriously, particularly on weak or aging people. True enough, the emergency in which these vaccines were produced prevented any extensive and serious testing for side effects with all types of people, particularly those who have some weakness due to age and disease. Yet on the other side of the divide, people can easily see that the death rate is maybe only 1% but the virus is spreading faster and faster and mutating into new strains that are spreading even faster. Vaccinating the population to reach herd immunity is probably the only way, or at least the most effective way, to contain the disease as fast as possible. That means the vaccinated people must be under serious control to make sure they do not have undesirable side-effects. But for some, vaccination is the only response possible and that is absolutely wrong. Social distance and barrier gestures are indispensable to slow down the spreading of the disease, and as long as the virus is not eradicated, if it ever will be, such barrier gestures and social distancing will have to remain in place.

What I say here to start my presentation is that the anti-vaccination side, as well as the pro-by-all-means-vaccination camp, are wrong, no matter what their arguments might be, scientifically or socially right or wrong. The coronavirus known as COVD-19 reveals that to face the crisis brought up by it, we need to find a middle way that states extreme positions are neither necessarily wrong nor unavoidably right, but they both are too short on the real situation. There is never in any way any final solution, any final point, any terminal destination beyond which a problem will be forever solved, a question will be forever answered. We have to retain from the anti-vaccination side the idea that nature's (or God's) intentions are at least difficult to know but they have to be respected: we must not lose our natural human essence by turning ourselves into robotic or even nanorobotic machines. We also have to retain from the pro-at-all-cost-vaccination camp the simple idea that vaccinating is going to be a great accelerator towards herd immunity first and full containment second, provided the side-effects are not worse than the original disease, though we have to be vigilant on this point. But we would be wrong not to see that containment will never be secure enough to go back to some "normal" social functioning if we do not keep and even institutionalize the famous barrier gestures, knowing that these barrier gestures will be difficult to respect in some situations in the world, in some countries even, and in some social classes in our societies. And social distancing will have to be kept, though we have to make sure that it does not destroy any social life or social contacts, turning humans into some kind of spiders locked up in an entirely closed densely populated if not overpopulated space, and we know the result for spiders, and we can imagine the result for humans: suicides and a survival (paper?) race of every moment.

I can now turn to the particular science I am going to examine under that light, linguistics. It is both a physical and social science, hard (when dealing with sounds, morphology, and syntax), soft (when dealing with semes and semantics), and social (when dealing with communication in social or cultural contexts) science. But let me be clear from the start. Noam Chomsky did not find the recipe of Universal Grammar in the Thora. Ferdinand de Saussure and Gustave Guillaume did not find their diachronic and phylogenic approaches in the New Testament of the Bible. Panini did not find his grammar of Sanskrit in Hinduist or Buddhist sacred texts since Hinduism was in the process of developing and Buddhism was not yet transcribed into Pali first or Sanskrit second.[1] Linguistics does not come from any sacred text and it is not dealing with a raw material that evades scientific investigation. Like all other sciences, linguistics is never finished, fully achieved, or completed at any time of its history including today and tomorrow. It is, like all sciences, a non-finished attempt to understand and explain the functioning of the ever-changing perceptible objective substance it tries to explore. Let's enter modern linguistics starting in 1866 in Paris.

2. THE MYTH OF UNIVERSAL GRAMMAR

In Linguistics we have a long history of grammarians or linguists who have declared their cogitations on one particular language or a group of languages were the final state of knowledge on this or these languages. In this field of science, the only possible discussions come as a confrontation between several schools that are reciprocally excluding one another. The first linguist of note to use mathematics, hence what is considered as undebatable science (but is it really? We all know the debate about Euclidean

[1] Pāṇini, Sanskrit philologist and grammarian in ancient India. Pāṇini is the "first descriptive linguist", or even "the father of linguistics." Era: floruit 4th century BCE; floruit 400–350 BCE; 6th–5th century BCE

geometry.[2] In the real universe, straight lines don't exist. They are always concave or convex and flat planes do not exist either, hence parallel lines do not exist since straight lines do not exist.), was Zellig Harris.[3] He used statistics to determine the end of a word, not in writing but in language in general, hence in oral speech. He had observed that the phoneme that comes after the last phoneme of a word is widely open as for choice, whereas within a word the choice is a lot more limited. This indicates the cuts between words, hence the units of a particular discourse. The units can be defined either as semantic or as syntactic. Zellig Harris was working at first on Semitic languages and he used mathematics to generalize what he discovered. In his own retrospective survey (published as Harris, *The background of transformational and metalanguage analysis*, 2002b, original English text of Harris, 1990), he said: "it was possible to describe the entire program from the outset". Nevertheless, working out its consequences and demonstrating its results required many years of painstaking work, with tests in many languages. This idea of linguistics being an entire program, meaning it has a beginning and an end, and that the end is the end, hence perfect knowledge, not to say the truth, is the perfect vanity of some rationalistic structuralists who constantly keep in mind the fact they are targeting this absolute truth, this final knowledge terminating the search itself, and that we will only have to check the results in new languages. It does not mean Zellig Harris or Noam Chomsky were of that type, but it is the general idea that comes out of the publications of these linguists, particularly their followers who might want to prove more than they should, students often try to outdo their professors.

But before considering Noam Chomsky, it is important to qualify Zellig Harris a little bit more.

> "Harris worked a subject deeply before bringing it to publication. The appearance of discrete "stages" reflects how long it took to work the data of language into confirmations worthy of presentation.
>
> "For example, in the course of his investigations as a Semitist, he laid the foundations for the distributional methodology (Stage 2), summarized in *Methods in Structural Linguistics* (1946/1951), which seems suddenly to have sprung into view in a series of papers beginning with the (1940) review of Gray's Foundations of Language. Similarly, transformations and the correlation of linguistic form to linguistic information were evident from the beginning (Harris, "The background of transformational and metalanguage analysis," 1990/2002). When Leigh Lisker became his student in 1939, he was already teaching transformational analysis and discourse analysis (Stage 3), including the work on Hidatsa (*Hidatsa Texts*, 1939c), more than a decade before it was first published (1952).
>
> "Harrisian distributionalism is usually represented as a prime exemplar of the alleged striving of 'Bloomfieldians' to eliminate meaning from linguistics. In fact, it explicates Leonard Bloomfield's affirmation that the form of an utterance and the meaning that it conveys are two aspects of the same thing. It has a deep connection with the search for configuration and pattern in language data exemplified by Edward Sapir, who regarded Harris as his intellectual heir. Harris was more open than most of his contemporaries to developments in the Prague school and elsewhere in Europe, such as the work of Roman Jakobson who he assisted in getting established in the U.S.

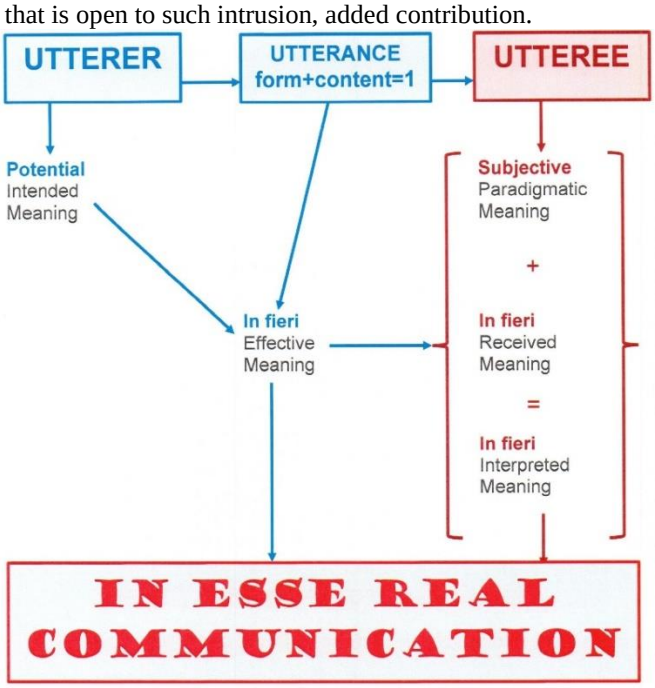
[2] Euclid's five postulates : 1. A straight line segment can be drawn joining any two points. 2. Any straight-line segment can be extended indefinitely into a straight line. 3. Given any straight lines segment, a circle can be drawn having the segment as radius and one endpoint as center. 4. All Right Angles are congruent. 5. If two lines are drawn which intersect a third in such a way that the sum of the inner angles on one side is less than two Right Angles, then the two lines inevitably must intersect each other on that side if extended far enough. This postulate is equivalent to what is known as the Parallel Postulate.

[3] The work of Zellig Harris in language, grammar, and information, and in the methodology of linguistics, is remarkable for its consistency and integrity over a span of almost 60 years, culminating in an elegant and comprehensive theory of language and information. I consider two books as fundamental to understand the logic of his work. 1951, Methods in Structural Linguistics. 1968, Mathematical Structures of Language. After https://zelligharris.org/description.html

https://doi.org/10.26520/mcdsare. 2021.5.37-57
Corresponding Author: Jacques Coulardeau
MCDSARE 2021/ e-ISSN 2601-8403 p-ISSN 2601-839X

> "The work on linguistic information that is made most explicit in Stage 5 is thus the formative theme underlying all of Harris's work from the beginning. The correlation of form and information is the motivation for distributionalism, discourse analysis, transformational analysis, and the identification of elementary transformations (*Transformations in linguistic structure*, 1964; *The two structures of grammar* 1969). The analysis of elementary sentence-differences led directly to Operator Grammar (Stage 4), the "least grammar" (*Language and Information*, 1988:57) with which we may characterize the informational capacities of language. Carrying this forward into sublanguage analysis discloses the information "in" or "carried by" a given utterance. The form of an utterance, taken within the patterning of the language, is itself the "semantic representation" of the information "in" the utterance, as distinct from additional kinds of meaning brought to it by the recipient."[4]

This long quotation insists on the fact the semantic dimension of language is essential because language is communication, and this semantic content is connected directly to the form of the utterances or discourse. At the same time, he knows the recipient of the discourse will add some meaning from his or her own mental awareness of what the discourse is dealing with. That's a major difference with Noam Chomsky who totally reduces the discourses he analyzes to what the utterer formally – meaning by the form the utterance carries – projected into it, which is limited in understanding by the tremendously dangerous objective that he, Chomsky, deals with the standard language of the average person in an average discursive situation. Harris knew there is nothing average in communication and it always depends on the utterer and the utteree. Both add to the plain structure of the utterance a whole paradigmatic flow of information that actually determines the meaning for both the utterer and the utteree. This is a lot more interesting than it may look. The concept of utteree is far from being admitted by all linguists as fundamental in any kind of communication. Think of Gustave Guillaume for example who speaks of "effet de sens" which means "effective meaning produced by the real form of the utterance as produced by the utterer." If you want to introduce the utteree, you have to understand that the meaning for him will be what meaning he captured in the effective meaning intended by the utterer hybridized with what he/she, the utteree, is projecting into this form. The form of the utterance contains an effective meaning from the utterer that is captured partially or not by the utteree who anyway projects his/her own meaning into the form that is open to such intrusion, added contribution.



[4] The Work of Zellig Harris, https://zelligharris.org/description.html

Zellig Harris was the research director of Noam Chomsky[5] who worked in priority on English and generalized what he found out to all languages. I use the verb "find out" because for these structuralist linguists everything they presented was a discovery. Chomsky targeted an abstract model of language seen as one human ability more than numerous particular virtual material tools to communicate. They both created the field of what was called at first transformational grammar and was extended into Universal Grammar[6] later on by Noam Chomsky himself, which Harris did not do when more studies from more linguists considered more languages. There is absolutely no phylogenetic approach in this linguistics. They reject, at least totally neglect, any diachronic approach, any historical approach. A language for them is a fully stable set of rules and lexical items, even at times seen as unchangeable. If they change something it's because they made a mistake first, or they did not consider all the cases they should have considered. It is not the method or the program that is wrong. It is the linguist who is mistaken. Noam Chomsky is totally unable to capture the simple observable fact that languages, any languages, change all the time. But his emphasis on linguistic competence for a whole community defined as homogeneously speaking one language makes him insensitive to linguistic creativity (poetry, literature, even simple political discourse, the discourse of politicians, religious and ritualistic discourses, etc.) and to real living communicational oral language. He worked on and with a normative vision of each language he considered (when he himself got out of standard English) or his followers considered. And that came from the very start. Noam Chomsky's *Syntactic Structures* (1957)[7] introduced a bias in his approach by choosing to build the grammar of a language from, and only from grammatical sentences actually uttered and utterable in the said language. The term grammatical is of course difficult and it is opposed to ungrammatical but also nonsensical. To be accepted a sentence has to be both grammatical and sensical, meaningful. The structure comes first, and the meaning comes second.

> "**2.3** Second, the notion "grammatical" cannot be identified with "meaningful" or "significant" in any semantic sense. Sentences (1) and (2) are equally nonsensical, but any speaker of English will recognize that only the former is grammatical.
> (1) Colorless green ideas sleep furiously.
> (2) Furiously sleep ideas green colorless.
> […]
> Such examples suggest that any search for a semantically based definition of "grammaticalness" will be futile."[8]

The use of the future ("will be futile") in the rejection of any semantic approach is exactly what I mean when calling such approaches the absolute reference to a norm. Chomsky here establishes a norm that rejects any alternative to what he may say or think, and "generative semantics" is not yet in the picture. The condemnation of future attempts to consider things differently is just rejected before it has come into existence. He aborts the alternative theory even before it has been conceived, impregnated into some kind of fetal life. We have the same closure of any discussion possible, any alternative imaginable, with Chomsky's declaration, once and for all, that language is the result of a "black box" in the brain of any human being and that black box is innate and it precisely contains Universal Grammar. Hence Universal Grammar is genetic.

> "Chomsky proposed that each of us has a **Language Acquisition Device (LAD)** – what he sometimes called a "little black box" – that starts functioning when we are still infants. By the time

[5] Noam Chomsky, (1928-) an American linguist, philosopher, cognitive scientist, historian, social critic, and political activist. Sometimes called "the father of modern linguistics."
[6] Universal grammar, in modern linguistics, is the theory of the genetic component of the language faculty, usually credited to Noam Chomsky. The basic postulate of UG is that a certain set of structural rules are innate to humans, independent of sensory experience.
[7] Noam Chomsky, *Syntactic Structures*, Mouton, The Hague, 1957.
[8] Noam Chomsky, *Syntactic Structures*, Mouton, The Hague, 1957, p.15.

> we are five or six, that device has enabled us to vacuum from our immediate environment a native language based on **universal grammar**. Put another way, all languages are fundamentally the same, irrespective of the cultures we live in [or the general architecture of the languages of the world that can be seen from four different architectural points of view: root languages, isolating languages, agglutinative languages, and synthetic-analytical languages. My comment.]. They are the function of a large number of words (arbitrary symbols whose meaning is set by convention) and a limited number of grammatical rules that are somehow structured into our brains and minds."[9]

After such a ukase, there is no possible discussion and elaboration on the development of language in children, on the acquisition of a foreign language, on bilingual and multilingual children, on the impact of any, each, and all languages on the way a speaker may think or see the world. Carol Chomsky, Noam Chomsky's wife, tried in the late 1960s to devise a pedagogy of language from her husband's universal grammar theory. Carol Chomsky's best-known book in this field is *The Acquisition of Syntax in Children From 5 to 10* (1969). The book investigated how children develop an understanding of **the underlying grammatical structure** of their native language, as well as how they use this skill **to interpret sentences** of increasing complexity as they get older. The word "understanding" is too strong and we should speak of "apprehending" because even someone who has not received any education and hence has no understanding that would imply that he can explain why the sentence is built this or that way, is perfectly able to speak his native language accurately. Despite earlier scientific beliefs that children complete their acquisition of syntax by the age of five, Carol Chomsky's research showed that children continue to develop the skills needed to understand complex constructions beyond that age. This idea is just trying to open doors that had not been closed at the time (1969) for a very long time, showing she did not consider two essential researchers in the field who essentially worked between 1925 and 1965. Vygotsky[10] would of course oppose such an approach, both Noam Chomsky's black box and Carol Chomsky's purely pragmatic observation about the acquisition of linguistic competence in one or more languages by children. But even Piaget[11] would find it difficult to accept both approaches, at least in his research after the Second World War. If learning any simple fact like the conservation of a volume of water when you shift it from one glass to another that has a different shape, which leads to the acquisition of comparatives, is an observable process in all children at a certain age, it is because it is not innate, even if we may think that visually capturing the said liquid as an entity is the result of the mental ability of any human to discriminate one item from another because of one difference or particular element. Conceptualization is a constructed ability that precisely associates the language developed by the mind through experience to the mental capability of the brain, and the senses that nurture the brain with sensations, to discriminate between these sensations and analyze them into perceptions that are registered, at first in the brain, in some kind of brain machine language if not code, and to which later on words will be attached enabling these mentally controlled words to conceptualize these sensations and the objects attached to them. And conceptualization is a long process that Vygotsky envisaged up to 18 or 20 years of

[9] Peter McKenzie-Brown, "Noam Chomsky's Black Box," Sunday, August 20, 2006, https://languageinstinct.blogspot.com/2006/08/noam-chomskys-black-box.html#:~:text=Chomsky%20proposed%20that%20each%20of,language%20based%20on%20universal%20grammar.

[10] Lev Vygotsky was a seminal Russian psychologist who is best known for his sociocultural theory. He believed that social interaction plays a critical role in children's learning. Through such social interactions, children go through a continuous process of learning. Vygotsky noted that culture profoundly influences this process. Imitation, guided learning, and collaborative learning all play a critical part in his theory.

[11] Jean Piaget, (born August 9, 1896, Neuchâtel, Switzerland—died September 16, 1980, Geneva), Swiss psychologist who was the first to make a systematic study of the acquisition of understanding in children. He is thought by many to have been the major figure in 20th-century developmental psychology, though he recognized in the 1960s he could have come to different conclusions if he had known Lev Vygotsky when he was younger.

age for the most abstract concepts, and we could say that today with the need to learn new things, new techniques, new technologies every day and all along in our lives, this conceptualization is never ended, never terminated, never fully achieved in Life. Check older people over 60 or 65 who have just gotten their first computer, tablet, or smartphone and how they learn how to use these machines.

These structuralist linguists of universal language understand language as if it were a machine, which it is not, even if it is a complex set of tools that people, once they have acquired or developed these linguistic tools, can use freely to express what they want to express, what they have the impulse to express, etc. But when I have rejected this mechanical way of thinking language as an innate universal grammar, it is obvious I have to suggest an alternative, and this alternative has to be phylogenetic: it develops and thus has a genesis, which does not mean it is genetic, from its inner dynamic and within the outside circumstances of the child's environment.

Of course, the newborn is not a tabula rasa. It reaches life with all it has auditorily accumulated from the 24th week of its fetal life onward in its memory: all the vocalic and consonantal clusters of sounds that have had any repetitive presence in the environment of its mother. The first thing it is going to do as soon as it is born is that it will recognize these clusters in real life, hence attach them to some items, objects, persons around it. Before birth, it memorized repetitive clusters, and after birth, it attaches these clusters to references, hence the brain machine code its brain had used before birth to remember the clusters after discriminating them from one another, which was possible because they were repetitive, becomes language. That is the beginning of the construction of the language the child, because now he/she is a child, will acquire and develop, and beyond this first collecting of referentially meaningful clusters, the child starts to mentally walk on the road to conceptualization.

What is innate because something is innate? The ability to discriminate sensorial items in the continuous flow of sensory impacts. The not yet born is just like any other animal: sensations, discrimination, brain machine code for memorization. But the human newborn starts building his/her mind and in his/her mind a language that gives to his/her simple animal discrimination power and memory a completely different dimension: language which develops from "scratch," would you say? Not really. But if you state a universal grammar is innate there is no development anymore, only a process of activation. There is no real free thought, only a more or less open adaptation to some outside stimulus. And that's exactly what the rationalistic structuralists in linguistics have produced, at first in the USA, and then they exported it to the whole world as part of the American cultural domination thanks to Hollywood, the Marshall Plan, and chewing gum. Since 1945 we have been trying to free ourselves from this leash and reopen the scientific field. There is no truth, there are only points of view, and a point of view has any value if it enables more points of view to develop. The pragmatic technological way of thinking that American scientists too often develop is the end of science, the end of progress. It states the full and total truth, and for them, it is the final truth, and it is the technical satisfaction of human needs. And today we are living through a crisis that makes this pragmatic technological vision absurd because the answer to the COVID-19 pandemic is not technological, even with as many vaccines we could invent. It is a whole change in our human way of life. Emerging from this American pragmatic technological vision, the next stage is Ray Kurzweil's[12] hyper-technological answer, the Singularity, when Artificial Intelligent machines will be more intelligent than human beings when the human body will be controlled by thousands of nanobots in our veins, organs including the brain, and muscles to make us able to live in a time when machines are more intelligent than human beings. And these nanorobotic human beings will have better behave otherwise the machines that control all these nanobots will cut them off, implying your death in a few minutes at best, and with no pangs of conscience from the machines.

[12] Ray Kurzweil is one of the world's leading inventors, thinkers, and futurists, with a thirty-year track record of accurate predictions. Called "the restless genius" by The Wall Street Journal and "the ultimate thinking machine" by Forbes magazine, Kurzweil was selected as one of the top entrepreneurs by Inc. magazine, which described him as the "rightful heir to Thomas Edison." PBS selected him as one of the "sixteen revolutionaries who made America." Ray has written several national best-selling books, including *The Singularity Is Near* (2005) and *How To Create A Mind* (2012). He is Co-Founder and Chancellor of Singularity University and a Director of Engineering at Google heading up a team developing machine intelligence and natural language understanding.

But there is more to say about this universal grammar, and an alternative that opens up future research instead of closing it with some theoretical pragmatically oriented conception declared at once universal and final. It is, in a way, a man-made apocalypse that leaves us the slaves of the Intelligent machines an elite of technicians and engineers are inventing to turn us into nanorobots, into flesh and bone androids, into what is, all together and in the end, a figment in the mind of some technical inventors made real into a dystopic accumulation of closing arguments, meaning arguments that close any further research.

But is there something universal? And I will say yes there is: the human communicational situation.

3. THE HUMAN COMMUNICATIONAL SITUATION

I have vastly published on the subject of both the emergence of Homo Sapiens thanks to a large systematic ritualization of the menstrual cycle and the impregnation-pregnancy-delivery cycle of women in a time when expanding and migrating meant for women the bringing of three individuals to a full 29-year long life. That meant, with a 50% death rate in delivery, infancy, and early childhood and 25% more not reaching the full 29-year life expectancy, women who were fertile from 13 to 29, hence 16 years had to consider childbearing as the only way for the community to survive and expand. That gave them the responsibility of going through 10 to 12 pregnancies, being pregnant every 18 months, and from 13 onward being practically simultaneously pregnant, breastfeeding a second baby, and carrying a third infant on her back or hip. That meant that for a community of 20 women there were twenty births every 18-month cycle, hence there were a potential 20 children under the age of three permanently around, minus of course, 50% infantile and early childhood deaths, meaning a permanent 10 living children under the age of 3 plus 10 more aged 3 to 6 and ten more age 6 to 9. 20 women had thirty living children to take care of permanently, plus or minus let's say 5. A new-born and then infant was breastfed at least twelve months knowing that between one delivery and the next only 18 months will elapse, and the last 9 of these 18 months corresponded to the second pregnancy bringing the second delivery. We all know that for mammals the procreative cycle makes the mothers produce milk continuously, which means one mother can easily take care of two breastfed babies regularly.

The proof of all that is found in Marshack's research on the various stone, horn, or wood artifacts found in European caves and carrying all sorts of small marks. Marshack did a pretty good job at deciphering these marks and finding out they were built on the pattern of a cycle. Being a male archaeologist in a time when it was not kosher to speak of women in Paleolithic times, he followed the bias of his period and analyzed these cyclical artifacts as representing the cycles of the moon. Why on earth most of these artifacts were only two or three lunar or solar months long and very few going beyond but never beyond nine months? If you observe the cycles of the moon, you must have an objective, and as for the moon, you can only either be satisfied with the four (or three) phases of this moon cycle that have a strong, influence on many natural elements like tides in maritime areas, animal behaviors, and even plant growth. But this is the same every moon cycle with at most some variations when the season cycle, meaning the sun captured by the cyclical movement of the earth around it, gets in conjunction with the moon cycles in equinoxes periods for example. But the moon cycle is visible any time the sky is clear at night (mostly), which makes such observation something you can know and transmit orally. No further observation is needed with notes taken on a mobile piece of rock or horn. The second interest of the observation of the moon cycle would be to calculate the eclipses of the moon or the sun. But then these ecliptical cycles are a lot longer than the maximum nine months. So, the artifacts Marshack studied were just not pertinent as for the moon cycle since they had practically no application in the real world. On the other hand, to read these artifacts as the observation of the menstrual cycle or the pregnancy cycle of women is a lot more interesting, especially the first case of the menstrual cycle. Since pregnancy is essential for the survival and expansion of the community it has to be calculated and hence ritualized to be sure the three or four days of the fertility of women will be precisely identified for each woman in each menstrual cycle so that the fertilization and impregnation of women will be effective as often as possible.

We have to avoid the bias of most male archaeologists or male mythologists or other male specialists of the study of prehistory. We have to avoid the modern biases that are literally enslaving our minds when looking at the past, and consequently, we are not able to step out of what is "normal" today.

The direct consequence of this bias is that we cannot understand nor even envisage what the real situation was from 300,000 to 19,000 BCE, the emergence of Homo Sapiens up to the peak of the Ice Age. A radical change not entirely captured by though present in Marshack's work occurred sometime in the middle of the Magdalenian period with a shift from one type of representation of women to another. This moment is when agriculture and herding were developed along with the beginning of new crafts like pot-making and basket weaving. We have to speak of the way Homo Sapiens lived before the peak of the Ice Age. What may today be seen by women and society as real enslavement was in those very distant times the extremely valuable position that women could occupy in their communities: providing survival to the community, the means to expand, the fair raising of children under some kind of collective responsibility and security thanks to the collective rearing of children by women, of course by women, because they breastfed the children, and then the great responsibility to teach children how to speak, communicate, do all sorts of things and become adults at the age of 13. The age of 12, the age of reason, was captured as the limit of childhood and the beginning of adult age up to the end of the 19th century at best, the beginning of the 20th century at worst in the western world (it was quite different in the colonialized world and under slavery in some countries where slavery lasted up to 1865, at least.). Schooling only became compulsory in France up to the age of 13, for example, in 1936. After that age, there was only one choice, to go on to secondary schools for the children of the families who could afford not so much the cost of such education but the loss of an income, on one hand, and on the other hand, the possibility for the child to get his first salary and thus to contribute till he or she married to the welfare of his or her working-class family. Before 1936 in France schooling was finished after five years of primary education, at best, at the age of 11-12, and these compulsory five years of education were only introduced in 1881 with Jules Ferry's laws on compulsory, free and secular education.

This tremendously fundamental position of women in Paleolithic times and even long before required a special division of labor that dedicated women to this fundamental activity. With some organization, one-third or maybe even one-half of women, on a rotating basis, could leave the children, particularly breastfeeding infants, to the care of the other half or two-thirds of women while those who were thus liberated for a time, till their turn to look after the children came, could do other things like gathering what could be gathered, cooking what had to be cooked, hence they were responsible for fire, and take care of the caves and other communal places, decorating them, etc., knowing these caves were highly spiritual places where most rituals were probably performed. They had a spiritual function in this society, in these communities. That goes along the newly developed knowledge on facts like the representations of women in the caves or on mobile artifacts, and the simple spiritual duties of decorating the caves for such functions, and probably developing the necessary language for all rituals, both words, and some chanting, if we accept the idea Steven Mithen suggested for Neanderthals,[13] but that can be easily expanded to Hominins starting with Homo Erectus, and thus inherited from Homo Erectus via Homo Ergaster by Homo Sapiens. Musical communication, particularly with the other side of the rock surface, with spirits, is basically a heritage from earlier development and a way to transcend plain ordinary communication and thus reach the spiritual realm. We can state such spiritual communication based on the belief in a spiritual world, meaning a world where the spirits of dead people – or the spirits of animals, or plain mythical spirits – can be, as soon as, or at the latest when Hominins started burying at least some of their dead.

The main rituals had to do with pregnancy, childbearing, and child-raising, the third cycle of women, and we can notice it is not binary. All these women's cycles are ternary. The menstrual cycle is ternary and does look like the moon cycle in some ways. The period (end and beginning of a cycle),

[13] Steven Mithen, *The Singing Neanderthals, The Origins of Music, Language, Mind, and Body*, Harvard University Press; 2005
Professor Steve Mithen, Steven's research interests cover from the origin of Homo at c. 2 million years ago to the origin and spread of farming, and the use of heritage for sustainable development, individual and community wellbeing: 1. Late Pleistocene and Early Holocene Hunter-Gatherers and Farmers. 2. Cultural heritage for sustainable development and community archaeology. 3. Evolution of the Human Mind, Language and Music. https://www.reading.ac.uk/archaeology/about/staff/s-j-mithen.aspx

before the fertile phase, the fertile phase (very short), after the fertile phase just like the end-beginning of a moon cycle (no moon), waxing moon, full moon (very short), waning moon. The cut in four quarters for the moon is totally artificial. For Shakespeare, the changing and inconstant moon[14] only had three phases. Then impregnation-pregnancy-delivery, and finally pregnancy-child-bearing-child-raising. No surprise then that all, or quite many if not all, pagan gods are ternary in a way or another: that's the survival of the older times before agriculture. No surprise either that the concept of the triple goddess is so present in some very old pagan religions and mythologies, even though the mythologies we inherit from the past have all been produced or rewritten after agriculture and herding. Even Leroy-Gourhan[15] knew about it. Though he divided all the cave paintings of long ago into male and female elements he knew and said that there was always, on the side of these two, a third element in the various painted panels. Along that line, I am surprised that the representation of women in Paleolithic times was not studied with the intensity it deserves, apart from the mention of the Gravettian Venuses generally depicted as fat or full in the flesh, or whatever remark that was derogatory in a way or another. Today we have to go beyond these biases and finally recognize that Paleolithic times were based on a division of labor that did not give one sex or the other any special authority, but that gave both sexes responsibilities that were not the same but both sides were essential for the survival and expansion of the communities. So essential that Neanderthals disappeared without integrating Homo Sapiens genes in their own genes, whereas Homo Sapiens survived and prospered integrating some Neanderthals genes, meaning integrating the mothers of the hybrid children along with the children. If that had not happened, we would not have any Neanderthals genes. Our Neanderthals genes are the evidence there was copulation and impregnation between Homo Sapiens and Neanderthals, and at the same time, integration of the hybridized and hybridizing individuals in Homo Sapiens communities. Neanderthals women were integrated into Homo Sapiens communities, be it only to take care of their children.

[14] "O, swear not by the moon, th' inconstant moon, / That monthly changes in her circle orb, / Lest that thy love prove likewise variable." William Shakespeare, *Romeo and Juliet*, Act 2 Scene 2

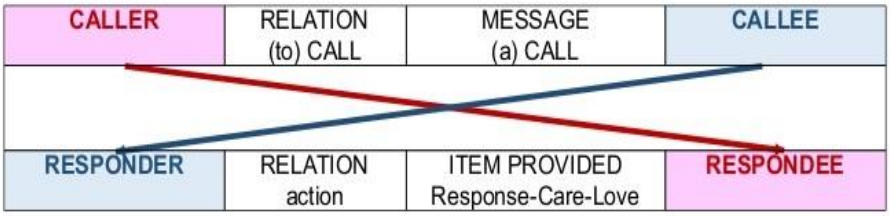
[15] Philippe Soulier, André Leroi-Gourhan (25 August 1911 - 19 February 1986), https://doi.org/10.4000/histoire-cnrs.554, https://journals.openedition.org/histoire-cnrs/554. A short biography of André Leroi-Gourhan is here presented, beginning in 1927, at the moment of his student years, until his retirement in 1982. It rests on a systematic analysis of his publications and on his personal and professional archives, collected and studied for the first time in 2001 when the author was temporally engaged by the CNRS. Going beyond the pure biography of events, such as those already presented in numerous posthumous tributes, from 1986 to 1988, this article is instead a short examination of the connections and the continuities present in his work. It evokes A. Leroi-Gourhan's research and teaching across the many disciplines he pursued : orientalism, philology, ethnology, history of art and religions, early technology, zoology, human geography, and prehistoric archeology. The article traces the main outlines of the four major periods of his professional activity, with the goal of underlining the coherence that unites them, and also the accidents of circumstances : his education and the period of orientalism (1927-1944), the time of his doctoral studies and of ethnology (1944-1955), the early period of prehistory (1952-1965), and his second foray into prehistory (1965-1986). The first period is marked above all by physical anthropology, learning from Marcel Mauss, the study about expositions in the Musée de l'Homme under the direction of Georges Henri Rivière, oriental languages with Paul Boyer and Marcel Granet, not to forget his formative sojourn in Japan from 1937 to 1939. The second period is that of the PhD in art and sciences, to make it possible for A. Leroi-Gourhan to teach the two approaches to ethnology as he conceived them, closely interweaving technological man and biological man. After 1952, his orientation toward prehistory is definitively affirmed, whether he conceived as proofs to support his ideas about technology in ethnology, or the interpretation of Western prehistoric art. This new orientation can be perceived equally in the organization of his fieldwork expeditions and the centers where he formed researchers. In effect, from 1944 to 1986, and complementary to his own research, his activity as laboratory director would be determinant, for himself as well as for his teaching. The last part of his life, after 1965, is marked by progressive illness, but also by his participation in the direction of public research and cultural institutions, and, after 1969, by courses given at the Collège de France.

When this is said, children for at least two or three years are entirely dependent on their mothers for food, care, and love. The children, as soon as they're born have to communicate to tell the mother or in this collective system the mothers that they have a need requiring to be satisfied. This is the communicational situation, and it has hardly changed since 300,000 years ago, except maybe it has become even more important and invasive. This communicational situation implies there is a communicating tool somewhere that can be used by children, and that, after and beyond crying, is language. No matter what language is spoken around the child, the situation is always the same with only one difference I can think of that will produce ergativeness and agentiveness which is a continuum that all communicational situations contain between two extremes with various stations in-between. The language around the child will favor one or the other end of this continuum or some intermediary solution in-between. A lot of work has to be done along this line. So far, ergativeness is seen by many as a particular case that does not require any psycholinguistic investigation. It is a special case just like agentiveness, and that is enough for most people and they do not question the psycholinguistic side of both sides of these two functional orientations. I just wonder if some linguists do not consider ergativeness as an aberration that will in due time disappear. Some identify it as a passive vision since translating most of these sentences in agentive languages requires shifting to the passive. But it is not. We have to start on another line and consider universals as linguistic entities, particularly when these are abstract conceptualized functions, are most of the time misguided because they negate the diversity of languages, they want, in a very good western tradition, negate diversity to homogenize their object of study. This is a deep mental way of thinking, a bias most of the time implicit and thus all the more feeling natural, that wants to make differences nonsignificant.[16]

But human situations, social circumstances can be universal as for the dimensions that are biologically determined, physiologically specified, and situationally diversified. The human species is an animal species like all others and their biology and physiology determine their needs, and these needs determine the social situation that must be able to answer them, satisfy them. The most important situation of this type is the communicational situation of a newborn baby of the human species. What is this universal specifically human communicational situation? And think here of the collective creches where a set of several women or men at times are going to take care of all those children entrusted to them as soon as they are three months old. Are we reinventing the old Paleolithic raising situation for newborns and infants? And then think of kindergartens starting at the age of two or three.

[16] Nicholas Evans, Stephen C. Levinson, "The myth of language universals: Language diversity and its importance for cognitive science," in *Behavioral And Brain Sciences* (2009) 32, 429–492, doi: 10.1017/S0140525X0999094X. **Abstract:** Talk of linguistic universals has given cognitive scientists the impression that languages are all built to a common pattern. In fact, there are vanishingly few universals of language in the direct sense that all languages exhibit them. Instead, diversity can be found at almost every level of linguistic organization. This fundamentally changes the object of enquiry from a cognitive science perspective. This target article summarizes decades of cross-linguistic work by typologists and descriptive linguists, showing just how few and un-profound the universal characteristics of language are, once we honestly confront the diversity offered to us by the world's 6,000 to 8,000 languages. After surveying the various uses of "universal," we illustrate the ways languages vary radically in sound, meaning, and syntactic organization, and then we examine in more detail the core grammatical machinery of recursion, constituency, and grammatical relations. Although there are significant recurrent patterns in organization, these are better explained as stable engineering solutions satisfying multiple design constraints, reflecting both cultural-historical factors and the constraints of human cognition. Linguistic diversity then becomes the crucial datum for cognitive science: we are the only species with a communication system that is fundamentally variable at all levels. Recognizing the true extent of structural diversity in human language opens up exciting new research directions for cognitive scientists, offering thousands of different natural experiments given by different languages, with new opportunities for dialogue with biological paradigms concerned with change and diversity, and confronting us with the extraordinary plasticity of the highest human skills.
https://www.eva.mpg.de/documents/Cambridge/Tomasello_Universal_BehBrainSci_2009_1554182.pdf,

https://doi.org/10.26520/mcdsare. 2021.5.37-57
Corresponding Author: Jacques Coulardeau



This communicational situation is universal, and it was just the same 300,000 years ago, or even before for other hominins, as it is with us because the main tool for this communication was the developing oral competence that became linguistic with the later Hominins, and all the more so if we consider the level of dependence of the newborn and the length of this phase of dependence. The difference with Homo Sapiens is that, from two or three hundred calls the previous hominins had, and Homo Sapiens inherited what Homo Ergaster had, of course, this Homo Sapiens integrated or was integrating some mutations that are selected for his/her long-distance fast bipedal running status that had a side-effect that opened up Homo Sapiens's possibility to expand the rotation of vowels and consonants from a limited number of vowels or consonants to a far richer number of vowels and consonants. Homo Sapiens jumped in a few decades or maybe a couple of centuries into a potential "lexicon" of two or three thousand items. When one can do a lot, one develops new capabilities. The mind of Homo Sapiens could develop because of the possibility to attach all these new "lexical" items to referent objects or actions or sensations, and these rotating items suddenly jumped from the status of calls to the status of lexicon. Some of those items could refer to purely spatial items, hence simple objects. Some of these items could refer to temporal (time-connected) items that imply a movement in space or a change in inner status with thus a double movement in space (there1- here-There2) or inner status (State1-change- State2) If you span the second onto the first the concept of space that can be seen, measured, walked, run or physically experienced, is the matrix for the concept of time that is derived from the simple experience of duration. We can experience duration, but we have to conceptualize time, just as we can experience distance but we have to conceptualize space. It was easier for space because they could walk from here to there, but they could not walk from before to after. You can only remember before and imagine after.

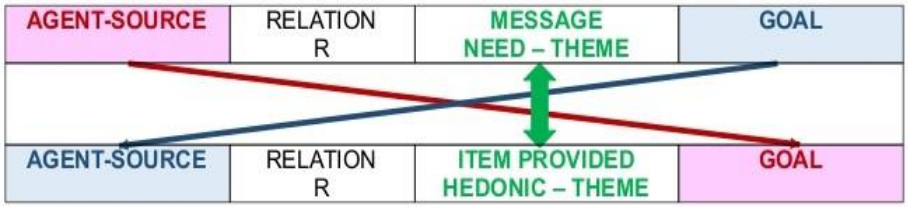
All this is entirely contained in the communicational situation. The CALLEE has to move from where he/she is to where the CALLER is (from right to left), and in the same way, the CALLER has to move to where the CALLEE is (left to right), for both to become respectively the RESPONDER and the RESPONDEE. The RESPONDEE can remember his experiential need and then enjoy his satisfied need that is going to last in the experiential future. It is also quite clear that this communication can give greater importance to the "-EE" character over the "-ER" character, hence on the theme and goal over the source and agent. Then we are moving towards ergative communication. If the emphasis is set the other way, on the "-ER" side rather than on the "-EE" side we are moving towards an agentive communication.[17] I have just mentioned Source-Agent and Goal-Theme. Here are the four (five with plain static Location) basic case functions that can be modulated but that basically remain these four functions, and they are universal in such a communicational situation and experiential long before becoming syntactic or linguistic. All that is contained in the communicational situation and it is this matrix that was the matrix of the syntax of the language that was being devised, invented, developed by Homo Sapiens 300,000 years ago for two simple reasons:

1- Homo Sapiens started then to have the means to develop this oral communication.

2- Homo Sapiens had the need to develop this oral communication for his/her own survival.

[17] Note I do not use the traditional surface terms used by Universal grammarians like "transitive," "intransitive," "direct object," "indirect object," or "transitivity." I use the couple of words "ergativeness" and "agentiveness." Because I refer to functional roles in the syntactic and semantic structure of language, not on the surface of the utterance. I work with the following basic functions: **agent** (the item that performs the action), **theme** (the item that bears the effect of the action), **source** (point of origin in time or space), **goal** (end point in time or space), and **location** (simple spatial or temporal positional item). Note one item can carry two functions like agent-source and theme-goal.

https://doi.org/10.26520/mcdsare. 2021.5.37-57
Corresponding Author: Jacques Coulardeau



And this oral communication gives Homo Sapiens such a tremendous advantage that within a few centuries or one millennium the first articulation was fully developed with the communicational syntax behind trying to find ways to express itself in communication: body language, intonation, emphasis, the order of items and eventually the beginning of morphology with inflections on the basic lexicon items that are roots. This is, only at first, the use of the rotation of vowels essentially to modulate the meaning or the function of the word with simple inflections (changing the vowel of the word like in "sing, sang, sung") and then all sorts of morphological addenda to produce functional values of the word (like in "eat, ate, eaten, eating" and the two endings of the last two items are themselves carrying meaning and they can be conceptualized, generalized, systematized and they become formative elements), or derived expanded values of it with word association or composition (like "eater," "eatery," "eatable," "overeat," "anteater"). Root languages are the first to go beyond the first articulation, hence, to start working on the second. Check some basic root languages like Arabic or Hebrew, and you can see how the morphological modifications of the roots produce functionalized items to be used in discourse and thus modified either semantically or syntactically. That was the embryo of human articulated language. The basic condition for this emergence was the various mutations brought by long-distance fast bipedal running: better breathing, a very low larynx, the transformation of the respiratory and articulatory apparatuses necessary for this running and that became ancillary and transformational for oral communication. Why don't most linguists see or consider that? The answer is simple. It was forbidden by the Paris School of Linguistics and anyway, all linguists took then and still take language as something that does not need to be explained in its genesis. It is bad enough to deal with it in children, but we can always forget about such simple physiological elements, not to mention the psycho-physiological elements, and concentrate on the acquisition of grammar. It is not for most linguists important to know why grammar is what it is, how this grammar was developed, not in any one language, but in language at the very start of its emergence, and it is still true today. As long as the physiology of Homo Sapiens does not change, as long as articulatory, respiratory, long dependence of children, and a few other physiological elements will remain the same, then the same dynamic will produce the same oral communication. If "same" bothers you, just use "similar." Today's transformation is not in language itself, nor in oral communication per se. The change is in the technology of communication, both oral and non-oral. Zoom does not change oral communication, and certainly not language. It only enables everyone connected to this particular communicational situation processor to orally and visually communicate with all others though they can be several thousand kilometers apart.

It is not grammar that is universal, but it is the communicational situation that is universal, and it produced a whole set of languages within the phylogeny of language during the emergence of Homo Sapiens, and the three phylogenic articulations were (and still are) the basis of three vast families of languages: consonantal-root languages, isolating-stem languages and agglutinative/synthetic-analytical-frond languages. It is a fact that the first family of root languages developed out of Black Africa because the people concerned left Black Africa to conquer and occupy the Nile valley, Northern Africa, and Saharan Africa, with some archaeologically proved presence of Homo Sapiens remains in Morocco going back 300,000 years. The migrations out of Black Africa to go to other continents started with the isolating languages that are second articulation languages and started moving from Djibouti, the Horn of Africa to the Southern Arabian corridor, to Hormuz strait and then the whole of Asia where they met the Denisovans. That was somewhere around 120,000 years ago and stem-languages. Then came the third-articulation migration of frond-languages sometime around 70,000 years ago with agglutinative languages that followed the same route as the previous migration but settled first in the Middle East and from there via Anatolia and through the Caucasus to the whole of Europe, and at the same time around the Caspian

Sea in Central Asia, to the Urals and northern Europe and Finland, and simultaneously to Siberia. They probably met the Denisovans and they definitely met the isolating people speaking isolating languages of the vast Tibeto-Chinese family and some other languages that evolved on the periphery of this main conglomerate. And the second wave of this migration followed the same route but stayed on the Iranian Plateau up to after the peak of the Ice Age and the Magdalenian. The great change that occurred in the world between 15,000 and 3,000 BCE, the development of agriculture and herding will shift paleolithic communities based on territory and on the division of labor I have described to the Magdalenian agricultural and herding societies that were based on the control, hence possession, of the land worked by the first farmworkers in the world, and all over the world. This happened all around the globe with different domesticated plants and animals and different social organizations, but one change was particularly important: the division of labor became a lot less interesting for women, and men took over the far more balanced Paleolithic society. The Paleolithic situation I described above only survived as a recollection, hence as myths and it is also the time when all sorts of strictly organized religions developed from diffuse supernatural awareness. The debate on the subject of mythologies, religions, mythical beliefs, and even tales shows that we are far from even dreaming of an end to this scientific quest. Science only exists in the quest for knowledge, and I would say that God only exists in the human quest for him, her, or them.

To be fair I should quote George Lakoff[18] and his Generative Semantics, doing exactly what Chomsky had declared scientifically vain. I should also quote Sebastian Konstantinovič Šaumjan[19] in his research before he left the USSR for the USA where he was recuperated by Universal Grammar and was reduced to some semantic interpretative model for Universal Grammar. And I should insist on Gustave Guillaume[20] who was the first to reintroduce the psyche into language and linguistics with his psychomechanics of language. Those three linguists are proof that linguistics will never be a unified and finished science. To pretend it is finished, it has achieved its objective, it has reached the final truth is, in fact, a way to terminate the various theories that pretend such an incredible idea. I will regret that Julien d'Huy in his first book and latest publication (chapter 6 particularly) lets himself slide into the fake debate about the original matriarchy. Paleolithic women deserve better treatment than being reduced to Amazons and sexual tyrants against men. That is totally unrealistic, and to speak against it the way Julien d'Huy does may be interpreted as being sexist in a way and certainly not scientific. We have enough data today to propose a new interpretation of Paleolithic women at least 30,000 years before the Peak of the Ice Age. I guess archaeology may produce some strange opinions. Julien d'Huy's book deserves tremendous attention. He proves all along by his often-prudent even at times over-prudent reconstructions based on a strict phylogenetic method that It all started, not simply in Africa, but in Black Africa, that women played an extremely important role in the old Paleolithic societies that he only studies myths outside the whole of Africa, missing the myths in North Africa and even Saharan Africa, hence Afro-Asiatic or Semitic myths. He states that this role of women was vastly spiritual, and yet he does not specify how and he lets himself fall into some rather hostile anti-women's-lib declarations. His use of the term "shaman" ("chamane" in French is less man-oriented though it is masculine) which is extremely negative because at no time he specifies that this agent of spirituality does not have to be a man, as it is generally understood even in hunting-gathering societies still in existence on the planet. The classics of Shamanism are speaking and

[18] Gorge Lakoff, (1971), "On generative semantics," in D.D. Steinberg and L.A. Jakobovits (Eds), *Semantics: an interdisciplinary reader in philosophy, linguistics and psychology*, Cambridge University Press, 232-96

[19] S.K. Šaumjan, Principles of Structural Linguistics, Mouton, The Hague, 1971

[20] Gustave Guillaume, Roch Valin & Walter Hirtle editors, Leçons de linguistique de Gustave Guillaume 1958-1959 & 1959-1960, Les Presses de l'Université Laval, Québec, Klincksieck, Paris, 1995.

Jacques Coulardeau, "Gustave Guillaume, De la Glossogénie à la Phylogénie du Langage, Des Trois Aires aux Trois Articulations," 2015,
https://www.academia.edu/11696415/GUSTAVE_GUILLAUME_DE_LA_GLOSSOG%C3%89NIE_%C3%80_LA_PHYLOG%C3%89NIE_DU_LANGAGE_DES_TROIS_AIRES_AUX_TROIS_ARTICULATIONS

working within a general understanding that shamans are men. But It is today easy to get out of this "natural understanding" which is unrealistic. David Lewis-Williams[21] studies African societies of hunter-gatherers but in the 20th century and he does not take into account, first that they do practice some agriculture and even have domesticated animals, so they are Magdalenian in a way, and he should wonder how deep the influence of the modern world is on them and has been since they started being under the influence, even at a distance, of the European colonizers. In the same way, Jean Clottes[22] follows David Lewis-Williams, though he worked a lot on French cave art, and yet he should know better and ask the question of the sex of the "shamans" he posits in Paleolithic times among the Turkic-speaking Homo Sapiens known as the Old Europeans (75% of modern European DNA). And he should know what researchers and archaeologists like Genevieve Von Petzinger[23] have published on the subject and how a

[21] Professor Emeritus Lewis-Williams focused his research efforts on the areas of rock art, cultural heritage, and the rights of the San people of southern Africa. He developed methods for the interpretation of sophisticated San rock art, a significant part of South Africa's heritage. He is recognised as the father of rock-art archaeology the world over, and his work remains the most seminal in all endeavors to contribute to the understanding of rock art within archaeology. He conducted his research in the Drakensberg, studying rock paintings. The interpretation of the rock paintings elsewhere was, as a result, based on the methodology he developed. He has a profound command of the now-almost extinct /Xam language spoken by the San people and was invited by former President Thabo Mbeki to translate the South African national motto into the /Xam San language. He later extended his research to the Palaeolithic cave art of western Europe, and his book The Mind in the Cave has been widely acclaimed. He worked with French archaeologist Jean Clottes and developed the theory of shamanism in hunter-gatherer societies.

[22] Jean Clottes, "From « Art for Art's Sake » to Shamanism: Interpretation of Prehistoric Art," https://doi.org/10.4000/histoire-cnrs.553, https://journals.openedition.org/histoire-cnrs/553

SUMMARY – Interpreting fossil art – as Paleolithic art is – is an obviously difficult endeavor because the ultimate meaning of the works is unreachable. This is why a few specialists were tempted by pessimism and recommended to abandon all research on meaning. However, it is still possible to reach a certain degree of understanding, an interpretative framework rather than a global interpretation. This can be done by using three types of arguments from the art itself, its archaeological context and from comparisons with some recent traditional societies that used to practice rock art.

Since the second half of the XIXth century, several explanations were put forth, for portable as well as for wall art. The first one was the Art for Art's sake theory. Engravings and carvings would have had no aim but to adorn weapons and tools, for the fun of it. It was abandoned because it could not explain the works of art deep inside the caves, out of sight far from habitation sites.

Totemism briefly tempted some prehistorians and influenced many. It implies a narrow privileged relationship between a human group and a particular animal or vegetable species that will characterize the group and be venerated by it.

Sympathetic magic was more successful. It was the prevalent theory for half a century. It is based upon a straight relationship between the image and its subject: by acting upon the image one can act upon the animal it represents. Magical practices would have had three main purposes: to help with the hunting and fertility of useful animals and to destroy the dangerous noxious ones.

The second half of the XXth century was that of structuralism. Animals and geometric signs had a particular symbolic meaning, and they were put all through the caves in relation to each other as well as in relation to topographic peculiarities.

More recently, cave art was interpreted within the framework of a shamanic type of religion. Its authors would have gone underground to explore the supernatural world and to get into touch with the spirits that lived there. Taking advantage of the work previously done, this hypothesis is the one that currently explains best the data to-day known for portable and cave art in the Upper Paleolithic.

[23] Genevieve von Petzinger, *The First Signs: Unlocking the Mysteries of the World's Oldest Symbols*, Atria, New York, 2016. Genevieve von Petzinger is a PhD student under the supervision of April Nowell in the department of Anthropology. Her main area of interest is European Upper Paleolithic (Ice Age) rock art, in particular the geometric imagery, and how this practice could be used to identify

vast majority of handprints in caves all over the world are women's hands. The point is that Julien d'Huy states routes for some myths, or themes in those myths that he calls mythemes, that are not specified enough in time and space. The first exit migration from Africa is not the first exit migration from Black Africa, and like that, he misses the Afro-Asiatic or Semitic northern section of the African continent from Suez to Morocco to which the Arabian Peninsula and the Middle East were added in later periods. He speaks, for many myths, of a route along the southern border of the Asian Continent, to Southeast Asia then Melanesia, then Australia, and then he jumps to South America, but only speaks of Siberia and Alaska via the Bering Straights when he specifies the migration to America, most of the time northern and extreme northern America, though he states three migrations to the Americas. We need more specifications on these migrations and how myths that reached Australia jumped to South America. It is sure that we still have a lot of work to do before even approaching a satisfying completed but definitely unfinished phase in our linguistic questioning of the origin and phylogenetic development of language.

A last remark on Gustave Guillaume's "three areas" theory.

The essential lessons on the topic were delivered by Gustave Guillaume in 1958-1960. They were edited and published in 1995 by Roch Valin and Walter Hirtle[24]. What are the three areas?

1- The primary area is identified on page 288 as concerning what he calls "Nostratic" languages though his understanding of this word was not what it has become. In this group, he apparently sets all agglutinative languages and isolating languages, in fact, all languages that are neither Hamito-Semitic nor Indo-European (we can understand that this last term covers all Indo-Aryan languages too). Concerning the agglutinative Basque language, he says: "Basque is, according to me, a living fossil of the architectural history of language that comes from the open and virtually non-closing primary area."[25] (Gustave Guillaume, 46) He is right in global terms but he does not attach this language to its real family: the agglutinative third-articulation frond language family (Turkic languages specifically).

2- The secondary area is identified on page 288 as concerning what he calls the Hamito-Semitic languages. This is not based on any reasoning about when they left the Black African nest and their migration first to Northern Africa and then out of Africa (not a migration but an extension), in a very limited way, though dramatically and partly depicted in the Old Testament of the Bible.

3- The ternary area is identified on page 288 as concerning what he calls the Indo-European languages. I guess the term Indo-Aryan was no longer politically correct after the Second World War and the Aryan reference of the Nazis.

His reasoning on the subject is best represented by the graph given on page 313 where he proposes a vision of the full glossogeny as he calls it. I prefer phylogeny because this term does not only concern language but any human creation, hence the phylogeny of language.

The most important element here is his formula below just after the graph:

"language = used "langue" + using discourse
using "parole" }

". . . It implies two systems:

i. the system that is used (that of "langue")
ii. and the system that is the user's (that of discourse)" (Gustave Guillaume, 313)

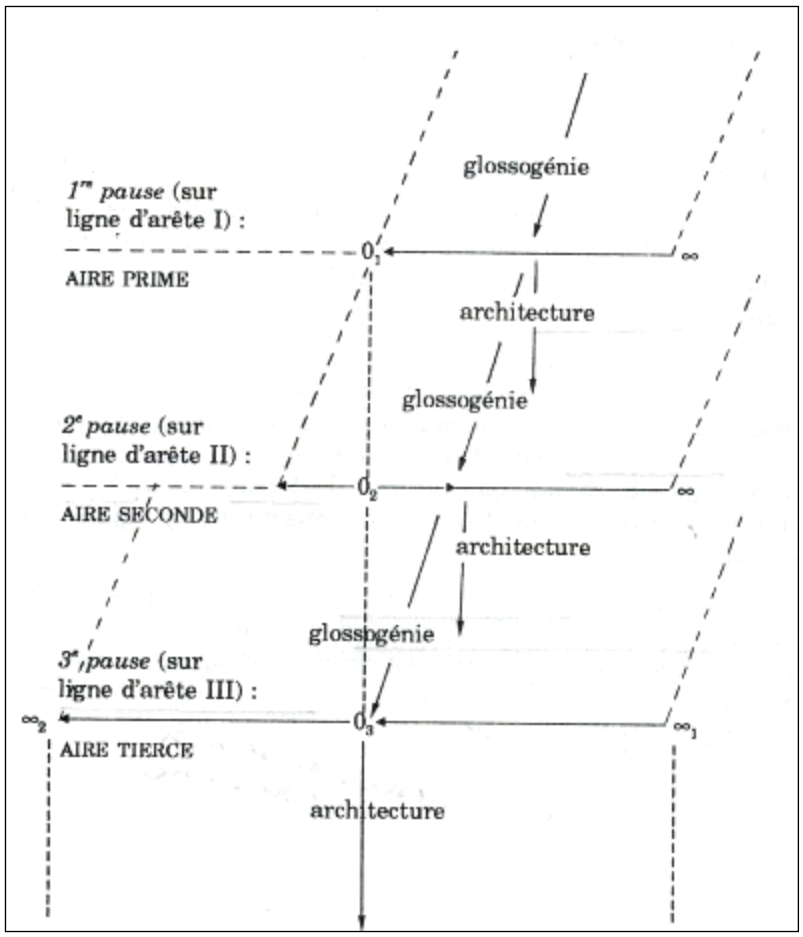
---

cognitive and symbolic evolution in modern humans. Genevieve is also interested in the development of early graphic communication and in the potential of the abstract markings to track patterns of migration and cultural borrowing during this early chapter in human history. Her work was featured in New Scientist in 2010 and again in 2013 and her research will be the subject of a story on CBC's The National and Les Années Lumière in 2014. She has also appeared on the Discovery Channel's Daily Planet show and in 2013 was named a TED Senior Fellow. Genevieve's current project involves documenting the geometric signs at understudied rock art sites in France, Spain, and Portugal. https://www.uvic.ca/socialsciences/anthropology/people/graduate-students/profiles/von-petzingergenevieve.php

[24] Gustave Guillaume (1883-1960), *Leçons de linguistique de Gustave Guillaume 1958-1959 et 1959-1960*, Roch Valin & Walter Hirtle, eds., Les Presses de l'Université Laval, Québec, & Klincksieck, Paris, 1995

[25] All translations of Gustave Guillaume's text are mine.

https://doi.org/10.26520/mcdsare. 2021.5.37-57
Corresponding Author: Jacques Coulardeau
MCDSARE 2021/ e-ISSN 2601-8403 p-ISSN 2601-839X



Full glossogeny (Gustave Guillaume,313)

My general project is to use the archaeological finds on the various migrations out of Black Africa to re-examine Gustave Guillaume's theory of the "three areas." I have already given the summary of these three vast migrations out of Black Africa. It is most difficult to make people who are attached to a theory understand that to terminate any evolution of this theory is to terminate the theory itself. A theory can only live if it can develop and it has to develop along with science in general. Gustave Guillaume was no archaeologist, no anthropologist, no ethnologist, no mythologist. To know what happened from 300,000 years ago to today in the phylogeny of language we have to listen to all these specialists and what they have discovered, knowing none of them are linguists and there a phylogenic linguist can bring a new way of looking at things that will necessarily open doors and windows, and the voyage up the never-ending ladder of knowledge can continue.

4. CONCLUSION

The starting point of this paper being the question of "the limits of science and human knowledge" and my own version of this question in the field of linguistics being the phylogenic history of language and linguistics from the emergence of human articulated language to what it has become today without us being able to predict what it will be tomorrow in Artificial Intelligence times, how can linguistics cope with its own limited ability at knowing more and more, and yet never all that could be known, that should be known, and this will never be the end of it.

Linguistics studies language in general, the ability of human beings to communicate with oral and written languages; and languages in particular, meaning the immense number of different languages and dialects and the possible gathering of them all in some vast families diverse both among themselves and

within each one of them. The task is so enormous that even machines will find it difficult to cope with thousands of languages.

Then Linguistics studies a raw material that is changing all the time according to its own rules and its own environment, covering thus the various uses of these languages and the fact that any language is always evolving, changing and the main dynamic of it is inside the languages themselves. Each language is evolving its own way. This means a linguist studies a language at a certain point in time. As soon as his study is finished, he can be sure the language he has studied has already changed and his study is already obsolete.

But there is a fourth dimension here and it is the fact that linguistics as a science, first of all, is not homogeneous since there are many schools, some call them chapels, often antagonistic or contradictory, always diverse, and lacking unity even on the simplest concepts. Second, even within one school things, ideas, principles, results, and equations are confronted to new elements that falsify them constantly and even worse with a phylogenetic evolution within the science itself, some concepts bringing new questions about themselves when confronted to other concepts and new ways of reasoning within this or that particular school of linguistics.

My conclusion then is that we will never reach anything that would be complete knowledge and could qualify as the truth. Once again in our post-modern time, there is no truth, there are only points of view. That idea was kind of disturbing still in 2005 with some Masters's graduate students in Sorbonne. Yet today, it has become so banal that we wonder what is going to happen when Artificial Intelligence frees our minds of all the ticky-tacky work a researcher is still doing today, no longer by hand, but by keyboard, screen, and internet interposed. One day tomorrow, a machine will do that. What language will I speak with that machine to control it and to guide it within the research line I would like it to follow? That will not be machine code, because I am not a machine and machine code is too narrow for human thinking. But that will not be any particular human language the way we know them today. It will be some advanced research multilingual dialect that will emerge and evolve in front of our own eyes and that we as well as the machines will understand. Imagine these researchers of today that cannot read an article in English or write a paper in German. Tomorrow will they be able to read, write, speak the three or four dominant languages in the field of research that we can think will be English, French, Chinese, Russian, and German, plus one or two more? At the level of the individual researcher, such a challenge will make us definitely more intelligent than any machine. And we will have to be if we want to use the machines' tremendous abilities-to-be soon.

BIBLIOGRAPHY:

[1] Allsworth-Jones, P., (1993). "The archaeology of archaic and early modern *Homo sapiens*: an African perspective." *Cambridge Archaeological Journal* **3,** 21–39.

[2] Cann, R.L., Stoneking, M. & Wilson, A.C., "Mitochondrial DNA and human evolution," in *Nature* 325, 31-36. (1987).

[3] Chomsky Noam, *Syntactic Structures*, Mouton, The Hague, 1957

[4] Chomsky, Noam, *Cartesian Linguistics: A Chapter in the History of Rationalist Thought*, Cambridge University Press; 3rd edition (March 2, 2009)

[5] Clottes Jean , "From "Art for Art's Sake" to Shamanism: Interpretation of Prehistoric Art," https://doi.org/10.4000/histoire-cnrs.553, https://journals.openedition.org/histoire-cnrs/553

[6] Coulardeau, Jacques, "Philosophie et religion chez Voltaire : Le Fanatisme, ou Mahomet le Prophète (1741), Traité sur la tolérance (1763) et Les Guèbres, ou la tolérance (1769)," in *Théâtres du Monde*, numéro 26, Université d'Avignon et des Pays de Vaucluse, Association de Recherches Internationales sur les Arts du Spectacle, Avignon, mai 2016

[7] Coulardeau, Jacques, "Jacques Teyssier, linguiste et phylogéniste du langage" [Linguist and Phylogeneticist of Language] Last Master Course in Germanic Languages, 1972-73, edited by Jacques Coulardeau, available at http://drjacquescoulardeau.blogspot.com/2015/04/jacques-teyssier-linguiste-et.html

[8] Coulardeau, Jacques, "Jacques Teyssier," in Lexicon Grammaticorum: A bio-bibliographical companion to the history of linguistics, edited by Harro Stammerjohann, Walter de Gruyter, Max Niemeyer Verlag | 2009, DOI: https://doi.org/10.1515/9783484971127

[9] Coulardeau, Jacques, "Gustave Guillaume, De La Glossogénie À La Phylogénie Du Langage, Des Trois Aires Aux Trois Articulations," Review of *Gustave Guillaume, Roch Valin & Walter Hirtle, Editors, Leçons De Linguistique De Gustave Guillaume 1958-1959 &1959-1960, Les Presses De l'Université Laval, Québec, KLincksieck, Paris, 1995*, available at https://www.academia.edu/11696415/GUSTAVE_GUILLAUME_DE_LA_GLOSSOG%C3%89NIE_%C3%80_LA_PHYLOG%C3%89NIE_DU_LANGAGE_DES_TROIS_AIRES_AUX_TROIS_ARTICULATIONS

[10] Cruz, Marcio Alexandre, "Saussure, l'origine du langage et la question du temps", in Marcienne Martin, « Béatrice FRACCHIOLLA, éd., *Les Origines du langage et des langues* », *Questions de communication* [En ligne], 27 | 2015, mis en ligne le 01 septembre 2015, consulté le 07 janvier 2021. URL, https://doi.org/10.4000/questionsdecommunication.9958.

[11] d'Errico Francesco, Henshilwood Christopher, Vanhaerend Marian, Niekerk Karen van, "Nassarius kraussianusshell beads from Blombos Cave: evidence for symbolic behavior in the Middle Stone Age" in *Journal of Human Evolution* 48 (2005) 3-24, accessed February 4, 2021

[12] d'Huy, Julien, *Cosmogonies, La Préhistoire des Mythes*, La Découverte, Paris, 2020.

[13] Davis, Angela, Exceptional Lecture at Sorbonne Nouvelle, 18 March 2013, 18h30-19h30, https://campusdirectory.ucsc.edu/cd_detail?uid=aydavis

[14] Descartes, René, *Regulae ad directionem ingenii*, (*Rules for the Direction of the Mind*), CreateSpace Independent Publishing Platform (October 14, 2017), Scotts Valley, California, USA

[15] Diller Karl C. & Cann Rebecca Louise, "Evidence against a genetic-based revolution in language 50,000 years ago," January 2009,

[16] Elizarenkova T. IA, *The Pali language*, Nauka Publishing house, Central department of oriental literature (January 1, 1976)

[17] Elizarenkova T. IA, *Language And Style Of The Vedic Rsis*, State University of New York Press, 1995.

[18] Enard, W., Przeworski M., Fisher S.E., et al., "Molecular evolution of FOXP2, a gene involved in speech and language," in *Nature* 418, 869-72. 2002.

[19] Evans Nicholas, Levinson Stephen C., "The myth of language universals: Language diversity and its importance for cognitive science," in *Behavioral And Brain Sciences* (2009) 32, 429–492

[20] Greenberg JH, Turner CG II, Zegura SL, "The settlement of the Americas: a comparison of the linguistic, dental and genetic evidence," in *Current Anthropology* 27:477–497, 1986

[21] Greenberg, Joseph Harold, *Language in the Americas*, Stanford University Press, 1987 - Foreign Language Study - 438 pages

[22] Guillaume, Gustave, *The Problem of the article and its solution in the French* (1919).

[23] Guillaume, Gustave, *Time et Verb, theory of aspects, modes, and tenses* (1929)

[24] Guillaume, Gustave, *The Architectonics of Time in Classical Languages* (1943)

[25] Guillaume, Gustave, *Language and the Science of language* (1964)

[26] Harari, Yuval Noah, *Sapiens: A Brief History of Humankind*, first published in Hebrew in Israel in 2011 based on a series of lectures Harari taught at The Hebrew University of Jerusalem, and in English in 2014.

[27] Harari, Yuval Noah, *Homo Deus: A Brief History of Tomorrow*, an Israeli author professor at the Hebrew University in Jerusalem, first published in Hebrew in 2015. The English-language version was published in September 2016 in the United Kingdom and in February 2017 in the United States

[28] Harari, Yuval Noah, Meet the Characters: *Sapiens: A Graphic History*, https://www.youtube.com/watch?v=ucaTWsQURUk&feature=emb_logo

[29] Harris Zellig, *Methods in Structural Linguistics*, 1951,

[30] Harris Zellig, *Mathematical Structures of Language*, 1968,

[31] Jakobson Roman, *Essais De Linguistique Générale - En 2 Volumes : Tome I : Les Fondations Du Langage + Tome II : Rapports Internes Et Externes Du Langage.* Éditions de Minuit (1 janvier 2013)

[32] King James, *King James Bible*

[33] Klein, R. G., "Anatomy, behavior, and modern human origins," in *Journal of. World Prehistory*. **9,** 167–198. Diamond, J. (1992). *The Third Chimpanzee*. New York: Harper Collins. (1995).
[34] Klein, R.G., *The Human Career.* 2nd edition. Chicago : Chicago University Press. (1999).
[35] Kurzweil Ray, *The Singularity Is Near* (2005)
[36] Kurzweil Ray, *How To Create A Mind* (2012).
[37] Lai, C.S.L., Fisher S.E., Hurst J.A., Vargha-Khadem F. & Monaco A.P., "A novel forkhead-domain gene is mutated in a severe speech and language disorder," in *Nature* 413, 519-23, 2001.
[38] Lakoff Gorge, "On generative semantics," in D.D. Steinberg and L.A. Jakobovits (Eds), *Semantics: an interdisciplinary reader in philosophy, linguistics and psychology*, Cambridge University Press, 232-96 (1971),
[39] Le Quellec Jean-Loïc, *Dictionary of mythical zoology* (1995)
[40] Lévi-Strauss Claude, *Anthropologie structurale zéro* (Français) Broché, Le Seuil, Paris 19 septembre 2019
[41] Lewis-Williams David, *The Mind in the Cave: Consciousness and the Origins of Art*, Thames & Hudson Ltd; Reprint édition (5 avril 2004)
[42] Lubotsky Alexander, "What Language was Spoken by the People of the Bactria-Margiana Archaeological Complex?" in Paul W. Kroll and Jonathan A. Silk, Editors, *At the Shores of the Sky*, Asian Studies for Albert Hoffstädt Series: Sinica Leidensia, Volume: 151, E-Book (PDF) Availability: Published ISBN: 978-90-04-43820-0 Publication Date: 12 Oct 2020, Hardback Availability: Published ISBN: 978-90-04-43298-7 Publication Date: 08 Oct 2020
[43] Macaulay Vincent, Hill Catherine, Achilli Alessandro, Rengo Chiara, Clarke Douglas, Meehan William, Blackburn James, Semino Ornella, Scozzari Rosaria, Cruciani Fulvio, Taha Adi, Kassim Shaari Norazila, Maripa Raja Joseph, Ismail Patimah, Zainuddin Zafarina, Goodwin William, Bulbeck David, Bandelt Hans-Jürgen, Oppenheimer Stephen, Torroni Antonio, Richards Martin, "Single, Rapid Coastal Settlement of Asia Revealed by Analysis of Complete Mitochondrial Genomes," in *Science*, 13 May 2005:Vol. 308, Issue 5724, pp. 1034-1036,
[44] Marcus, G.F. & Fisher S.E., "FOXP2 in focus : what can genes tell us about speech and language," in *Trends in Cognitive Sciences 7, 257-62*, 2003.
[45] Martin, Marcienne, "Béatrice FRACCHIOLLA, éd., *Les Origines du langage et des langues*," in *Questions de communication* 01 septembre 2015, https://doi.org/10.4000/questionsdecommunication.9958.
[46] McBrearty Sally, Brooks Alison S., "The revolution that wasn't: a new interpretation of the origin of modern human behavior," in *Journal of Human Evolution* (2000) 39, 453–563
[47] McBrearty, Sally, "Down with the Revolution," in Paul Mellars, Katie Boyle, Ofer Bar-Yossef & Chris Stringer, eds, *Rethinking the Human revolution*, McDonald Institute for Archaeological Research, Cambridge UK, 2007, p. 133-151
[48] McDougall I, Brown FH, Fleagle JG., "Stratigraphic placement and age of modern humans from Kibish, Ethiopia." In Nature 433, 733-736, March 2005,
[49] McKenzie-Brown Peter, "Noam Chomsky's Black Box," Sunday, August 20, 2006, https://languageinstinct.blogspot.com/2006/08/noam-chomskys-black-box.html#:~:text=Chomsky%20proposed%20that%20each%20of,language%20based%20on%20universal%20grammar
[50] Mellars Paul, Boyle Katie, Bar-Yossef Ofer, Stringer Chris, eds, *Rethinking the Human revolution*, McDonald Institute for Archaeological Research, Cambridge UK, 2007
[51] Mithen Steven, *The Singing Neanderthals, The Origins of Music, Language, Mind, and Body*, Harvard University Press; 2005
[52] O'Halloran **Kay L.,** Tan **Sabine and** Wignell **Peter**, "Intersemiotic Translation as Resemiotisation: A Multimodal Perspective," in *Signata*, 7 | 2016, 199-229.
[53] Pāṇini, *The Astadhyayi of Panini - A Treatise on Sanskrit Grammar* (Set of Two Volumes), Sanskrit Text with English Translation, Parimal Publication Pvt. Ltd.; 2017th edition, Delhi, India
[54] Petzinger Genevieve von, *The First Signs: Unlocking the Mysteries of the World's Oldest Symbols*, Atria, New York, 2016.
[55] Piaget Jean, *La Psychologie de l'intelligence*, Dunod, Paris (8 juillet 2020)

[56] Radin Paul, *Primitive Man as Philosopher,* 1927
[57] Regional consultation workshop between Mandingo traditionalists and Farm Radio communicators, (Kankan from 02 to 12 March 1998) *The Kurukan Fuga Charter*, https://www.franceculture.fr/emissions/la-fabrique-de-lhistoire/une-histoire-des-declarations-des-droits-de-lhomme-24-les-declarations-africaines-du-kurukan-fuga-a
[58] Ruhlen, Merritt, *On the Origin of Languages: Studies in Linguistic Taxonomy*, Stanford University Press; 1st edition (July 1, 1994)
[59] Šaumjan S.K., *Principles of Structural Linguistics*, Mouton, The Hague, 1971
[60] Saussure, Ferdinand de, *Course in General Linguistics*, 1916
[61] Shakespeare William, *Romeo and Juliet*, 1597
[62] Soulier Philippe, "André Leroi-Gourhan (25 August 1911 - 19 February 1986)," in ***La revue pour l'histoire du CNRS*** https://doi.org/10.4000/histoire-cnrs.554, https://journals.openedition.org/histoire-cnrs/554.
[63] Stavans, Ilan, *Popol Vuh, A Retelling*, Restless books, New York, 2020
[64] Tedlock, Dennis, *Popol Vuh, the Definitive Edition of the Mayan Book of the Dawn of Life and the Glories of Gods and Kings*, Simon and Schuster, New York, 1985-1996
[65] The Smithsonian Institution, National Museum of Natural History, "DNA: Genotypes and Phenotypes," https://humanorigins.si.edu/evidence/genetics/ancient-dna-and-neanderthals/dna-genotypes-and-phenotypes accessed February 3, 2021
[66] Valin, Roch, et al, *Les Leçons de Linguistique de Gustave Guillaume*, Fonds Gustave Guillaume, Université Laval, Québec, and various secondary publishers.
[67] Vygotski Lev, *Pensée et langage*, La Dispute Édition 2019, Jean Piaget (Commentaires), Lucien Sève (Préface), Françoise Sève (Traduction)
[68] Watkins, Chris; Carnell, Eileen; Lodge, Caroline; Wagner, Patsy and Whalley, Caroline, "Effective Learning" in Research Matters Series No. 17). London: Institute of Education School Improvement Network. (2002)

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2021, e-ISSN: 2601-8403
p-ISSN 2601-839X

https://doi.org/10.26520/mcdsare.2021.5.58-66

MCDSARE: 2021
International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

THE FIRST FOUR DAYS: A SCIENTIFIC VIEW FOR THE CREATION OF THE UNIVERSE

Tianxi Zhang

Physics Department, Chemistry, and Mathematics, Alabama A & M Universe, Normal, AL 35762, USA, tianxi.zhang@aamu.edu,

Abstract

The first four days of Genesis are scientifically interpreted according to the author's well-developed black hole universe model. From this scientific view for the creation of the universe described in the book of Genesis, God in the first day created the space and time, matter and motion, charge and fundamental forces, energy and light for the infinite large entire universe. Then, in the second day, God hierarchically structured the entire universe by separating the matter and space with infinite layers that are bounded by event horizons and further formed our finite black hole universe. In the third day, God constructed the interiors of our finite black hole universe with planets, stars, galaxies, and clusters, etc. And, in the fourth day, God finally created our home planet Earth and the solar system and made lights including the Sun, Moon, and stars to give light to our universe and Earth. This up-to-date explanation to God's creative work during the first four days has bridged the gap between Genesis and observations of the universe and brought us a scientific view and understanding on the book of Genesis. This innovative interpretation of Genesis also strongly supports the black hole universe model to be capable of revealing the mysteries of the universe. This is a synthetic article of the four papers recently published on IJTPS to interpret the first through fourth day of Genesis according to the black hole model of the universe.

Keywords: Genesis; Cosmology, Black Hole; Universe

1. INTRODUCTION

Cosmology is the study for the origin and development of the universe. The cosmological method is scientific, philosophical, and theological (Figure 1). The science of cosmology discovers the truths of the universe and explains why the phenomena scientifically occur in the nature. The philosophy of cosmology reveals the beauty of the universe, including the conceptual foundations of cosmology and the philosophical contemplation of the universe as a totality. Philosophically, the universe must be in all aspects characterized as beauty, simplicity, and completeness. An ugly, complicated, and incomplete stuff

cannot be a work done by God. The theology of cosmology reveals the love of the universe, including the initial creation and origin of the universe and lives, and shows God's spirit, power, and love to the entire universe and all lives created by him including our earthly beings. Overall, cosmology is a branch of study to find scientifically the fundamental truths of the universe, to explore philosophically the complete beauty of the universe, and to uncover theologically the great love of the universe.

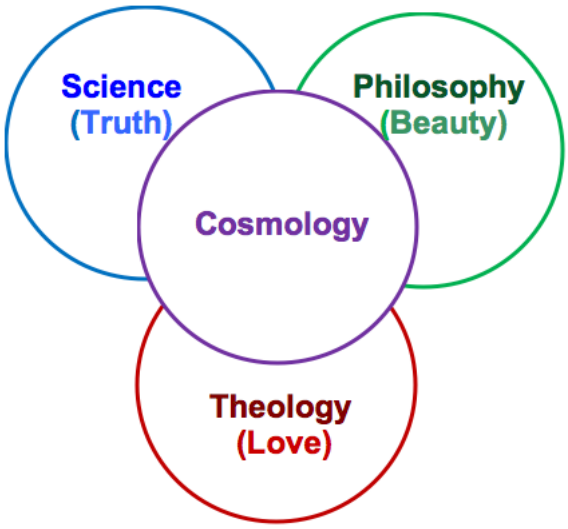


Fig. 1: Cosmology is the study of the universe, combining science, philosophy, and theology [1]. The science of cosmology explores the fundamental truths of the universe; the philosophy of cosmology reveals the complete beauty of the universe; and the theology of cosmology shows the great love of the universe

The cosmology has a long history which can be traced back to the 3000 BC's Babylonian cosmology with the heavens and the earth being equal and joined as a whole without the geocentric worldview, the 1700 BC's Hindu cosmology for the universe to be cyclically created and destroyed with the multiverse concept, the ancient Hebrew or biblical cosmology of a flat earth at the middle connecting via gates with a hell below the earth and heavens above the earth, the 2 AD's Ptolemy geocentric model of the universe that describes our earth to be the center of the universe and all planets including stars and the moon to be revolving around the earth, and the 1600 AD's Copernicus-Kepler-Newton heliocentric model of the universe that describes the Sun to be the center of the universe and our earth (also planets and the moon) to rotate by its own. The modern cosmologies were developed on the basis of the ideas of the early cosmologies and the observations of the universe with modern technological instruments, and started their eras especially after Albert Einstein developed his general theory of relativity in 1916, such as Einstein's infinite static cosmology and Friedmann-Lemaitre's finite dynamic big bang cosmology. The ancient cosmologies were most mainly philosophical and theological, while the modern cosmologies including the Copernican heliocentric model of the universe were more scientific. The author believes that a complete cosmology should cross the borderlines among science, philosophy, and theology. Any finite universe model must face critical issues and difficulties on the outside worlds and prehistory of the universe. Any infinite universe model cannot actually scientifically address the origin of the entire universe, but may philosophically describe it as being existed forever beginninglessly and endlessly or theologically describe it as being created by God in the beginning.

Based on the well-developed modern sciences of the nature and high-tech observations of the universe, scientists have developed the standard big bang cosmological model. It solidly bases on the Einsteinian general relativity (GR) to describe the effect of matter on spacetime and the Newtonian cosmological principle (CP) to describe matter and radiation to be uniformly distributed in the spacetime. But this model strongly relies on an increasing number of hypothetical entities (HEs) in order for it to be capable of explaining the observations of the universe and overcoming the cosmic difficulties (Figure 2).

The big bang model of the universe (BBU) is not yet enough scientific because it includes many HEs that may never be tested or justified such as dark energy and inflation, not yet enough philosophical because it has many uncertain issues that cannot be appropriately solved or answered such as what the outside of the universe is, what the era before the big bang was, where the universe came from, etc., and thus is incomplete or imperfect, and not yet theological at all because it is severely inconsistent or conflicts with the book of Genesis of the bible and thus excludes the creator, God. A big bang of this finite universe does not need God, but for the outside and prehistory, we may still have to think these philosophically or theologically. The ancient biblical or Hebrew's cosmology, conventionally developed from the book of Genesis, is apparently theological and severely contradicts with observations of the universe, so that it is not scientific. The book of Genesis likely appears to describe the universe with a flat earth at the middle connecting via gates with a hell at bottom and heavens at top. The discrepancy between observations of the universe and Genesis of the bible are most probably resulted either from the ancient bible writer, who did not appropriately describe God's inspiration for the creation of the universe, or from the later bible translators, who did not precisely translate the book of Genesis from Hebrew to English. There has not yet been any scientific model developed so far to be able to fully address, describe, and understand the book of Genesis about the creation of the universe.

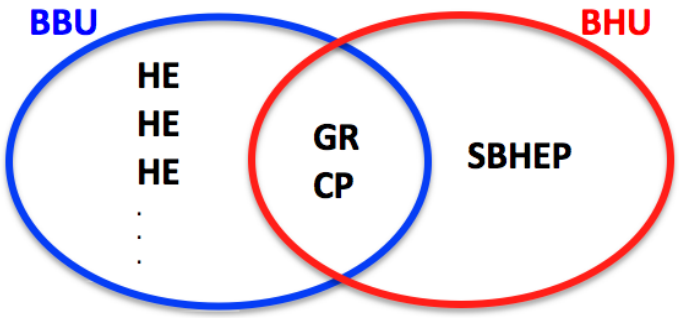


Fig. 2: The comparison of fundamentals between BBU and BHU [1]. The BBU is based on two fundamentals, GR and CP, with innumerable HEs in order for it to explain observations and overcome cosmic problems and difficulties. The BHU is based on three fundamentals: GR, CP and SBHEP, with one more base (i.e. SBHEP). The BHU can also perfectly explain all the existing observations of the universe and meantime overcome the cosmic problems and difficulties in terms of the well-developed physics without needing any other HEs.

Recently, the author developed a new cosmological model called black hole universe (BHU) on the bases of three fundamentals [2-4] in attempt to model the universe, explain the existing observations, and overcome the cosmic problems and difficulties without relying on any other HEs. The three fundamentals of black hole universe are: (1) Einstein's general theory of relativity (GR) that describes the effect of matter on spacetime, (2) Newton's cosmological principle (CP) of spacetime homogeneity and isotropy in a large scale, and (3) Zhang's newly proposed principle of spacetime black hole equivalence (SBHEP) that suggests that a black hole constructs an individual spacetime and a spacetime wraps a black hole [5]. In comparison with the currently accepted standard big bang model of the universe, the black hole universe model uses one extra principle to remove all hypothetical entities (Figure 2). The black hole universe model is scientific because it can explain all existing observations of the universe and overcome all cosmic problems and difficulties. It is philosophical because the entire universe or spacetime is beautifully structured with similarity, simply described by the well-developed physics without non-justifiable HEs, and completely represented having no beginning, no end, and no outside. Recently, the author has demonstrated that the black hole universe model is also theological because it can fully address the creation of the universe. In the sequence of study, he has self-consistently interpreted the book of Genesis regarding God's work during the first four days [1, 6-8]. This conference proceeding presents a synthetic article to describe overall the scientific view for the creation of the universe by God in the first four days.

2. SCIENTIFIC VIEWS ON THE FIRST FOUR DAYS OF GENESIS

In accordance with the New International Version (NIV) of the bible, the sections one through nineteen of chapter one in the book of Genesis describe how God created the universe in the first four days. This conference paper synthetically overviews the creation of the universe described in the first nineteen sections of Genesis according to the author's well-developed black hole universe model, which scientifically, philosophically, and theologically interpreted God's work on the creation of the universe during the first four days.

2.1. The First Day

The work done by God in the first day to create the universe can be divided into three parts. At first, in the beginning, God created the heavens and the earth, The heavens are the worlds of spirit, which are the holiest places or paradises that God, angels, and other heavenly beings reside or live in, as many other parts of the bible described as the dwelling places of God, God's angels, God's saints, and some human spirits at death to go. In contrast with the heavens as the worlds of spirit, the earth that God created in the beginning is the world of matter or the entire space that all the matter and earthly beings including our human beings and other lives exist or live in. The Hebrews had no proper word for the "world" in its wide sense of "universe", so the word "earth" was chosen to represent the world of mater or the universe. At this moment, the entire space created by God was an empty infinite (or formless) large dark/black hole, a three-dimensional (3D) dark empty space. Time, a quantity to measure change and motion, could not be started (or say $t = 0$ was remained) because there was no matter and thus no motion and no change. The quantity of space determines positions and measures sizes and an empty space is not yet physical, but purely geometrical. God is a spaceless being and space only opened with his creation of the universe. Therefore, in the beginning, God opened an infinite empty dark geometric space without matter and energy, called the earth in the Genesis of the bible.

Secondly, God created matter, which was initially super fluidal and neutral substance called "waters" in the book of Genesis and filled sufficiently into the empty earth (i.e. the entire space) in accordance with the Mach-Schwarzschild mass-radius relation, God's law. The waters are not those we are using and drinking daily, whose molecules are made of two hydrogen and one oxygen atoms (H_2O), All things we see nowadays are all made from this initial super fluidal and neutral matter, God's waters, as the Koran stated: "From water we have made all things." God further let his Spirit be hovering over the waters to power the initial super fluidal and neutral matter with energy and motion via the work done by the gravitational interaction (i.e. force between masses), a fundamental force created by God in this era for the nature, followed by the first and second laws of thermodynamics, i.e. the law of energy conservation including heat and the law of entropy (defined as a measure of system's disorder) increase for any isolated system or the entire universe. The rotational or spinning characteristics of all celestial objects including the later formed planets, stars, galaxies, and clusters might be due to or come from the initial hovering of God's Spirit and power. With this fundamental force, the mass of an object in the entire space measures the inertia of motion of the object. As Mach's principle stated, the inertia of an object is resulted from the gravitational interaction of the object with the rest of the universe. In this era, the time was started or created by God to measure the change and motion and it always points to the future along the direction of entropy increase. God is a timeless being and time only began with his Spirit to power his created matter and universe. The space and time (i.e. spacetime) of the grand universe that God created was an infinite large black hole with infinite great mass and radius, but a constant mass-radius ratio, and an infinitesimal mass density. In other words, the spacetime created by God is equivalent to a physical black hole. Until this point, the universe is darkness that God later called night. The temperature of the grand universe is not absolute zero but still infinitesimal because both the density and pressure of the matter are infinitesimals.

Thirdly, God created light (i.e. electromagnetic radiation), which is composed of varying electric and magnetic fields, and produced by accelerating electrically charged particles. According to the decreasing order of wavelength or the increasing order of frequency, we usually categorize electromagnetic radiation or waves as radio wave, microwave, infrared, visible light, ultraviolet, X-ray, and gamma ray. Oscillating negatively charged electrons and positively charged nuclei including protons may produce radio waves and microwaves. Thermal motions of electrons may produce infrared. Orbital

(i.e. energy level or state) changes of electrons in atoms may emit visible light and ultraviolet. Sudden stops of high-speed electrons on a target can emit X-rays. Nuclei reactions and decays may produce gamma rays. It should be noted that, to God, a light with any frequency is visible, but to human beings, the visible light has a rather narrow range of frequency or wavelength. To accomplish this goal, God simply set the free neutrons that are composed of the initial super fluidal matter to be unstably decaying to protons by emitting electrons and antineutrinos with a mean lifetime of around fifteen minutes.

Before the creation of the light, the universe was darkness, i.e. in the evening. After the creation of the light, the universe began its daytime, i.e. the morning at first. Lighting the dark universe, God changed the universe from night to day (i.e. darkness to brightness or evening then morning). We usually say a day morning then evening, but in the Genesis of bible, it always said a day first evening then morning. That God saw that light was good indicates that he liked the daytime more than the night. Therefore, the first day of creation was a long day. It contained the entire time period for God to create the 3D infinite and empty space, to make matter and fill in the space with a full of matter, to power the matter with motion and start the time, to create the fundamental forces and issue inertia, and to generate light that switched the entire space or the grand universe from night to day. It was not the earth day, which is only the time needed for our earth that we reside in to make one rotation about its axis, i.e. 24 hours. In fact, at this moment, the Sun, the planets including our earth, and the moon were not formed and placed yet, and thus it is meaningless to say the earth day. In the first day, God created the first black hole, the infinite entire space or the grand universe, simply denoted by U.

2.2. The Second Day

The work done by God in the second day to structure the infinite entire universe or spacetime into layers can be divided into two steps. First, God structured the infinite entire universe or spacetime by separating matter (i.e. the waters) with vaults or boundaries into layers or multiverses and then further created our finite black hole universe, which has a finite radius, mass, density, temperature, and entropy. Here, the vault can be understood as the event horizon (or boundary) of black hole universe, which separated the water or matter inside (or below) the vault from the water or mater outside (or above) the vault. No water or matter even the light can flow up through or escape across the vault from inside (or under the vault) to outside (or above the vault). It is the boundary for matter and light to be able to go or, in other words, the boundary for us to be able to view or observe. The sky, which we can view (and where stars shine), is limited by or extended to the vault or the event horizon. The sky, usually called celestial dome, is everything that lies above the surface of our earth including the atmosphere and outer space. The water above the vault are not the raindrops and vapours from clouds, because the vault should be much higher (as high as stars we can view) than the height of clouds.

The vault or event horizon was automatically formed from gravitational attractions when God set the speed limit of matter including light to be finite. This greatly limits our view and constrains our observable universe to be finite. No such speed limit, we suppose to be able to view or observe the entire universe. The difference between human beings and God is that of finiteness and infiniteness. The vault or event horizon, because any matter even light cannot escape from it, is darkness if it is viewed from outside. So, for us living under the vault or inside the event horizon, the outside cannot be seen because it is out of our view or is darkness or at night. God built the dark outside of the vault in the evening, and then made or fixed the bright inside of the vault in the day. Therefore, there was the darkness or evening outside the vault, there was the brightness or morning of the day inside the vault. That was the second day, which again was not the earth day with 24 hours, the time period for our earth axially rotating one revolution. The second day was the day of structuring the infinite entire universe or spacetime with infinite layers and further creating our finite black hole universe. It was the time needed for God to form the event horizons or vaults and thus separate mater outside (i.e. the side of darkness or night) from inside (i.e. the side of lightness or day).

From the infinite entire spacetime with infinitesimal matter density and absolute temperature and infinite great mass and radius to our finite black hole universe, there have infinite separations or vaults (i.e. event horizons) to be formed. All layers or universes are self-similarly separated by event horizons (or vaults in the book of Genesis), and governed by the same physics that includes the Einsteinian general theory of relativity with the FLRW metric, Mach-Schwarzschild mass-radius relation, and positive

curvature constant. Figure 3 shows the infinite hierarchically layered spacetime [4,9]. The outmost layer called the grand universe (i.e. the entire spacetime that God initially created) is infinite in radius and mass with mass-radius ratio to be a constant, but zero or infinitesimal for the density and absolute temperature. The bottom layer is the layer of child universes. The second layer from the bottom is the layer of our universe and sister universes, which are finite and parallel one another. A child universe is a subspacetime of our universe; our universe is a subspacetime (or a child universe) of the mother universe; the mother universe is a subspacetime (or a child universe) of the grandmother universe; and so on. If we number the layer from the bottom layer (or child universe) to the top layer (or grand universe), we should have the count as 1, 2, …, to ∞.

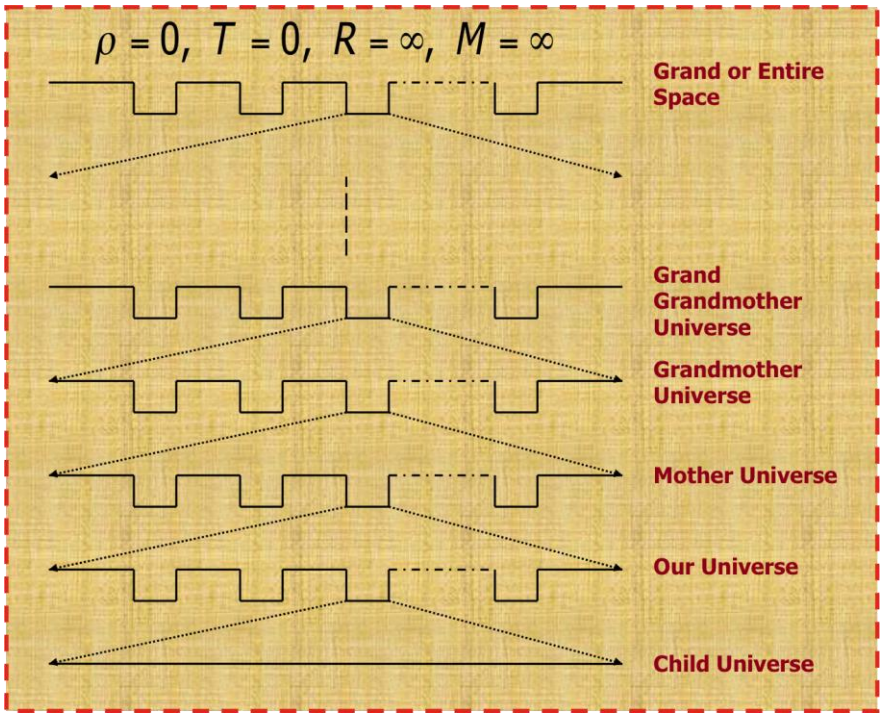


Fig. 3: The infinitely layered structure of the entire spacetime or grand universe [4, 9]. The outmost layer is the grand universe and the bottom (or innermost) layer is the layer of child universes. A child universe is a subspacetime of our universe, our universe is a subspacetime (or child universe) of mother universe, the mother universe is a subspacetime (or child universe) of grandmother universe, and so on.

Overall, in the second day, God structured the infinite entire spacetime or universe that he created in the first day into layers by separating the waters (i.e. the matter or super fluidal substance that God initially made and filled into the entire space) with vaults, which in physics can be understood as event horizons. God did this work by only setting the light speed as the speed limit for any matter and particles in the world of matter. From the infinite entire universe, which has infinite large radius and mass and infinitesimal density and temperature, to our finite black hole universe, which has a finite mass, radius, density, and temperature, there are infinite layers, which are structured hierarchically and governed by the same fundamental laws of physics. The infinitely layered structure of the entire spacetime or grand universe can be mathematically represented by sets and subsets as U = {…{F, F, F, ...{G, G, G, ...{A, A, A, ...{S, S, S, ...{C, C, C, ..., C} } } } }…}, in which {C, C, C, …., C} = O is our finite black hole universe and {S, S, S, …, O} = M is the mother universe[1-3].

2.3. The Third Day

The work done by God in the third day to construct the interiors of our finite black hole universe can be also divided into two steps. First, the matter (i.e. the water or the God's initially created super

fluidal matter) under the vault (i.e. inside the event horizon, e.g. our finite black hole universe) gathers (or gravitationally collapses) to one place appears (or produces) dry ground that God called it as "land". Since the God's created initial super fluidal matter is called the water, then a dry ground or land is something without such water or not in the initial super fluidal state. That is to say, the dry ground or land should be an enough condensed, and thus not anymore super fluidal (i.e. gaseous, liquid, or solid) celestial object that God could stand firmly on, such as a star, a planet including our earth, etc. The waters under the vault (i.e. inside the event horizon, e.g. our black hole universe) gather to many places so that appear or produce seas such as galaxies (i.e. the seas of stars including planets, etc.), clusters (i.e. the seas of galaxies), etc. Gathering water to one place appears a land or celestial body such as a star and planet, and gathering waters to many places appears many lands or celestial bodies (e.g. many stars and planets) that form a sea such as a galaxy. A galaxy is a sea of stars and a cluster is a sea of galaxies. The sea refers to a vast expanse or quantity of something. It is not the expanse of salt waters that covers most of our earth's surface.

In the Hebrew's era, concepts of galaxies and clusters were not built or developed, so that they were named as seas in the book of Genesis. In China, since the ancient time to the present, our galaxy, Milky Way, had being called as a river "Silver River" (or in Chinese "Yin He"). This section of Genesis of the bible told us how God created stars, planets, galaxies, clusters, etc. from the initial super fluidal matter, i.e. the God's waters, through gravitational collapses under a vault or in a black hole universe (i.e. inside an event horizon). The matter or water flows downward across the vault and the vault rises upward, which explains the expansion of the black hole universe or spacetime. When a black hole accretes matter (or absorbs waters), it expands or enlarges its size [10]. Observations indicate our black hole universe contains billions of galaxies and each galaxy contains billions of stars. For instance, our galaxy – the Milky Way – contains about hundred billions of stars. The Virgo cluster contains thousands of galaxies, in which the giant elliptical galaxy M87 is one of the largest and brightest galaxies.

God then chose one land (i.e. celestial body or planet) that he created as our land or our earth to produce plants and trees that bear fruits with seeds according to their various kinds. God let our earth produce or grow vegetation, including plants that bear seeds according to their kinds and trees that bear fruits with seeds in them according to their kinds. Since this part does not belong to physical science, the author cannot appropriately describe the details. Therefore, the third day was the day of structuring the interiors of our finite black hole universe by creating celestial objects from the gravitationally collapsing matter such as stars including planets and our earth, on which plants and vegetation were grown or produced. To shine the stars, God assigned matter and light or massless radiation with duality of particle and wave. This leads to fusion reaction to occur in the core of stars and power emissions from the stars. The third day was the time period for God to form stars (lightness or day) including galaxies (seas of stars) and clusters (seas of galaxies) from the initial waters (darkness or night) and to create our planet, the earth, that grows plants and vegetation.

Overall, in the third day, God constructed the interiors of our finite black hole universe [4]. The work includes the formation of celestial objects by gathering the waters or gravitationally collapsing the initial super fluidal matter under the sky or inside the even horizon of our black hole universe. These formed celestial objects could be stars and planets called dry grounds or lands, in which matter is not in the water state any more, and galaxies and clusters called, respectively, seas of stars and seas of galaxies. Stars luminously shine on (or give off energy to) the world of matter when fusion occurs after particles of matter were assigned with the property of waves or the ability of quantum tunnelling of the Coulomb barrier. God further selected one land (i.e. our earth) for plants to grow and then for humans to live. In the third day, God constructed the interiors of our black hole universe to breed C, the child universes, which refer to star-like, massive, supermassive black holes. The third day was the day of our finite black hole universe. During this day the interiors of our universe such as stars, planets including our earth and moon, galaxies, and clusters were created and constructed.

2.4. The Fourth Day

The work done by God in the fourth day to create the solar system with our earth and lights to light the universe and our earth can be divided into two aspects. First, God made the stars and planets including their natural satellites such as the moon of our earth, which were created or constructed in the

third day, to be lights that can emit (from their photospheres if stars) or reflect (by their surfaces if others) light, which here especially refers to the visible light, in our black hole universe (i.e. in the vault of the sky or within the event horizon) to separate the day from the night (i.e. from the darkness to the brightness). Our universe contains hundred billions of galaxies, each galaxy contains hundred billions of stars, each star has a number of planets including dwarf planets, thousands of comets, and billions of asteroids, and each planet may also have moons.

Then. God further created our solar system and made two great lights for the earth. The greater light is the Sun, which emits light from its photosphere and governs the day. The lesser light is the moon, which reflects the sunlight and governs the night. To our earth, the day and night governed by the Sun and moon are the earth day and night. This was accomplished by placing the Sun at the center of the solar system, enabling our earth to be revolving around the Sun once an earth year and meantime spinning itself about its own axis once an earth day, and making the moon to be revolving around the earth once about every earth month. God satisfied his work in the fourth day. It was a day to prepare the earth for plants to grow and for lives, especially humans, to live. Before the creation of lights to give light to our black hole universe (in the vault of the sky) and on the earth, everywhere in our black hole universe, including on the earth, was darkness i.e. there was the evening. After the creation of lights to give light to our black hole universe and to our earth, everywhere in our black hole universe, including on the earth, becomes brightness and thus there was the morning.

The Sun is our star and lies at the heart of the solar system. It holds almost all the masses of the solar system and emits electromagnetic radiation, especially visible light. There are eight planets revolving around the Sun and our earth is the third planet, five dwarf planets, thousands of comets, and billions of asteroids to be revolving around the Sun. The Sun also releases solar wind, a constant stream of electrically charged particles that mostly consists of electrons, protons, helium, and trace amount heavy ions or atomic nuclei. The solar wind may charge planets and induce magnetic fields for planets in accordance with their size and self-rotations. The geomagnetic field plays the essential role in protecting and maintaining our earth atmosphere and environment weather. The earth is our planet with mass about three millionth of the solar mass and radius about one hundredth of the solar radius. The earth atmosphere consists mostly of nitrogen and oxygen, one to two percent of argon and carbon dioxide, and trace amount of other gases. It has five major layers, which are, from lowest to highest, troposphere, stratosphere, mesosphere, thermosphere, and exosphere. The earth weather mostly happens in the lowest layer, troposphere, while the highest layer, exosphere, merges with the solar wind. The earth is our human's homeland, the only place in the universe where we know for certain that life exists. God selected the earth, a beautiful green planet, for plants to grow and for animals, especially human beings, to live by getting energy from the Sun. The moon is Earth's only natural satellite, as the lesser light, which gives light for our earth and governs the night via reflecting the sunlight. It has diameter and mass to be about one fourth and one eightieth of the earth, respectively, orbiting the earth at an average distance about thirty times the earth radius. The moon is tidally locked to the earth since its near side always faces the earth. Its gravity is the major cause of the tides of the earth ocean waters to be rising and falling twice of each daily. The moon has phases since the illuminated portion that we see changes as it orbits the earth. The moon as like the Sun has played an important role in the world culture and human civilization. The NASA spacecraft Apollo 11 first landed humans on the moon half century ago and our human beings will go to the moon again in the near future.

Overall, in the fourth day, God created solar system including planets, comets, and asteroids and generated lights including the Sun, the moon, and stars to give light to our black hole universe and our earth. To the universe, God made light emitters (stars including the Sun) and light reflectors (planets including their moons) to be lights that light our black hole universe and brought the universe from darkness or night without lights to brightness or day with lights. To our earth, God created two lights: the greater light Sun and the lesser light moon, which governed the day and the night of our earth, respectively. The Sun emits light and the moon reflects the light that the Sun emitted. Other stars serve as tiny lights to our earth for the night by placing them at large distances in the vault or within the event horizon. In the fourth day, God made lights to our black hole universe and created solar system including the earth and moon to prepare homeland for human to live and plants to grow. God selected our earth, a beautiful green planet with an appropriate space weather environment system, for plants to grow and for animals, especially human beings, to live.

3. CONCLUSION

This synthetic article has comprehensively overviewed the full and self-consistent interpretation of the first four days of Genesis for God's creation of the universe, according to the author's well-developed black hole model of the universe. In the first day, God created the infinite entire universe with matter, motion, and light. In the second day, God structured the infinite entire universe intro infinite layers via gravitational collapse with setting light speed as the speed limit and further formed our finite black hole universe. In the third day, God constructed the interiors of our finite black hole universe to form stars including planets, galaxies, and clusters and further selected our earth for plants to grow and for humans to live. In the fourth day, God created solar system and made lights to light our black hole universe and our earth. God further made two lights, in which the greater light, the Sun, emits light and governs the day and the lesser light, the moon, reflects the sunlight and governs the night. Via the sequence of study, the author has shown that not only can the well-developed black hole universe model scientifically reveal the truth of the universe for explaining observations and overcoming cosmic difficulties, but also philosophically describe the beauty of the universe for simplicity and completeness and theologically interpret the book of Genesis for the love and creation of the universe.

Acknowledgments

The author appreciates editors and reviewers for accepting the sequence of papers to be published on the journal, IJTPS. He is also grateful very much for the invitation to join the International Multidisciplinary Scientific Conference of the Dialogue between Science & Arts, Religion & Education (MCDSARE: 2021) and present a synthetic paper of this sequence of study.

BIBLIOGRAPHY:

[1] Zhang, T. X., "Genesis and Black Hole Universe: The First Day", International Journal of Theology, Philosophy, and Science, 6 (2020), 54-67
[2] Zhang, T. X., "A New Cosmological Model: Black Hole Universe", American Astronomical Society 211th Meeting, Abstract #152.04 (2007)
[3] Zhang, T. X., "A New Cosmological Model: Black Hole Universe", Progress in Physics, 5 (2009), 3-11
[4] Zhang, T. X., "The Principles and Laws of Black Hole Universe", Journal of Modern Physics, 9 (2018), 1838-1865
[5] Zhang, T. X., "Principle of Spacetime Black Hole Equivalence", Progress in Physics, 12 (2016), 353-361
[6] Zhang, T. X., "Genesis and Black Hole Universe: The Second Day", International Journal of Theology, Philosophy, and Science, 7 (2020), 5-19
[7] Zhang, T. X., "Genesis and Black Hole Universe: The Third Day", International Journal of Theology, Philosophy, and Science, 8 (2021), 5-18
[8] Zhang, T. X., "Genesis and Black Hole Universe: The Fourth Day", International Journal of Theology, Philosophy, and Science, 9 (2021), In Press
[9] Zhang, T. X., "Cosmic Microwave Background Radiation of Black Hole Universe", Astrophysics and Space Science, 330 (2010), 157-165
[10] Zhang, T. X., and Frederick, C. "Acceleration of Black Hole Universe", Astrophysics and Space Science, 349 (2014), 567–573

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2021, e-ISSN: 2601-8403
p-ISSN 2601-839X

https://doi.org/10.26520/mcdsare.2021.5.67-79

MCDSARE: 2021
International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

TWO RESEARCH PARADIGMS, WITH OR WITHOUT „GOD HYPOTHESIS": C.S. LEWIS AND RICHARD DAWKINS

Alexandru-Corneliu ARION,
Associate Professor PhD, Faculty of Theology and Sciences of Education,
"Valahia" University of Târgoviște, ROMANIA
Email: alexcoarion@yahoo.co.uk

Abstract

In this present paper we try to learn something about how to cope with analytical investigation of reality, by comparing the ideas of two iconic Oxford figures. On the one hand, the renowned atheist Richard Dawkins, and the Christian apologist C.S. Lewis, on the other. It is more than interesting to know how two great thinkers of the 20th century can raise and answer to questions of life, such as Reasoned belief, the so-called „God hypothesis" or concerning our place and purpose in this world. Both Dawkins and Lewis see intellectual reflection on the big questions as natural and significant. Both insist that their beliefs – atheism and Christianity respectively – demand and deserve intellectual seriousness and are capable of being developed into larger systems. Lewis's apologetic approach generally takes the form of identifying a common human observation or experience, and then showing how it fits, naturally and plausibly, within a Christian way of looking at things. For Dawkins, there is no room for faith in science, precisely because the evidence compels us to draw certain valid conclusions. He proposes an absolute dichotomy between 'blind faith' and the 'overwhelming scientific evidence. Dawkins contends that a supernatural creator, God, almost certainly does not exist, and that belief in a personal god qualifies as a delusion, which he defines as a persistent false belief held in the face of strong contradictory evidence.
An inevitable conclusion is that both Dawkins and Lewis are men of faith, in that both hold committed positions that cannot be proved right, but which they clearly regard as justified and reasonable. We must learn to live with a degree of rational uncertainty about our deepest beliefs and values.

Keywords: investigation of reality; Richard Dawkins; C.S. Lewis; God hypothesis;

1. INTRODUCTION

Many a time man has faced the difficulty of understanding his limits in front of the attempt to unravel the mysteries of the reality he lives in. As such, he came to experience the awareness of the limits of science and, consequently, of human knowledge in his endeavor to defend either the positivist knowledge or the faith in God, which appeals to what we call „God hypothesis".

Therefore, in the present paper we try to learn something about the way we cope with analytical investigation of reality, by comparing the ideas of two iconic Oxford figures. On the one hand, the scientific popularizer, and the renowned atheist Richard Dawkins, and, on the other, the literary scholar and Christian apologist C.S. Lewis. It is so fascinating to understand how these two great thinkers of the 20th century can answer the questions of life, such as Reasoned belief, "the God hypothesis" or concerning our place and purpose in this world.

Dawkins is an evolutionary biologist who moved from a nominal Anglicanism to a committed atheism; Lewis is a literary scholar who moved from atheism to what he named 'mere Christianity', a form of Christianity that overlooked its denominational aspects. Both Dawkins and Lewis see intellectual reflection on the big questions as natural and significant. Both insist that their beliefs – atheism and Christianity respectively – demand and deserve intellectual seriousness and are capable of being developed into larger systems.

One could raise the question: what we might learn by engaging with both Dawkins and Lewis on some big questions in life, including issues of meaning and faith, or the relationship of the natural sciences and the arts.

The term 'big questions' is widely used to refer to ways of thinking about ourselves and our world that help us make sense of things. Psychologists tell us this thinking is natural and that it helps us manage with the riddles of life. Some of these big pictures are religious, some are not. Christianity is a good example of a faith that both tries to make sense of our lives and shows how they can be transformed and renewed. Marxism is a good example of a non-religious – many would say anti-religious – world view that aims to explain our world.

Some think the answer might lie in our evolutionary past. Others suggest that we have homing instinct for God as our creator, which makes us search for signs of transcendence or significance. Yet whatever explanation we offer, there's little doubt about how important this sense of meaning can be.

Meaning is often connected with 'world views' – big pictures of reality that link individual aspects of life together into an interconnected whole. Religious belief is widely acknowledged as affirming the intelligibility and coherence of our world. The American Christian philosopher Keith Yandell († 2020) suggests that a religion is a 'conceptual system that provides an interpretation of the world and the place of human beings in it'. These world views act like lenses, allowing us to see our world and ourselves more clearly by bringing things into focus. Yet some of these world views are non-religious or even anti-religious, as in the case of the two major secular ones of our age: (Neo-) Marxism and Darwinism.

2. BIG PICTURES: WHY MEANING MATTERS

2.1. Dawkins's big picture: universal Darwinism

Dawkins (1941-) uses the term 'Darwinism' to designate both Darwin's theory of the origins of biological diversity and a broader world view based on this theory. He introduced the term 'Universal Darwinism' in 1983 to refer to an expanded vision of Darwinism, which he subsequently developed beyond the realm of biology to include explan¬ations of cultural phenomena, including religious belief and the question of purpose in life. (Richard DAWKINS, 1983, 403–25). Dawkins's The God Delusion (2006) developed the suggestion that religion is an 'accidental by-product' of the evolutionary process, a 'misfiring of something useful'. (Richard DAWKINS, 2006, 188). He also uses the metaphysical framework of this Universal Darwinism to reject any notion of purpose – a view summarized in his well-known statement that the universe has 'no design, no purpose, no evil and no good, nothing but blind pitiless indifference'. (Richard DAWKINS, 1995, 133).

Dawkins attributes his loss of any religious faith to two factors. The first was his growing realization that 'Darwin provided the magnificently powerful alternative to biological design which we now know to be true.' (Richard DAWKINS, 2013, 141). This is a recurrent theme in Dawkins's later writings: Darwinism offers an explanation of what is observed in the biological world that is superior to belief in a creator God. The second factor is his belief that there is an 'elementary fallacy' within any argument from design, in that 'any god capable of designing the universe would have needed a fair bit of

designing himself'. (Ibid, pp. 140–141). Darwin's idea of gradual complexification from a 'primeval simplicity' seemed to make a lot more sense to him.

Ironically, Darwinism does not – and cannot – explain everything. It deals with how life evolves. Some of the most significant events in the history of the universe – such as the Big Bang and the origins of life – lie beyond its scope. Nonetheless, Dawkins sees in Darwinism a framework for reflecting on human meaning in general and not simply on biological development.

The Moral Landscape, a book by the New Atheist writer Sam Harris, is perhaps the stand-out manifesto for scientism, arguing that science is able to determine human moral values – in effect, putting moral philosophy out of business. However, moral philosophers have dismissed Harris's overstatements: it is not exactly difficult to point out that he has merely co-opted a position within moral philosophy, namely a form of utilitarianism that holds that the 'good' is defined in terms of the greatest happiness of the greatest number. (Sam HARRIS, 2010,79).

That is one of the reasons why it is so interesting to engage with Dawkins. It forces us to think about the place of science in developing a big picture of life. Can science answer all our big questions about the meaning of life? Or does it really deal with the quite different question of how the universe and human beings function? For Dawkins, science tells us all we can hope to know; for others, it has limits that are to be respected, so that we look to other intellectual disciplines or undertakings to answer other questions – including questions of meaning. (Alister MCGRATH, 2019, 15).

The noted biologist John Maynard Smith, for example, declares that scientific theories have nothing to say "about the value of human beings" – or indeed about moral values in general. For Maynard, biological theories "say nothing about what is right but only about what is possible", leading us to draw the conclusion that "we need some other source of values". (John Maynard SMITH, 1984, 10-24).

Clearly there is more that needs to be said about Dawkins's approach, and we shall pick this up later. But we now need to introduce our second dialogue partner – C. S. Lewis (1898-1963).

2.2. Lewis's big picture: mere Christianity

Lewis's initial atheism was hardened by his experience as a soldier in the British Army during the First World War. How could God allow such pointless suffering and devastation? Although Lewis was aware that there were some logical flaws with being angry with a non-existent God, he saw atheism as the default position of any right-thinking person.

During the 1920s, however, Lewis changed his mind. Although he remained convinced that atheism was probably his best option, he found it intellectually uninteresting and came to see it as stifling the life of the imagination. The world of the logically provable was inadequate and unsatisfying: he became convinced that there had to be more to life. He set out this view by contrasting two forces that seemed to be at war within his soul: a plausible yet dull rationalism and a risky yet potentially exhilarating faith.

"On the one side, a many-islanded sea of poetry and myth; on the other, a glib and shallow rationalism. Nearly all that I loved I believed to be imaginary; nearly all that I believed to be real I thought grim and meaningless". (C. S. LEWIS, 2002, p. 197).

As an atheist who became a Christian, Lewis came to see himself as an apologist for the Christian faith. However, he was always clear that rather than defending any particular kind or style of Christianity, such as Anglicanism or Methodism, he was commending a basic consensual Christian orthodoxy – what he termed 'mere Christianity': 'You will not learn from me', he informed his readers, 'whether you ought to become an Anglican, a Methodist, a Presbyterian, or a Roman Catholic.' (C. S. LEWIS, 2016, viii).

Yet Lewis was not suggesting that his readers should avoid individual Christian denominations, such as his own Church of England. Nor was he suggesting that the Christian life was to be seen as individualist, without any sense of attachment to or involvement in a Christian community. Rather, each such denomination was to be seen as a distinct embodiment or manifestation of something more fundamental – mere Christianity:

"[Mere Christianity is] like a hall out of which doors open into several rooms. If I can bring anyone into that hall, I shall have done what I attempted. But it is in the rooms, not in the hall, that there

are fires and chairs and meals. The hall is a place to wait in, a place from which to try the various doors, not a place to live in. (Ibid., p. xv).

Lewis came to see God as both the ground of the rationality of the world, and the one who enables us to grasp that rationality. For Lewis, the truths of the Christian faith lie beyond the reach of human reason; yet when those truths are presented and grasped, their rationality can easily be discerned. And one hallmark of that rationality is the ability of the Christian faith to make things intelligible. This basic belief is set out with particular clarity in what has come to be one of his best-known maxims:

'I believe in Christianity as I believe that the Sun has risen, not only because I see it but because by it I see everything else.' (C. S. Lewis, ed. Lesley WALMSLEY, 2000, 21).

As an atheist turned Christian, Lewis was convinced of the apologetic need to set out the intellectual and imaginative appeal of Christianity to our wider culture (Michael WARD, Andrew DAVISON, ed., 2011, 59–78; Alister E. MCGRATH, 2013, 129-46) – something that required intelligent reflection on the content and practice of faith. His point is that an informed understanding of Christianity provides both clarification of what we ought to be doing and a motivation to do it. As Lewis argued in his discussion of the 'Christian hope', what might be seen by some as theological escapism turns out to be empowering:

'The Christians who did most for the present world were just those who thought most of the next.' (Lewis, 2016, 134).

2.3. Reflecting on Dawkins and Lewis

Dawkins and Lewis both see intellectual reflection on the big questions as natural and significant. Both insist that their beliefs – atheism and Christianity respectively – demand and deserve intellectual seriousness and are capable of being developed into larger systems. We would agree with them both on the importance of critical and constructive reflection on our beliefs, and regularly commend such a 'discipleship of the mind' to the Christian readers. (Alister McGrath, 2018).

Dawkins, like many within the New Atheism, holds a view of religion determined by the myth of the warfare of science and religion – a view that emerged during the late nineteenth century, for social reasons, but has long been discredited by historical research. (Peter HARRISON, 2015, 172–176, 191–198) . So if, as this controlling myth dictates, science and religion must be seen as at war with each other, what does that imply about the many active scientists who are religious believers? This myth has only one answer to give, and we fear it is a rather thin and unsatisfying one: such people are traitors who collaborate with the enemy. This leads Dawkins to suggest that scientists who believe in or contribute to a positive working relationship between science and religion represent the 'Neville Chamberlain' school. (DAWKINS, 2006, 66–69).

Lewis also helps us think about the dangers of controlling myths, which lead us to demonize others. He found a persuasive answer to his concerns in a long conversation with his Oxford colleague J.R.R. Tolkien (John Ronald Reuel Tolkien was an English writer, poet, philologist, and academic, best known as the author of the high fantasy works The Hobbit and The Lord of the Rings. He was a close friend of C.S. Lewis) in September 1931. Tolkien argued that human beings tell stories that are unconsciously patterned on the Christian grand narrative of creation and redemption. For him, one of the great strengths of that narrative was its ability to explain why we tell stories of meaning in the first place. The Christian gospel enfolded and proclaimed 'a story of a larger kind', which embraced what was good, true and beautiful in the great myths of literature, expressing it as 'a far-off gleam or echo of evangelium in the real world'. (J.R.R. TOLKIEN, 2001, 71–27).

Lewis came to see that the story of Christ was a 'true myth' – that is to say, a myth that functions in the same manner as other myths, yet really happened. Christianity possessed the literary form of a myth, which for Lewis meant a story with deep imaginative appeal, conveying a set of ideas. Yet there was a critical difference between Nordic myths (so much prized by the young Lewis) and the Christian myth: only the latter was true. (Alister E. MCGRATH, 2013, 55–82). Pagan myths represented an imperfect grasping towards the truth, a goal finally attained in Christianity.

It seems that Dawkins's view of science is shaped by an unnecessary and distorting metaphysical naturalism, as well as a dogged commitment to a discredited myth of the 'warfare' of science and faith, which blind him to the ways a theological framework might illuminate and enrich our appreciation of science. Happily, there are sections of his writing in which he seems to set such dogmatic assumptions to

one side and reflect joyfully on science's ability to help us appreciate the beauty and complexity of nature. Lewis, unfortunately, does not engage with science in depth, (Michael WARD, 2013, 3–16) so that his readers must develop their own approaches to science based on his general outlook. Yet this is not difficult to do – and turns out to be ¬profoundly worthwhile.

3. REASONED BELIEF: FAITH, PROOF AND EVIDENCE

It is often said that we live in a post-truth world in which we just make up our beliefs. We decide what we would like to be true, then live as if it were true – hoping nobody will come along and ask us difficult questions about our reasons for holding these beliefs. Religious people are often accused of 'wish-fulfilment' – a term used by the atheist psychoanalyst Sigmund Freud in the early twentieth century to refer to the need felt by some to console themselves in believing in a non-existent God. Yet atheism can also be seen as a form of wish-fulfilment.

But then, how can we show that our beliefs make sense? Can we prove that they are right? Or if we can't prove them, what's the next best thing? These are important questions. Just about all of us hold certain beliefs, be they religious, ethical or political. Is there a God? What is the good life? Nobody is really certain about the answers to these questions, but we can still offer good reasons for what we believe. So how do Lewis and Dawkins help us to think about these questions? Let's begin by looking at Lewis's approach.

3.1. C. S. Lewis: fitting things in

During the twentieth century, Lewis was one of the most out¬spoken defenders of the rationality of the Christian faith. Lewis's apologetic approach generally takes the form of identifying a common human observation or experience, and then showing how it fits, naturally and plausibly, within a Christian way of looking at things. (Alister MCGRATH, 2013, 129-46). He holds that Christianity provides a big picture of reality, an intellectually capacious and imaginatively satisfying way of seeing things, one that helps make sense of what we observe or experience.

Lewis' approach to the rationality of religious belief emphasizes its capacity to enfold our experience of the world and help us discern what it means. But some objections need to be considered. For example, Lewis suggests that we judge a set of beliefs by their capacity to make sense of things. But then we ought to ask what evidence might lead us to adopt those beliefs in the first place, rather than simply taking them as given and then proceeding to evaluate them?

It is a perfectly fair point. Yet the issue is more commonplace than might be expected. As Ludwig Wittgenstein pointed out, one and the same propos¬ition or idea may at one point be treated as something to be tested and at another as a rule of testing. (Ludwig WITTGENSTEIN, 1974, p. 98).

Lewis himself is quite clear that Christianity does not offer us a totally clear view of reality, and readily concedes that there are certain things that do not fit comfortably – for example, the problem of pain and suffering, the subject of two of his books. (C. S. LEWIS, 1940).

His counterargument would be that we should compare possible approaches and see which makes the most sense of a complex and fuzzy reality.

Lewis himself uses this approach in Mere Christianity. He notes that many people have known a 'desire which no experi¬ence in this world can satisfy'. After exploring this observa¬tion, he offers three possible explanations for such a sense of emptiness and lack of fulfilment. First, this frustration might arise from looking for its true 'object' in the wrong place; we therefore need to keep searching. Second, it might be that there is no true object to be found. If this second explanation is true, there is no point in any further searching, which will only result in repeated disappointment.

Lewis, however, suggests there is a third approach, which recognizes that these earthly longings are 'only a kind of copy, or echo, or mirage' of our true homeland. Since this overwhelming desire cannot be fulfilled through anything in the present world, this suggests that its ultimate object lies beyond this world. Lewis concludes that this third is the 'most probable' explanation. (LEWIS, 2016, 136–137; Alister E. MCGRATH, 2016, 395–408).

3.2. Richard Dawkins: science and evidence

Dawkins is suspicious of religious beliefs because they seem to involve a retreat from critical thinking and a disengagement from evidence-based reasoning. His commitment to a scientific assessment of evidence leads him to adopt a strongly critical attitude towards any beliefs inadequately grounded in the observable: 'As a lover of truth, I am suspicious of strongly held beliefs that are unsupported by evidence.' (Richard DAWKINS, 2003, 117). For Dawkins, religious faith is 'blind trust, in the absence of evidence, even in the teeth of evidence'. (Richard DAWKINS, 1989, p. 198).

Scientists regularly must confront the problem of the 'underdetermination' of theory by evidence. (Thomas BONK, 2008). In other words, the evidence is often insufficient to compel us to accept one theory over another, in that each theory has some evidential support.

For Dawkins, there is no room for faith in science, precisely because the evidence compels us to draw certain valid conclusions. In The Selfish Gene he proposes an absolute dichotomy between 'blind faith' and 'overwhelming, publicly available evidence':

But what, after all, is faith? It is a state of mind that leads people to believe something – it doesn't matter what – in the total absence of supporting evidence. If there were good supporting evidence, then faith would be superfluous, for the evidence would compel us to believe it anyway. (DAWKINS, 1989, 330).

Dawkins overstates the ease with which scientists navigate their way from observations of our universe to theories about it, conveniently overlooking the serious intellectual difficulties raised by the underdetermination of theory by evidence. Yet he is entirely right to highlight the importance of evidence-based thinking in science, and to raise concerns about those who simply demand we accept their ideas or ask us to ignore evidence or avoid serious thinking about our universe or the meaning of life.

The difficulty is that science does not always deliver simple judgements. For example, consider the following question: 'Which is the best approach to quantum theory?' A recent survey of experts in the field showed a wide range of commitments to the ten major interpretations – again showing the importance of personal judgement in these decisions. (M. SCHLOSSHAUER, J. KOFLER and A. ZEILINGER , 2013, 220-30). As these interpret¬ations are inconsistent with one another, this raises some difficult questions for the simplistic 'science proves its beliefs' outlook.

Dawkins often seems to make an illegitimate logical transition from 'this cannot be proved' to 'this is false'. During a 1999 debate entitled 'Is Science Killing the Soul?' a member of the audience asked whether science could offer people consolation similar to that offered by religion – for example, after the death of a close friend or relative. Dawkins's response was puzzling: "It's a moot point whether one wishes to be consoled by a falsehood.' He here slides effortlessly from saying that consolation does not make religion true to saying that religion is false. Now while this might seem to be an entirely natural inference for Dawkins, it is not a logically valid conclusion. It does not follow that since A has not been proved, A is false.

3.3. Reflecting on Dawkins and Lewis

Dawkins's emphasis on providing good reasons for what we believe is appreciable. But one can legitimately wondered, why do so many theoretical physicists love super-string theory – put forward by Edward Witten in 1995 –, when there is no evidence to support it and it makes absolutely no predictions? Many scientists regard it as pure fantasy and wish that colleagues enamoured of the theory would rediscover their experimental roots. (Roger PENROSE, 2017). Lewis is a good example of a religious thinker who sets out a reasoned case for faith.

Lewis, however, is more cautious than Dawkins at this point, emphasizing that philosophical and existential attempts to make sense of our world and our lives lack the precision of mathematics and logic. We must make judgements about how well our world views fit with what we observe and experience. Lewis does not try to prove the existence of God on a priori grounds. Instead, he invites us to see how what we observe in the world around us and experience within us fits the Christian way of seeing things, almost as if we were trying on a hat or coat.

So how do Dawkins and Lewis cope with things that do not seem to fit their world views? In Dawkins's case, the stand-out inconsistency within his scientific atheism is the existence of so many people who believe in a God or gods. While he offers a Darwinian debunking argument against such belief, his dominant strategy – especially in The God Delusion – is to assert the idiocy of religious

believers, who are dismissed as deluded or perhaps even mentally ill. Believing in God is just like believing in the Tooth Fairy or Santa Claus – an infantile illusion that is abandoned when one grows up. Religious people, however, remain locked within a childish mentality, their intellectual growth stunted and impaired.

On the other hand, at Lewis, the most obvious inconsistency would seem to be the existence of suffering. He was aware of this concern and addressed it in two of his works: The Problem of Pain (1940) and A Grief Observed (1961). Though his case is not intellectually watertight, there is no doubt that he takes the force of such concerns seriously, leading him to show how an incarnational faith can accommodate the existence of suffering and even offer a way of coping with its trauma. (Ann LOADES, 1989, 269-276).

Many people hold social, political, ethical and religious beliefs that go beyond the available evidence but help us work out what is good and how we ought to live. We may note three examples of influential and important beliefs that cannot be proved true:

1. There is no God.
2. There is a God.
3. Democracy is the best form of government.

Each of these views commands some degree of support in today's com-plex and multifaceted world. But none of them can be proved to be true. If we followed Dawkins's criteria and accepted only those beliefs that can be proved to be right, we would have to turn our backs on all three of these beliefs – and many others drawn from the worlds of religion, ethics and politics. But we don't used to it. Why not? Because we realize that things are a lot more complicated than Dawkins allows. You can prove shallow truths such as 2 + 2 = 4. But our really significant beliefs lie beyond proof, and we have to learn to live with this. It is interesting to note how often Dawkins's New Atheist colleague Christopher Hitchens makes criticisms of theism that often rest on unproved moral values.

The moral values, like theism itself, turn out to be unproved and unprovable. This problem is widely recognized. Bertrand Russell, for example, self-defined as an atheist, was in fact an agnostic, who knew that the question of whether God existed could not be proved one way or the other. (Bertrand RUSSELL,1960), 20). His atheism was basically a lifestyle choice, a decision to live and act in a certain way, knowing it ultimately involved an act of faith. Dawkins describes this position as 'de facto atheism' and summarizes it as follows:

'I cannot know for certain but I think God is very improbable, and I live my life on the assumption that he is not there.' (DAWKINS, 2006, 50-51).

Dawkins sets out rational and evidential criteria by which he chastises religious beliefs. So, the inherent or ineluctable question is: why does he not apply those same criteria to his own beliefs? This rational asymmetry represents a significant vulnerability within the New Atheist movement as a whole and has often been challenged by its critics. Dawkins is haunted by the fear that his own committed form of atheism cannot be sustained in the light of the criteria of rationality he uses in his criticism of religion. These criteria can too easily be turned against him by his critics.

Judge yourself by the standards by which you judge others! At times Dawkins comes close to facing up to this major difficulty with his approach. In a debate with Rowan Williams, hosted by Oxford University (in February 2012. https://podcasts.ox.ac.uk/nature-human-beings-and-question-their-ultimate-origin),Dawkins was perfectly clear about this point: he could not prove there was no God. In a sense, he was therefore an agnostic.

C.S. Lewis similarly recognizes the limits placed on the human quest for certainty. He saw God as the best way of making sense of our world and inhabiting it meaningfully. But he also knew this belief could not be proved in the way someone could ¬provide, say, mathematical proofs of Fermat's last theorem.

Religion is often framed solely in terms of beliefs about God, overlooking its equally significant beliefs about the dignity and destiny of human beings. Faith is not simply a set of doctrines about the transcendent but a set of commitments about how we understand and respond to our fellow human beings. Anyway, is religion really just about ideas? What about the practices, attitudes and values entangled with religious beliefs?

Dawkins and Lewis, in their different ways, help Christians reflect on the nature of faith. Dawkins often overstates his concerns, and by doing so limits his appeal to the more uncrit¬ical fringes of

atheism. Faith, he suggests, is: 'blind trust, in the absence of evidence, even in the teeth of evidence'; (DAWKINS, 1989, 198) a 'process of non-thinking'; 'evil precisely because it requires no justification and brooks no argument'. (DAWKINS, 2006, p. 308). One cannot help but feel that Dawkins really ought to read more Christian writers before making such muddled overstatements about something he does not understand.

Lewis has concerns as well. One of the more important relates to an over-emphasis on rational arguments for faith. As a result, some Christians are preoccupied with showing the truth of their faith, often echoing the 'glib and shallow ration¬alism' of their critics, and thus fail to bring out its important emphasis on meaning and its capacity to transform life. Lewis holds that stories are a far better way both to explore the reasonableness of the Christian faith, and to express Christianity's capacity to transform life. (Gilbert MEILAENDER, 1981, 222–230). Faith is not about evading human reason; it is about recognizing and transcending its limits rather than remaining trapped within the austere 'iron cage' of rationalism (Max Weber). But ultimately, the biggest question that separates Dawkins and Lewis is whether there is a God.

4. IS THERE A GOD?

The major question is that concerning the belief in God; how reasonable is this? Both Dawkins and Lewis give this question extended discussion.

III.1. Dawkins: God as an unevidenced delusion

Dawkins takes the view that God is a good – perhaps the best – example of an unevidenced belief, a delusion. People believe in God because this belief has been hammered into them by aggressively religious families or schools, or because they have failed to think seriously about superior scientific understandings of the world, which make belief in God both unnecessary and implausible. No good reason can be given for believing in God. It is irrational for a modern person to believe in God, which must be seen as a throwback to an earlier pre-scientific age in which such beliefs seemed credible. (Richard DAWKINS, 2006, 111-59).

Christians take the view that believing in God helps us make sense of the world, offering a larger framework or big picture into which fits what we observe and experience. Dawkins argues that this involves adding an unobserved and intrinsically complicated entity – God – to the inventory of the universe. Science is about keeping things as simple as possible – which is one reason why Dawkins prefers atheism to Christianity. It seems a simpler and neater idea.

Now this seems a fair point. If someone is to decide which of several possible scientific explanations of an observation was the best, then, one criterion, unreservedly, is that of simplicity. The philosopher Richard Swinburne focuses on this and argues that theism is the most elegant and simple explanation of our world. (Richard SWINBURNE, 1997, 83). Some atheists argue that it is easier to believe in no God than in one God. Yet although some philosophers of science have argued that the simplest theory is always the best, the history of science just does not bear this out. (Hauke RIESCH, 2010, 75–90).

Yet Christians do not see God as a physical object within the universe, analogous to a new moon orbiting the planet Neptune. God is rather the ground and cause of all things, who stands behind and beyond the universe, while also choosing to self-disclose in human form. As William Inge (1860-1954) pointed out, rationalists try to 'find a place for God' in the world. Christians, however, think of God not as part of a painting or diagram but rather as 'the canvas on which the picture is painted, or the frame in which it is set'. (William Ralph INGE, 1910, p. 197).

Dawkins, however, has another point to make that needs to be taken very seriously, namely the moral character of God. God, for Dawkins, is intellectually superfluous and morally repugnant. God is a tyrant, an oppressor who imprisons humanity within a constricted and constraining intellectual strait¬jacket. The God Delusion speaks eloquently of a 'nasty god' who 'stalks every page of the Old Testament'. This god is elsewhere described as a 'psychotic delinquent' and a 'cruel ogre (DAWKINS, 2006, 108). Some might see this as a prejudicial stereotyping of Judaism; others, however, would see Dawkins's focus on the Old Testament as a necessary tactic to discredit any form of monotheism, given the New Testament's rather attractive emphasis on divine love and compassion.

Scholars of the Old Testament fault Dawkins for his wooden and uncomprehending reading of this text, particularly his failure to do justice to the complexity of its vision of God,(Katharine DELL, 2017) or to realize that Christians interpret the Old Testament in the light of Jesus Christ, seen as the fulfilment of Law and prophets. This is one of the reasons why so many have criticized Dawkins for ridi¬culing a concept of God that seems to bear little relation to the Christian God – an idealized (or demonized?) invention designed with the needs of atheist apologetics in mind, playing on dark cultural suspicions of religion and exploiting a diminishing general knowledge of Christian beliefs and practices.

III.2. C. S. Lewis: God as the heart's desire

Lewis's transition from atheism to Christianity proceeded in stages. Initially he realized that the concept of God offered both an explanation and a confirmation of human moral values. Yet this essentially philosophical idea of God gave way to the notion of God as a living reality – someone we could know, not just know about. Lewis thus came to see God as the source and goal of human longing. His grounds for believing in God were not that this would make him a happier human being but because the Christian vision of God was true and trustworthy and brought joy and fulfilment in its wake.

For Lewis, God is neither an object within our universe nor a mere abstract philosophical idea. Although our quest may begin with rational arguments or take these in along the way, the goal of that quest is a personal reality:

[The existence of God] is a speculative question as long as it is a question at all. But once it has been answered in the affirmative, you get quite a new situation. You are no longer faced with an argument which demands your assent, but with a Person who demands your confidence. (C.S. LEWIS, ed. Lesley Walmsley, 2000, 213-214).

The point Lewis is making is that religious belief is grounded on rational norms that are not the same as those governing scientific theories. The former are governed by the 'logic of personal relations', the latter by the 'logic of speculative thought'. To have faith in God is not primarily to give intellectual assent to an idea, but to step into a greater picture of our world and become part of it.

'Each of us has got to enter that pattern, take his place in that dance (God seen by him in terms of dance). There is no other way to the happiness for which we are made.'(LEWIS, 2016, p. 176).

But which God are we talking about? Lewis is quite clear about this: it is the God made known and available through Jesus Christ, whose significance is to be grasped through both reason and the imagination. Belief in this God allows us to make sense of our world, so that we see it truly; yet it is also about the discernment of what we and our universe mean and how this informs the way we live. For Lewis, 'reason is the natural organ of truth; but imagination is the organ of meaning'. (C. S. LEWIS, ed. Walter Hooper, 1969; repr. 2013, 265).

Like a scientist, Lewis aimed to evaluate the reliability of his beliefs by checking them out against observations. This helps us understand why he called himself an 'empirical theist': he assessed Christianity – especially its understanding of God – by asking how well this 'fits in' with what he experienced. (Readers of Mere Christianity will be familiar with his reflections on the human sense of moral responsibility, and the deep and elusive sense of yearning – which he termed 'joy' – that was such an integral part of his world of experience.).

Yet Lewis's approach to belief in God raises questions. One of the most obvious is this: he does not establish the existence of God by evidence-based reasoning. His approach seems rather to be assessing the Christian idea of God by seeing how well it makes sense of experience. But surely, he should prove the existence of God on the basis of the evidence? It is an important question, but not easily answered. Lewis seems to have adopted a binary solution during the late 1920s: either a recovery of belief in God or a confirmation and consolidation of his atheism. His was thus a comparative judgement, in which he set two already familiar positions side by side, considering how well they 'conveyed' or rendered actual human experience.

It is interesting to set Lewis alongside Dawkins at this point. As we already noted, for Dawkins's view – that the universe has neither design nor purpose, we need to look at this passage more closely and note the method he uses in drawing this conclusion:

'The universe we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil and no good, nothing but blind pitiless ¬indifference.' (Richard DAWKINS, 1995, 133).

Dawkins here argues that there is a congruence or convergence of our actual observations of the universe and what we would expect if it is devoid of any intrinsic purpose, meaning or value.

Although Dawkins and Lewis reach quite different conclusions, their lines of argument are surprisingly similar. Each is asking which way of thinking seems to fit in better with our observations. The question is resonance or consonance between theory and observation, not proof of theory by observation. In the end, these two thinkers reach different judgements about God, yet by similar intellectual trajectories; neither of their positions is proved or provable. Sometimes the best theory is complicated and needs to be judged by its empirical adequacy; in other words, its ability to make sense of what we observe and experience. And Alister McGrath notes down: 'That's one of the main reasons why I moved away from atheism to Christianity. It seemed to me that atheism didn't really help me make sense of the complexities of our world or human experience, whereas Christianity did. (In Richard DAWKINS, 2019, 51-52).

5. CONCLUSION

Perhaps one obvious conclusion is that both Dawkins and Lewis are men of faith, in that both hold committed positions that cannot be proved right but which they clearly regard as justified and reasonable. We have to learn to live with a degree of rational uncertainty about our deepest beliefs and values.

To his critics, Dawkins's views on faith and proof seem to be philosophically thin, characterized by a narrow account of the capacity of human beings to know what really matters and live out their lives on its basis. It is instructive to compare Dawkins's shallow account of proof with the more realistic reflections of poets such as Alfred, Lord Tennyson (1809-1892). His poem 'The Ancient Sage' provides a concise summary of the dilemma of human beings as they try to make sense of our world and live meaningfully within it: 'For nothing worthy proving can be proven, / Nor yet disproven.'(Howard W. FULWEILER, 1983, 203-216).

In terms of their intellectual precariousness, both atheism and Christianity reflect the epistemic limits of human beings, who show a tendency to want to believe more – whether that belief is religious or secular – than the evidence actually warrants.

We find that setting Lewis and Dawkins side by side illuminates both the human condition and the inevitability of some form of faith in living a meaningful life. Yet many would suggest that the existence of suffering calls into question whether life can be said to be 'meaningful' in any sense of the word.

A similar theme is found in The God Delusion, where Dawkins clearly believes there is no intellectual case for the existence of any kind of God; he is severely critical of the moral character of the Old Testament's deity:

'The God of the Old Testament is arguably the most unpleasant character in all fiction: jealous and proud of it; a petty, unjust, unforgiving control-freak; a vindictive, bloodthirsty ethnic cleanser; a misogynistic, homophobic, racist, infanticidal, genocidal, megalomaniacal, sadomasochistic, capriciously malevolent bully.' (R. DAWKINS, 2006, 31).

This uncomfortable outpouring of contempt is illuminating, for it indicates that we cannot separate the question of 'belief in God' from that of 'What God are we talking about?'

Christopher Hitchens, Dawkins's fellow New Atheist, points out that from an atheist perspective, human beings create a God who is like them: 'God did not create man in his own image. Evidently, it was the other way about.' (Christopher HITCHENS, 2007, 8). Both God and religions must be recognized as 'man-made'. Human religion illuminates human nature. This issue is central to the writings of the German atheist philosopher Ludwig Feuerbach, who influenced both Karl Marx and Sigmund Freud. In his Essence of Christianity (1841), Feuerbach argued that human beings invent gods, and in so doing disclose their true natures, aspirations and fears. The study of religion thus offers a way of understanding human nature. (Josef WINIGER, 2004).

If, as Dawkins asserts, God is a 'bloodthirsty ethnic cleanser', what does that say about the people who invented this God? Dawkins doesn't seem to have grasped the significance of this question.

Within an atheist perspective, a repulsive deity is the mirror image of the repulsive human beings who invented this idea of God. So what does this tell us about human nature? Given the human moral fiascos of the 20th century, few would now echo the naive moral optimism of the Victorian atheist

poet Algernon C. Swinburne († 1909): 'Glory to Man in the highest! for Man is the master of things.' (Algernon Charles SWINBURNE, 1871, 124). The sheer irrationality of the two total wars of the twentieth century reduced many – such as Bertrand Russell – to despair:

'Man is a rational animal – so at least I have been told. Throughout a long life, I have looked diligently for evidence in favor of this statement, but so far I have not had the good fortune to come across it.' (Bertrand RUSSELL, 1996, 82).

These lines of thought move us away from the question of God to the perhaps more troubling one of human nature. Why troub¬ling? Because any good theory of human nature is like a mirror: it shows us how we really are rather than how we would like to be.

The great questions of life remain debated and discussed precisely because they are so important and because they transcend the evidential and rational capacities of human beings. We ought to know how we and our universe work; yet we also need to know what they mean. For Lewis, the Christian narrative allows us to hold together the functionality and meaning of our universe.

But how can we meet Dawkins's demand to show that our beliefs are justified, like those of the natural sciences? Or Lewis's concern that we do not limit ourselves to what the natural sciences can disclose? For Lewis, 'reason is the natural organ of truth; but imagination is the organ of meaning'– and we need both if we are to find our way to something both true and trustworthy on the one hand, yet capable of helping us find meaning on the other.

**

I want to have a final look to a personal history that highlights the main points of our paper. Paul Kalanithi (1977–2015) was a promising neurosurgeon who died of metastatic lung cancer at the age of 37 (before he could ever practice as a fully qualified surgeon). Once he knew he was dying, Kalanithi reflected hard on the meaning of life, the importance of the practice of medicine and the place of science in human culture. His bestselling book, When Breath Becomes Air, was written during his final illness and published posthumously.

Kalanithi loved science but found that it failed to engage with some of the questions that both really mattered to him and increased in importance as his illness progressed:

Science may provide the most useful way to organize empirical, reproducible data, but its power to do so is predicated on its inability to grasp the most central aspects of human life: hope, fear, love, hate, beauty, envy, honor, weakness, striving, suffering, virtue. (Paul KALANITHI, 2017, 170).

Literature, however, illuminated experience, providing a way of confronting the 'messiness and weight of real human life'. Kalanithi found writers such as T. S. Eliot helpful in exploring life's more complex questions, where other approaches were as 'dry as a bone'.

Science, he argues, is not really about explanation but about reducing phenomena into manageable units. By its very nature it cannot engage with the 'existential, visceral nature of human life, which is unique and subjective' (Paul KALANITHI, 2017, 170). There is nothing wrong with science; it is simply that its answers are important in some areas of life but not in others. To deal with the complexity of life we need more than science.

As a neurosurgeon, Kalanithi clearly affirms the importance of the natural sciences as a way of understanding how our world works, and as a means of developing new approaches to diagnosis and therapy. Yet he refuses to exalt science into a world view that establishes meaning and value. Those must come from other sources. He nods here in the directions of both Dawkins and Lewis, even if his more significant inspiration comes from the position represented by Lewis.

BIBLIOGRAPHY:

[1] DAWKINS. Richard. *The God Delusion* (London: Bantam, 2006).
[2] ———. *A Devil's Chaplain* (London: Weidenfeld & Nicholson, 2003).
[3] ———. *An Appetite for Wonder* (London: Bantam, 2013).
[4] ———. *River out of Eden: A Darwinian View of Life* (London: Phoenix, 1995).
[5] ———. 'Universal Darwinism'. in D.S. BENDALL (ed.), *Evolution: From Molecules to Men* (Cambridge: Cambridge University Press. 1983.
[6] DELL. Katharine. *Who Needs the Old Testament? Its Enduring Appeal and Why the New Atheists Don't Get It* (London: SPCK, 2017.
[7] FULWEILER. Howard W. 'The Argument of "The Ancient Sage": Tennyson and the Christian Intellectual Tradition', *Victorian Poetry* 21:3 (1983).
[8] HARRIS. Sam. *The Moral Landscape* (London: Bantam, 2010).
[9] HARRISON. Peter. *The Territories of Science and Religion* (Chicago: University of Chicago Press. 2015).
[10] HICKS. Joshua A. and KING. Laura. 'A Meaning in Life and Seeing the Big Picture'. *Cognition and Emotion* 21:7 (2007).
[11] HITCHENS. Christopher. *God Is Not Great: How Religion Poisons Everything* (New York: Twelve, 2007.
[12] INGE. William Ralph. *Faith and Its Psychology* (New York: Charles Scribner's Sons, 1910.
[13] KALANITHI, Paul, *When Breath Becomes Air* (London: Vintage Books, 2017).
[14] LEWIS. C. S., *Mere Christianity* (London: HarperCollins, 2016).
[15]———. ed. Lesley WALMSLEY, *Essay Collection: Faith, Christianity and the Church* (London: Collins, 2000).
[16]———. *Surprised by Joy* (London: HarperCollins, 2002).
[17]———. *The Problem of Pain* (London: Centenary Press, 1940).
[18]———. *A Grief Observed* (London: Faber & Faber, 1961).
[19]———. ed. Walter Hooper, *Selected Literary Essays* (Cambridge: Cambridge University Press, 1969; repr. 2013.
[20] LOADES. Ann. 'The Grief of C. S. Lewis', *Theology Today* 46:3 (1989).
[21] MAYNARD SMITH. John. 'Science and Myth', *Natural History* 93:11 (1984).
[22] MCGRATH. Alister. *Richard Dawkins, C.S. Lewis and the Meaning of life*, Printed in Great Britain (London: Society for Promoting Christian Knowledge, 2019).
[23]———. *Mere Discipleship: On Growing in Wisdom and Hope* (London: SPCK, 2018).
[24]———. *The Intellectual World of C. S. Lewis* (Oxford: Wiley-Blackwell, 2013).
[25]———. 'The Rationality of Faith: How Does Christianity Make Sense of Things?', *Philosophia Christi* 18:2 (2016).
[26] MEILAENDE. Gilbert. 'Theology in Stories: C. S. Lewis and the Narrative Quality of Experience', *Word and World* 1:3 (1981).
[27] PENROSE. Roger. *Fashion, Faith, and Fantasy in the New Physics of the Universe* (Princeton, NJ: Princeton University Press, 2017).
[28] RIESCH. Hauke. 'Simple or Simplistic? Scientists' Views on Occam's Razor', *Theoria* 25:1 (2010).
[29] RUSSELL. Bertrand. *Bertrand Russell Speaks his Mind* (London: Barker, 1960).
[30]———. *Essays in Skepticism* (New York: Philosophical Library, 1963).
[31]———. *Unpopular Essays* (New York: Routledge, 1996).
[32] SCHLOSSHAUER. Maximilian, KOFLER. Johannes and ZEILINGER, Anton. 'A Snapshot of Foundational Attitudes toward Quantum Mechanics'. *Studies in the History and Philosophy of Modern Physics* 44:3 (2013).

[33] SWINBURNE. Richard. *Simplicity as Evidence for Truth* (Milwaukee, WI: Marquette University Press, 1997).

[34] TOLKIEN. J.R.R., *Tree and Leaf* (London: HarperCollins, 2001).

[35] WARD. Michael. 'The Good Serves the Better and Both the Best: C.S. Lewis on Imagination and Reason in Apologetics', in Andrew DAVISON (ed.), *Imaginative Apologetics: Theology, Philosophy and the Catholic Tradition* (London: SCM Press, 2011).

[36] WINIGER. Josef. *Ludwig Feuerbach: Denker der Menschlichkeit: Eine Biographie* (Berlin: Aufbau Taschenbuch Verlag, 2004.

[37] YANDELL. Keith. *Philosophy of Religion: A Contemporary Introduction* (London: Routledge, 1999).

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2021, e-ISSN: 2601-8403
p-ISSN 2601-839X

https://doi.org/10.26520/mcdsare.2021.5.80-84

MCDSARE: 2021
International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

THE CONCEPT OF THE SOUL IN PLATO AND IN PATRISTIC THOUGHT

Bugiulescu Marin (a)*
(a) Professor, PhD., Member of Dumitru Stăniloae Scientific and Interdisciplinary Research Center, Valahia University, Târgovişte, Romania. Email: m_bugiulescu@yahoo.com

Abstract
This article is focuses on Plato's conception of the soul, through which man as a psycho-physical being, lives with the perspective of immortality. The pre-existence and immortality of the soul is in fact the basis of Platonic philosophy. Plato presents the existence of the soul in the Phaidon Dialogue starting from the hypothesis that something called the soul has existence in the form of pre-existence and post-existence and has an intelligible nature, similar to the structure of Eidos (Ideas). The second part of the research considers the transition from ontology to metaphysics, focused on a different perspective given the patristic thinking in which man is created in his divine image, as a personal being composed of body and soul, a synthesis of the intelligible world with the material.
Keywords: soul; perfection; body; Plato; Christianity;

1. INTRODUCTION
From the epistemological point of view, the concept of the soul is part of a problem that philosophical research has sought to deepen, subordinating the problem of the soul to metaphysics. Thus, certain directions were issued, more or less universal, and in the space of patristic thinking the problem of the soul is a theologian. Philosophers have associated the soul as a form / essence of their existence with transcendental life. If the body comes by birth from the parents' bodies, having a common part (genetic), but also its own (DNA, physiognomy, etc.), the soul has its own metaphysical essence that induces the life that leads the body. The patristic shows that the soul individualizes the body it crosses without being through its structure touched and material (quantitative) body, and its presence implies the intellectual part of man, self-awareness and free will through which he perceives the biological body, but also the side emotional, sentimental and even mystical.

2. PURPOSE OF THE STUDY
This study aims to investigate the problem of the soul in Plato's philosophy, but also the relationship of similarity versus criticism of the specific contents of patristic thinking. The essential notions are the definition of the functions of the soul, delimited conceptually by the tripartite problem and by immortality. The core of Platonic conceptions, especially the ideational problem, is also developed by patristic thinking precisely through the possibility of a conscious occasion. The premise from which Plato

starts in the process of proving the existence of the soul in the Phaidon dialogue is that something called the soul has existence in the form of pre-existence and post-existence (in correlation with the argument of generating opposites, which shows that the soul existed before the body was born). Exists after his death and has an intelligible nature, similar to the structure of the eidos.

3. RESEARCH METHODS

The research objectives, the working hypotheses and the hierarchy / choice of the selective bibliography on the topic of the soul will be established. The problem of the soul is analyzed in Plato's philosophy through the relation with the metaphysical aspects in relation to the patristic thinking. I will demonstrate the immortality of the soul by dealing with the main arguments developed in the Phaidon dialogue, in order to state the ontology of Being. The main arguments presented in the Phaidon dialogue are: the argument of opposites (70c – 72a), the argument of re-memory (72e –76d), the argument of the affinity of the soul with Forms (78b – 80c) and the argument of indestructibility, which aims to prove the unity and simplicity of the soul (102b–107a), the argument of the self-moving soul (Phaedrus 245).

By using the methods of critical research, the dimensions of the soul will be highlighted: ontological, phenomenological and existential, - analyzing analytically the works of Plato, of the philosophers, but also some patristic works. These will strengthen the theory of the parts of the soul, in accordance with Plato's philosophy and the resized form of patristic thinking.

4. FINDINGS

The problem of the soul in Plato's philosophy is correlated with the ontology known by the conception or theory of Ideas. The term Idea (gr. idea) represents the prototype or paradigm (gr. paradigm) of sensitive and contingent things. Ideas in the first aspect, for Plato, represent the absolute, metaphysical reality in comparison with the idea (the term that designates people's ideas), the products of the activity of theoretical reflection. In Romanian, the Greek eidos / idea is translated by form or essence, also defined as the theory of forms. For Plato, the real is only the world of Ideas, the world of eternal prototypes, made up of pure Essences or Forms. Plato, in the Phaidon dialogue, argues that the soul is immortal, because the idea is immortal. The existence of the soul, as well as the participation in ideas, comes in continuation of the ontology, explaining the multiplicity of the sensitive world. Plato's ideas are not simple mental concepts, but ontologically distinct entities in the World of Ideas, but at the same time represented under the sign of the Intelligible. If the soul did not exist before it entered the body, Plato could no longer develop the idea of knowledge by remembrance. In Plato's philosophy, the soul pre-exists the body and is configured in three parts: one rational, opposite to the other two, the sensual and the passionate. The conception of the soul is presented by Plato in general in the Phaidon dialogue, but also in some parts of the Phaidros dialogue and in the Republic.

In the dialogue Phaidon or On the Soul Plato conceives the need to demonstrate the immortality of the soul in the context of the death of Socrates. The fear of death is clarified by arguing that philosophy is the preparation for understanding this moment. Socrates, provoked by his companions, Criton, Cebes and Simmias, seeks arguments for both the pre-existence of the soul and its existence after the death of the body, considering that the two concepts do not overlap: “if, after the death of men, their souls, whether or not they exist. There is an old tradition, of which I have already mentioned, according to which they exist there, arrived from here, and also that they return here, in this world, and are born from the dead” (Plato, Phaidon, 70a- 77a).

Plato builds part of Phaidros' argument on the myth of the ontology of the soul. The soul is symbolized by the allegory of the visit and the chariot to which two good horses are harnessed (in the case of the gods), or a good horse and a bad horse (in the case of men): and endowed with wings, winged carriage and on his visit. When it comes to gods, both horses and visitors are all good and noble; but in other cases, their way of being is mixed" (Plato, Phaidros, 246a-b). In the Platonic conception, the world is the most beautiful work of pure Intelligence, of the absolute Good. The demiurge is the creator of the soul of the world, which is prior to the universal material body, which it must animate.

In Plato's view, the fall of human souls is argued by the fact that men are mortal and the gods immortal: the state of death, does it not necessarily have to exist even after death since it is to be born again?” (Plato, Phaidon, 77b).

Plato describes divinity as having body and soul. In this case, it is not the body that is to blame for imperfection, but mortality. Human souls, before they fell, possessed a god-like body. The part of the soul: the horse with the habit, led to the fall from the pure state. This is a significant change from Plato's original conception that the sentient world, the body, is a prison for the soul, representing all that is evil, imperfect, while the soul, the intelligible world in general, is perfect, good. The soul approaches Ideas, as it participates in them as life, truth, reason, justice, beauty and good, but it is not itself an idea. The nature of the soul can only be known through symbols.

Phaidon is dedicated almost entirely to the immortality of the soul and is structured as a series of arguments, which critics share as follows:

1. The argument of opposites 70a – 72e

Everything that has an opposite comes into existence precisely from this opposite; coldness from heat, weakness from strength, sleep from wakefulness. In each pair of opposites there must always be a process of transformation, as is the case with death versus life: “if the mutual becoming of opposites of each other would not take place as in a circular motion, but the process would take place, rectilinear and irreversible, only in one direction, then ... in the end all things would freeze in the same state, subject to the same condition, and any generative process would cease. ”Life and death are the opposite, and the process of one of them, namely, death is obvious to us. We could deduce that there is a second process by which living things have their origin in death. This conclusion must be drawn in the sense that "the souls of the dead must be somewhere from where they can return to life”.

2. The argument of re-memory 73a – 77e

Man's ability to give abstract answers shows that we possess a type of knowledge (of Forms, as they exist) that must be received before birth because "souls existed apart from the body before they took human form." ”. This argument of remembrance highlights the idea of the pre-existence of the soul, but also its immortality.

3. The argument of similarity 78b – 84b

The argument of similarity shows not only that the soul resembles the intelligible, immortal being, but also that it is somewhat of the same essence-idea. The soul is like an intelligible being because it is not visible and generally not perceptible (79b) so it has the power to lead. Forms, or universals and particulars, differ structurally: forms are invisible, unchanging, uniform, and eternal, while particulars are visible, changeable, compound, and perishable. The human soul is invisible, and explores Forms without the aid of the bodily senses. Thus the soul is ”more divine, immortal, intelligible, uniform and indissoluble”. The assertion that the soul is related to intelligible reality is thus based on the idea that intelligible reality is especially suited to the soul, so as to attain its most advanced and optimal state, wisdom.

The argument of Republic X (611) in favor of the immortality of the soul from the perspective of the indivisible nature of the soul is based on the similarity that recalls its uniformity and simplicity. To the body the soul is a simple, indivisible entity, it is, therefore, immortal.

In Phaedros Plato argues the immortality of the soul starting from its essence as a self-mover; he acts as the ultimate source of the motion of all things, for they can have no beginning or end in themselves: “all that is soul is immortal. Indeed, what moves by itself is immortal” (245). The conception of the soul is bound by the mind to the body. In his argument Socrates attributes a wide variety of psychological states that the soul feels, for example, pleasures (83d), desires, fears (94d). At the same time, the soul is not intellectually limited: it also has desires (81d), even passionate ones (such as eros 80b), but also pleasures, of learning (114e).

In patristic thinking, the soul created by God is presented as the reality (essence) of life, which leads the body with which it forms a unity. It has the quality of being untouched and incomprehensible material (quantitative), endowed with reason, self-awareness and free will, immortal by divine grace, immaterial, unique and unitary, indelible and unrepeatable, which through its faculties offers and directs human nature to spirituality.

Three opinions have emerged regarding the origin of the soul, namely: pre-existentialism, traducianism and creationism. Pre-existence (Origen / Plato) claims that human souls were created all at once, at first and, sinning in the state of pre-existence were then placed in bodies, to punishment, and then, through the suffering endured in the body, to be purified. Traditionalism claims that the soul of the descendants comes from the souls of the parents, like the seedlings of plants. This view is countered by

the nature and spirituality of the soul which cannot be divided or hybridized. Creationism holds that the soul is a direct creation that comes from God, not from parents. This affirms the distinction of the soul as a special principle of the body. The soul is brought into existence with the body.

Arguing the functions of the soul exercised together with the body by the whole human person is the key concept of research. Even if he speaks of pre-existence and reincarnation, Plato conceptually expresses the tripartite reality of the soul (1 rational part, which leads, represented analogically and symbolically by the visit, 2. the passionate part, by the good horse, 3. the appetizing part, by the bad horse). The same tripartite conception of the soul is found in the Republic, politically based. The soul is like a city, in which there are several social categories, but which are reduced to three: the rulers - philosophers, lords and sages of the city to whom corresponds the rational part of the soul (nous or logos), the military - to take care in at the same time by the good running of the city, and the people - which should include all the others, each fulfilling his providential order, the appetizing, inviting element of the soul corresponds to them (Plato, Republic, 433b).

Without supporting pre-existence and reincarnation, the soul in patristic thinking has three main faculties: the mind (nous), which is the generator of acts of knowledge and contemplation; lust (Gr. epithymia / lust, as the potency of all desires, which is related to the will); and anger, impulsivity. Lust and anger direct the soul to the body. In unison, patristic accentuates the understanding upper part of the soul, nous (mind), through which man holds the gnomic power either directly or intuitively, after a liberation from all material representations and images, through the reality of uncreated divine energies or grace. "As in a whistle the breath makes sounds according to the width of the whistle, so also the soul, appearing helplessly in a limp body, is shown once the body is strengthened, and then discovers all its intelligence" (Gregory the Theologian, 2009, p.103).

Patristic thinking rejects the Platonic idea of the preexistence of the soul and the mind, but considers that the two powers (lust and irascibility - the irrational part) are in relation to the mind (the new rational) although they differ. “So the soul has three parts (for there are three parts to it: reason, haste, and lust), if in haste there is love and love of men, and in lust, purity, and righteousness, reason is enlightened; and if in haste there is hatred of men and lust in fornication, reason is dark”. Understanding is the organ of the intellect (nous), of the place where his divine face is conceived in man, while through the other two irrational faculties, related to the body, the soul has an organ through which it enters the sensitive material world, through which it perceives the body.

Man is created out of love and begins from somewhere and sometimes, as a unique, individual subject, as a conscious, free and rational personal being. "And God said, Let us make man in our image, after our likeness; and let us have dominion over the fish of the sea ... and over all the earth" (Genesis 1:27). Of all creatures, only man has been specially created by God. Thus, first of all, man is a being who cannot be defined in an exhaustive way because he bears the image of the One who cannot be defined; and second, the Holy Fathers manifested a profoundly creative and innovative freedom of thought and interpretation of biblical texts. Man is not the result of a divine commandment, as God created all other beings, things, and universes because - in the sense of evolving matter - he was not able to produce a being endowed with reason, freedom, conscience, and will.

God, through His great power and love, created man in the image of divine glory and gave him as his goal the likeness to which he must reach by his own will. Analyzing the scriptural text, we observe the distinction between the singular “and said” and the plural “Let us do”, man (singular), according to our image and resemblance (singular) (plural); and we come to the conclusion that man is a subject of the image modeled on ”the invisible God” (Colossians 1:15). Then, the Holy Scripture tells us how God created woman precisely to elucidate the ontological data of the divine image: ”And God made man in his own image, in the image of God made the man and woman” (Genesis 1:27). The distinction between man and woman has nothing to do with the ontological and indelible data of the image of God in man, because God is not divided into genders (male and female) so His image extends over all human nature. The book of Genesis 2: 7 tells how God created man: ”Then the Lord God took the dust of the earth, and made it man's breath, and breathed into his nostrils the breath of life.” What is important is not the material, procedural act, but the fact that human nature was constituted dually in body and soul, through the breath of life of divine grace: guide and traverse the whole creature” (Grigorie de Nyssa, 1998, 34). The Greek translation *psihe* - *soul*, of the Hebrew *nephesch* has several meanings and would mean, in general, everything that is alive, even animals, but nevertheless the philosophical definition of man as a rational

animal is not justified - because the spiritual nature of man is not based on body, soul and reason, but on the quality of person.

Man is the central being of creation, the material and spiritual axis of the world. Patristic theology bases the teaching on man on his quality as the image of God (the ontological data) and the resemblance to God defined as perfection, through the state of holiness as the fulfillment of man and man. Thus, man is not only a part of the world, but also its synthesis, able to contemplate and determine it.

5. CONCLUSION

The immortality of the soul is existential, ontological and not existential, phenomenological; therefore death is not an absolute end of being, but a transition to another form of existence, in which the soul, as a conscious identity of being, continues to exist in two eternal realities. The three faculties of the soul relate to each other and influence each other. Thus, according to the order of creation, lust yearns for good, for virtue, while irascibility fights for it by resisting evil with energy.

Philosophy presents man as a rational being, autonomous and capable of self-control, both at the personal level, through the discipline of instincts, and at the interpersonal level, through social laws. In the coordinates of modern thought, the description of human nature, in terms of knowledge, has focused only on the powers of the human mind due to the autonomy of science and technology that claim to explain everything that exists. In general, man is defined as the most evolved being, who has reached this state due to the instinct of self-preservation or through the struggle for survival.

BIBLIOGRAPHY:

[1] Muscă, Vasile, *Introducere în filosofia lui Platon*, (*Introduction to Plato's philosophy*), Bucureşti, 2002.
[2] Platon, *Phaidon*, Traducere de Petru Creţia, Humanitas, Bucureşti, 2011.
[3] Platon, *Phaidros*, în Opere complete II, Humanitas, Bucureşti, 2002.
[4] Platon, *Republica*, Opere V, EDP, Bucureşti, 1986.
[5] Grigorie, Teologul, *Despre suflet* (About the Soul), Cartea Ortodoxă, Bucharest, 2009.
[6] Sfântul Ioan Damaschin, *Cuvânt minunat şi de suflet folositor*, (Wonderful word and useful soul), în *Filocalia*, vol. IV, Humanitas, Bucureşti, 2000.
[7] Ioan Damaschin, *Dogmatica*, EIBMBOR, Bucureşti, 2001.
[8] Grigore de Nyssa, *Marele Cuvânt Catehetic*, (The Great Catechetical Oration) trad. Grigore Teodorescu, Sofia, Bucureşti 1998.

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2020, e-ISSN: 2601-8403
p-ISSN 2601-839X

https://doi.org/10.26520/mcdsare.2021.5.85-89

MCDSARE: 2021
International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

THE SITUATION OF THE ORTHODOX CHURCH IN NORTHERN BUKOVINA DURING ALIENATION FROM ITS MOTHERLAND, BY THE AUSTRO-HUNGARIAN EMPIRE

Costel-Mirel Nechita (a)*
(a) Sanctus Choirmaster of the Metropolitan Cathedral in Iasi, Phd Dr. and Univ. Lecturer at the Church Music Department of the Faculty of Orthodox Theology in Alba Iulia, Romania.
Email: costelmirelnechita@yahoo.com

Abstract
In 1775, the Austro-Hungarian Empire occupied Northern Bukovina, a wonderful land, sprinkled with towering mountains, covered with secular forests, rich grasslands and crystal-clear waters, and good householders and worthy people. The fate of this part of Romania was shared by other confreres, occupied by the same abusive empire: Transylvania in 1699, Banat and Oltenia in 1718. Thus, the occupied Romanians found themselves in a kind of forced diaspora, becoming neighbors of borders with their own brothers. The occupation was very oppressive, long-lasting and with disastrous consequences in all fields religious, social, and cultural, the occupier trying, and most of the time, succeeding in destroying the traditional local values and imposing its own. The phenomenon run slowly by the activity of enlightened hierarchs of the Church, as well as of some associations and institutions, which fought and defended themselves through culture, prevailing the musical culture, especially the choral one, which kept the Bukovinians closely united near the ancestral Church. Even if the Austro-Hungarian occupation brought certain benefits, it remains a black spot in bimillennial of the Romanian people.
Keywords: diaspora; occupation; resistance; tradition; local culture;

1. INTRODUCTION
Until 1775, Bukovina had a common history with Moldova, province which was broken by the Austro-Hungarian Empire, which was advancing, as like Russia, towards south-eastern Europe, targeting territories occupied or dominated by Turkey. Austrian diplomacy, decides to break from the ancient Romanian land the northern part of Moldova, as demonstrated by the letter addressed, on September 20, 1774, by Chancellor Kaunitz of Thugut, the Austrian minister in Constantinople: "As I have informed you, the imperial decision is to take under possession the well-known county of Moldova" (*** The Abduction of Bucovina as stated by authentic documents, Bucharest, 1875, p. 9), to create a direct link between Galitia and Transylvania.

On 1 October 1774, Tsarist troops evacuated the lands of Cernauti, Suceava and Campulung, then the Habsburg armies enter Moldova and occupy the northern part of it. On 7 May 1775, the Austro-Ottoman Convention was signed, in four points, by which was stating that north of Moldova, with its capital in Suceava and the grave of Stephen the Great, were part of the Habsburg Empire. (Nicolae Ciachir, From the History of Bukovina (1775-1944), Publishing House "Oscar Print", Bucharest, 1999, p. 41, from: Eudoxiu Hurmuzachi, Documents, VII, Bucharest, 1886, p. 277). The occupied territory equaled to 10,441 km2 and a population of 75,000 inhabitants, mostly romanians (P.S. Aurelian, Bucovina - economic description accompanied by a map, Bucharest, 1867, p. 15), including 225 villages and 3 cities: Cernauti, Siret and Suceava. With pain, the poet Mihai Eminescu, expressed at Putna the following words: “Extraordinary trespass, treacherous conspiracy, a business between a debauched woman and the Pashas from Byzantium, the sale of Bukovina will be an eternal stain... forever a pain for us. But we will not let this wound to close. With our own hands we will paint the icon of that time and the old strings, as much as we have left, we will refresh them in remembrance, so that our souls would not forget ...” (Mihai Eminescu, The Significance of the Putna Celebration, Bucharest, 1905. Excerpt from the speech given by Mihai Eminescu on the Putna celebrations from 1871, 400 years after his consecration).

In addition to Bukovina, the Habsburg Empire occupied other Romanian territories: Transylvania in 1699, Banat and Oltenia in 1718.

2. THE STATE OF THE CHURCH IN BUKOVINA DURINGTHE FOREIGN OCCUPATION

Until its stealing by the Austro-Hungarian Empire, Bukovina, as part of Moldova, had a well-configured and unitary church organization. From the occupation until 1918, when she returned to her homeland, she was pastored by several hierarchs, each with own merits and lacks, as we all have.

At the time of the occupation, Bishop Dosoftei Herescu (1750-1789) was pastoring the northern part of Bukovina, with the Bishopric of Radauti, "which included a number of villages beyond the Cordun, in Moldova". (Ion Nistor, History of the Church from Bukovina, “Septentrion” Publishing House, Radauţi, 2003, p. 1, from: Nicolae Iorga, History of the Romanian Church, Valenii de Munte, 1908, vol. I, p. 89). During his time, based on the imperial decision dated of 12 December 1781, signed by King Joseph II, the episcopal residence was moved from Radauti to Cernauti, where there was no episcopal residence or cathedral church. Between 1783-1786 the bishopric was subordinated to the Serbian Orthodox Metropolis of Carlowitz. (Ion Nistor, 2003, p. 3-4).

In 1786 enter into force the new Regulation for the organization of the Orthodox Church in Bukovina, by which the diocese was divided, the number of parishes decreasing from 247 to 186. This Regulation also reduced the number of monasteries and hermitages, decreasing from 20 to 4: Putna, Sucevita, Dragomirna and Saint John the New from Suceava (as a hermitage of Dragomirna Monastery). (Ioan Caproşu, Old Metropolitan Cathedral of Suceava, Publishing House of Moldova and Suceava, Iasi, 1980, p . 46). This fact also led to a gradual decrease in the Romanian population and the rise of the Ukrainian population, facilitating many emigrations of German, Ruthenian, Slovak, Polish population. The estates of the monasteries were secularized and transformed into a “church fund” which was going to serve for the culture raising, but as the administration of the fund was held by the emperor, through his representatives, it was not used for Romanian purposes. (Petre P. Panaitescu, History of Romanians, Publishing House Didactic and Pedagogic, Bucharest, 1990, pp. 314-315).

Bishop Daniil Vlahovici (1789-1822), a Serb of origin, ordained at Karlowitz, was a stranger to the country and the people of his parishioners, called to the hierarchy as emperor, without being asked by any of the Romanian leaders. Before becoming a bishop, he was called to Bukovina, as director of the new clerical School of St. Ilie near Suceava, although his savvy was like that of a “village priest”. (Ion Nistor, 2003, p. 29, from: S. Saghin, From the acts and documents regarding the Church history from Bukovina, in "Candela", XVI, 1897, p. 17).

As a bishop, he advised clerics to detach themselves from the people, establishing the principle of "bureaucracy" among clerics. At the same time, the ruthenian element was strengthened, and they gradually imposed their language in some churches, ritual books and even deacons and priests, a fault that falls largely on the negligence and lack of courage of Romanian priests.

Bishop Isaia Balosescu (1823-1834), came from an old Romanian family from Bukovina. During his pastorate, on 4 October 1827 in Cernauti were opened the courses of a theological Institute, following

the model of the Putna Academy, where Bishop Isaiah graduated his studies. However, if at the Putna Academy the courses are taught in Romanian, at the new Theological Institute no theological discipline is taught in Romanian language. (Ion Nistor, 2003, p. 40). The teachers were recruited from among the priests who had studied at the Catholic institutes in Vienna and Lemberg. (Mircea Pacurariu, History of the Romanian Orthodox Church, vol. III, Publishing House of the Biblical and Mission Institute of Romanian Orthodox Church, 1994, p. 182).

Under the pastorate of Bishop Eugenie Hacman (1835-1873) "missing the necessary qualities of a hierarch, the Ruthenian element became stronger, the state's involvement in the life of the diocese turn out to be even more sensed, and Romanian schools were placed under state authority". (Bogdan Mihai-Nichitean, Metropolitan Silvestru Morariu-Andrievici of Bucovina, Suceava, 1973, p. 15).

Between 1844 and 1864, the Cathedral from Cernauti was built, which was consecrated on 5 of July 1864, the next day the foundation of the metropolitan palace was laid, which will be finalized in 1882. Following the Revolution of 1848, the Romanians from Bukovina acquired administrative autonomy, a provincial diet, a state of its own, a flag and a Coat of Arms on which was represented the aurochs's head of Moldova:

Becoming a dukedom, from 1849, Bukovina was directly subordinated to the government of Vienna, remaining in this situation until 15/28 November 1918, when it was united with Romania. By the royal resolution dated 23 January 1873, the diocese of Bukovina is raised to the rank of Archdiocese and Metropolis of Bukovina and Dalmatia, thus stopping the possibility of unification of all Romanians in the empire.

Teoctist Blajevici (1877-1879) was elected metropolitan in 1877. He was previously rector of the Clerical Seminary in Chernauti, then abbot of Dragomirna Monastery, consistorial assessor, general vicar, and chair archimandrite. He was one of the Bukovinian scholars who, before 1848, was engaged with the writing. He is the author of several works of spiritual guidance and schoolbooks. During his reign, in 1885, the royal tombs at Putna were officially opened (Ion Nistor, 2003, p. 109-110).

Few months after the death of Metropolitan Teoctist, archimandrite Silvestru Morariu-Andrievici (1880-1895) was named in the metropolitan seat, "father of the didactic literature in Bukovina" with the merit of "awarding to the Romanian primary school in Bukovina with the first reading books" (Bogdan Mihai-Nichitean, 1973, p. 32, from: George Tofan, Education in Bukovina, vol. II, Suceava, 1995, p. 393). He was ordained bishop on 6/18 April 1889 and installed on 27 April/ 9 May 1880 in Cernauti Cathedral. Since this year until 1890, were established in villages 36 Romanian schools. By a circular order dated of 29 July /10 August 1881, Metropolitan Silvestru Morariu-Andrievici inspires parents to send their children to school. Moreover, to his suggestion is set up the music society "Harmony". In 1882, together with the professors of the Faculty of Theology from Cernauti, he inaugurated the magazine "Candle". The monumental metropolitan palace, started in 1864 by Bishop Eugenie Hacman, was completed in 1882 by Metropolitan Silvestru Morariu Andrievici. In 1883 he laid the foundations of a printing house even in his residence, printing here a large part of his works. Being truly a good Romanian, the Austrians placed a ruthenian vicar next to the metropolitan, looking for to gradually "rutheneize" the Orthodox diocese in Bukovina.

After Metropolitan Silvestru Morariu-Andrievici death, the metropolitan seat was entrusted to the old archimandrite and vicar general Arcadie Ciupercovici (1896-1901) who spoke Romanian, German and Ruthenian. He was abbot of Putna since 1862, during his time, in 1871, was celebrated the 400th anniversary of the consecration of the holy monastery. Under his pastorate, the Ruthenian element was strengthened again, and the interference of the governor of Bukovina in the affairs of the Church became more and more evident. (Ion Nistor, 2003, p. 135-141).

The last metropolitan of Bukovina, being under Austrian rule, was Vladimir Repta (1902-1924). He studied at top universities from Germany, after which he was a professor of the New Testament at the Theological Faculty in Cernauti, just from its establishment. He has been an assessor of urban schools in Cernauti for 20 years, helping them to improve. He was appointed bishop of Radauti by the decree dated of 30 November 1898, receiving the ordination on 17 January 1895 in Cernauti cathedral church. It was the first bishop ordination in this cathedral. On 17 October 1902, he was appointed archbishop and metropolitan of Bukovina and Dalmatia. Vladimir Repta fought for raising the cultural level of the priests in the diocese (Mircea Pacurariu, 1994, p. 191), and for the advancement of their archdiocese.

3. CONCLUSION

Romanians in Bukovina survived the policy of denationalization, promoted by the Habsburg Empire, and through the activities of societies and cultural gatherings, subscribed to the efforts generated by emancipation through culture, an action led first by priests and teachers, and then by pupils and students from Bucovina. The situation was analyzed and treated in detail in a previous study. As unification in one state was not possible in those days, the people of Bukovina gathered under the flag of Romanian cultural unity, preparing together the act of 1918. And under foreign domination, music, with its universal language, represented a link between Romanians separated by borders. The repertoire of this period abounds in secular compositions, with the aim of promoting and defending the Romanian language, patriotic compositions, which encouraged the people in this fight and religious compositions, which kept bright the flame of hope, coming from faith. The attempt of the Austro-Hungarian Empire to annihilate the Romanian culture and tradition was thus hit by the resistance of the cultural societies and meetings, created to fight against this dangerous phenomenon, to uproot the culture and tradition of the Romanians from Bukovina. Many of these were created near the Church and at the initiative of enlightened hierarchs, who understood that the safest weapon to fight and defend against those who try to destroy your local culture is also culture.

Each cultural society established on the territory of Bukovina had in its composition a choir, which through its repertoire made known its dissatisfaction, but also the hopes of freedom and liberation from the oppressive yoke. The inexhaustible source of inspiration was the Romanian folklore, on which the great composers leaned, creating a real school of Romanian choral creation. The beginning was made by Ciprian Porumbescu and Alexandru Flechtenmacher, with “Baba Hârca”, continuing with Gavriil Musicescu, Dimitrie G. Kiriac, Iacov Mureşanu or Gheorghe Dima..

BIBLIOGRAPHY:

[1] Caproșu, Ion, *The Old Metropolitan Cathedral of Suceava*, Publishing House of Moldova and Suceava, Iasi, 1980.
[2] Ciachir, Nicolae, *From the History of Bukovina (1775-1944)*, Publishing House "Oscar Print", Bucharest, 1999.
[3] Eminescu Mihai, *The Significance of Putna Celebration*, Bucharest, 1905 (Excerpt from the speech given by Eminescu Mihai on the occasion of Putna celebrations dated 1871, 400 years after from its consecration).
[4] Nichitean, Bogdan Mihai, *Metropolitan Silvestru Morariu-Andrievici of Bucovina*, Suceava, 1973.
[5] Nistor, Ion, *From the acts and documents regarding the history of the Church in Bukovina*, in "Candela", XVI, 1897.
[6] Nistor, Ion, *History of the Church from Bukovina*, Publishing House Septentrion, Radauti, 2003.
[7] Panaitescu, P. Petre, **History of the Romanians**, Publishing House Didactic and Pedagogic, Bucharest, 1990.
[8] Pacurariu, Mircea, *History of the Romanian Orthodox Church*, vol. III, Publishing House of the Biblical and Mission Institute of the Romanian Orthodox Church, Bucharest, 1994.
[9] P. S. Aurelian, *Bukovina-Economic description accompanied by a map*, Bucharest, 1867.
[10] *** *The abduction of Bukovina according to the authentic documents*, Bucharest, 1875.
[11] Tofan, George, *Education in Bucovina*, vol. II, Suceava, 1995.

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2021, e-ISSN: 2601-8403
p-ISSN 2601-839X

https://doi.org/10.26520/mcdsare.2021.5.90-98

MCDSARE: 2021
International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

ON CRITICAL THINKING AND MODERN LIMITS TO HUMAN KNOWLEDGE

Daniela Şorcaru (a)
(a) Senior Lecturer, "Dunărea de Jos" University, Galati, Romania, E-mail: daniela.sorcaru@ugal.ro

Abstract

We are currently living in a world literally flooded with all types of information, and people have ended up dealing with various kinds of limitations to how much they can or choose to know. We can, thus, identify modern limits to human knowledge falling under (at least) two large categories: either limitations imposed by others (such as authorities, mass media, bosses or leaders, etc), or what we may call self-imposed limitations, i.e. choosing to disregard some information or another, refusing to keep up to date with a state of facts, rejecting scientifically proved data, etc. We are actually talking about outer manipulation (in option A above), or inner manipulation, if we may call it as such, namely the protection of personal comfort even over irrefutable evidence (in option B above). "Ignorance is bliss" (*The Matrix*, 1999), right? At least for some people. Yet, in this intricate matrix of human knowledge some of us are plagued with an incurable disease: critical thinking. A genuine bogeyman of any authoritarian system or regime, critical thinking is responsible for many glitches in this matrix, always at war against any sort of limitations imposed on human knowledge and rationale. We need to keep critical thinking alive and encourage it, and, in this process, identify the decisive vectors capable of disseminating the concept and its value, as well as its applications in everyday life.
Keywords: critical thinking; manipulation; communication; conspiracy theories; limitations;

1. INTRODUCTION

There is no debate anymore over the fact that the Sars-CoV-2 pandemic has changed the world in so many ways, some of which we have not even begun realizing or investigating. The whole COVID-19 hysteria has permeated all levels of existence and has already imprinted on language itself and particularly on the ways we are now forced to resort to so as to manage to communicate. We are no longer only talking about an international health crisis, although this is at the core of all other ramifications of the problem and it is undoubtedly the main source of sorrow in the world, if we consider the deaths and the consequences of so many serious cases in COVID-19 patients.

Unfortunately, this is just the root of other issues, serious enough in themselves to shake the very foundations of the world as we used to know it and which we took for granted for so long, without appreciating it for what it really was. But, then again, that is human nature.

The economic repercussions are staggering, resulting in a high number of jobs lost and more families living in poverty, or in businesses closing down and causing a ripple effect not only affecting their employees, but their suppliers and customers, as well, or even in exaggerated demands imposed by some employers, since everybody is aware that, if you are lucky to still have a paid job, you will do anything to keep it in such troubled times.

The same problematic international context has also had social consequences, which we can easily identify in all sorts of restrictions applied to everything that has to do with socializing either at work, or at a personal level. Not being able to meet friends and family freely or interact with co-workers the way we used to has taken its toll on all of us, irrespective of our different personalities, psychological training or lack of it, temper, or any other individual characteristics that make us who we are.

Which only brings us to a deeper level of analysing what the pandemic has done to us so far: the psychological impact, both collective, and individual. Not being able to communicate our thoughts, our dreams, our fears, basically ourselves to the others, against the constant background of international panic fuelled by mass-media's focus on getting the highest ratings and feeding off the sensational, has resulted in an incredible rise in cases of depression, anxiety, and isolation. And mass-media's influence on our daily lives, combined with people's natural fear of the unknown (since we very well know that only the known is safe, only the known is predictable and acceptable), has sneaked down to even more profound and more dangerous levels, up to endangering critical thinking and imposing limitations on human knowledge.

2. PROBLEM STATEMENT

As we can never entirely separate the individual from society and vice versa, we will always be interested in the correlation between language and society, namely in the way social identity is constructed using linguistic, but also extra-linguistic, tools. To do this, though, the researcher needs to resort to a high degree of interdisciplinarity, as sociology or sociolinguistics alone are not enough to make the whole context complete. Hence, "this view of social identity as an inferential *outcome* of linguistically encoded acts and stances goes dead against sociolinguistic analyses that assume social identities as a priori givens, including all correlational studies of language and social identity, where taken-for-granted social identities are posited as independent variables. […] We recognize that social identities have a sociohistorical reality independent of language behaviour, but, in any given actual situation, at any given actual moment, people in those situations are actively constructing their social identities rather than passively living out some cultural prescription for social identity. […] In *all* situations, even the most institutionalized and ritualized, people are *agents* in the production of their own and others' social selves" (Ochs, 2006, p. 84), nowadays divided into COVID believers and non-believers, vaxxers and anti-vaxxers, only confirming that the concept holds valid in contemporary society as well.

In this respect, research can only benefit from resorting to discourse analysis and CDA (critical discourse analysis), that help shed a clearer light on what is usually going on and not only take things at face value. The very word discourse is obviously intertwined with the concept of representation, as "representation is clearly a discoursal matter, and we can distinguish different discourses, which may represent the same area of the world from different perspectives or positions. Notice that 'discourse' is being used here in two senses: abstractly, as an abstract noun, meaning language and other types of semiosis as elements of social life; more concretely, as a count noun, meaning particular ways of representing part of the world" (Fairclough, 2006, p. 26).

Moreover, this entails the concept of interdiscursivity, particularly under contemporary pandemic circumstances, where power as control and control of the public discourse have become realities of everyday life. Interest here especially focuses on interdiscursivity as "the local authority anticipating the practices of business within which it hopes its publicity will be taken up" (Fairclough, 2006, p. 35), which, reformulated in present day terms, reads local, national and international authorities engaged in this race of anticipating people's reactions to limitations and impositions meant to control the pandemic, trying to walk a fine line between deliberately diminishing critical thinking and access to knowledge and facts and still observing constitutional rights.

The 'narrative' thread of such analysis has to rely on dissimilarities in discourses paralleling differences in people and the social/economic/educational/etc. categories they belong to and which dictate

changes in the way they respond to messages addressed to them, either at an individual, or at an official level. And this takes us directly to the concept of dialogicality of any text, as "orientation to difference brings into focus degrees and forms of dialogicality in texts," reference being made here of "an aspect of Bakhtin's 'dialogical' theory of language: 'a word, discourse, language and culture undergoes *dialogization* when it becomes relativized, de-privileged, aware of competing definitions for the same things. Undialogized language is authoritative and absolute' (Holquist, 1981, p. 427). Texts are inevitably and unavoidably dialogical in the sense that 'any utterance is a link in a very complexly organized chain of other utterances' with which it 'enters into one kind of relation or another' (Bakhtin, 1986, p. 69)" (Fairclough, 2006, p. 42). Thus, let us bear in mind that individuals are involved in a constant dialogue not only with society, but also with larger or small communities that they belong to, and ultimately with themselves, probably the most important dialogue of them all.

Turning to the latter tool in the pair listed above, CDA, van Dijk is definitely right in clearing up what CDA is not, when trying to define the concept: "CDA is not a direction of research among other, like TG grammar, or systemic linguistics, nor a subdiscipline of discourse analysis such as the psychology of discourse or conversation analysis. It is not a method, nor a theory that simply can be applied to social problems. CDA can be conducted in, and combined with any approach and subdiscipline in the humanities and the social sciences. Rather, CDA is a – critical – perspective on doing scholarship: it is, so to speak, discourse analysis 'with an attitude'. It focuses on social problems, and especially on the role of discourse in the production and reproduction of power abuse and domination. Wherever possible, it does so from a perspective that is consistent with the best interests of dominated groups. It takes the experiences and opinions of members of such groups seriously, and supports their struggle against inequality. That is, CDA research combines what perhaps somewhat pompously used to be called 'solidarity with the oppressed' with an attitude of opposition and dissent against those who abuse text and talk in order to establish, confirm or legitimate their abuse of power. Unlike much other scholarship, CDA does not deny but explicitly defines and defends its own socio-political position. That is, CDA is biased – and proud of it" (van Dijk, 2006, p. 96).

Hence, considering the complex multidisciplinary nature of CDA, as pointed out above and to which the current research fully agrees, we can easily grasp the intricate rendering of both background or context, and face-front message that CDA can provide. In so doing, we must take into account that, "given the fundamentally verbal nature of discourse, explicit CDA needs a solid 'linguistic' basis, where 'linguistic' is understood in a broad 'structural – functional' sense. In other words, whatever other dimensions of discourse CDA deals with, CDA as a specific form and practice of discourse analysis obviously always needs to account for at least some of the detailed structures, strategies and functions of text and talk, including grammatical, pragmatic, interactional, stylistic, rhetorical, semiotic, narrative or similar forms of verbal and paraverbal organization of communicative events" (van Dijk, 2006, p. 97). As a consequence, CDA not only permeates all levels of language and interaction, but it also manages to contribute to establishing a relationship among discourse, society and cognition, which again emphasizes its interdependence with other sciences.

Furthermore, "because CDA is interested in power, domination and social inequality, it tends to focus on groups, organizations and institutions. This means that CDA also needs to account for the various forms of social cognition that are shared by these social collectivities: knowledge, attitudes, ideologies, norms and values" (van Dijk, 2006, p. 113), which lays special focus on the cognitive dimension of the message, comprising both text and subtext.

And, when touching upon the issue of the subtext, mention must be made here of the importance of what is not openly said, but implied, with direct reference to implicatures (pertaining to the realm of pragmatics), assumption, presuppositions, in a nutshell everything that is not stated, but implied, and which can or cannot be decoded by the interlocutor(s): "especially interesting for CDA research is the study of the many forms of implicit and indirect meaning, such as implications, presuppositions, allusions, vagueness, and so on. We call information implicit when it may be inferred from (the meaning of) a text, without being explicitly expressed by the text. In theoretical terms […] this means that implicit information is part of a mental model of (the users of) a text, but not of the text itself. That is, implicit meanings are related to underlying beliefs, but are not openly, directly, completely or precisely asserted, for various contextual reasons, including the well-known ideological objective to de-emphasize our bad things and their good things" (van Dijk, 2006, p. 104) , which clearly holds valid in contemporary society,

not only at the level of politics and advertising, but also at that of national campaigns, such as the latest vaccination and distancing measures campaigns, in the context of the current Sars-CoV-2 pandemic.

Because, let us not forget that, ultimately, it is all about power and control, and Wodak summarizes it best: "Power is about relations of difference, and particularly about effects of differences in social structures. The constant unity of language and other social matters ensures that language is entwined in social power in a number of ways: language indexes power, expresses power, is involved where there is contention over and a challenge to power. Power does not derive from language, but language can be used to challenge power, to subvert it, to alter distributions of power in the short and long term. Language provides a finely articulated means for differences in power in social hierarchical structures. Very few linguistic forms have not at some stage been pressed into the service of the expression of power by a process of syntactic or textual metaphor. CDA takes an interest in the ways in which linguistic forms are used in various expressions and manipulations of power. Power is signalled not only by grammatical forms within a text, but also by a person's control of a social occasion by means of the genre of a text. It is often exactly within the genres associated with given social occasions that power is exercised or challenged" (Wodak, 2006, p. 11).

Therefore, considering the troubled times we have been experiencing since the onset of the current pandemic, it comes as no surprise that CDA, combined with discourse analysis, pragmatics, rhetoric, sociology, sociolinguistics, behavioural and mass psychology, NLP (neurolinguistic programming), and so on, can be indeed seen as bridging the gap between what is said and what is not said, but implied, and it can even shed light in the present unequal fight against harmful phenomena such as fake news and conspiracy theories.

3. PURPOSE OF THE STUDY

Hence, taking into account the contemporary international context, in all its complexity, researchers could not possibly avoid raising questions regarding mind control in the media and the political discourse, especially if we consider that authorities must impose their point of view on the general population if they were to stand a chance of controlling the current pandemic. Mind control is obviously referred to here not in terms of science fiction literature or the paranormal, but in terms of using the verbal and the non-verbal, sometimes at the level of the subliminal, so as to convince people to accept harsh measures or to go and get vaccinated, or to plant the seed of a thought in their heads, which is very easy to see in the quick spread of conspiracy theories. In other words, we may be dealing with real-life *Inception* (2010), where the plot revolves around instilling an idea in the deep subconscious of an individual by means of various techniques, so that the individual actually believes that the respective idea is of his/her own creation, thus internalizing it, not being aware of outer interference. Although the movie resorts to science fiction elements, the concept still stands and we can safely say that we have seen it at work so many times in human history, but all the more so in contemporary society, since information can travel much faster and reach more people than it used to.

In this respect, so as to clear things up, we rely again on van Dijk's expertise in the field, who reveals that "if controlling discourse is a first major form of power, controlling people's minds is the other fundamental way to reproduce dominance and hegemony. Within a CDA framework, 'mind control' involves even more than just acquiring beliefs about the world through discourse and communication. […] First, recipients tend to accept beliefs, knowledge and opinions (unless they are inconsistent with their personal beliefs and experiences) through discourse from what they see as authoritative, trustworthy, or credible sources, such as scholars, professionals, or reliable media (Nesler et al., 1993). Second, in some situations, participants are obliged to be recipients of discourse, e.g. in education and in many job situations. […] Third, in many situations, there are no public discourses or media that may provide information from which alternative beliefs could be derived (Downing, 1984). Fourth, […] recipients may not have the knowledge and beliefs needed to challenge the discourses or information they are exposed to (Wodak, 1987)" (van Dijk, 2003, p. 357). Thus, the present study is interested not only in how people reacted to media discourse manipulation, but also in investigating the manipulative techniques employed and how they can be used and identified by a larger segment of the population.

Moreover, it is not only the media discourse that has always resorted to such linguistic and extra-linguistic methods meant to control the masses, as it has always been perhaps even surpassed by the

political discourse. We owe Orwell the first clear theoretical signalling of what we may call the political potential of any language, as he helped open our eyes to the way politicians may use language to suggest and manipulate, claiming that "political speech and writing are largely the defence of the indefensible" (Orwell, 1969, p. 225).

Further investigation of the concept reveals its relative dimensions, as everything may be turned around to match the speaker's communicational intent: "The general principle here is one of transformation. Similar words and phrases may come to be reinterpreted within different ideological frameworks. Linked directly to this process is the concept of 'representation.' Representation refers to the issue of how language is employed in different ways to represent what we can know, believe, and perhaps think" (Wilson, 2003, p. 401; see also Mongomery, 1992). As a consequence, focus will be laid on what makes political discourse still function so well, despite the fact that many of its techniques have been exposed over time.

4. FINDINGS

In trying to answer the questions above, the present study has taken into account several concepts, easily applicable to all types of discourse, but yielding particularly relevant results in the cases of the media and the political discourses. Thus, special attention has been paid to:

- the pragmatic dimension of language as context, focusing on speaker and contextual meaning, with utmost relevance to the decoding of the message;
- the invisible meaning, so important in pragmatics, discourse analysis and CDA, as, sometimes, what is not being said carries more conversational wight than what is actually uttered;
- the Gricean maxims and the principle of cooperation, investigating whether the maxims of quality, quantity, manner and relevance are observed at the level of mass media and political texts;
- violating or flouting the Gricean maxims, this being of particular interest to CDA and manipulative discourse in general, as it means stepping off the beaten track and creating linguistic magic, while bending or even breaking traditional rules of engagement;
- the importance of the non-verbal, or the extra-linguistic, which can be quantified and analysed at the level of micro- and macro-behavioural markers to be found in body language, face mimic, tone of voice and intonation, clothing and accessories, stance, etc.

Investigating manipulative texts at several levels (mass media, politics, advertisements), we have discovered that a successful persuasive formula can easily be obtained if the speaker or writer of the message manages to touch upon four main areas of interest. Interest here should be read as pertaining to the audience, since it is your interlocutor(s) that must perform the intended decoding of the message and act accordingly.

First, perhaps the most important question to answer is **who your audience is**, and this involves thorough research, if you want your text to hit home, so to speak. As the emitter of the message, you need to be aware of the *social background* of the interlocutors, of their belonging to various social strata, at the same time being knowledgeable of the *economic context* of the area, including local problems, unemployment level, crime rate, housing and rent, etc. Another important factor in this category is the audience's *level of education*, as this dictates the degree of formality of your discourse and allows you to make sure you draw their attention to what you have to say. Equally important, the audience's *average age* is to be taken into account, as you address youth differently than older people, simply because they not only have dissimilar interests, but also react to different linguistic and extra-linguistic elements, and you need to speak the language they understand and can properly decode. Other factors should also be considered when researching your audience, such as *ethnic identity*, *religion* and *historical background* with a double purpose in mind: on the one hand, it is of utmost importance to avoid faux-pas in these respects, while, on the other, knowing and referring to the history and the personalities of the area could gain you valuable points with your interlocutors.

Second, especially with oral communication, the **location** of speech delivery is paramount in achieving manipulative tasks. Research must be conducted in assessing realities in terms of *urban vs rural communities* that are being addressed (simply because such groups of people have different realities and problems that concern them), the *historical and cultural background* of the place (in order to include

details that would make the audience find it easier to relate to your message), and the *socio-economic context* of the area (with particular focus on potential regional problems, such as conflicts, low wages for certain categories of people, child labour, etc.). For a better grasp on the location, further information should be acquired on *local infrastructure*, *tourism*, *health system* and *demographics*, with the same view to enhancing the chances that your message manages to reach and convince your audience.

Third, another dimension that has been identified as contributing to mass or individual manipulation at discourse level refers to complex ways of rendering **purpose and content of speech or written text**, where ideas or specific details can easily be highlighted at a subliminal level, thus making it more likely to remain with the audience long after having heard the speech or having read the text. Close analysis of media, political and advertising texts has revealed that this can be achieved by means of:

a) *repetitive patterns*, i.e. repeating the same word(s), paraphrasing the same idea as close to the original as possible, or even using keywords throughout the speech / text;
b) *purpose-focused language*, meaning that consistency is achieved within the same lexical field, which makes it impossible for the audience to miss the point, since reference to it is constant;
c) *avoiding* certain local or general *taboos* and *using politically correct language*, which keeps the locutor safe from any potential cultural, religious, collective or individual misunderstanding, that would hinder message delivery and decoding;
d) *being consistent* about the ideas conveyed, as inconsistency at this level would only result in the audience losing interest in the speech or text and turning away from it altogether;
e) *marketing arguments as well as possible*, which mainly refers to the fact that, in media, politics and advertising, perception is vital, more so than the message itself. We may have heard the concept more often associated with politics, when saying that 'politics is perception,' but the same holds valid in media and advertising, and its importance cannot be denied: whatever you are selling, you need to market it well, no matter if we are talking about planting ideas in people's heads, or convincing them to vote for or against someone or something, or enflame a lethargic crowd, or calm down an angry mob, and the list could go on forever.

Fourth, exclusively pertaining to the realm of oral conversation, but no less important in the functioning of the locutionary – illocutionary – perlocutionary interaction, the **extra-linguistic** or the **non-verbal** plays a crucial part in creating that invisible meaning that pragmatics, discourse analysis and CDA are so interested in. Just because some things cannot be addressed openly, by means of verbal utterances, but they can very well be conveyed subliminally. In this respect, we have discovered that elements such as *micro- and macro-behavioural markers* (body language, face mimic, repetitive gestures, etc.), *tone of voice and intonation*, or *clothing and accessories* may reveal either more than your interlocutor is willing to have exposed about themselves, or precisely what your interlocutor cannot say verbally for a variety of reasons. We are all aware, even at the level of everyday interactions, that the same utterance may acquire different, even up to opposing, meanings depending on the tone of voice or/and intonation employed. In its turn, clothing may communicate more than what meets the eye and a famous case in point is to be identified in Donald Trump's choices in clothing vs Hillary Clinton's during the 2016 US presidential campaign: Donald Trump made sure to constantly wear the colours of the American flag throughout his campaign (which perfectly complimented his equally famous, patriotic "Make America Great Again" logo and his going-back-to-traditional-values line of running for office), while Hillary Clinton started and continued to don white (or predominantly white) clothing from the moment she was accused of having leaked national security detail to the public by using an unsecured e-mail service, thus using white to suggest innocence, purity, lack of guilt.

We can find all these four dimensions combined in contemporary discourse, when the world is fighting an unequal battle against an invisible enemy and when the current Sars-CoV-2 pandemic has suddenly changed the rules of the game. During such troubled times, people are literally flooded with information from so many sources, both official (authorities, politicians, mass media, community leaders) and informal (social networks, friends, mass media), making it difficult for many to discern the truth or identify conspiracy theories for what they are. In case you noticed 'mass media' being included in both types of sources in the previous sentence, this was not a slip, but a deliberate choice, since we cannot include all mass media in the category of official sources of information, since there is a worrying number of alarmist tabloids and sensationalist TV channels that live off creating panic and that would not meet the criteria required to make it into the former category of the two mentioned above.

Further investigation into media discourse has brought some murky problems into specific relief, identifying certain techniques being repeatedly used to manipulative ends:

- broadcasting clipped videos or printing clipped information for the masses, so as to prove the point intended by the network or newspaper, but not necessarily by the original emitter of the message, with such practices resulting in taking things out of context, or, worse, editing separate information into a coherent new statement, never intended as such by the original author;
- careful and deliberate sequencing of news reports in TV news broadcast that go beyond logic and coherence into the realm of manipulation, in an attempt to induce a certain response in the audience, with the emotional component being the target most of the times, as people have been proved to react emotionally much quicker and more often than rationally, since emotion is instant, whereas reasoning takes time (or at least should do so);
- using and abusing the emotional component of manipulation, both in the media and the political discourse, as already discussed above, and which has already backfired, since we can identify people rejecting official statements or sound advice coming from authorities, just because they have grown to constantly suspect that they are being toyed around (Mention must be made here that this is more likely to occur in countries that have previously experienced authoritarian and oppressive regimes, such as post-communist countries, because people in such countries have a traumatic past where the official propaganda functioned along the same lines as conspiracy theories do now, or it even changed fundamental concepts form one day to another, and people never knew what to rely on or what to believe, at the same time refraining from speaking out, fearing the harsh consequences that came with freedom of speech which they were not entitled to.);
- making special use of register, vocabulary and intonation in reporting facts, which, again, elicits different responses in people than the same facts would have generated if portrayed in neutral terms;
- resorting to the manipulative impact of the visual in news reports, and we are all well aware that an image is worth a thousand words, but extensively displaying images that clearly affect the audience will eventually result in them refusing to watch the news;
- constantly playing upon the locutionary – illocutionary – perlocutionary, not only at the level of taking bits of information out of context, but also in using archived resources when it comes to public statements and broadcasting them again when politicians, for example, end up contradicting themselves on the same issue(s) within the span of just a couple of days, weeks or months.

All these considered, we can definitely say that people have ended up dealing with various kinds of limitations to how much they can or choose to know. We can, thus, identify modern limits to human knowledge falling under (at least) two large categories:

A. limitations imposed by others (such as authorities, mass media, bosses or leaders, etc);
B. what we may call self-imposed limitations, i.e. choosing to disregard some information or another, refusing to keep up to date with a state of facts, rejecting scientifically proved data, etc.

We may actually be talking about **outer manipulation** (in option A above), or **inner manipulation**, if we may call it as such, namely the protection of personal comfort even over irrefutable evidence (in option B above). “Ignorance is bliss” (The Matrix, 1999), right? At least for some people.

This is of particular interest in contemporary society, since all countries are engaged in a race to get as many people vaccinated as quickly possible and to convince them to observe social distancing measures at the same time. Unfortunately, the dangerous cocktail of what we called earlier outer and inner manipulation still stands in the way of their success and it might be a good time to change strategy if they want to reach their goals.

With respect to finding ways of fighting against manipulation, fake news and conspiracy theories, however, there is one potential universal tool that can help, irrespective of one’s cultural, social, financial, linguistic, etc. reality: critical thinking. The importance of critical thinking in the modern world is paramount, as it can go as far as diminishing or even erasing the limitations to human knowledge we mentioned above, and it can contribute to shedding light on current issues, such as the whole anti-COVID propaganda and vaccination process. Moreover, its applicability in everyday life would result in people becoming less prone to being easily manipulated, but they must, in this case, be prepared to cope with the

sometimes-ugly sub-text of everything that is going on. And, since we have touched upon the negative aspects connected to this concept, mention must be made here that an additional disadvantage to critical thinking is that it represents a clear danger to authoritarian and oppressive systems or regimes, which makes it a very uncomfortable concept to embrace and practice.

Nevertheless, we have discovered that critical thinking may just play the most important part in being capable of really discerning right from wrong, conspiracy theory from scientific fact, lie from truth, pre-digested information from actual fact, illusion/delusion from reality and so on and so forth. Responsibility also lies, in this case, with what we may call vectors of disseminating critical thinking, such as public figures, (serious, genuine) influencers, teachers, or more experienced family members, who should do their best and initiate others down this intricate, uncomfortable, but rewarding path of using one's own mind and getting used to doing research to assess information and events.

5. CONCLUSIONS

The conclusion may thus be drawn that pragmatics, discourse analysis and CDA permeate all levels of language and expand far beyond it, along the lines of the extra-linguistic or the non-verbal, into our everyday lives, whether we are aware of it or not. We resort to them on a daily basis, not only in our interpersonal interactions, but also in the complex process of trying to make sense of the world.

Another long-lasting truth is that manipulation has been around since the beginning of time and has become ever subtler over the years, perfecting the subliminal as its weapon. In response, people have reacted differently to such a process, either by accepting limitations to knowledge imposed by other, or by creating their own limitations as coping mechanisms or as ways of protecting themselves from a dangerous, invasive outer world.

Unfortunately, nobody can deny the fact that uninformed, or, worse, misinformed masses are much easier to manipulate, and, therefore, control, as they can either be fed any type of information, if they are not aware of the respective field at all, or be led down one path or another according to somebody else's interests, since one only needs to alter their beliefs, not change them completely, this being precisely the very technique behind the wide and quick spread of conspiracy theories.

To counteract all these, critical thinking might very well be our last line of defense against a future where everybody is compliant, submissive, obeying all kinds of orders without questioning anything. Using one's own mind and doing through research relying on credible sources will always help in this fight against identifying the truth value of what you are being told or shown.

Ultimately, disseminating critical thinking should be looked upon as everybody's responsibility in passing on a legacy that might save the human spirit from being crushed, or, worse, enslaved.

BIBLIOGRAPHY:

[1] Bakhtin, M. "The problem of speech genres," in *Speech Genres and Other Late Essays*, Austin: University of Texas Press, 1986, p.69.
[2] Downing, J. *Radical Media: The Political Experience of Alternative Communication*, Boston: Sount End Press, 1984.
[3] Fairclough, N. *Analysing Discourse*, New York: Routledge, 2006, pp. 26; 35; 42.
[4] Fairclough, N. "Critical discourse analysis as a method in social scientific research," in Wodak, R. and Meyer, M. (eds.), *Methods of Critical Discourse Analysis*, London: SAGE, 2006.
[5] Holliday, A., Hyde, M., and Kullman, J. *Intercultural Communication*, New York: Routledge, 2006.
[6] Holquist, M. *Dialogism: Bakhtin and His Works*, London, Routledge, 1981, p. 427.
[7] Meyer, M. "Between theory, method and politics: positioning of the approaches to CDA," in Wodak, R. and Meyer, M. (eds.), *Methods of Critical Discourse Analysis*, London: SAGE, 2006.
[8] Montgomery, M. *An Introduction to Language and Society*, London: Routledge, 1992.
[9] Nesler, M. S., Aguinis, H., Quigley, B. M., and Tedeschi, J. T. "The effect of credibility on perceived power," in *Journal of Applied Social Psychology*, 23(17), 1993, pp. 1407-25.
[10] Ochs, E. "Constructing Social Identity: A Language Socialization Perspective," in Kiesling, S. F. and Paulston, C. B. (eds.), *Intercultural Discourse and Communication*, Malden, MA: Blackwell, 2006, p.84.
[11] Orwell, G. "Politics and the English Language," in Bolton, W. F., and Crystal, D. (eds.), *The English Language Vol. 2: Essays by Linguists and Men of Letters, 1858-1964*, Cambridge: Cambridge University Press, 1969, pp. 217-19.
[12] van Dijk, T. A. "Critical Discourse Analysis," in Schiffrin, D., Tannen, D., and Hamilton, H. E. (eds.), *The Handbook of Discourse Analysis*, Malden, MA: Blackwell, 2003, p. 357.
[13] van Dijk, T. A. "Multidisciplinary CDA: a plea for diversity," in Wodak, R. and Meyer, M. (eds.), *Methods of Critical Discourse Analysis*, London: SAGE, 2006, pp. 96-97; 104; 113.
[14] Wilson, J. "Political Discourse," in Schiffrin, D., Tannen, D., and Hamilton, H. E. (eds.), *The Handbook of Discourse Analysis*, Malden, MA: Blackwell, 2003, p. 401.
[15] Wodak, R. "'And where is the Lebanon?' A socio-psycholinguistic investigation of comprehension and intelligibility of news," in *Text*, 7(4), 1987, pp. 377-410.
[16] Wodak, R. "What CDA is about – a summary of its history, important concepts and its developments," in Wodak, R. and Meyer, M. (eds.), *Methods of Critical Discourse Analysis*, London: SAGE, 2006,
[17] *Inception* - Directed by Christopher Nolan. With Leonardo DiCaprio, Joseph Gordon-Levitt, Elliot Page, Tom Hardy. Release year: 2010.
[18] **The Matrix* - Directed by Lana Wachowski, Lilly Wachowski. With Keanu Reeves, Laurence Fishburne, Carrie-Anne Moss, Hugo Weaving. Release year: 1999.

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2021, e-ISSN: 2601-8403
p-ISSN 2601-839X

https://doi.org/10.26520/mcdsare.2021.5. 99-105

MCDSARE: 2021
International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

ENCODING REALITY INTO FICTION/ DECODING FICTION AS REALITY: POSTMODERN HISTORIOGRAPHY AS CRITICAL THEORY

Oana Celia Gheorghiu (a)
Prof. PhD., "Dunarea de Jos" University of Galati, Romania, oana.gheorghiu@ugal.ro

Abstract

This paper is intended as a brief critical review of three interrelated, fairly similar critical theories, born out the necessity of looking into cultural forms and products with a view to finding the politics at work therein. While American New Historicism is more historically oriented, British Cultural Materialism, with its more obvious influence from Marxism, Postcolonialism and other theories which place the margin at their centre, seems to be more in tune with contemporaneity, and so is the area of Cultural Studies, with its emphasis on cultural representations. It is advocated here that contemporary fiction cannot be fully separated from other textual forms, which are considered here historiographic (not historical) because of their nature of texts produced subjectively, within a certain political, social and cultural context, irrespective of their assumed scientific objectivity. Literature, it is further argued, has become a discourse-oriented endeavour with an active participation, an idea supported in the present study by making reference to several critical and polemic writings by Salman Rushdie, which, in a topsy-turvy, postmodernist manner, are foregrounded before, and not after the literature review proper.

Keywords: Cultural Theory; New Historicism; Cultural Materialism; Cultural Studies; contemporary fiction; politics;

1. INTRODUCTION

Traditionally regarded as a playground where 'the limits of interpretation' (Eco, 1991) are pushed to the boundaries of psychoanalysis, to an almost grammatical parsing of the narrative structure, to deconstructing the binarism, opposition and hierarchies of form and meaning, to symbolically 'killing the author' with a view to granting all the power to the reader, or to embracing militant causes in the fashion of the age, the area of literary theory and criticism has become, since the twentieth century, a discourse-oriented endeavour. Resting on the binary categories of truth and reality, postmodernism questions both their very *truth* and *reality* at the level of fiction, and not only. It is this "not only" what brings in New Historicism, Cultural Materialism and Cultural Studies, all, critical theories which deal, aside from literature, with fictionalisation through discursive practices in texts that are customarily

perceived as pertaining to the domain of reality, such as history books, political speeches and, above all, the media. Twenty-first century political fiction, for instance, seems realistic at first sight; however, due to this influence, as well as to the ideological and contextual constraints added to its essence as representation, it employs layers of fictionalisation: created worlds that describe other created worlds which are marketed as reality to their audience, and which contribute to creating and imparting knowledge.

2. PROBLEM STATEMENT

Literature has become, since the end of the twentieth century, a discourse-oriented endeavour with an active participation. Writers should "rebuild their readers' belief in argument from factual evidence and do what fiction has always been good at doing—to construct, between the writer and the reader, an understanding about what is real" (Rushdie 2018). A good example is Salman Rushdie's treatment of his most famous novel, *Midnight's Children*, exposed in ''Errata': or, Unreliable Narration in *Midnight's Children*' (1983). He observes that history is always ambiguous, and that literature is not history, but plays with history forms. Analysing his goals pursued in writing this novel, Rushdie asserts that he was, at first, in a Proustian *search for lost time*. In time, however, he realised that he was searching for a way *to reconstruct the past so as to suit his own ends*, using memory as a tool. Saleem Sinai (the central character and narrator), far from being an objective historian, attempts to "cut up history to suit himself, just as he did when he cut up newspapers to compose his earlier text" (Rushdie, 1991, p. 24). It is thus obvious that the author's motivation is to endow his narrator with a cultural materialist-type of reasoning. In admitting the unreliability of his narrator, Rushdie lays emphasis on the fact that *Midnight's Children* is a novel, and not "some sort of inadequate reference book or encyclopaedia" (1991, p. 25), however, as he stresses in another article ('Outside the Whale', 1984) in which he polemicizes with Orwell's 'Inside the Whale' (1940) and 'Politics of the English Language' (1946), the need of politics in literature is very actual: "it becomes necessary, and even exhilarating, to grapple with the special problems created by the incorporation of political material, because politics is, by turns, farce and tragedy" (1991, p. 100).

Yet another one of Rushdie's observations, namely that the writer "need not always be the servant of some beetle-browed ideology" and that "he can also be its critic, his antagonist, its scourge" (1991, p. 98) is also close to the cultural materialist discussion of literature in terms of compliance versus resistance to ideology and superstructures. In *Literature, Politics and Culture in Post-war Britain,* Alan Sinfield enlarges upon society being forced "to reproduce itself both culturally and materially by putting in circulation stories of how the world goes" (1989: 2). Various institutions considered *dominant structures* are responsible with this (the media, religion, education, the political parties), and so is literature, which may either reinforce or contest the narratives of these structures. This contestation occurs when literature resists the ideology imposed by the State apparatus and focuses on "dissident politics of class, race, gender, and sexual orientation" (Sinfield, 1992, p. 10).

As a parenthesis, the word *dissident* (a term often used in political discourse to denote a person who dissents from an established policy) comes to underline the Foucauldian concept of subversion constructed within the discourse of power. Sinfield notes in *Faultlines –Cultural Materialism and the Politics of Dissident Reading* (1992) that "dissidence operates necessarily in reference to dominant structures; it has to invoke those structures to oppose them and therefore can always, *ipso facto*, be discovered re-inscribing that which it proposes to critique" (1992, p. 47). At the same time, dissidence represents a statement of intent made by the cultural materialist critics. It challenges the idealist view of literature as being somehow placed above the material conditions of production and reception, society and politics. This is because such an "honourable placement" would confine literature to an area of "limited influence, marginality, even irrelevance" (Sinfield 1989, p. 28), denying its status as an actual institution, a significant "cultural apparatus" or a source of knowledge.

More recently, in the article entitled "Truths, Lies and Literature", Salman Rushdie refines the ideas he has been advocated since the 1980s, maintaining that "the world can perhaps best be explained in terms of conflicting and often incompatible narratives. In Kashmir and in the Middle East, and in the battle between progressive America and Trumpistan, we see examples of such incompatibilities. The consequences of this new, argumentative, even polemical attitude to the real has profound implications

for literature—that we can't, or ought not to, pretend it isn't there. I believe that the influence on public discourse of more varied voices has been a good thing, enriching our literatures and making more complex our understanding of the world" (2018). It is, then, a reiteration of the idea that literature should, now more than ever, have "overt political ends in the contemporary world" (Brannigan, 1998, p. 98)

3. RESEARCH QUESTIONS

Before embarking on a review of critical modes, it seems appropriate to justify the choice. Why New Historicism and/or Cultural Materialism/ Cultural Studies? As Jonathan Culler, Structuralist critic, observes, critical theory is "inescapably interdisciplinary" (1997, p. 4), relying on philosophy, linguistics, anthropology, political or social theory, history, psychoanalysis, gender studies, etc. It follows that approaches like New Historicism, Cultural Materialism or Cultural Studies, which bring all these together, are the least likely to let various aspects related to text and to its textuality escape. Though it has been suggested that any grid of interpretation may be applied with reasonable results to any text – since one may grasp whatever one regards as relevant in that text and subsequently ground his/her line of argumentation in the theory which seems the most appropriate to make a point in that respect –, one cannot discuss contemporary fiction along lines which are not tangent with culture and politics. As such, the statement "literary criticism is the application of critical theory to a literary text, whether or not a given critic is aware of the theoretical assumptions informing her or his interpretation" (Tyson, 1999, p. 7) is contradicted, the views adopted being firstly that a critic should be at least familiarised with critical theory in general before opting for one analytical grid or another, and, secondly, that literary texts have a way of 'suggesting' the path that should be best followed in their deciphering, no matter how neutral the inquiring eye might imagine itself to be.

4. PURPOSE OF THE STUDY/ RESEARCH METHODS

In contemporary fiction, the literary texts foreground, more often than not, a tight relation to non-literary contemporary events which constitute topics of discussion for political and journalistic texts. Therefore, the choice for a critical theory informed by the necessity to regard literature in a wider context comes naturally. Focus could not be laid on either author or text; neither could marginal and marginalising issues be underlined, as that would render the analysis incomplete. Which is not to say that issues informed by principles of exclusion and differentiation should be disregarded, but rather that they are inscribed within a wider frame of cultural dynamics, and that laying emphasis exclusively on particular aspects (e.g. gender, race, ethnicity, sexuality, etc.) might hinder access to the bigger picture. Therefore, the aim of this paper is to advocate for the necessity of a critical theory informed by its relation to reality and politics, while the method employed is, for the most part, that of forwarding a critical review of the fundamental tenets of New Historicism, Cultural Materialism and Cultural Studies.

5. FINDINGS

5.1. New Historicism

Starting from Geertz's *Interpretation of Cultures*, according to which "there is no such thing as a human nature independent of culture" (1973, p. 11), where culture is regarded as "a set of control mechanisms – plans, recipes, rules, instructions" and less as a "complex of concrete behaviour patterns – customs, usages, tradition, habit clusters" (1973, p. 8), Stephen Greenblatt advocates for New Historicism in the introduction to his most influential *Renaissance Self-Fashioning – From More to Shakespeare* (1980, 2005). Thus, he redefines Geertz's 'control mechanisms' as a cultural system of meanings that creates specific individuals. Literature, appertaining both to the wider cultural system and to the individuals that create it, functions, in Greenblatt's view, in three ways: "as a manifestation of the concrete behaviour of its particular author, as itself expression of the codes by which this behaviour is shaped, and as a reflection upon these codes" (2005, p. 4). Failure to concern with these interrelated aspects in a critical essay may result either in biographical or psychoanalytical criticism or, if the literary work is regarded "exclusively as the expression of social rules and instructions", in a piece of Marxist representation of ideological superstructures. By contrast, if the three aspects are grasped in the analysis by using cultural and anthropological criticism, literature becomes "part of the system of signs that constitutes a given culture" (2005, p. 6). The goal of this method, which Greenblatt names, at this point,

cultural poetics, is "to investigate both the social presence to the world of the literary text and the social presence of the world in the literary text" (2005, p. 6).

Greenblatt acknowledges his influences coming from both Marxism and Poststructuralism, although neither of them satisfactorily explains, in his view, the relation between art and society. He stresses that this relation should not be regarded as a transfer, as an appropriation from social and political discursive practices to the artistic ones, but sooner as an exchange:

> We need to develop terms to describe the ways in which material – here official documents, private papers, newspaper clippings, and so forth – is transferred from one discursive sphere to another and becomes aesthetic property. It would, I think, be a mistake to regard this process as unidirectional – from social discourse to aesthetic discourse – not only because the aesthetic discourse in this case is so entirely bound up with capitalist venture but because the social discourse is already charged with aesthetic energies (2005, p. 27).

The first to actually create a methodological framework for New Historicism is Harold Aram Veeser, editor of the volume *The New Historicism* (1989), who identifies five major assumptions that inform the new historicist thinking:

1. That every expressive act is embedded in a network of material practices;
2. That every act of unmasking, critique and opposition uses the tools it condemns and risks falling prey to the practice it exposes;
3. That literary and non-literary texts circulate inseparably;
4. That no discourse, imaginative or archival, gives access to unchanging truths nor expresses inalterable human nature;
5. Finally […], that a critical method and a language adequate to describe culture under capitalism participate in the economy they describe (Veeser, 1989, p. xi).

5.2. Cultural Materialism

Fairly similar to New Historicism in views and approach, but much more politicised, Cultural Materialism (term coined by Raymond Williams in 1980) designates that analysis which examines culture "less as a set of isolated artistic monuments" and more "as a material formation, complete with its own modes of production, power-effects, social relation, identifiable audience and historically conditioned thought forms" (Eagleton, 1996, p. 198). Cultural Materialism as literary theory is even farther from any orientation towards new critical aestheticism or structuralist linguistics than New Historicism. Instead, the connection to Marxist criticism becomes more sensible. It is the critical mode that brings literature closer to sociology than it has ever been, considering the former "a practice in the society […] which is no fully available for analysis until each of its practices is included" (Williams, 2005, p. 44). The relation between art and society is discussed in terms similar to those proposed by New Historicism, regarding writing as a form of contribution to the dominant culture. To Williams, literature, the visual arts, music and "the powerful arts of film and broadcasting" possess the "capacity to embody and enact and perform meanings and values" and cannot be given "a uniform, static and ahistorical relation to some abstract social formation" (2005, p. 45). As part of the cultural process, these 'practices' contribute to the dominant culture and transform it (2005, p. 45).

The politics of race, class, gender and sexual orientation are overtly indicated as focal points in cultural materialist readings, and one cannot but acknowledge that Marxist, feminist and postcolonialist issues have been present on the cultural materialist agenda starting with the early writings in the field. This was, in the 1980s, the most significant difference between New Historicist and Cultural Materialist critics, but the former were to tackle these issues in the following decades. Forty years later, this difference can only be traced when attempting a diachronic survey of the cultural theories towards the end of the twentieth century, so it would not be inappropriate to discuss the connexion with the aforesaid theories and politics as a specific trait of Cultural Materialism. It might be worth mentioning here Brannigan's comparative analysis (1998, pp. 119-120), which posits that, in approaching the text from these perspectives, cultural materialist critics identify two major dichotomies: a diachronic one, in which they analyse the differences between then and now, that is to say, the extent to which the past is

constructed as otherness from the contemporary point of view; and a synchronic one, in which they examine alterity in its occurrence within the past culture.

One may argue that, despite the critique addressed for its disfavouring of the close analysis of the literary text and its prevalent obsession with social and politic context that shape the individuals (both the representing and the represented ones), Cultural Materialism has its merits in gearing literary criticism towards the study of historical context and the understanding of cultural and social differences. Today, Cultural Materialism broadened its scope to address the question of (marginalised) identity more and more thoroughly. As "the disciplinary societies" (Foucault, 1975)/ "the societies of control" (Deleuze, 1992)/ "the ideological state apparatuses" (Althusser, 1970) have gone global, it is only natural that the literary theories which examine their effects at the level of material practices represented in literature should also have been affected by globalization. What is more, in an electronic age, the cornucopia of information outside the literary text determines the critic to expand his/ her contextual analysis even further than in the case of the texts belonging to the historical past. Ultimately, it is still about **historical context + theoretical method + political commitment + textual analysis**, as the proponents of the theory in focus argued in the 1980s, and which this study attempts to reinforce.

5.3. Cultural Studies

However, as the sense of 'historicity' is altered due to its temporal vicinity with its witnesses and to a certain form of misapprehension which compulsorily places it in a more or less distant past, the analysis of its occurrence in and around discourses of the present may find a more suitable umbrella in *Cultural Studies*. The *historical*, the *material* and the *political* blended in the 'composition' of the two theories may be complemented with cultural studies operational concepts, such as *hegemony*, *agency*, *globalization*, *mass-culture*, *subculture*, and the overarching *discourse* and *representation*, as they seem adequate in the analysis of contemporary *texts* – in the broader sense of this term, which goes beyond language, covering all the conveyors of meaning. At this point, it seems necessary to state that Cultural Studies has been regarded, over the years, either as a different approach, divergent from Cultural Materialism, with a parallel development in the British academia in the 1970s-1980s, or as an extension of it, intended to put to good use the democratisation of culture advocated by Raymond Williams, and also to "tactfully remove the suggestion of Marxism" (Young 2004, p. 126).

This latter understanding has been advanced by the postcolonial theorist Robert Young who, in his work, *White Mythologies: Writing History and the West* (1990/ 2004), comments on the abandonment of the traditional, Marxist use of history as a ground for truth in favour of regarding it as a mirror for potential contemporary political aspects, by making an "identification with parallel forms of political struggle in our own day" (2004, p. 126).

Texts do not exist in isolation, establishing relations both synchronically (with parallel/ contemporary texts) and diachronically (with texts written before them), which give access to present and past, but only to a limited extent. This very simple interconnection has been termed in various ways; however, the term which best serves our purpose is that of *intertextuality*, as texts can only *represent* aspects and facts, not transpose them from the realm of the real into that of the written. "Life is the non-representable origin of representation", Derrida (2005, p. 295) notes, in relation to Antonin Artaud's theatre, but the statement can also be read as generalisation, in which case, this sentence alone suffices to explain Foucault's and his followers' understanding of discourse as **constructed representation of reality**. Representation is thus construed as an imperfect form of life imitation, and this imperfection is related to a series of factors outside the text: the author's distance from the represented factual aspect/ event (in time and space), his/ her subjectivity (which may be wilful, with manipulative ends), but also various societal, political, economic and cultural constraints, which, for the sake of brevity, will be included here under the term *context*.

In cultural theorist Stuart Hall's words, "representation does sort of carry with it the notion that something was there already and has been *represented*" (1997, p. 6). This 'something' may range from topics, people, events, situations, to politics and ideologies, etc. which are endowed with meanings through words or images. Hence, Hall's definition of representation is: "the way in which meaning is somehow given to the things which are depicted through the images or whatever it is, on screens or the words on a page which *stand for* what we're talking about" (1997, p. 6).

A foundational concept in aesthetics, semiotics and political theory, representation is… represented (*faute de mieux)* as a triangular relationship: "[it] is always *of* something or someone *by* something or someone *to* someone" (Hall, 1997, p. 12). Representation "is an extremely elastic notion which extends all the way from a stone representing a man to a novel representing a day in the life of several Dubliners" (Hall, 1997, p. 13) – and it goes without saying that, when one speaks of literature, only the latter type of representation applies. As it is, ultimately, an issue of social agreement ("let us agree to represent *this* with *that* in *this way*" (Hall, 1997, p. 13)), literary representation functions through codes and conventions (language, tonality, representational schemes, styles, genres) and "can never be completely divorced from political and ideological questions" (Hall, 1997, p. 15). The notions of ideology and identity in the contemporary historical context and truth as a discursive construct influenced by power structures, together with the assessment of the media – as communicator of politics, but also as a steady and reliable provider of non-literary texts necessary in the contextual analysis – justify the choice of New Historicism/ Cultural Materialism and Cultural Studies as critical theories appropriate in analysing contemporary fiction.

6. CONCLUSIONS

To conclude, it needs to be reiterated that Cultural Materialism analyses the interaction between the power of State and cultural forms, and traces the way in which dominant structures, carriers of ideology, inform identity at the individual level, but may be also expanded to the level of national/ Westernized/ globalized identity. To these ends, it relies on the concepts of truth and power, borrowed from Michel Foucault's theorization of discourse, whilst laying great emphasis, in Marxist spirit, on the way in which the political, social and economic contexts inform the aesthetics of cultural artefacts at a given time in its development. Literature becomes, in turn, a political, economic and social factor, able to communicate and even fight. Conversely, through their nature as constructed discourses, but also through their incorporation into the literary text, politics and history become literature, which substantiates looking into both literary and non-literary texts for that illusory truth and/or reality.

The textual analysis proposed by New Historicism/ Cultural Materialism/ Cultural Studies points to a form of virtually encompassing everything that may go under the term *culture*. In this context, the awareness of culture allows an expanded target audience unhindered by possible misapprehensions owed to incomprehensibly formulated theories. Whether termed interchangeably based on geographical and/ or ideological criteria or considered individually, in point of specific traits which differentiate them from one another, New Historicism, Cultural Materialism or Cultural Studies still represent actual and rewarding modes of critically approaching the (literary) text, owing precisely to this weaving of influences which constitutes their common core.

The combination of Poststructuralism, cultural theory, analyses of discourses of otherness (postcolonial and feminist studies, with their subsequent developments and ramifications) and Marxism leaves no stone unturned in the process of identification and understanding of the general context, whose conditions are, at the same time, abided by and replicated by discourse and representation. Without proposing a definitive grid of analysis, New Historicism, Cultural Materialism (and/ or Cultural Studies) provide the readers multifaceted possibilities to look at/ into the text.

BIBLIOGRAPHY:

[1] Brannigan, J. *New Historicism and Cultural Materialism*. London. Macmillan. 1998.
[2] Culler, J. *The Literary in Theory*. Stanford. Stanford University Press. 1997.
[3] Derrida, J. *Writing and Difference*. London. Routledge. 2005
[4] Eagleton, T. *Literary Theory.* Second edition. London. Blackwell. 1996.
[5] Eco, U. *The Limits of Interpretation (Advances in Semiotics)*. Indiana University Press. 1991.
[6] Geertz, C. *The Interpretation of Cultures*. New York. Basic Books. 1973.
[7] Greenblatt, S. *Renaissance Self-Fashioning. From More to Shakespeare*. Chicago. University of Chicago Press. 2005.
[8] Hall, S. 'Representation and the Media'. Transcript: Lecture at the Open University. Media Education Foundation. 1-22. 1997
[9] Rushdie, S. "Truth, Lies and Literature". *New Yorker*, May 31st, 2018.
[10] Rushdie, S. *Imaginary Homelands. Essays and Criticism 1981-1991*. London. Granta Books/ Penguin Books. 1991.
[11] Sinfield, A. *Faultlines - Cultural Materialism and the Politics of Dissident Reading*. Oxford. Clarendon Press. 1992.
[12] Sinfield, A. *Literature, Politics and Culture in Post-war Britain*. Los Angeles. University of California Press. 1989.
[13] Tyson, L. *Critical Theory Today*. USA: Garland Publishing. 1999.
[14] Veeser, H.A. (ed.) *The New Historicism*. London. Routledge. 1989.
[15] Williams, R. *Culture and Materialism*. New York. Verso. 2005.
[16] Young, R. *White Mythologies: Writing History and the West (second edition).* London and New York. Routledge. 2004.

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2021, e-ISSN: 2601-8403
p-ISSN 2601-839X

https://doi.org/10.26520/mcdsare.2021.5.106-114

MCDSARE: 2021
International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

THE RELATION BETWEEN STUDENTS ANXIETY AND COGNITIVE STYLES

Felicia Aurica Haidu (a)
(a) PhD Candidate, Ion Creanga Pedagogical State University, Chisinau, Republic of Moldavia, felicia.psiholog@gmail.com

Abstract

The key to academic success is not only good quality teaching but also a individualized teaching and individualized approaching to the student's cognitive styles of learning and anxiety. The present paper tries to answer the question if the teachers and school counsellors may help improve students' learning by helping them to manage their behaviour and attitudes more effectively. Precisely, it postulates that as long as teachers may adapt their communication styles and teachings to the cognitive styles of their student's better results and more efficient learning they will get from them. It first presents a short literature review of anxiety and of cognitive styles of learning the relation, followed by the relation between anxiety and the cognitive styles and it finally postulates the main methodological approaches that any teachers should adopt to make his teaching more effective having in mind the relation between the two variables. Finally, implications for teaching are discussed, as are suggestions for the future researches.

Keywords: anxiety; cognitive styles; learning; teaching methodology;

1. INTRODUCTION

The field of individual differences in cognitive and learning style and how they may be correlated to the teacher's style has been constantly criticized for conceptual confusion, contested definitions, poor measurement and lack of validity ((A. Parkinson (2004), Furnham, 1992, ,Entwistle and Peterson, 2004).

Still most too often we notice that both at the undergraduate level and at bachelor's that the more loved and efficient teachers are those who manage to establish a special relation to the educated. Good quality teaching often comes from teachers who also meet the criteria of fulfilled persons in their personal lives as well. Could it be related to the fact that they have already learned how to handle difficult emotions? That they learned how to master their anxiety? Or how to direct it towards rewarding aspects of their life and personality?

The relationship between cognitive styles and learning strategies have been established by many cognitive and educational studies both in Romania and abroad (Miclea, M,1999; Patrick R.Thomas, Jacinta B.McKay, 2010.). So there is no novelty concerning the hypothesis that cognitive styles have significant influence on learners' choices of learning strategies. Likewise, the hypothesis that students learn best when instructional material matches their cognitive style no longer needs re-examination. Synthesizing style, sharpener style, field-independent style and impulsive style of cognitive styles correlate positively almost with every strategy presented in the classroom.

However, there is always the need to take into consideration other important elements in the learner's personality such as their attitudes toward learning and their level of anxiety both during the process of learning and the assessments.

The cognitive styles that have impact the learners' learning strategy choices should also be correlated to the level of anxiety of each and every learner. Psychological developments on individual learning differences envision new approaches in three specific areas: processing capacity of the students' cognitive styles and understanding the process of knowledge. These are central to the understanding of students' differences. (Richard Riding, 2002)

The quality of students learning will improve by both managing the teaching styles according to the student's cognitive styles and the management of their anxiety.

2. HISTORICAL PERSPECTIVE ON ANXIETY

2.1.Anxiety in psychoanalytic vision

In psychology, the concept of *anxiety* was introduced by psychoanalysts and psychiatrists who examined anxiety as an innate personality trait, as an initial state characteristic of a person.

The term "anxiety" was first used in 1895 by Sigmund Freud, who gave a comprehensive description of the theory of anxiety. In his view, anxiety would be the signal of danger addressed to the Self, that is, to the conscious personality, which can react by appropriate measures or by mobilizing its defence mechanisms. (Freud, 2004, 658). In his 1923 book "Anxiety Problems," Freud describes anxiety as an emotional state with two distinct aspects: a specific note of discomfort and a motor determinant, both felt, experienced by the subject.

Anna Freud (2002) stated that anxiety is a state without object of waiting for an indeterminate danger (Freud, 2002, 210).

W. Reich continued the work of the two, defining anxiety as an obstacle to the contact of this energy with the outside world, which creates "muscle fixations", distorts and destroys sensitivity. (Reich, 1938, p.176). In this way, W. Reich introduces an important aspect in the description of the phenomenon of anxiety, namely stiffness, "muscle fixation (tension)", refusal to perform the activity by blocking the organs of the body. In A. Adler's view, anxiety arises in connection with the need to restore the lost social emotion when the social entourage places certain tasks in front of the individual. Even when the task is very easy, the person perceives it as a check on his integrity, which leads to an emotional reaction and a strong tension when it is performed.

2.2. Anxiety in Neo-Freudian vision

Karen Horney (1998) uses the term anxiety as synonymous with "fear," believing that there is a connection between anxiety and fear. She believes that both are, in fact, emotional reactions to a danger and both can be accompanied by physical sensations, such as sweating, violent palpitations, which can be so strong that an instantaneous and intense fear can lead to death.

Anxiety is a proportionate reaction to the hidden and subjective danger. She concluded that anxiety is the dynamic center of all neuroses, the main source of anxiety being not sexual impulses as S. Freud claimed, but hostile impulses. (Horney, 1998, p.216).

Erich Fromm (2004 points out that anxiety is caused by alienation, which is related to the fact that man perceives himself as a separate personality feeling helpless in the face of the forces of nature and the forces of society. The solution to this problem, according to E. Fromm, can be achieved through the various types of love that exist between people. (E. Fromm, 2004).

2.3. Behavioral approach to anxiety

James Watson defines anxiety as a reaction to conditioned fear, an acquired tendency. Starting from the main task of behaviorism "to be useful to practice", Watson exposes in his works not only theoretical theses, but also some advice to teachers and parents on ways to combat anxiety. (Watson, 1919,167).

Edward Tolman (1886-1959) makes a critical analysis of G. Watson's ideas, considering them boundless and introduces a series of intermediate values (heredity, impulses, physiological, maturity, thinking), in the formula S → R. Thus according to him Tolman, human behavior is seen to be much more complex, directed by certain goals and determined by previous experiences (Tolman, 1938, 41).

2.4. Anxiety from the perspective of Gestalt psychology

(Fritz) Perls considers anxiety to be the rupture between "now" and "then"; it forces man to plan, to repeat his future. This not only confuses him to become aware of the present but also destroys the openness to the future, which is necessary for spontaneity and development.

2.5. The cognitive and humanistic approach to anxiety

George Kelly considers that anxiety is the awareness of the fact that the event with which man encounters. According to G. Kelly, anxiety is the result of awareness of existing constructs, which cannot be used to predict all the events that man encounters. Anxiety arises when a person becomes aware that, in principle, he does not have adequate constructs with which to interpret events, namely the inability to predict (predict); they determine the appearance of lack of defence, of helplessness, of weakness (Kelly, 1955, p.344).

Carl Rogers (1980) considered that the source of anxiety is the encounter of the subject with an experience which, if it is conscious, can threaten man's conception of himself. (Rogers, 1980, 237).

For Rollo May (1966), a classic of humanistic-existential psychology, the key word in understanding anxiety is the threat to the values of the individual. (May, 1966, .425).

It is important to note that from the perspective of cognitive and humanistic psychology, the concept of anxiety is radically different from that of psychoanalysis, where anxiety is defined as a consequence of unconscious conflicts and repression of instinctual energy.

Analysing the concepts of anxiety described above, we conclude that in all psychological currents there are two ways of defining anxiety, namely: anxiety is seen as a primary characteristic of man and as a reaction to the hostile (hostile) outside world.

If the anxiety comes from the inferiority complex, then the person who relives it has a motivation that is not related to the current situation. Another conception of A. Adler's theory is that anxiety is more often determined by those tasks that endanger the self-esteem of the individual (Adler, 1996, 275).

As stated by R. Feldman (1993), anxiety states not only have a dysfunctional effect on the mental life of the individual, but can also positively influence motivation and performance. But when anxiety arises and becomes chronic without any external justification, we can speak of a mental problem.

3. ACADEMIC ANXIETY OF STUDENTS

In this sense, academic anxiety is the reaction of students to different learning situations, knowledge acquisition, testing, examination, etc. This reaction manifests itself in two dimensions: cognitive and emotional.

Academic anxiety is a spectrum of manifestations, in which there is excessive fear, negative cognitions in relation to some academic situations. People with a high level of academic anxiety are very sensitive and not very resistant to anxious stimuli.

Therefore, anxiety as a personality trait to react to threats and danger and as a state related to a certain context or situation manifests itself differently over a limited time, being determined by several internal and external factors, which can be structured in two categories:

1) the category of biological factors;

2) the category of social-psychological factors.

The factors in the first category are represented by the native biological predispositions that influence the appearance of anxiety. For example, high parental sensitivity can be genetically transmitted to children.

The second category of factors that determine the appearance of anxiety are the social psychological ones. This category includes all the socio-affective, socio-cultural and educational factors within the human groups in which the person must be integrated or of which he is a part. From this category of factors we highlight: the factor of the academic environment, the factor of the complexity of the training, the relational factor.

Academic anxiety, therefore, is related to students' reaction to different learning situations: knowledge acquisition, testing, examination, academic assessment, and so on.

https://doi.org/10.26520/mcdsare. 2021.5.106-114
Corresponding Author: Felicia Aurica Haidu

4. THE RELATIONSHIP BETWEEN ANXIETY AND COGNITIVE LEARNING STYLE

Anxiety is an exaggerated mobilization of mental energy and is part of the fundamental emotional reactions of man, as well as depression and suffering.

The fundamental feeling of anxiety is fear. This fear is a natural reaction to a real danger, but anxiety is the fear of an imaginary danger, being defined by specialists as a diffuse fear, without a well-defined object.

If fear teaches you to be careful, anxiety teaches you to be avoidant. Hence an essential idea about the nature of anxious behaviours, namely that they are learned, not innate. Due to this, anxious behaviours respond very well to short-term cognitive-behavioural therapies.

What needs to be remembered is that these anxious behaviours are learned so that they can be successfully addressed through cognitive-behavioural interventions and can disappear within a few months of the start of the intervention. The anxious person will learn to manage his fear by assigning it appropriately to each "obstacle" starting from an improved self-image with the help of therapeutic techniques, well defined but realistic.

The question arising here is the following: how can a professor correlate the students 'anxiety to their learning style? Is this the duty of the student only or should each teacher perceive and help some students manage their anxiety better? If the answer is affirmative, then the academic stuff should be:

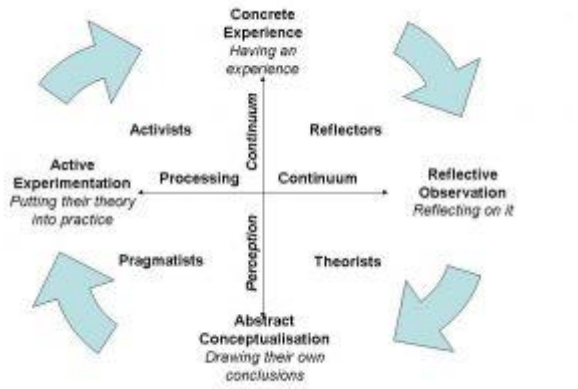
-expecting and managing anxiety (detecting anxious students)

-familiar with cognitive learning styles (simple and practical methods available to any teacher)

-aware of the relationship between anxious factors and learning ability

Specific psychological and educational intervention programs regarding the reduction / regulation of academic anxiety in students should normally be found at Career Counselling and Guidance Center of each university.

From the perspective of establishing the interaction between academic anxiety and cognitive style, we opted for the classification of cognitive styles by P. Honey and A. Mumford (2000):



Honey and Mumford's Learning Cycle linked with learning styles – Honey, P. & Mumford, A. (1995). *Using your learning styles*. Maidenhead: Peter Honey Publications Ltd.p. 17

Active cognitive style. Students prefer to be attentive, to act, they are well prepared for different types of activities. Their strengths are: initiative and activism. Usually, students in this category are extroverted and impulsive.

Reflexive cognitive style. Students with this style prefer to be prepared for classes, they like to analyze, to appreciate the results of their own activity, but also that of others. The strong point - adequate self-assessment and forecasting the necessary actions in the future.

Theoretical cognitive style. Students with this cognitive style have a high level of abstract thinking, show abilities of analysis, synthesis, conclusion, etc. These students are less impulsive and show a tendency toward optimal reflexivity.

Practical cognitive style. Students with this cognitive style have a pragmatic thinking, are prone to practical activities, are afraid of theoretical tasks. They are flexible in relation to practical and rigid activities in relation to the theoretical ones.

An understanding of Learning Styles theory may encourage learning facilitators/extension professionals to utilise a broader range of learning strategies – therefore providing for all learners through a more diverse learning experience. This increases the potential for more comprehensive learning.

The profile of the student with a high level of anxiety in relation to his cognitive and learning styles may look like the following:

- Rigid thinking
- exaggerated emotional reactions
- emotional instability
- Frustration
- nervousness
- low self-assertion
- lack of self-confidence
- low level of motivation
- exaggerated reflection

Each learner ought to understand their own learning style and seek out opportunities to learn in their learning style. But they should also develop their learning capacity in other styles to become a more well-rounded learner. This along with the proper management of their negative emotions will increase versatility in learning situations. So it is not only the professor's task to help them manage both their learning styles and anxiety but theirs as well.

5. METHODOLOGICAL INTERVENTIONS THAT VALUE THE RELATIONSHIP BETWEEN ANXIETY AND COGNITIVE STYLE

The methodological interventions regard the following:

1. Heuristic conversation
   - asking questions
   - answering questions
   - producing and implementing innovations
2. Problematization
   - creating problematic situations
   - solving problematic situations

- solving problem-situations

3. Brainstorming
   - brainstorming
   - debates
   - conversations
4. Case study
   - case analysis and debate
   - case research
   - proposing new solutions
5. Modelling
   - modelling learning contexts
   - modelling processes and outcomes
   - making decisions
6. Investigation
   - individual activity
   - induction
   - deduction
   - analogy
   - trial and error
7. The project
   - elaboration of projects
   - analysis and presentation of projects
   - appreciation of projects
8. Demonstration
   - analysis
   - synthesis
   - analogy
   - conclusion
9. Observation
   - direct
   - indirect
   - anxiety management tools

Capitalizing on the tools directly oriented towards the formation of reasons for learning also include:

1. Involvement of students in setting learning objectives / goals. How?
   - progressive setting of objectives;
   - individualization of objectives according to one's own personality;
   - prioritization of objectives;
   - monitoring progress towards objectives.

2. Building positive expectations and self-confidence. How?
   - supporting cognitive activities by expanding the area of information, interests;
   - development of independent thinking, intellectual courage, correctness.

3. Awareness of the essence and value of the task, perception of the connection between the current task and future professional problems. How?
   - planning how to solve tasks;

• differentiation of tasks by difficulty categories;
• use of positive feedback techniques
• creating an additional relational motivation.

4. Self-assessment. How?
• highlighting the progress made in each area of the learning act

5. Developing the feeling of self-efficacy, knowing one's own cognitive processes and regulating them. How?
• knowledge of one's own cognitive styles;

Teachers need to become aware of their students 'learning styles so that they are more empathetic toward their students' learning (Smith 2002).

• self-confidence;
• continuous self-assessment

The professor, through his / her own teaching-evaluation styles, must involve the students in accomplishing the problem-tasks, varied and attractive tasks. She/he needs to capitalize on and improve communication styles with students, taking into account their cognitive styles, but also the level of manifestation of academic anxiety.

Another important need of the academic stuff is to know and work individually with students with high levels of anxiety in the problem group

Finally, the creation of institutional centers for psychological counselling of students from the perspective of regulating and reducing academic anxiety is a fundamental step for each university.

Other important steps may include changes and initiatives around educational environment, curriculum and enhancing the collaboration with psychologists and other trainers:

• Adoption and application in practice by psychologists and university teachers of the proposed mechanism for regulating and reducing academic anxiety in students.

• Reviewing the university curriculum from the perspective of training psychologists in order to achieve motivational and reflective (psychological) valences to regulate and reduce academic anxiety in students.

• Application of psychological and educational mechanisms to regulate and reduce academic anxiety in students in special training, in the process of continuing education of psychologists, educators, teachers.

• Inclusion of students in research on the issue of academic anxiety at the level of bachelor's and master's theses

7. CONCLUSIONS

The university teacher need to become aware of their students' learning styles so that they are more empathetic toward their students' learning.

Not all students favour the same way of learning and they do not have the same personality traits; there are individual differences in managing the symptoms of anxiety and in the learning processes as well.

Each learner ought to understand their own learning style and seek out opportunities to learn in their learning style. But they should also develop their learning capacity in other styles to become a more well-rounded learner. This increases versatility in learning situations.

Although there may not be a significant relationship between learning styles and personality traits the knowledge and management of students 'anxiety by blending them with their cognitive styles may open the path to a new approach of what effective learning for future teacher candidates may mean.

BIBLIOGRAPHY

[1] Adler, A. (1996). *The knowledge of man.* București: Editura IRI;
[2] A. Parkinson et al. (2004),*Test–retest reliability of Riding's cognitive styles analysis test* Personality and Individual Differences ,Volume 37, Issue 6, October 2004, Pages 1273-1278
[3] Bendle, M. F. (2013). Erich Fromm and the age of anxiety. Quadrant, 57(10), 66–72. https://search.informit.org/doi/10.3316/informit.613232273093496
[4] Freud, S. (2004). *Introduction to psychoanalysis*, București, Editura Trei;
[5] Freud S. *Inhibitions, symptoms and, anxiety*. The standard edition of the complete psychological Works. L., 1926.
[6] Furnham, A. (1992). *Personality and learning style: A study of three instruments*. Personality and Individual Differences, 13(4), 429–438. https://doi.org/10.1016/0191-8869(92)90071-V
[7] E.R. Peterson et al., (2009), Learning and Individual Differences, Volume 19, Issue 4, December 2009, Pages 518-523
[8] Honey and Mumford's Learning Cycle linked with learning styles – Honey, P. & Mumford, A. (1995). Using your learning styles. Maidenhead: Peter Honey Publications Ltd.p. 17
[9] Horney, K. (1998). *The nevrotic personality of our epoch*, București: Editura IRI;
[10] Kelly, G. (1995). *The psychology of personal constructs*. New York: Editura W.W. Norton & Company Inc;
[11] May, R. (1996). *The meaning of anxiety*. New York: W.W. Norton &Company;
[12] Miclea, M. (1999), *Cognitive psychology*, Iasi:Polirom
[13] Moore, B. A. (2016). *How to control your anxiey*. București: Editura Trei.
[14] N. Entwistle et al. (2004), *Learning styles and approaches to studying*, Encyclopedia of Applied Psychology,Pages 537-542
[15] Patrick R. Thomas, Jacinta B.,McKayb, *Cognitive styles and instructional design in university learning*, Learning and Individual Differences Volume 20, Issue 3, June 2010, Pages 197-202
[16] Riding Richard (2002), School Learning and Cognitive Styles,1st Edition, London,ImprintDavid Fulton Publishers
[17] Roger, C (1980). *A way of being.* Boston: Houghton Mifflin;
[18] Tolman, E. (1938). *The determinants of behavior at a choice point*. Psychological Review;
[19] Watson, J. (1919). *Psychology from the Standpoint of a Behaviorist*. Philadelphia: J. B. Lippincott Company;

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2021, e-ISSN: 2601-8403
p-ISSN2601-839X

https://doi.org/10.26520/mcdsare.2021.5. 115-122

MCDSARE: 2021
International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

CLASSICISM AND NEO-CLASSICISMS IN THE HISTORY OF MUSIC

Gabriel Bulancea (a)
Professor, PhD., "Dunarea de Jos" University of Galati, Romania, bulancea_gabriel@yahoo.com

Abstract

In one of his articles, Octavian Paler draws attention in a metaphorical-mythologizing manner upon one of the risks taken by those who chose tradition as their source of inspiration. The epigonic spirit, because this is what he refers to, cannot escape idolatrising tradition, phenomenon that happens within an alterity of the creative identity, within the pettiness of controlling the artistic means, within the infatuation of his own image which is placed under the protection of the great creative figures. The epigone masters in an embryonic form some techniques which, for various reasons, he cannot manipulate creatively. He is somehow suspended between two sensibilities, hence his failure. On the one hand, he is not aware of the risk of assuming past sensibilities, and on the other, he does not assume his contemporariness. Giving in to the temptation of looking too much into the past, the epigonic artist loses his identifying sensibility. "The mistake of neo-classicism, with its statues painted or sculpted based and antique models, is Orpheus' mistake. As we no longer have the soul of the ancient Greeks, imitating their art is useless because in art too, looking back kills if there is no conscience of the irreversibility. From this point of view, there is no turning back unless in order to desolate everything" (Paler, 2016, pp. 189-190).

This quote refers to neo-classicism perceived in its most rudimentary form, in which it would identify itself with the epigonic phenomenon. Of course, no relation of equality can be claimed between an epigone and a neo-classicist. If we are to give a brief definition in which to establish a relationship between these two terms, the epigone is a neo-classicist that lacks fantasy. Neo-classicism means to creatively take over technical means, past sensibilities in order to anchor them in the tumultuousness of contemporary times. Neo-classicism represents the happiest mixture between past and present, that form of artistic reverberation in which modernity still makes room for the seal of the past. Not servility, not obedience, not anachronism which denote the incapacity to assimilate new composing techniques or the lack of vigour of creative energies, but the power to adapt to new sensibilities through restorative interventions. Starting from here, we will trace a re-echeloning line of various types of neo-classic sensibilities specific to the end of the 19th century and to the entire 20th century.

Keywords: classicism; neo-classicism; nomos; canon; artistic perfection;

https://doi.org/10.26520/mcdsare. 2021.5.115-122
Corresponding Author: Gabriel Bulancea

1. INRODUCTION. CLASSICISM AND NEOCLASSICISM. SIGNIFICANCES OF THE TERM *NEOCLASSICISM*

Classicism is a notion that applies to the field of art, used to define any drive to seek artistic perfection, to find any ideal of beauty which gains a rational representation, deducible through organisation nomoi, norms and laws established within the internal structure of the work of art. Beyond the historical determinations and stylistic particularities that it has experienced in time, *classicism* is an ahistorical notion, which has inhabited the history of humanity periodically and en passant.

The recurrences of this spiritual matrix are known as neoclassicisms and will consist of the order, clarity and simplicity of the means of artistic expression as well as of the outlining of a restricted emotionality, judiciously kept under the permanent control of a rationality which will dictate the path of artistic inspiration. From a musical point of view, this will mean returning to the contrapuntal writing and the tonal-type harmonic clarity, approaching certain genres and forms specific to the Baroque and Classicism, but also embracing the pure music, the instrumentalism devoid of any programmatic intention. The following study will see how much truth is in all these.

> In *Dictionnaire de la mousique*, neoclassicism is an
> "expression that appeared towards the end of the 19th century to designate in music, as well as in other forms of art (poetry, painting), certain aesthetics that translate the express will to «return to»: a return to a balanced, styled, pure, «Apollonian» music inspired by the classic masters (especially Bach), as a reaction against the unstoppable expressiveness of romanticism, against its sometimes hypertrophied or rhapsodic forms and the tendency to subject music to drama; at the same time, a reactive return to atonalism and «vanguardism», etc. Romanticism was already carrying neoclassicism within itself, claiming to belong to the past, and Johan Sebastian Bach was very frequently referred to as its father, considered to be «the most classic of the classics»" (Vignal, 1997, pp. 545-546).

With the visual arts, the notion is older, neoclassicism being correlated with the art from the time of the French Revolution and Napoleon's reign, so there had already been a precedent in terms of using it. In musical arts, as the connection between the Baroque style and the classical one is tighter than in the realm of plastic arts, neoclassicism is often defined as a "tendency to reinstate and implicitly re-evaluate within the composition certain aesthetical principles and norms and techniques specific to classical or pre-classical music" (Vancea, 1984, p. 322) or, looking at it from an ampler perspective, one can invoke "the neoclassical attitude (...) of the creators of models (of form, writing, style) of the pre-romantic musical past, more exactly the classic but especially the pre-classic one (...)" (Firca, G., 2010, pp. 368-369).

Keeping this in mind, it is noticeable that, in the turmoil of semantic clarifications and distillations characterising the history of music, one may often talk about neo-Baroque, neo-classicism and even neo-romanticism or neo-Gothic, depending on the time chosen as source of inspiration. The prefix *neo-* becomes a kind of *return to*. It is therefore natural to extend the significance of the term to any composers' tendency or attitude to re-edit some techniques from any other period, closer or farther from this, to use and re-evaluate the past in general, as a reaction to any manifestation of novelty in art which shocks, disappoints or gives the impression of instating anarchy.

This way, neoclassicism becomes somehow similar to the idea of *looking back* which generates nostalgia about the past and a rejection reaction towards certain musical experiments specific to the present. It would not be surprising anymore that certain musical languages which were criticised by certain composers, who were considered neoclassic, were assimilated by their successors for precisely the same reason. The former composers, on their turn, might have considered their predecessors a kind of neoclassic themselves. One can find similarities in the neo-serialism of the '50s and '60s which promote an identical reaction towards the serial experiments specific to the '20s and the '30s. Is it not possible for the composers of the '50s and '60s to have become a kind of neoclassics for those belonging to the '20s and '30s? To the largest extent of the term neoclassicism, the answer is 'yes'.

Neoclassicism, as we previously suggested, may also represent an attitude against the romantic, postromantic, and expressionist emotionality or against a more and more emphasised artistic individuality within the context of the ever aggressive affirmation of the musical vanguards. Thus, neoclassicism

claims the composer gains objectivity, a certain detachment which does not exclude the emotional aspect but claims to refine it and subject it to certain creation rules.

> "Looking at things from within, one has to notice first of all that the modern *neo*-manifestations are mostly reactions – spontaneous or doctrinarily motivated, whether the protagonists of that particular orientation, such as Stravinski or Ravel, Hindemith, are aware of it or not – generated by the *progressist fetishism* and the *permanent revolution* state promoted by the vanguard" (Firca, C.L., 2002, p. 117).

On the other hand, neoclassicism, once this new objectivity is gained, by approaching certain previous musical models in an ironic manner, seems to resort to different distortion degrees of the *cited* musical genres or languages. Famous examples that may be mentioned here are Prokofiev's *Symphony No.1* or Stravinsky's *Symphony of Psalms*. The allusion to Hayden's work in the former case or Bach's in the latter is evident. The neoclassic attitude may become

> "on the other hand, essentially modern, in regards to the freedom that composers manifest in the *performance* (craft) of those certain models, to the large (aesthetic, stylistic, technical) easiness of approaching the traditional musical *objects*. The modern dimension of neoclassicism is determined both by the recourse to the 20th century's language conquests – such as, the free use of chromatic totality, or the reforms in the realm of the modal – and, often, by the irony or parodic spirit of evoking, by the various degrees of distortion applied to the inherited data, obvious proof of the creator's distancing from the past that he is only apparently *citing*" (Firca, G., 2010, p. 369).

Analysing all these, one may reach the following synthesis:

- at first, neoclassicism was tighter connected to classical aesthetics, capitalising on its Apollonian potential;
- at the same time, neoclassicism represents a return to the immediately previous musical languages, as a reaction to the alleged anarchy springing from Romanticism's freedom of creation;
- then, the term was extended to other epochs, styles and musical languages;
- along with the ever abrupt emancipation of dissonance and the adjustment of the new sensibilities to a vanguard musical language, neoclassicism may become an experiment of mixture, eclectic or synthetic in nature, in which neomodalism may coexist with the liturgic modalism, the archaic genres may be adapted to the new sonorous organisations, the Wagnerian chromatic-type expanded tonality may be inserted into the poly-phonic language, the atonal may live along the imitative writing, etc.

2. *HISTORIES* OF NEOCLASSICISM

The new Grove Dictionary mentions the appearance of the term in 1923, closely connected to Stravinsky's work, referring to this fact in terms of *general historic awareness* of everything that means tradition and dissolution of everything that we label as classical composers (Dyer&Sadie, 2001). The history of the term also includes certain significances related to school of creation, individual stylistic orientations, be them phased or extended to the composer's entire creation period, and even associating him with the generality of an entire current existing in the history of music. Some *music histories* link neoclassicism to the Parisian inter-war vanguard and to the writer Jean Cocteau and the composer Erik Satie, these being the ones that initiated the movement called neoclassicism (Carozzo&Cimagalli, 2001, p. 390); others accidentally mention and briefly define the significance of neoclassicism (Salvetti, 1991, p. 97) which they see connected to Stravinsky's creation (Swafford, 2018, pp. 227-228), almost going without saying. Some extreme versions hardly mention neoclassicism (Allorto, 2005, p. 453) while other initiatives extend it to an entire period (Pascu&Boțocan, 2003, pp. 393-400, pp. 521-545).

There are also versions that break it down to formulations that are more successful in grasping the status of the neoclassical phenomenon, with a predilection towards disseminating various categories of notions; not a current, not an era, not even a style or technique, but a *first expression* or *wave* in asserting neoclassical trajectories, outlining three moments:

> "A first expression of neoclassicism is born in the middle of the Romantic current, having as its central purpose the continuation of Beethovenian directions (J. Brahms, A. Bruckner, C. Franck). The second wave will consist of the composers that are active in the last years

of the 19th century and during the first decades of the 20th (Max Reger, F. Busoni, M. Ravel, G. Enescu) and it revives traditions of the early classicism and of the baroque. The third wave, which starts after WWI, coincides with the generalisation of the neo-baroque tendency through the works signed by I. Stravinski, P. Hindemith, A. Honegger, D. Milhaud, M. Ravel etc." (Vasiliu, 2002, p. 109).

3. NEOCLASSICISM *AVANT LA LETTRE*

Without an official name, the neoclassical tendencies specific to the 19th century manifest themselves rather temperamentally, the composer's psychological structure displaying predilections towards the baroque or classical musical language, without the need to define them. Brahms, profoundly attached to Romanticism, officiates the synthesis between certain techniques specific to the Baroque and Classicism with the Romantic harmony and sensitivity. Franz Liszt behaves similarly with the less known *Missa choralis*, which he will finish in 1865, where the modal language, the polyphonic vocal writing and the romantic harmony co-exist in a salutary symbiosis. These neoclassical presentiments are also to be found in some romantic composers such as Robert Schumann, Anton Bruckner, César Franck, Camille Saint-Säens, Piotr Ilici Ceaikovski, Giuseppe Verdi etc. With some of them, these will constitute only brief stages, moments of confirmation and mastering certain past composing techniques, with others though they will essentially mark their entire creative evolution, multiple histories of music often placing them on a map of neoclassical nature.

Johannes Brahms (1833-1897) is one of those composers; his personality absorbs the entire romantic sensitivity, grafting on the trunk of tradition this twig that carries the name of romanticism, tumultuous and profoundly rebellious, trying to re-establish its order and equilibrium by regimenting it in the baroque or classical rules and canons. The result was an extremely special neoclassicism: on the one hand, the recrudescence of the baroque or classical sensitivity is animated by a new spirit, livelier, more palpable, more authentic, more modern for its contemporaries, escaping the rigidity and dryness that Brahms' contemporaries criticised; on the other hand, the romantic sensitivity, without to succumb among the graces that were legitimising its inspiration, receives the seal of inspiring clarity of certain ordinating streams that re-instate human emotion in a restoring and regenerating framework. Often mentioned as a romantic or neoclassical composer and pianist, fact which would somehow absolve him of the monopolising labels, Brahms distinguishes himself from the romantic generation by several features which constitute the identity of his musical style and define the beginning of an orientation that reconciles the romantic sensitivity with the one of the preceding tradition. The neoclassical dimension of the Brahmsian creation is *absorbed* by the composer's romantic personality, his preference for his predecessor's techniques and the repudiation of programming from his creation partially distinguishing him from the romantic generation. Historians often assign to him a neoclassical dimension contained *in nuce* throughout his compositional journey. This is why Brahms's creation is mostly the reconciliation act between Romanticism and its preceding currents; it embodies a matured artistic consciousness capable of bringing within the same framework the romantic *defiance* and the classicism's *dogmatic rigidity*. Brahms is *taming* the romantic spirit depriving it of instrumental virtuosity, of literalistic extremes or of formal *libertinism*, conferring it depth, nobility and meditation.

The neoclassical dimension of Piotr Ilici Tchaikovsky's creation (1840-1893) is less known. One could catch a glimpse of it in the four orchestral suites he composes in 1879, 1883, 1884, and 1887. Tchaikovsky composes constantly from 1862 to 1893, the year of his death, one not being able to delineate a neoclassical stage in his creation. Neoclassic escapades are to be found throughout his creation such as in *Symphony No. 3*, that he composes in 1875, in the fifth part of which he inserts an ample fugue; and this is not the only example of this sort.

The four orchestral suites scattered across a decade, during which Tchaikovsky composes a series of other major works such as the *Piano Concert No. 2* (1880), the *1812* and *Romeo and Juliete* overtures (1880), the *Mazeppa* opera (1883) and the *Manfred Symphony* (1885), represent accreditations of a Baroque compositional technique that Brahms completely mastered. The inserted fugues, either as distinct sections or developing segments, and some dances of baroque nature denote a transient neoclassicism, a passing phase which may return anytime, rather than a deliberate preoccupation of the composer's part. Tchaikovsky is profoundly devoted to romantic aesthetics and his neoclassicism is

linked to a certain emotional circumstance. He sometimes wants to give birth to his romantic experiences and dreams in a more sombre manner, by assigning it the neoclassical mark, promoting thus a circumstantial neoclassicism.

Max Reger (1873-1916) configures a neoclassicism of a post-romantic nature noticed from his very first creations in 1890 till his last ones, towards the end of his life. The initiator of the slogan *Back to Bach*, he will promote a musical language whose specificity is the synthesis between the Bachian polyphonic writing and the intensely chromatized tonal harmony of post-romantic nature, the way Liszt and Wagner forged it. However, unlike Bach whose *avant la lettre* "postromantism" could be felt here and there in some of his creations and which was closely related to strengthening certain areas of religious significance (Bulancea, 2019, pp. 185-194), Reger goes further and, still staying within the postromantic aesthetic framework, overloads the polyphonic writing at the same time with overpopulating the harmonic discourse with chromatic elements and modulations that are more and more often and distant, gaining the superlative effect of a grandiloquent expression with the risk of losing the warm humanism of an internalized lyrism. Reger is not less postromantic than neoclassical; he is not less subjectively involved than objectively. He manages to push their extreme levels to unimaginable dimensions, obtaining a spectacular polarizing effect. He ventures himself to outline an ever precarious equilibrium which survives an overflowing imagination, profoundly attached to the musical tradition detached from any literalistic intent.

4. *NEOCLASSICISMS* IN THE 20TH CENTURY. TYPES OF NEOCLASSICISMS

In the 20th century, Neoclassicism gains a historic and aesthetic identity through the already mentioned contribution from the French musical sphere. Its area of manifestation is located somewhere between 1920s and 1950s. Nevertheless, there are numerous composers who, without having any connection with Cocteau's, Satie's and Stravinsky's initiatives, manifested a neoclassical tendency in their creation so neoclassicism comes to define that natural, human and universal inclination of the creative man to return to or recover the tradition in order to regain an Apollonian attitude in art. Some, such as Messiaen, Stravinsky or Hindemith, will approach it in a more daring manner; others, such as Orff or Elgar, will be more docile towards it. Some will treat it transiently, such as Enescu, Bartók, Prokofiev or Schostakovich; others will operate with longer intervals, such as Poulenc, Bussoni or Respighi. This explains the great variety of neoclassical tendencies specific to this century; the various approaches that characterise the creative impetus of composers.

This is not less evident in France where, unlike Claude Debussy (1862-1918) who is sometimes said to have had a short neoclassical stage in terms of the evolution of his chansons, Maurice Ravel (1875-1937) detaches himself from his impressionist homologue precisely through his preference for musical forms and structures springing from the synthesis between tonal and modal, his predilection for intellectual rigor affecting the structure of his works. The undeclared neoclassicism of his works offers the musicological medium the opportunity of attaching him to impressionism. However, when it comes to Ravel's style and his comparison with Debussy's style, the former is rightfully attributed a strong sense of objectivity, an inclination of working on the musical theme and the forms derived from classical and Baroque models rather than preference for the colours, textures and languorous sensuality of Debussy's music (Schonberg, 2000, p. 454). Synthesising, we could state that Ravel, profoundly devoted to impressionism, often resorts to the ordering force of neoclassicism, grafting it on the former's trunk, in a similar manner to that in which Brahms did with romanticism.

Then, there will be the composers known as Les Six (*The Group of Six*), especially Honegger, Milhaud and Poulenc, who, disapproving with Debussy's or Ravel's music, which they considered outdated and artificial, will build an eclectic-like neoclassical attitude encompassing different variants. Milhaud, for instance, builds an eclectic-like neoclassical attitude through his predilection for short pieces, jazz music and South-American dance music, with often incursions into polytonality. Honegger remains attached to the Western symphonic tradition or to the Handelian oratorical conception, while Poulenc, the only one surviving time's censorship, performs incursions into farther eras which he approaches in an unmatched manner, with a fine sense of humour which confers him a certain objectivity, allowing him a chance of ensuring a recipe for success.

Later on, the French composer Olivier Messiaen (1908-1992), who will patron the group *Young France* at some point, will assume for himself a certain type of neoclassical attitude. Messiaen reinvents the entire musical language and, if one may speak of a neoclassicism in his works, this will always be located in a vanguard area. He destructures the work of musical art through rethinking all musical parameters, especially the melody, the rhythm and the harmony, obtaining musical effects of a particular originality. There is a hermeticism of his art which does not make it accessible to the large public. Despite this, the mix of intuition and engineering found in his art, the combination between decorative and structural, the mixture between naturalism and abstractionism, sensuality and aridity, luxury and simplicity, action and contemplation, will ensure an undisputed success. Messiaen is probing with his music areas of feeling that avoid any intrusion of banality. Using his themes, he often ventures in expressing certain profound and ardent religious experiences, so that the violence of his musical language draws its essence from the defiance of common categories. (Vignal, 1987, p. 508) His sensitivity navigates areas that are linked to mysticism so his music will consequently alternate as expression between the quietness of a gentle breeze and the shuddering greatness of a thunder.

Paradoxically, one will also find a neoclassical vision in the Viennese school dominated by the figures of the three expressionist composers. "If neoclassicism means, among other things, a return to an order given by Baroque and classical structures, then the idea of chaotic atonalism (which became a cliché to describe some of Schönberg's works) is immediately contradicted." (Sandu-Dediu, 2010, p. 168) The idea of Apollonian which had dominated any artistic desideratum for centuries would be profoundly altered by the unprecedented status that dissonance would gain among musical opposites. The claim of an affinity with Bach's music is only a partial one and profoundly distinct from it but, perhaps, justified. Grafting compositional techniques specific to the Baroque and classicism on an atonal framework, in a desperate attempt to confer the illusion of order, may constitute a failed experiment. From a metaphoric perspective, their endeavours resemble the efforts of some children who are trying to recompose the vase they have just broken. Of course, there is the delight of reconstruction, as in a puzzle, which will confer the illusion of aesthetic satisfaction and, in addition, the idea that the mechanics of re-assembling the pieces, the mathematics governing this process, offers access to the hidden essence of the world, finally discovered by means of a refined *game of beads*. Order, complexity, rigor to the detriment of functionality, consonance, and organicity, resulting in dissolution of human sensitivity. Schönberg, Berg and Webern claim that they reconfigures the order postulate in a world dominated by anarchy turning, paradoxically, into Messianic apostles of what art should signify. Disfiguring it of any type of functionality, they would do the same as their contemporary regimes, gaining a formal, non-human and non-empathic order. The quintessence of their actions is unmeasurably more justified than that of the political vector of their time. It may impress certain professionals or melomaniacs seeking the hermetic sensationalism, fact which happened nonetheless, but it will not enjoy at all the public popularity.

Unlike atonal composers, Paul Hindemith (1895-1963) claimed a position closer to tradition and Bach's music. He loved to approach Baroque-like genres and forms such as fugue, suite or sonata, which he would dress up in a profoundly original harmonic language. He did not contemplate atonalism at all although the audacity of his musical language has often been mistaken for atonalism. It is enough to simply listen to the prelude of *Ludus tonalis* (1942) to notice the profound resemblance to Bach's *Chromatic fantasy*. Hindemith borrows, along with their techniques, various musical genres and forms, especially Baroque, which he adapts to his neotonal language, promoting an essentially vanguardist neoclassicism, always supple, permanently innovative through reconfiguring them "in the new mosaic-like sound context of the 20th century, achieved through the combination of the baroque traditional constructive techniques with the innovative principles of personal thought." (Vlahopol, 2010, p. 173)

Unlike him, Carl Orff (1895-1982) sets himself within the limits of a synthesis neoclassicism which succeeds in amalgamating the musical languages specific to his age with those of the Middle Ages. His preference for the poetics and musical themes practised by the Goliards presents him as composer capable of updating the past, not necessarily by taking over certain techniques specific to it, but by adapting and reconfiguring certain artistic meanings that seemed to have been forgotten. Having perhaps a more acute awareness of the past that other composers, Orff rejects in his creation the ideas of evolution, novelty or originality at all costs, betting instead on the idea or reiteration, of *aggiornaménto*, of adaptation to the progress by promoting a neoclassical attitude which manages to transmit the discreet perfume of some ages that seemed unrecoverable.

The English musical landscape manifests itself through a grounded classical-romantic continental tradition and a profound attachment for national music. The musical language of a composer such as Edvard Elgar (1857-1934) will alternate between the ardent rigour of Brahms and the postromanticism of Strauss or Mahler. Others, such as Vaughan Williams (1872-1958) or Benjamin Britten (1913-1976), will recover, through neoclassical evocations, composers like Thomas Tallis or Henri Purcell. A certain modal flavour will permeate the folkloric themes of Vaughn, a symphonism that rejects a provincial perspective, sometimes cross-bred with a boldness of language that forces the English music to evolve on all levels. On the other hand, Gustave Holst (1874-1934) will alternate between the modernity of the musical language that may shock by boldness and the appeal to folklore or to sonorous sources of medieval inspiration, much like his colleague Vaughn Williams whom he had a profound friendship with.

On its turn, Italy will manifest, through its composers, strong neoclassical tendencies whose essence can also be found in their quasi-restorative nature. Take for instance, the initiator of *young classicism*, Ferruccio Busoni (1866-1924), whose compositional endeavours aimed at combining the Italian cantability with the German musical structures. His neoclassicism will be indebted to the postromantic aesthetics along the line initiated by Liszt, Wagner, or Brahms, manifesting itself mainly as a reaction to Schönberg's expressionistic atonalism, Stravinsky's primitivist modalism or Debussy's sensual tonal modalism. His neoclassical language will leave a mark on his entire compositional career, so he will become one of the main promoters of compositional rigor.

Another Italian composer that will develop a neoclassicism of quasi-restorative nature is Ottorino Respighi (1879-1936) who will be preoccupied with the recovering of several musical traditions starting from the Gregorian music, feeding on the sources provided by the Renaissance or Baroque music and going as far as processing Rossini's music. Reluctant towards the idea of originality and novelty at all costs, Respighi reveals himself to be a composer profoundly attached to musical tradition and to creation in its spirit. He is not preoccupied with renewing the musical language but rather with updating tradition through orchestral transcripts and adaptations. The same path will be taken by composers like Gian Francesco Malipiero (1882-1973), Alfredo Casella (1883-1947) and Ildebrando Pizzetti (1880-1968) who will constitute the triad of the Italian neoclassicism. They will develop a classicising direction, a mannerism which does not avoid creative intervention, more daring harmonies or certain compositional incursions that have an increased degree of originality. Within the European, and not only, musical context of experiments of any type upon the musical phenomenon, they claim as their own an aesthetics of tradition by re-establishing the initial beauty of music, that beauty which, risking to seem old-fashioned to some people, still has a lot to say. It is a beauty that offers the soul the feeling of reconciliation with itself, reinstates its damaged dignity, which takes you to the origin of grace, a place where the entire human equilibrium is restored. A beauty of finding fulfilment in simplicity, a beauty of pure joy, which sees the world as a celebration, as an epiphany of light and profound order. It is a beauty of recovering a deep feeling of good in relation with the self, the world and God.

5. CONCLUSIONS

In the history of music, neoclassicism is not a current like the great creative eras. It is manifesting more like a tendency which reverberates at the level of the musical language through reinstating order and equilibrium where these seem to exist no more. Unfavoured in history by the temporal factor, by circumstance or by the glamour of a school of creation that has imposed itself on the landscape of musical evolution dynamics, neoclassicism does not receive the status of current or era like the one in the visual arts. On the other hand, neoclassicism is not a style because the diversity of forms of manifestation makes it impossible to achieve unity at the level of musical language. The multitude of neoclassical approaches, attitudes, and tendencies turns to crumbles any unitary perspective of it. In the case of the other arts, neoclassicism is favoured by some European monarchic regimes, their centripetal political attitude manifesting in art as well. It should be enough to notice the more than one-hundred-year gap between the classicism of visual arts and the musical classicism to better understand this matter of fact. Musical classicism becomes visible in the vicinity of certain political sensitivities which already envisaged the dissolution of the monarchic regimes. It is contemporary with the affirmation of neoclassicism in the other arts, reason for which, the coming-backs to a neoclassical attitude in music will

be nothing but particular manifestations sometimes with dispersion at the national level, well individualised as tendencies, reflecting thus the multicultural context of the European space specific to the 20th century.

BIBLIOGRAPHY:

[1] Allorto, Riccardo, *Nuova storia della musica* (New history of music), Ricordi, Milan, 2005, p. 453;
[2] Bulancea, Gabriel, *Harmonic foreshadows in J.S. Bach's creation*, 6th SWS International Scientific Conference on Arts and Humanities ISCAH 2019, SGEM Scientific eLibrary, pp. 185-194;
[3] Carozzo, Mario; Cimagalli, Cristina, *Storia della muzica occidentale – Dal Romanticismo alla muzica elettronica* (History of Western music – from Romanticism to electronic music), vol. III, Armando Editore, Rome, 2001, p. 390;
[4] Dyer, Joseph; Sadie, Stanley, *The New Grove Dictionary of Music and Musiciens*, Edited by Stanley Sadie, London, 2001;
[5] Firca, Clemansa Liliana, *Modernitatea și avangardă în muzica ante- și interbelică a secolului XX (1900-1940)* (Modernity and vantguard in the pre- and inter-war music of the 20th century (1900-1940), Romanian Cultural Foundation Publishing House, Bucharest, 2002, p. 117;
[6] Firca, Gheorghe, scientific coord., *Dicționar de termeni muzicali* (Dictionary of musical terms), Scientific and Encyclopaedic Publishing House, Bucharest, 2010, pp. 368-369;
[7] Paler, Octavian, *Mitologii subiective* (Subjective mythologies), Polirom Publishing House, Bucharest, 2016, pp. 189-190;
[8] Pascu, George; Boțocan, Melania, *Carte de istorie a muzicii* (A history of music), vol. II, Vasiliana'98 Publishing House, Iași, 2003 pp. 393-400, pp. 521-545;
[9] Salvetti, Guido, *Storia della musica - La nascita de Novecento* (History of music – the birth of the 20th century), vol. 10, 1991, EDT Ltd – Turin, p. 97;
[10] Sandu-Dediu, Valentina, *Alegeri, atitudini, afecte – Despre stil și retorică în muzică* (Choices, attitudes, emotions – about style and rhetoric in music), Didactic and Pedagogical Publishing House, Bucharest, 2010, p. 168;
[11] Schonberg, Harold C., *Viețile marilor compozitori* (The lives of the great composers), Lider Publishing House, Bucharest, 2000, p. 454;
[12] Swafford, Jan, *Il linguaggio dello spirito – Breve storia della musica classica* (The language of spirit – brief history of classical music), Mondadori Libri S.p.A., Milan, 2018, pp. 227-228;
[13] Vancea, Zeno, scientific coord., *Dicționar de termeni muzicali* (Dictionary of musical terms), Scientific and Encyclopaedic Publishing House, Bucharest, 1984, p. 322;
[14] Vasiliu, Laura, *Articularea și dramaturgia formei muzicale în epoca modernă (1900-1920)* (Articulation and dramaturgy of the musical form in the modern era (1900-1920), Artes Publishing House, Iași, 2002, p. 109;
[15] Vignal, Marc, *Dictionnaire de la mousique – la mousique des origines à nos jours* (Dictionary of music – music from its origins to nowadays), Larousse, 1997, pp. 545-546, p. 508;
[16] Vlahopol, Gabriela, *Baroque reflections in ludus tonalis by Paul Hindemith*, AMTA'10: Proceedings of the 11th WSEAS international conference on Acoustics & music: theory & applications, June 2010, p. 173;

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education
MCDSARE 2021, e-ISSN: 2601-8403
p-ISSN2601-839X

Ideas Forum International Academic and Scientific Association

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education

AIMS & SCOPE

Since 2015, International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education by Ideas Forum International Academic and Scientific Association (IFIASA) has become one of the most important conference on social sciences and arts in Romania. IFIASA organizes conferences, workshops, and publishes high quality academic international journals.

The aim of International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education - MCDSARE is to create a debate conference concerning the great challenges which the contemporary society addresses to social sciences, philosophical and education. The main topics covered by the researchers are: Philosophy, Sociology, Communication, Social Work, Anthropology, Applied Philosophy, Ethics, Applied Ethics, Bioethics, History, Religious Studies, Arts & Architecture, Psychology, Educational Sciences, Politics, European Studies, International Relations, Public & Private Law, Management, Marketing, Economy.

The MCDSARE by IFIASA conferences is equally opened to researchers and professors, educational policies makers, strategists, scientists, university postgraduate and undergraduate engineering and students.

International Multidisciplinary Scientific Conference on the Dialogue between Sciences & Arts, Religion & Education (MCDSARE) is an open access, peer-reviewed and refereed journal published by IFIASA. The main objective of MCDSARE is to provide an intellectual platform for the international scholars. MCDSARE aims to promote interdisciplinary studies in social and behavioural sciences and become the leading journal in social and behavioural sciences in the world.

MCDSARE publishes original papers, review papers, conceptual framework, analytical and simulation models, case studies, empirical research, technical notes, and book reviews. Special Issues devoted to important topics in social and behavioural sciences will occasionally be published.

Authors must be authorized to transfer copyright of the manuscript to MCDSARE by IFIASA. The author shall transfer all rights to the document editor who is committed to the publication and commercialization of the document (also in printed, electronical or E-book form), without limits of time and space. Only papers presented at the conference and received according to publication guidelines and timelines will be published in the MCDSARE. Only the Full Text Papers that follow the rules and are written in A+ English will be considered for publication.