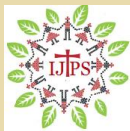


**International Journal of Theology,
Philosophy and Science**



Number 9, Year 5, November 2021
Ideas Forum International Academic and Scientific Association
Romania 2021



EDITORIAL BOARD AND STAFF

Advisory Board

Ivan **IVLAMPIE**, Professor PhD., Faculty of History Philosophy and Theology, University Dunarea de Jos Galati, ROMANIA,
Gheorghe **ANGHELESCU**, Prof. Faculty of Orthodox Theology, "Valahia" University, Târgoviște, Romania
Iulian **GRIGORIU**, Professor PhD., Faculty of History Philosophy and Theology, University Dunarea de Jos Galati, ROMANIA,
B. Hyun **CHOO**, Ph.D. Lecturer of Department of Asian and Asian-American Studies, Stony Brook University, New York, USA
Mihail **RARIȚA**, Professor PhD., Faculty of History Philosophy and Theology, University Dunarea de Jos Galati, ROMANIA,
Jay J. **CHOI** M.D., DABPM, Former Associate Professor of Clinical Anesthesiology, UMD New Jersey Medical School, Newark, NJ, USA
Alexandru-Traian **MIU**, PhD.Asist. Faculty of Orthodox Theology, "Valahia" University, Târgoviște, Romania

Editorial Board

Jacques **COULARDEAU**, Prof. Ph.D. University Paris I, Panthéon-Sorbonne, Paris, FRANCE
Gerard **WEBER** Prof. Ph.D. Bronx Community College Of the City University of New York, USA
Spyridon **KAKOS**, PhD., National Technical University of Athens (NTUA), University of Athens, GREECE,
Marian **VILCIU**, PhD. Prof. Faculty of Orthodox Theology, "Valahia" University, Târgoviște, ROMANIA
Florea **STEFAN**, PhD. Prof. Faculty of Orthodox Theolog, "Valahia" University, Târgoviște, ROMANIA
Daniel Alberto **AYUCH**, PhD. Professor, Faculty of Orthodox Theology, University of Balamand, LIBAN,
Ion **CORDONEANU**, Professor PhD., Faculty of History Philosophy and Theology, University Dunarea de Jos Galati, ROMANIA,
Encarnación Ruiz **CALLEJÓN**, Prof. Faculty of Philosophy, University of Granada, SPAIN
Ramona **NEACSA**, PhD. Lect. Faculty of Orthodox Theology and Education Sciences, "Valahia" University, Târgoviște, ROMANIA
Nicolae **XIONIS**, PhD. Prof. Faculty of Orthodox Theology, University of Athens, GREECE
Walter **GOMIDE**, PhD. Professor, Federal University of Mato Grosso, BRAZIL
Roberto **PARRA DORANTES**, M.A. Professor, Universidad del Caribe, Cancún, MEXICO
Marin **BUGIULESCU**, PhD. Member of Dumitru Stăniloae Scientific and Interdisciplinary Research Center, Valahia University, Târgoviște, ROMANIA
Alexandru-Corneliu **ARION**, PhD. Faculty of Orthodox Theology, Valahia University, Târgoviște, ROMANIA
Ion **CROITORU**, PhD. Prof. Faculty of Orthodox Theology, "Valahia" University, Târgoviște, ROMANIA

Editor-in-chief

Marin **BUGIULESCU**, Prof. PhD. Member of Dumitru Stăniloae Scientific and Interdisciplinary Research Center, Valahia University, Târgoviște, ROMANIA

©Published by IFIASA, Romania

Web: web: <https://www.ifiasa.com/ijtps>
ijtps_journal@yahoo.com

Print to: PIM COPY, Bulevardul Mihail Kogalniceanu Nr. 24, București, Romania,

Grafic disinger: Marin BUGIULESCU

© International Journal of Theology, Philosophy and Science. Copyright is warranted by national and international laws. Authors are responsible for the content and accuracy.

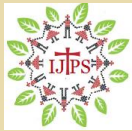


TABLE OF CONTENTS

Editorial Board of IJTPS	2
Table of contents	3
Preface	4
Prof. PhD. Tianxi ZHANG, GENESIS AND BLACK HOLE UNIVERSE: THE FOURTH DAY	5
Prof. PhD. Bharat JHUNJHUNWALA, HINDU COSMOLOGY IN THE LIGHT OF MODERN PSYCHOLOGY	19
Prof. PhD. Giovanni FAZIO, PHYSICAL OR THEOLOGICAL APPROACH TO INVESTIGATE THE SHROUD IMAGE FORMATION BY UV RADIATION?	53
Prof. Ph.D. Candidate Sorin Cristian NUCĂ, MONASTIC SPIRITUALITY IN THE TEACHING OF SAINT BASIL THE GREAT	59
Prof. Christine Carmela R. RAMOS, TECHNOLOGY AT THE CROSSROADS: A CALL FOR TRANSFORMATIVE TECHNOLOGY IN THE POST-PANDEMIC ERA	70
Presentation of IJTPS	78



Preface

The 9-th issue of *International Journal of Theology, Philosophy and Science* (November 2021) presents scientific and theoretical articles on various aspects, all of them centred on the area of Philosophy, Theology, and Science.

In the first article: *GENESIS AND BLACK HOLE UNIVERSE: THE FOURTH DAY*, Prof. Ph.D. Tianxi ZHANG. This paper as Paper-IV, describes how God created our earth and solar system and generated lights including the Sun, the moon, and stars to give light to our universe and earth. The efforts of this systematic study on God's creative work during the first four days bridged the gap between Genesis and observations of the universe and brought us a scientific understanding of the Genesis.

The next work is called: *HINDU COSMOLOGY IN THE LIGHT OF MODERN PSYCHOLOGY* and it belongs to Prof. Ph.D. Bharat JHUNJHUNWALA. This study is an comprehensive_Hindu narrative of creation in the framework of modern cosmology and psychology.

The next study, by Prof. Ph.D. Giovanni FAZIO, presents the theological theme: *PHYSICAL OR THEOLOGICAL APPROACH TO INVESTIGATE THE SHROUD IMAGE FORMATION BY UV RADIATION?* In this article, author research ask ourselves if it is possible that Corona Discharge or Vacuum UV radiation may have been the tools to produce the Shroud body image. He is convinced that both are not appropriate mechanisms. In fact, the start of these processes is based on inconsistent hypotheses for the natural sciences, although all that follows is rational, reasonable and acceptable. However, the big initial mole remains.

MONASTIC SPIRITUALITY IN THE TEACHING OF SAINT BASIL THE GREAT is the article presented by Ph.D. Candidate Sorin Cristian NUCĂ. The spiritual training of the exceptional beacon of the Cappadocian Fathers, Saint Basil the Great, influenced the subsequent ecclesial life, but especially the monastic one, by the divinely inspired rules, which became essential for all the subsequent monastic settlements, the fruits of the monastic spirituality according to his teaching being substantiated in the principles governing the life of the monastic community by love, obedience, teaching, knowledge, asceticism, without despising the hermitic (skete) life, trying to combine the most useful principles of both of these forms of monastic asceticism.

TECHNOLOGY AT THE CROSSROADS: A CALL FOR TRANSFORMATIVE TECHNOLOGY IN THE POST-PANDEMIC ERA is the final article of the volume presented by Ph.D. Christine Carmela R. RAMOS, which explains the philosophy of globalization in viewed in this work as a critical concept by which we understand the transition of human society into the post-pandemic era. In this vein, this paper attempts to look into the process of globalization and its central feature the technology.

The scientific content presented in the current issue of *International Journal of Theology, Philosophy and Science* distinguishes the opportunity of examining altogether truth-claims found in Theology, Philosophy, and Science, as well as the methods laid out by every discipline and the meanings derived from them. This is the aim and also the scientific task of IFIASA *International Journal of Theology, Philosophy and Science*.

Prof. Ph.D. Marian BUGIULESCU,
IFIASA, ROMANIA



GENESIS AND BLACK HOLE UNIVERSE: THE FOURTH DAY

Prof. PhD. Tianxi ZHANG,

Department of Physics, Chemistry, and Mathematics, Alabama A & M University,
Huntsville, Alabama 35762,
UNITED STATES,
Email: tianxi.zhang@aamu.edu

ABSTRACT

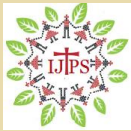
Papers I through III has fully and self-consistently addressed the first three days of Genesis according to the author's well-developed black hole universe model. In the first day, God created space and time, matter and motion, charge and fundamental forces, and energy and light for the infinite entire universe. Then, in the second day he hierarchically structured the entire universe by separating the matter and space with infinite layers bounded by event horizons and further formed our finite black hole universe. In the third day, God constructed the interiors of our black hole universe with planets, stars, galaxies, and clusters, etc. In this sequence of study as Paper-IV, we describe how God created our earth and solar system and generated lights including the Sun, the moon, and stars to give light to our universe and earth. The efforts of this systematic study on God's creative work during the first four days bridged the gap between Genesis and observations of the universe and brought us a scientific understanding of the Genesis. This innovative interpretation of Genesis also strongly supports the black hole universe model to be capable of revealing the mysteries of the universe.

Keywords: Genesis; Cosmology; Black Hole; Universe;

INTRODUCTION

Recently, the author has fully and self-consistently interpreted the first three days of Genesis [1-3], according to his well-developed black hole model of the universe [4-16]. Paper-I interpreted the first day of Genesis [1]. It was a long day that contained the entire time period for God to create the three-dimensional infinite (or formless) and dark empty space (called earth in the book of Genesis), to make the initial super fluidal matter (named as water in the book of Genesis) and fill it into the empty space, to power the matter with motion and hence start the time, to create the fundamental forces among matter and thus provide matter with inertia of motion, and to generate light or radiation so that switched the entire space or the grand universe from darkness to brightness or from night to day (i.e. evening to morning). In the first day, God created the first black hole, the infinite entire space or the grand universe, simply denoted by U.

Paper-II interpreted the second day of Genesis on the basis of the interpretation of the first day according to the black hole universe model [2]. In the second day, God structured the infinite entire space 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 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 finite mass, radius, density, and temperature, there are infinite layers, which are structured hierarchically and governed by the same fundamental laws of physics. In the second day, God structured the entire universe to have the infinite layers, mathematically represented by $U = \{ \dots \{ F, F, F, \dots \{ G, G, G, \dots \{ A, A, A, \dots \{ S, S, S, \dots \{ C, C, C, \dots, C \} \} \} \} \dots \}$, in which $\{ C, C, C, \dots, C \} = O$ is our finite black hole universe [2].

Paper-III interpreted God's work in the third day in constructing the interiors of our finite black hole universe [3]. 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.

In the book of Genesis, the first through fifth sections of the first chapter describe the first day's work by God on creating the entire universe with matter and light, while the sixth through eighth sections of the first chapter describe the second day's work by God on structuring the entire universe with layers. The ninth and tenth sections of the first chapter describe the third day's work by God on constructing the interiors of our finite black hole universe with stars, planets, galaxies, clusters etc. The first two days were the days of the entire universe, rather than our earth day (i.e. 24 hours), which is only the time needed for our earth to make one self-rotation about its axis. In the first two days, the Sun, planets including our earth, moon and even the interiors of our finite black hole universe were actually not formed and placed yet, and thus it is meaningless to say the earth day. 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.

This paper as Paper IV further self-consistently explain God's work in the fourth day in forming our solar system including planets, comets, and asteroids. Planets may have their natural satellites such as the moon of our earth, and making lights including the Sun, the moon, and stars to give light to the universe as well as to 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 great lights: the Sun and the 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. To the other stars and planets of the universe, God made them with similarities to the Sun, earth, and solar system. 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.

With overall of this sequence of study, we aim at an attempt to develop author's newly well-developed black hole universe or cosmological model, for revealing the

mysteries of the universe and wiping out the discrepancy between science of cosmology and the book of Genesis. It provides a new interpretation of Genesis and meanwhile supports the black hole universe model in terms of Genesis. Through this effort, we will demonstrate the black hole universe model to be not only scientific because it reveals truths and self-consistently explains observations of the universes, but also philosophical because it is complete and simply answers questions and overcomes difficulties without any non-testable hypothetical entities, and further theological because it is biblical and innovatively interprets the Genesis of the bible.

1. GENESIS AND BLACK HOLE UNIVERSE: THE 4th DAY

In this section, we interpret the fourth day of Genesis according to the black hole universe model. We again apply the New International Version (NIV) of the bible [17].

1.1. *Creating Lights for Our Universe*

¹⁴*And God said, "Let there be lights in the vault of the sky to separate the day from the night, and let them serve as signs to mark sacred times, and days and years,"*. Here, God furthered his work to make 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). Figure 1 shows the lights or stars in the universe. As the black hole universe model described, the mass of the universe is about 8×10^{52} kg or 4×10^{22} solar masses, consistent with observations that indicate that our universe contains hundred billions of galaxies and each galaxy contains hundred billions of stars.



Fig. 1: The universe and stars (credit: www.universetoday.com). Our universe contains hundred billions of galaxies, each galaxy contains hundred billions of stars, each star can have a number of planets revolving around, and each planet may have some natural satellites orbiting around. Stars emit light and planets and their satellites reflect stars' light. They are all lights to give light to the universe and our earth.

Since the time (initiated by God in the first day) is a measure of change or motion, these lights created can serve as signs to indicate times, days, seasons, and years based on their relative motions. For instances, the map or relative position of constellations around the northern star or Polaris can serve us as a clock of seasons. Figure 2 shows the Dipper clock, whose pointer from the last two stars of the Big Dipper to the Polaris points or tells us the month of the year according to a formula: the time equals the Dipper clock reading subtract two times the number of month after March 6. In addition, the redshifts of light from stars, galaxies, and clusters can indicate the distances or times (including days and years) that the light has travelled. The changes of luminosities of supernovae can also show the times elapsed.

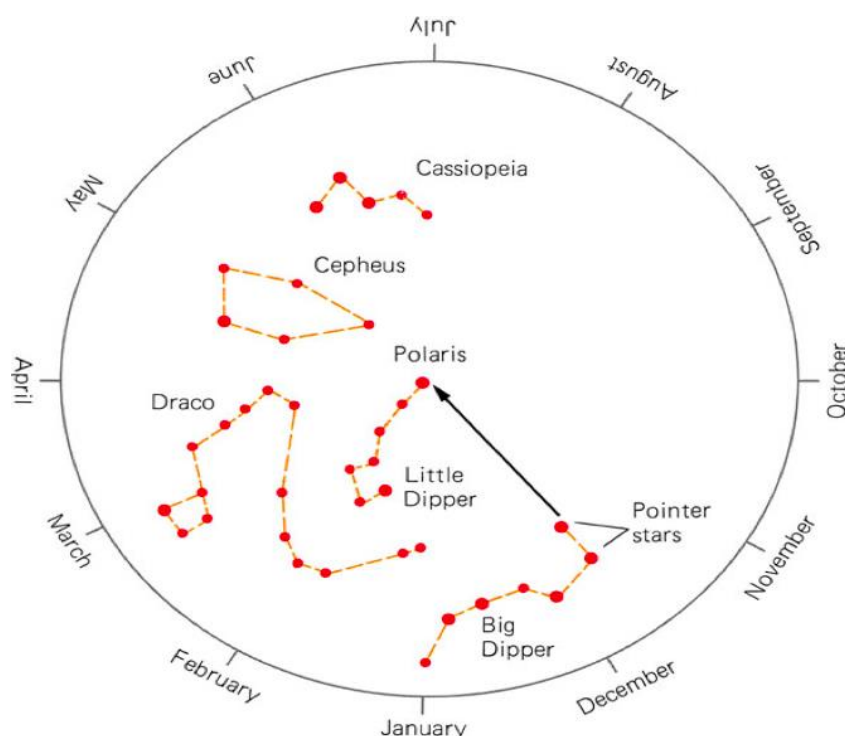


Fig. 2: The Dipper clock of seasons (credit: The McGraw-Hill Companies, In.). The pattern of constellations apparently appeared in association of the Polaris with seasons of the year. The night sky changes with the seasons. The star pointer from the head (or the last two stars) of Big Dipper to the Polaris points to the month (thus the season) of the year.

Nuclear fusions in the cores of stars do not directly emit visible light. It is known that each proton-proton fusion reaction forms a deuteron with emissions of a positron and a neutrino that all carry total energies of 17.6 MeV. Then, the proton-deuteron fusion produces a helium-3 (${}^3\text{He}$) and meantime emits a gamma ray, which has frequency much higher than that of visible light. Since the positron (β^+) decay of diproton is rather rare, a star including the Sun can slowly fuse its core protons for billions of years. Recently, the author has indicated that the β^+ decay may be not rare enough and the plasma oscillations or waves generated in the hot and turbulent core can play the role in opposing the proton-proton fusion reaction [18-19]. All of the visible lights from stars are actually emitted by the photospheres, in which atoms are excited or energized from the energy of nuclear fusion in the cores of stars. Letting the energy of photons of visible light to be equal to about the thermal energy of the photosphere, one can estimate the temperature of the photosphere in an order of magnitude about 10^4 Kelvins, thousand times lower than the temperature of the core.

According to the quantum theory or Bohr’s model, the atomic spectrum of hydrogen can be represented by the Bohr’s wavelength expression. Figure 3 shows the atomic spectrum of hydrogen with the spectral lines in different series, in which the visible light belongs to the Balmer series, emitted when the excited hydrogen atoms when they change their energies to the first excited states. There are 118 elements discovered in the nature and labs. Their atoms, whether ionized or not, can emit various lines of spectra with more complicate series. A star, like the Sun, usually has its atmosphere that comprises the chromosphere, transition region, corona, and heliosphere, which can be seen when the main part of the star or the photosphere is hidden.

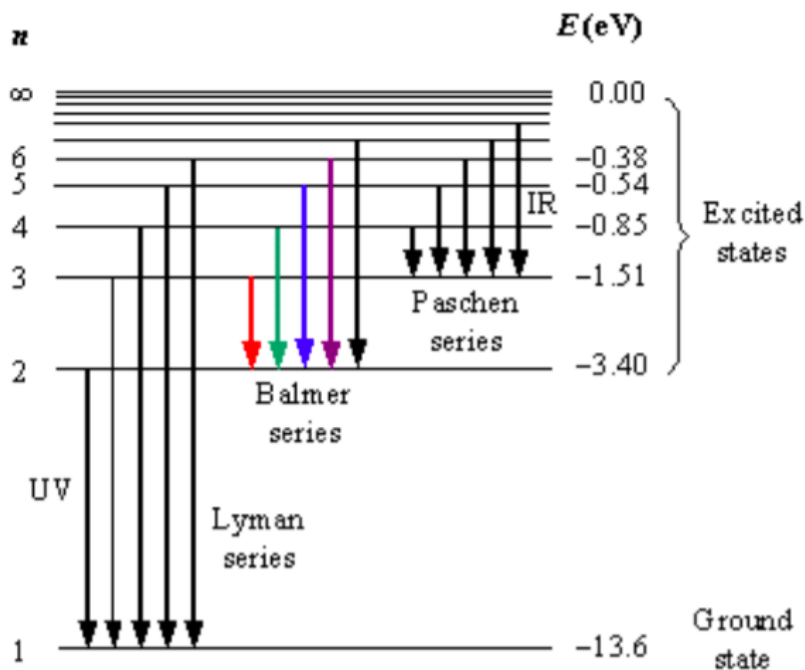


Fig. 3: Energy and spectrum of hydrogen atom [20]. When a hydrogen atom changes its state or energy from one to another, it emits a photon. The spectrum of the hydrogen atom falls into different series such as Lyman series in the UV frequency region, Balmer series in the visible light frequency region, and Paschen series in the infrared frequency region.

1.2. Creating Solar System with the Sun, Our Earth, and Moon

“¹⁵and let them be lights in the vault of the sky to give light on the earth.” And it was so. ¹⁶God made two great lights—the greater light to govern the day and the lesser light to govern the night. He also made the stars. ¹⁷God set them in the vault of the sky to give light on the earth, ¹⁸to govern the day and the night, and to separate light from darkness. And God saw that it was good. ¹⁹And there was evening, and there was morning—the fourth day.

Then, God let the lights created in the universe to give light on the earth. God further created our solar system (Figure 4) 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 made by placing the Sun at the center of the solar system, enabling our earth to be revolving around the Sun once a year (or 365 earth days) and meantime spinning itself about its own axis once a day (or 24 hours), and making the moon to be revolving around the earth once about every 27.3 earth days. God satisfied his work in the fourth day. It was a day to prepare the earth for plants to

grow and for lives, especially human, to live. Before the creation of lights to give off 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 off 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.

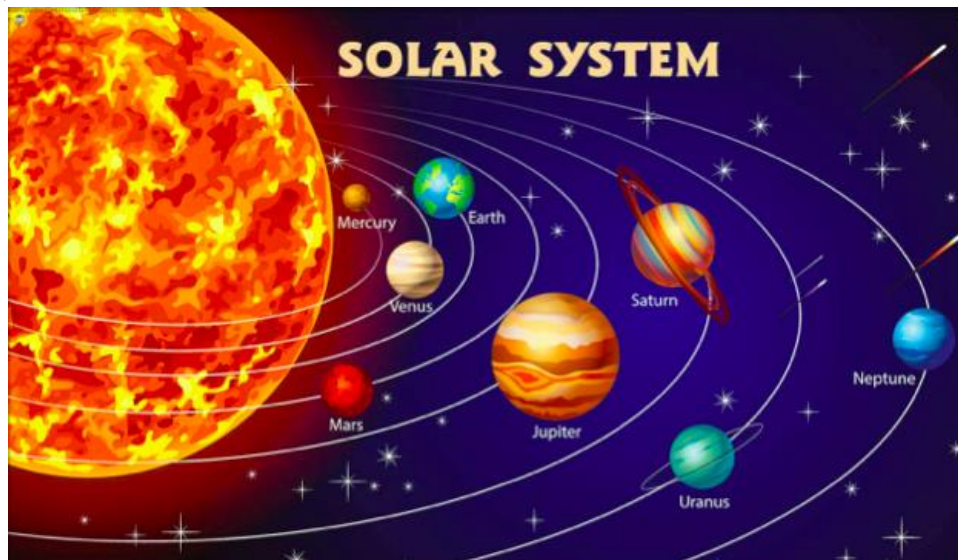


Fig. 4. The solar system (credit: amazon.com banner photos). The Sun is located at the center of the solar system with eight planets, five dwarf planets, thousands of comets, and billions of asteroids revolving around. Some planets own their natural satellites such as the moon, the only natural satellite of the earth. Jupiter has 79 confirmed natural satellites.

The Sun is our star and lies at the heart of the solar system. It holds 99.8% of the solar system's mass with luminosity of about 3.85×10^{26} W, mainly electromagnetic radiation, especially visible light, from its photosphere and powered by the nuclear fusion of 3.6×10^{38} protons per second to helium nuclei in its core. There are eight planets revolving around the Sun and our earth is the third planet with a distance of 1.49×10^{11} m (or one AU) from the Sun. In addition, there are also five dwarf planets, thousands of comets, and billions of asteroids observed to be revolving around the Sun. The Sun is one of more than 100 billion stars in the Milky Way. It orbits some 25,000 light-years from the galactic core, completing one revolution every 250 million years. Except for emitting light, the Sun also releases a constant stream of electrically charged particles or plasma called solar wind that mostly consists of electrons, protons, and helium nuclei with speed reaching about 250-750 km/s at a distance of more than a few solar radii and trace amount heavy ions or atomic nuclei such as C, N, O, Ne, Mg, Si, Fe, and so on [21]. The solar wind that originates from coronal holes is usually flowing faster, temperature higher, and density lower than that originates from the equator region. The tails of comets are resulted from interactions by the solar wind. Considering planets to be all embraced by the solar wind, the author recently proposed the space charging model for the origin of planetary magnetic fields [22]. It provides a self-consistent and alternative explanation for the present magnetic fields of Moon, Venus, Mars, and Pluto, and the relative magnetic fields or moments of Mercury, Earth, Jupiter, Saturn, Uranus, and Neptune (Figure 5). The present dynamo model does not self-consistently explain why smaller sized Mercury and Mars can develop dynamos but the Venus cannot. The geomagnetic field plays the essential role in protecting and maintaining Earth's

atmosphere and environment weather.

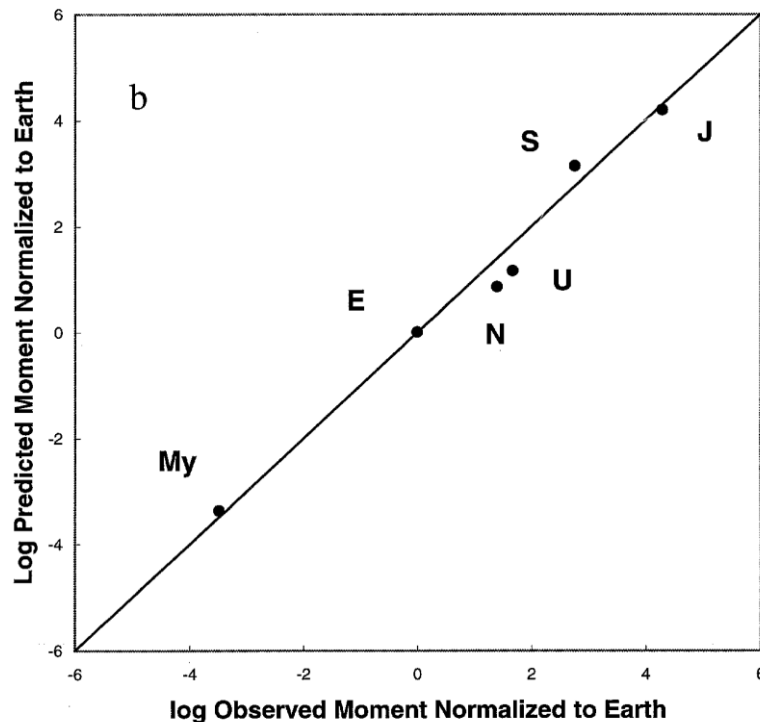


Fig. 5: The planetary magnetic moments normalized to the earth predicted by the space charging model are plotted as functions of those measured by observations [22]. Results self-consistently explained magnetic fields of Mercury, Earth, Saturn, Jupiter, Uranus, and Neptune.

The earth is our planet with mass about 6×10^{24} kg and radius about 6.4×10^3 km. It is the third (or fifth largest) planet in the solar system and has distance from the Sun about 1.49×10^{11} m. About 30% of its surface is land, while the remaining part covers by water. The earth atmosphere consists mostly of nitrogen and oxygen by 78% and 20%, respectively, plus 0.9% argon, 0.04% 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. By adding excess carbon dioxide, a major greenhouse gas, which traps infrared radiation from going out to space, human activity, which happens mostly in the lowest layer, troposphere, is greatly affecting the climate and weather in the earth's atmosphere and causing the blue planet global warming. Figure 6 shows the beautiful image of our earth, a blue planet, from space. God selected the earth for plants to grow and for animals, especially human beings, to live by getting energy about 1.37 kW per square meter from the Sun.



Fig. 6: The earth from space (image credit: NASA/JPL). Its surface is mostly covered by water, so that is called blue planet. The green part shows plants on land and white clouds are full of atmosphere.

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 1/4 and 1/80 of the earth, respectively, orbiting the earth at an average distance about 30 times the earth radius every 27.3 earth days. 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. As the earth also revolves the Sun, the period of the lunar phases is about 2.2 days longer than the time needed to make one revolution around the earth. Figure 7 shows the eight phases of the moon, from a new moon to the full moon and back to another new moon, taking 29.5 earth days. Chinese calendar is lunisolar, created on the basis of the astronomical observation of the Sun's longitude and phases of the moon. In this Chinese calendar, a common year has 12 months while a leap year has 13 months. A small month has 29 days, while a big month has 30 days.

The full moon is always around the 15th and 16th of the month, while the waxing crescent moon is always around the 3rd and 4th of the month. The moon as like the Sun has played an important role in the world culture and human civilization. For instance, in Chinese tradition, the full moon is a symbol of peace, prosperity, and family reunion. Mooncakes are made and eaten during the Mid-Term Festival on August 15th in each year. In 1969, the NASA spacecraft Apollo 11 first landed humans on the moon.

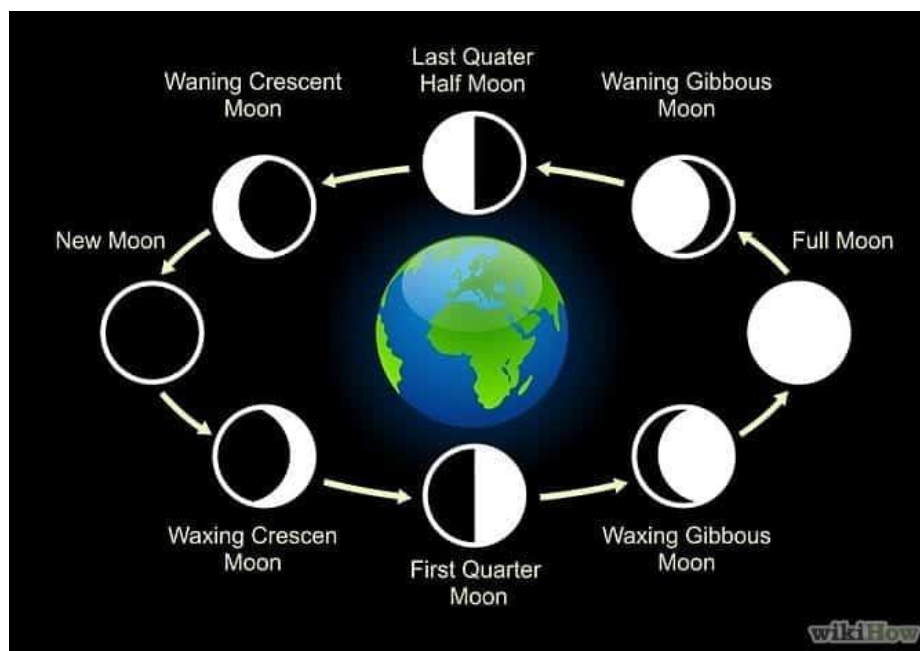


Fig. 7: Eight phases of Moon from new moon to full moon and back to new moon (credit: physicsinmyview.com). The illuminated portion that we who are standing on the earth can see varies the shape in a period of about 29.5 earth days.

Except for the sunlight and solar wind, another two fundamental solar phenomena or emissions that severely affect the space weather system of the earth environment are coronal mass ejections (CMEs) and solar energetic particles (SEPs) with energy of some MeV/nucleon, accelerated in solar flares and by CME-driven shocks. These SEP and CME events can cause solar radiation storms, geomagnetic storms, aurora, and so on (Figure 8). CMEs are ejections of materials including plasma and magnetic field from the solar corona to heliosphere in hundreds to thousands of kilometers per second [23]. According to the magnetic properties, the CMEs observed at 1AU can be classified into two categories: (1) flux-rope CMEs and (2) non-flux-rope CMEs. Statistically, about 1/3 of CMEs are associated with magnetic clouds, whose local magnetic structure is that of a flux rope, while other 2/3 of CMEs are associated with complex ejecta, which are not flux ropes and have disordered magnetic fields [24]. The SEPs are high-energy particles including electrons and ions (or elemental nuclei) and also have two distinct categories: (1) impulsive SEP events and (2) gradual SEP events [25]. The gradual SEP events are associated with flux-rope CMEs and accelerated by CME-driven shocks. The Impulsive SEP events are usually enriched in ^3He and plasma waves with frequency about harmonics of the ^3He -cyclotron frequency are believed to play essential roles in these solar ^3He -rich events [26]. The magnetic topologies that lead to these two types of SEP events are very different. The magnetic reconnections produce the magnetic topology of impulsive SEP events if they occur partially on the coronal open field lines and the magnetic topology of gradual SEP events if they occur entirely on the coronal closed field lines. In other words, gradual SEP events originate from the closed magnetic field regions, while impulsive SEP events originate from the open field regions. Solar X-ray and plasma outflow jets are produced with similar magnetic reconnection and topology to impulsive SEP events [25,27].

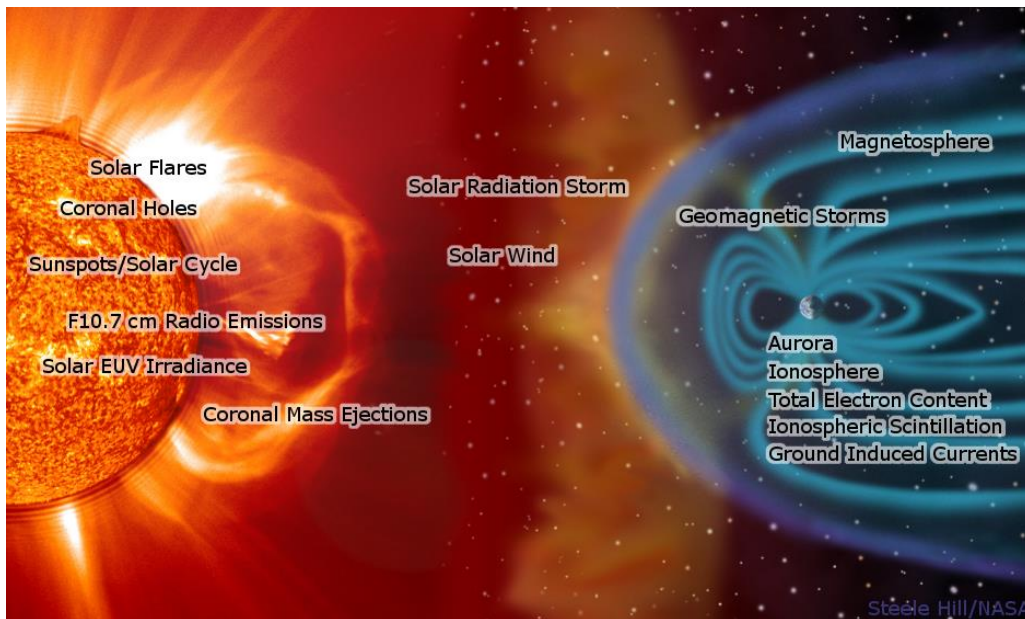


Fig. 8: Space weather phenomena (credit: www.swpc.noaa.org) between the Sun and Earth. Solar wind along with coronal mass ejections and solar energetic particles, accelerated in solar flares and by CME-driven shocks severely impact space weather environment near the earth and cause solar radiation storms, geomagnetic storms, etc.

On the CMEs, the author and his colleagues comprehensively simulated both flux-rope and non-flux-rope CMES with a well-developed 2.5-dimensional magnetohydrodynamic (MHD) model [27-30]. The MHD simulations start from the solar wind streamer solution, in which the magnetic field lines above the equator by about three solar radii are opened. The magnetic field lines at the low corona (below about three solar radii) near the equator are still closed. During a solar minimum or with an inactive solar dynamo, the solar corona appears as a large magnetic dipole-configuration streamer magnetic topology. By emerging a magnetic flux rope from the photosphere to the solar corona in the closed field region, the simulation initiates a flux-rope CME and produces the magnetic topology that leads to a gradual SEP event. By emerging a flux rope from the photosphere to the solar corona at the open field line region near the closed magnetic field lines, the simulation initiates a non-flux rope CME and produces the magnetic topology that leads to an impulsive SEP event. Physically, the magnetic field of the emerged flux rope has an opposite polarity with the background open field and the location of the magnetic flux emergence is at the edge of a coronal hole. Figure 9 plots magnetic topology and its evolution of a flux-rope CME (left panel), and plasma density image and its evolution of a non-flux-rope CME (right panel), obtained from the MHD simulations.

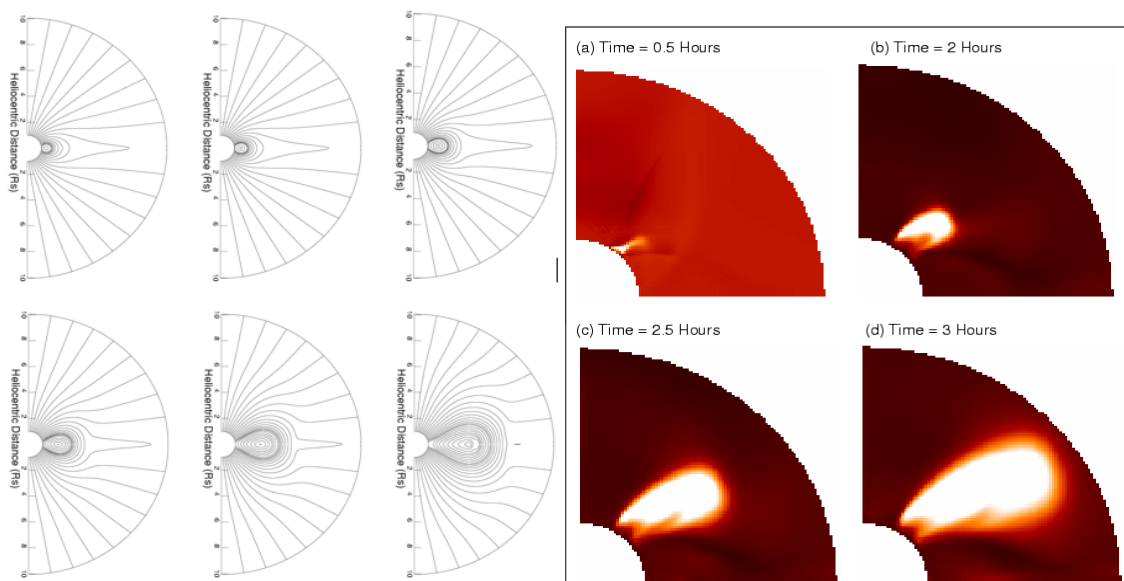


Fig. 9: Left panel plots magnetic topology and its evolution of a flux-rope CME that is produced from the MHD simulation when a magnetic flux emerges from the closed field line region in the coronal streamer [28-29]. Right panel plots images of plasma density for a non-flux rope CME to be initiated from the MHD simulation by the magnetic reconnection at the coronal base in the open field region or coronal hole near the closed magnetic field lines [27,30].

On the SEPs, the author successfully developed a complete common acceleration mechanism for ^3He and heavy-ion enrichments in impulsive SEP events [31-32]. It consists of two processes or stages of particle acceleration (the left panel of Figure 10). In the first process or stage, ^3He and heavy ions with appropriate charge states are preferentially heated by current-driven electrostatic ion-cyclotron waves via harmonic resonances; while in the second process or stage, those preferentially preheated ^3He and heavy ions with velocity or energy above a threshold (the right panel of Figure 10) are further accelerated to high energies (MeV per nucleon) in a flare acceleration mechanism triggered due to magnetic reconnections. It was shown that current-driven electrostatic H-cyclotron waves could be destabilized at frequency twice the ^3He -cyclotron frequency and thus can preferentially heat ^3He via the second harmonic resonances and heavy ions via the third harmonic resonances. The author further self-consistently interpreted various aspects of heating and acceleration of ^3He , ^4He , H, electrons, heavy ions, including C, N, O, Ne, Si, Mg, and Fe elemental nuclei, and ultraheavy ions with an atomic number greater than fifty ($Z > 50$) in the most frequently occurred SEP events [33-42]. In comparison to Fisk's ^4He -cyclotron waves, Zhang's H-cyclotron waves are: (1) more easily excited (or are excited by lower currents), (2) excited in more reasonable coronal plasma conditions, (3) more efficient at heating ^3He and heavy ions, and (4) resonating heavy ions with higher charge states and thus, more consistent with measurements. The author first numerically solved the dispersion relation of H-cyclotron waves. Figure 11 plots the real frequencies and growth rates (i.e. positive imaginary frequencies) of H-cyclotron waves as functions of parallel and/or perpendicular wavenumbers. It shows that H-cyclotron waves are likely excited by currents at frequency about twice the ^3He -cyclotron frequency and thus efficiently heat ^3He ions via the second harmonic resonances and heavy ions with appropriate charge states via the third harmonic resonances. The preferential heating of ^3He and heavy ions by H-cyclotron waves leads to

more ^3He and heavy ions to be selected to further accelerate in solar flares to high energies and produces solar ^3He -rich events. Quantitatively studying the preferential heating of ^3He and heavy ions by H-cyclotron waves and the selective acceleration of the preheated ^3He and heavy ions above threshold, the author has self-consistently explained various aspects and measurements of solar ^3He -rich events [31-42]. The million tons of ^3He in the regolith of the moon surface soils are due to direct bombardments and deposits of solar ^3He -rich events. The measurements that ^3He and heavy-ion spectra of solar ^3He -rich events are very similar strongly prefer to support this two-stage common acceleration model [43].

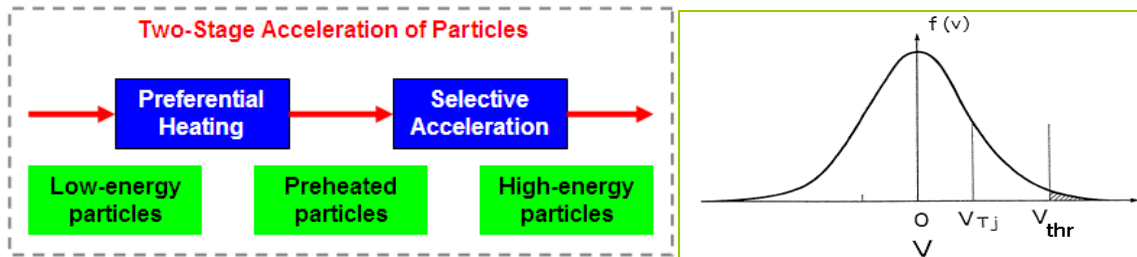


Fig. 10: Schematic diagrams for the two-stage model of preheating and selective acceleration of particles that have preheated above the threshold velocity.

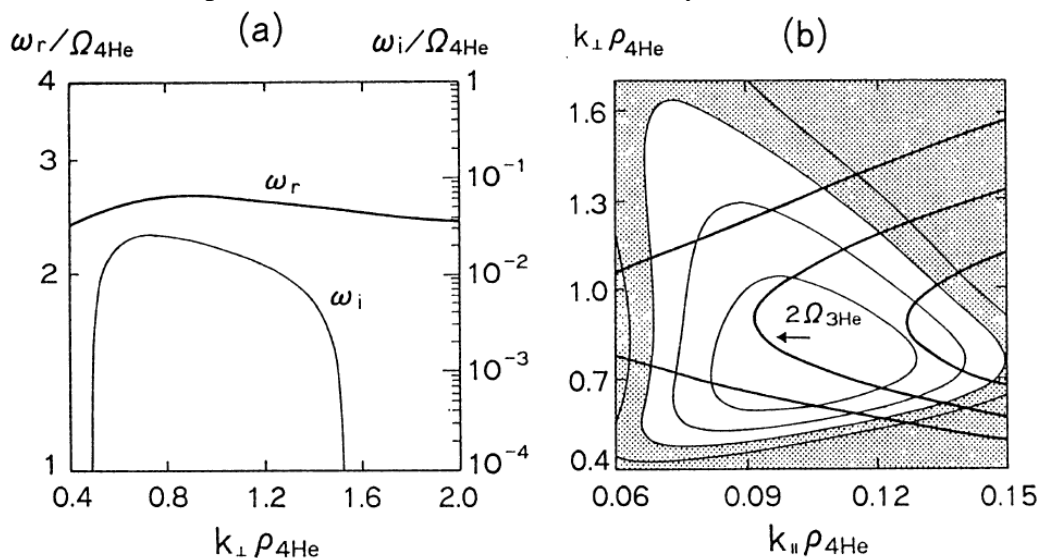
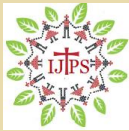


Fig. 11. Dispersion relation of current-driven electrostatic H-cyclotron waves [36]. Left panel plots the real and imaginary frequencies as a function of the perpendicular wavenumber with a fixed parallel wavenumber. Right panel plots the contours for real and imaginary frequencies in the parallel and perpendicular wavenumber plane.

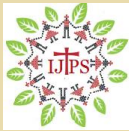
CONCLUSION

We have interpreted the fourth day of Genesis as the day of lighting stars to our black hole universe and our earth, creating solar system, and placing the Sun and the moon as the greater and lesser lights to light the earth and thus to govern the earth day and night, respectively. God created an appropriate weather environment system of the earth for plants to grow and for human beings and any animals to live. Not only does the Sun emit light to provide energy to warm the earth and blow solar wind to originate the geomagnetic field, but also it produces CMEs and SEPs that disturb the space weather. The tilt of Earth’s rotation to the orbit leads to the weather on the earth to be seasonal. The rotation of the moon around the earth leads to the phases of the moon.



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., “Genesis and Black Hole Universe: The Second Day”, *International Journal of Theology, Philosophy, and Science*, 7 (2020), 5-19
- [3] Zhang, T. X., “Genesis and Black Hole Universe: The Third Day”, *International Journal of Theology, Philosophy, and Science*, 8 (2021), 5-18
- [4] Zhang, T. X., “A New Cosmological Model: Black Hole Universe”, *American Astronomical Society 211th Meeting*, Abstract #152.04 (2007)
- [5] Zhang, T. X., “A New Cosmological Model: Black Hole Universe”, *Progress in Physics*, 5 (2009), 3-11
- [6] Zhang, T. X., “Cosmic Microwave Background Radiation of Black Hole Universe”, *Astrophysics and Space Science*, 330 (2010), 157-165
- [7] Zhang, T. X., “Quasar Formation and Energy Emission in Black Hole Universe”, *Progress in Physics*, 3 (2012), 48-53
- [8] Zhang, T. X., “Key to the Mystery of Dark Energy: Corrected Relationship Between Luminosity Distance and Redshift”, *Progress in Physics*, 9 (2013), 33-38
- [9] Zhang, T. X., “A New Mechanism for Gamma Ray Bursts: Emissions of Dynamic Black Holes”, *Proceeding of Gamma Ray Burst 2013 Symposium*, SNSN-323-63 (2013)
- [10] Zhang, T. X., and Frederick, C. “Acceleration of Black Hole Universe”, *Astrophysics and Space Science*, 349 (2014), 567–573
- [11] Zhang, T. X., “Gamma Ray Bursts of Black Hole Universe”, *Astrophysics and Space Science*, 358 (2015), article id. #14, 8 pp
- [12] Zhang, T. X., Nika P., and Guggilla P., “Energy and Spectra of Gamma Ray Bursts from Mergers of Binary Black Holes”, *Gamma-Ray Burst Symposium*, article. Id. 4028.pdf (2016).
- [13] Zhang, T. X., “Principle of Spacetime Black Hole Equivalence”, *Progress in Physics*, 12 (2016), 353-361
- [14] Zhang, T. X., Wilson, C., and Schamschula, M. P., “X-Ray Flares Sagittarius A* and Black Hole Universe”, *Progress in Physics*, 12 (2016), 61-67
- [15] Zhang, T. X., “Mach’s Principle to Hubble’s Law and Light Relativity”, *Journal of Modern Physics*, 9 (2018), 433-442
- [16] Zhang, T. X., “The Principles and Laws of Black Hole Universe”, *Journal of Modern Physics*, 9 (2018), 1838-1865
- [17] New International Version of the Bible, www.biblehub.com/niv/genesis/1.htm.
- [18] Zhang, T. X., “The Role of Plasma Oscillation Played in Solar Nuclear Fusion”, *Progress in Physics*, 17 (2021), 93-98
- [19] Zhang, T. X., “Gamow Theory for Transmission and Decay of Unbound Diprotons”, *Progress in Physics*, 17 (2021), 151-154
- [20] Griffiths, D. J., *Introduction to Quantum Mechanics*, Prentice Hall Press, (1995)
- [21] Parker, E. N., “Dynamics of the Interplanetary Gas and Magnetic Field”, *Astrophysical Journal*, 128 (1958), 644-676
- [22] Zhang, T. X., “A Space Charging Model for the Origin of Planets’ Magnetic Fields”, *Progress in Physics*, 15 (2019), 92-100
- [23] [Forbes, T. G.](#) et al., “CME Theory and Models”, *Space Science Review*, 123 (2006), 251-302.
- [24] Gosling, J. T., Thomsen, M. F., Bame, S. J., and Zwickl, R. D., “The Eastward Deflection of Fast Coronal Mass Ejecta in Interplanetary Space”, *Journal of Geophysical Research*, 92 (1987), 12399-12406
- [25] Reames, D. V., “Particle Acceleration at the Sun and in the Heliosphere”, *Space Science Review*, 90 (1999), 413-491
- [26] Fisk, L. A., “³He-Rich Flares - A Possible Explanation”, *Astrophysical Journal*, 224 (1978), 1048-1055



- [27] Zhang, T. X., “MHD Simulation for the Origin and Magnetic Topology of Solar ^3He -Rich Events”, *Astrophysical Journal*, 677 (2008), 692-698
- [28] Wu, S. T., Zhang, T. X., et al., “Numerical Magnetohydrodynamic (MHD) Experiments for Testing the Physical Mechanisms of Coronal Mass Ejections (CMEs) Acceleration”, *Solar Physics*, 225 (2004), 157-175
- [29] Wu, S. T., Zhang, T. X., M. Dryer, Feng, X. S., and Tan, A., “The Role of Magnetic Reconnection in CME acceleration”, *Space Science Review*, 121 (2005), 33-47
- [30] Zhang, T. X., and Wu, S. T., “MHD Simulation of Non-Flux Rope Coronal Mass Ejections”, *Journal of Geophysical Research*, 114 (2009), A05107.
- [31] Zhang, T. X., “Solar ^3He -Rich Events and Ion Acceleration in Two Stages”, *Astrophysical Journal*, 449 (1995), 916-928
- [32] Zhang, T. X., “Solar ^3He -Rich Events and Electron Acceleration in Two Stages”, *Astrophysical Journal*, 518 (1999), 954-965
- [33] Zhang, T. X., “Solar ^3He -Rich Events and Energy Spectra of Particles Accelerated in Two Stages”, *Journal of Geophysical Research*, 108 (2003), 1031
- [34] Zhang, T. X., “An Explanation for Huge Enhancements of Ultraheavy Ions in Solar ^3He -Rich Events”, *Astrophysical Journal Letters*, 617 (2004), L77-L80
- [35] Zhang, T. X., “Preferential Heating of Particles by H-Cyclotron Waves Generated by a Global Magnetohydrodynamic Mode in Solar Coronal Holes”, *Astrophysical Journal Letters*, 597 (2003), L69-L72
- [36] Zhang, T. X., and Ohsawa, Y., “ ^3He -Enrichments by Magnetosonic Waves in Solar ^3He -Rich Events”, *Solar Physics*, 158 (1995), 115-137
- [37] Zhang T. X., and Wang, J. X., “An Explanation for Large Enrichments of Nitrogen Relative to Carbon and Oxygen in Solar ^3He -Rich Events”, *Astrophysical Journal Letters*, 588 (2003), L57-L60
- [38] Zhang, T. X., and Wang, J. X., “Double-Power-Law Energy Spectra of Electrons from Solar ^3He -Rich Events”, *Astrophysical Journal Letters*, 613 (2004), L165-L168
- [39] Zhang, T. X., Toida, M. and Ohsawa, Y., “Oblique Ion Acoustic Wave Instabilities in a Multi-Ion Plasma and ^3He -Rich Events”, *Journal of the Physical Society of Japan*, 62 (1993), L2545-L2548
- [40] Zhang, T. X., Wang, J. X., and Tan, A., “Solar ^3He -Rich Events and Abnormal Enhancements of Heavy-Ion Isotopes Accelerated in Two-Stages”, *Journal of Geophysical Research*, 110 (2005), A12111
- [41] Zhang, T. X., Wang, J. X., and Xiao, C. J., “Resonant Heating of Ions by Parallel Propagating Alfvén Waves in Solar Coronal Holes”, *Chinese Journal of Astronomy and Astrophysics*, 5 (2005), 285-294
- [42] Broaden, A., Zhang, T. X., Edwards, V. M., Tan, A., Winebarger, A., Zhang, J., and Wu, S. T., “The Roles of Electromagnetic Ion Cyclotron Waves in Solar ^3He -Rich Events”, *Journal of Atmospheric Solar-Terrestrial Physics*, 97 (2013), 22-28
- [43] Mason, G. M., Nitta, N. V., Wiedenbeck, M. E., and Innes, D. E., “Evidence for a Common Acceleration Mechanism for Enrichments of ^3He and Heavy Ions in Impulsive SEP Events”, *Astrophysical Journal*, 823 (2016) 138, 9



HINDU COSMOLOGY IN THE LIGHT OF MODERN PSYCHOLOGY

Prof. PhD. Bharat JHUNJHUNWALA,

Formerly, Indian Institute of Management, Bengaluru

INDIA

Email: bharatjj@gmail.com

ABSTRACT

This paper tries to comprehend Hindu narrative of creation in the framework of modern cosmology and psychology. The objective is to build a conversation for mutual understanding. The following concordance between the two streams is suggested.

The state of the Primeval Being before It desired to become many is not known in the Hindu stream just as the state of the universe before the Big Bang is not known in the modern stream. The Primeval Being desired to grow according to the Hindu stream. Modern psychology says there is an innate desire to grow among human beings that we extrapolate backwards to suggest that the Singularity desired to grow. The Brahman pervades the entire Universe according to the Hindu stream. The panpsychists hold that every particle in the universe has consciousness. Brahman is the fused consciousness of all the particles in the universe according to the Hindu stream. In parallel the panpsychists hold that the fused consciousness is more than the sum of the parts. The collective consciousness of a subset of the universe is “devta” according to the Hindu stream. This concurs with the “unconscious substrate” created in social organizations according to modern psychology. The collective consciousness of individuals having their consciousness at the Vishuddhi, Manipur and Anahata chakras is known as Brahma, Vishnu and Shiva. These concord with the collective consciousness of individuals who have evolved to the needs of cognition, belonging and esteem according to Abraham Maslow. The devtas can descend into a living person who is then called an avatara. This concurs with the descent of the libido into the unconscious as said by Carl G. Jung. In conclusion, Hindu Brahman is modern God. Hindu devtas are modern gods. Hindu avataras are modern individuals in whom the gods have descended. In this way we can make the Hindu cosmology understandable to the modern mind and vice versa.

Keywords: Hindu; Psychology; Cosmology; Creation; Brahman; God;

1. INTRODUCTION: GENESIS AND PURPOSE OF THIS PAPER

The Hindu spiritual world has been an enigma to me. From childhood I used to wonder who created this world, and why? I was taught that the world was unreal. It had no purpose. The question arose as to how this world came into existence if there was no purpose for its existence? I once had a discussion with most respected Swami Ramanand Saraswati at Onkareshwar. He said that Brahman had a special quality of creating without having a desire. But it seemed more obvious that the Brahman must have had a desire to create this world.

I used to wonder what- or who- were Vishnu and other devtas? Vishnu was supposed to live in Vaikuntha. But I could not find Vaikuntha on this earth. Another question was why the avataras were pained? Why did Rama have to wage a difficult war against Ravana? Why did he expel Sita? Why did Krishna leave Dwarka? The explanation that the avataras made pretense of such suffering as a teaching to the people did not jell with me because their suffering was too real to be mere pretense. I wondered how the Western countries that had



no devtas or avataras were yet able to make progress while India was declining despite having her devtas and avataras. These and many more such questions led me to undertake the present study. It was difficult to get into this subject trained as I was in economics. However, I note with satisfaction as well as despair that I have had a streak of physics and psychology in me. I got an offer from the Department of Nuclear Physics at the University of Utah to join them as a graduate student when I landed at the University of Florida to study Agricultural Engineering. For some unknown reason I did not accept that offer and instead opted to study Agricultural Economics at Florida. I read Stephen Hawking's *A Brief History of Time* and other similar books. That was my failed entry into modern cosmology. At the same time I volunteered at the Suicide and Crisis Intervention Service of my University and attended meetings of societies of psychology. I read Sigmund Freud's *A General Introduction to Psychoanalysis* and Irving Stone's *Passions of the Mind*. These were my failed entry into psychology. These books nevertheless left a deep impression on my mind. Needless to say I was brought up as a practicing Hindu and was much influenced by the *Gita*. I was thus torn between my readings of the modern sciences and my inheritance of the Hindu thought. The time has perhaps now come to pursue these failed attempts. I have thus explored in this paper whether the Hindu concepts of Brahman, devtas and avataras could be explained in terms of modern cosmological and psychological concepts. I find that this can indeed be done. A brief note on the texts is in order here. There exist multiple interpretations of the scriptures among Hindu scholars as well as multiple theories among modern scientists. Our purpose here is limited to examining if certain views in the two streams concord with each other. Towards this end we have consciously invoked those particular views from the two streams that are in harmony with each other. We do not claim that the particular view invoked was "correct." It is beyond the scope of this paper to "defend" the particular view relied upon us vis-à-vis the other views. It suffices for this paper that *an* interpretation of Hindu scriptures exists that concords with *a particular* view of the modern scientists.

This paper has been structured as follows. First, I present the relevant Hindu concepts. Then, if required, I discuss the difficulties with the Hindu concepts. Next, I discuss the modern concepts that concord with the Hindu concepts that are mentioned. Lastly, if required, I discuss the difficulties with the modern concepts. I put forth the concordance so arrived in the last section of the paper. We begin with the narrative of cosmic creation.

2. THE BEGINNING OF CREATION

2.1 Who knows whence it was born?

The Rig Veda says that the state before the creation is not known:

Who verily knows and who can here declare it, whence it was born and whence comes this creation? The gods are later than this world's production. Who knows then whence it first came into being? He, the first origin of this creation, whether he formed it all or did not form it, Whose eye controls this world in highest heaven, he verily knows it, or perhaps he knows not (10:129:5-7).

The Sanskrit word for "gods" in this verse is "deva." We shall show subsequently that devas or devtas are collective consciousness of a subset of the universe. This verse thus says that the devtas who were created after the creation did not know what existed earlier. The *Gita*, however, suggests that the Lord is without a beginning or an end (11:19). We understand this to mean that there is no *known* beginning or end. The *Gita* presents this lack of knowledge as there being no beginning or end. Thus interpreted this verse is consistent with the Lord, Being or creation being infinite the origin of which is not known.



2.2 Uncertainty before the Big Bang

The unknowability of the origin of the universe is expressed by modern cosmologists in terms of various theories:

Born in greater universe. Our universe has a beginning in quantum disturbances in a greater universe that is constantly inflating.

Cyclic universe. Our universe oscillates between Bang-Crunch states.

Bounce. Our universe bounced from an earlier universe. It does not have an initial singularity wherefrom it all began.

Pre-existing black hole. Our universe was born in a black hole.

Pre-existing branes: Our universe arose from the collision of two pre-existing branes having a number of dimensions.¹

Collision. The universe was formed by a collision as a result of which it became hot and began to expand.²

Big Bounce. The cyclic universe is continually bouncing between big bangs and big crunches for eternity back in time and for eternity into the future.³

Dark Matter. The universe consists of 4% normal matter, 22% dark matter and 74% dark energy. We are oblivious to 96% of the universe.⁴

Fluctuating quantum fields. Our known universe started as an extremely small patch of vacuum. The quantum vacuum is not a true emptiness or nothingness. It has fluctuating quantum fields in it. The present material world had origin in quantum fluctuations of this vacuum.⁵

The multiplicity of these theories suggests that modern science has no credible knowledge as to what existed before the Big Bang. One possibility is that something preexisted and led to the Big Bang. This view suggests that existence has an infinite past. Second possibility is that Big Bang was created *de novo* with no prior existence. The first view concords with the Hindu stream.

2.3 Can infinity exist?

The possibility of prior existence of the universe has been debated in the modern stream in relation to the existence of infinity. If infinity can exist then it is plausible that the universe may have existed for an infinite time before the Big Bang. On the other hand, if infinity itself cannot exist then there has to exist a particular starting point when the universe was created *de novo*. This debate was carried out between Professor of Philosophy at Houston Baptist University William Lane Craig and Professor of Philosophy at University of Colorado Wes Morriston. Craig argued for non-existence of infinity, for a divine intervention leading to *de novo* creation of the universe, or for the existence of God. Morriston, on the other hand, argued that infinity could exist which, then, does not

¹ Lim, Emmanuel, "Before the Big Bang," Retrieved from https://webhome.phy.duke.edu/~mkruse/PHY105_S11/projects/Emmanuel_Lim_Phy105_project.pdf, August 17, 2021.

² Brustein, R. and Kupferman, J., "The creation of the world--according to science," in *Hist Philos Life Sci.*, 34(3):361-72 (2012). Retrieved from <https://pubmed.ncbi.nlm.nih.gov/23316566/>, August 15, 2021.

³ Sutter, Paul, "What happened before the Big Bang?" in *Space.com* (2020). Retrieved from <https://www.space.com/what-came-before-big-bang.html>, August 15, 2021.

⁴ Steiner, João E., "The Origin of the Universe," in *Estudos Avançados* 20(58), (2006), Retrieved from <https://www.scielo.br/j/ea/a/L4Cn5NyczFTBhdXTDsr4Kng/?lang=en&format=pdf>, August 15, 2021.

⁵ Vasavada, Kashyap, "Concepts of Reality in Hinduism and Buddhism from the Perspective of a Physicist," in *Conference Proceedings: Quantum Reality and Theory of Shunya*, Springer, New Delhi, 2016, p. 17.



necessitate divine intervention or the existence of God. Graig's key argument against existence of infinity is built on Hilbert's Hotel paradox.

The familiar story of Hilbert's Hotel involves a hotel with infinitely many rooms, numbered 1, 2, 3, each of which is occupied by a guest. When a new guest arrives, the proprietor asks the guest in Room N to move to Room $N+1$ (for $N = 1, 2, 3, \dots$), thereby freeing up Room 1 for the new guest to use... if all the guests in odd numbered rooms (1, 3, 5, ...) check out, there will still be infinitely many guests remaining: all those in even numbered rooms (2, 4, 6, ...). However, if all the guests in Rooms 4, 5, 6, checked out, then the hotel would be nearly empty, with only three rooms remaining occupied.

The two scenarios above indicate that one could remove infinitely many objects from an infinite collection (if one existed) in two different ways, and end up with a different number of objects left over.⁶

The argument is that if infinity existed then in all cases infinite numbers of objects should be left over. The example, in our view, is misplaced. The error is that the infinite numbers of the rooms re said to start with the finite no 1. Let us think of a hotel with infinite numbers of floors below and above with the room numbers as ...-4, -3, -2, -1, 1, 2, 3, 4... In this case if the infinite numbers of guests in room numbers 4 and above checked out then still infinite numbers of guests in rooms numbered ...-4, -3, -2, -1, 1, 2, and 3 would remain. Thus, we suggest that the conclusion drawn from Hilbert's hotel example is misplaced and infinity can exist.

To put the question another way, it is asked can infinite regress exist? If infinite regress can exist then there is no necessity of a creator. Craig argues that infinite regress cannot exist because the past events are already frozen: ...the events that led to the formation of our sun, for example, have already happened, that is, they have already been actualized, and their number is no longer increasing perpetually but a determinate whole. Hence, when we ask whether there could be an infinite regress of causes or events... we are asking whether there could be an actual infinite regress... The past is either actual infinite or actual finite.⁷ The term "actual" implies that although the regress is infinite but, whatever its extent may be, it cannot expand further in the past. That, in turn, means that there is a particular starting point even though it may be infinitely in the past. We see three problems with this formulation. One, how can an infinite past have a starting point because if it has a starting point then it no longer is infinite. Two, granting for a moment that the actual infinite will have some starting point, our *knowledge* of the past infinite can be potentially infinite. The past may be finite but we can continue to expand our knowledge of the past infinitely. Three, as point out by James East, the author of the paper from which the above quote is extracted, the principles of mathematics need not apply to the real world. We conclude that infinity can exist and there is no necessity to stipulate the existence of a creator outside the universe.

This formulation concords with the Hindu view that no one knows whence this creation has come. The common theme is that the universe can stretch infinitely into the past and we do not know whether it has a beginning.

⁶ East, James, "Infinity Minus Infinity," in *Faith and Philosophy: Journal of the Society of Christian Philosophers*, 3(4), (2013), Retrieved from <https://core.ac.uk/download/pdf/216990711.pdf>, August 25, 2021.

⁷ Loke, Andrew Ter Ern, "On beginningless past, endless future, God, and singing angels: An assessment of the Morriston-Craig dialogue," in *Neue Zeitschrift für Systematische Theologie und Religionsphilosophie*, 58(1): 57-66, (2016), Retrieved from <https://www.degruyter.com/document/doi/10.1515/nzsth-2016-0004/html>, August 25, 2021.

3. CREATION OF TIME

3.1 May I become many

The lack of knowledge about whence this universe came into being is depicted as “?” at Step 1 in Figure 1. At the same time, the texts say that the Primeval Being alone existed at a particular point of time. This is depicted at Step 2 in Figure 1. Then It divided itself to become many:

In the beginning, dear boy, this was Being alone, one only, without a second... That Being willed, "*May I become many, may I grow forth.*" It created fire. That fire willed, "*May I become many, may I grow forth.*" It created water (Chhandogya Upanishad 6:2:1-3).

[The Brahman desired] *I may become many.* He undertook penance. He created all this by undertaking penance. Then He entered the creation (Taittiriya Upanishad 6:1).

“Becoming” involves a progression between two points of time. Thus, “time” was created as depicted at Step 3 in Figure 1. Then the Shwetashwetar Upanishad lists time as the first cause followed by various causes such as intellect, emotions and will:

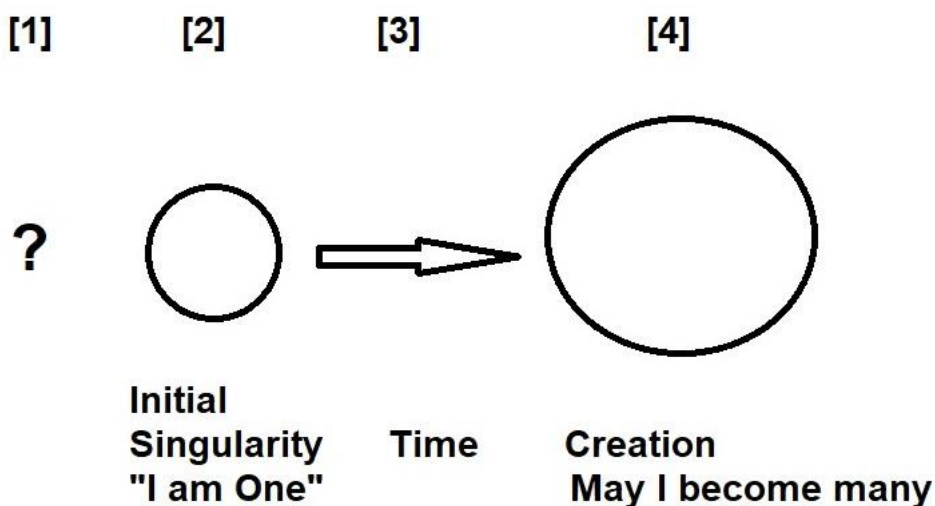


Figure 1: Time and creation

[The Being] who is the source of the intellect, emotions and will; who is one without a second; who presides over all the causes enumerated above, *beginning with time* and ending with the individual soul (Shwetashwetar Upanishad 3).

A similar view is held by the Atharva Veda:

Time created the earth; in time burns the sun; in time [are] all existences; in time the eye looks abroad (Atharva Veda 19:53:5-6).

On the other hand, the same Shwetashwetar Upanishad says that time is not a free agent:

Time, nature, law, chance, matter, energy, intelligence—neither these, nor a combination of these, can bear examination because of their own birth, identity and the existence of the self (Shwetashwetar Upanishad 2).

The seemingly contradictory verses above read together indicate the following sequence as depicted in Figure 1. The Being existed as indicated in Step [2] in Figure 1. Then the Being “became,” that is, time was created as indicated in Step [3]. Thus it is said that time is not the creator. Time, in turn, led to the creation of nature, law, chance, matter, energy, intelligence, and self as indicated in Step [4].



3.2 Real time was created after the Big Bang

Most modern theories accept that a Big Bang took place around 13.8 billion years ago leading to the creation of the present universe as proposed by Belgian astrophysicist Georges Lemaitre in 1931:

We could conceive the beginning of the universe in the form of a unique atom, the atomic weight of which is the total mass of the universe ... [and which] would divide in smaller and smaller atoms by a kind of super-radioactive process.⁸

English astronomer Fred Hoyle, who first coined the term “Big Bang,” postulated that a tiny amount of matter led to the creation of the universe.⁹ This creation may be described in the Hindu texts as “May I become many” as said above and as has been noted by a number of scholars.¹⁰

Stephen Hawking concludes in a short lecture that “time itself had a beginning in the Big Bang about 15 billion years ago.”¹¹ Hawking does not address the question from where the Big Bang arose. In doing so he remains silent on Step 2 in Figure 1. He acknowledges this in the statement that, “science could not predict, how the universe would have begun.”¹²

We conclude that the Hindu and modern thinking concord: There is uncertainty before creation [1]; then there was the existence of a Being or Singularity [2]; followed by the creation of time [3] and lastly this multifarious universe [4].

4. THE DESIRE AND EVOLUTION OF THE BEING

4.1 “May I become many”

Question arises what caused the Being to become many as suggested at Step [4] above? Most, if not all, scholars of Hinduism follow the footsteps of Shankaracharya (late first millennium by most estimates) that the Being was desireless. However, the Upanishads do not say that the Being was desireless. The attributes of the Being are given as follows:¹³

All pervasive. ‘In the heart of all things, of whatever there is in the universe dwells the Ishwara/Brahman (Isa Upanishad 1; Chhandogya Upanishad 3.14.1).

Powerful. This is the truth of Brahman in relation to people: in the movement of the mind, the power that is shown is the power of Brahman (Kena Upanishad 4.5).

⁸ Kraugh, Helge, “The Origin and Earliest Reception of Big-Bang Cosmology,” in *Publ. Astron. Obs.* 2008. 85:7-16.

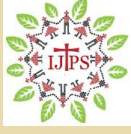
⁹ Kragh, Helge, “Cosmology and the Origin of the Universe: Historical and Conceptual Perspectives” in *History and Philosophy of Physics*, Cornell University. Retrieved from <https://arxiv.org/abs/1706.00726>, September 3, 2020.

¹⁰ Vishwanadha, Rayalu, “Origin Of the Universe: On Nasadiya Sukta of Rig Veda, in *vedaravindamu*, Retrieved from <https://vedaravindamu.wordpress.com/2011/10/11/origin-of-the-universe-nasadiya-sukta-of-rig-veda/>, August 15, 2021; Humphrey, Robert L., “Cosmogogenesis In Ancient Hindu Scriptures And Modern Science,” in *InSight: Rivier Academic Journal*, 11(1), (2015). Retrieved from https://www2.rivier.edu/journal/ROAJ-Spring-2015/J904_Humphrey_revised.pdf, August 15, 2021; Ragavendrasamy, B., Nanjundaiah, R. M. and Krishnamurthy, M. N., “Nāsadiya Sūktam: The earliest cosmology on origins of life,” in *Int J Yoga - Philosop Psychol Parapsychol* 5:24-5, (2017).

¹¹ Hawking, Stephen, “The Beginning Of Time,” Retrieved from <https://www.hawking.org.uk/in-words/lectures/the-beginning-of-time>, September 12, 2021, p. 2.

¹² Stephen Hawking, *The Beginning Of Time*, p. 6.

¹³ Durga, T. K., Sridhar, M. K. and Nagendra, H. R., “Consciousness in Upanishads,” in *International Journal of Sanskrit Research*, 4(5), (2018). Retrieved from <https://www.anantaajournal.com/archives/?year=2018&vol=4&issue=5&part=B&ArticleId=675>, August 18, 2021.



Imperishable, immortal. He, the self-luminous, subtler than the subtlest, in whom exist all the worlds and all those that live therein—he is the imperishable Brahman. He is the principle of life. He is speech, and he is mind. He is real. He is immortal (Mundaka Upanishad 2:2:2).

Beyond Space and Time: You are the dark butterfly, you are the green parrot with red eyes, you are the thunder cloud, the seasons, seas, you are without beginning, beyond space and time. From you sprang the three worlds (Shwetashweta Upanishad 4.4).

Consciousness. Consciousness is Brahman (Aitreya Upanishad 3.1.3)

All the above attributes are consistent with the Being being desirous. The Chhandogya Upanishad explicitly says that the Being had pure desires:

He, who is permeating the mind, who has Prāna for his body, whose nature is consciousness, whose resolve is infallible, whose own form is like Ākāsha, whose creation is all that exists, *whose are all the pure desires*, who possesses all the agreeable odors and all the pleasant tastes, who exists pervading all this... (Chhandogya Upanishad 3:14:2-3).

We conclude that the Being had desires that led it to become many. The terms “Being,” “Brahman” and “Ishwara” are used in the above verses for the same Primeval Being and this difference in nomenclature is not relevant here. The next question is whether the Being self-triggered its growth or it was triggered by an external agent? The Vedas and Upanishads say that the Brahman itself breathed and thought:

That One Thing, breathless, breathed by its own nature: apart from it was nothing whatsoever (Rig Veda 10:129:2).

In the beginning this was Self alone, in the shape of Purusha. He looking round saw nothing but his Self... He feared... He thought, “As there is nothing but myself, why should I fear.” But he felt no delight... He wished for a second... He then made this his Self to fall in two, and thence arose husband and wife (Brihadaranyaka Upanishad 1:4:1-3).

These statements read with the statement that the Being was alone (Chhandogya Upanishad 6:2:1-3, quoted above), leads to the conclusion that the Being existed alone and itself triggered its own growth. This same is said in the Yoga Vasishtha: “This Brahman obtains to growth in-itself by-itself” (3:13).

4.2 Strategic negation of Brahman’s desires

Seemingly contra to our above proposition the Kathopanishad says that the One Atman is not contaminated:

As the sun, which helps all eyes to see, is not affected by the blemishes of the eyes or of the external things revealed by it, so also the one Atman, dwelling in all beings, is never contaminated by the misery of the world, being outside it (2:2:11).

The Sanskrit word for “contaminated” is “लित्त.” It means “smeared, anointed, soiled, defiled”¹⁴ Now, a desire need not be defiling. For example, the desire of salvation cannot be said to be smeared, anointed or defiled. Thus, this verse is consistent with the pure desire of Brahman to create. Another verse invoked to support the idea that Being has no desires is from the Gita:

O Arjuna, there is nothing in the three worlds — heaven, earth, and the lower regions — that should be done by Me, nor there is anything unobtained that I should obtain, yet I engage in action (3:22, quoted above also).

¹⁴ Monier-Williams, Monier, *Sanskrit-English Dictionary*, Southern Publications, Madras, 1987, p. 902.



This verse says that there is no compulsion on the Lord to do anything. It does not say that the Lord does not desire anything. Yet another verse invoked in favour of a desireless Brahman is Sankara's oft quoted statement "ब्रह्म सत्यं जगन्मिथ्याः"

Brahman alone is the Real and the phenomenal world is unreal is known as discrimination between the real and the unreal (Vivekchoodamani 20).

Brahman alone being real does not mean that It is undesirous. Brahman can be real as well as desirous. We conclude that the Brahman had desires. Indeed they may be purer than the material desires but they are desires nevertheless.¹⁵

Another conception is that there is no *change* in the Being which implies that it cannot become many:

Just as from a single lump of clay, dear boy, one would know about everything made from clay, the difference being a mere verbal distinction, a name, the reality is only 'clay.' (Chhandogya Upanishad 6:1:4).

This verse seems to say that the clay is changeless. However, the quality of the clay may change. The clay may be wet or dry, smooth or coarse, etc. Likewise, we may consider the total mass of the universe not changing but the quality changing.

Question arises, why should the Gita portray a non-desiring Brahman when the Upanishads tell of the Brahman having desires? Our sense is that the non-desiring Brahman is said as a strategy to get the individual to disengage with his own desires and align with the desires of Brahman.¹⁶ To give an example, a manager would be undertaking desireless action if she detaches from her own desires and works to fulfill the desires of her employer.

In conclusion, we suggest that the Brahman desires and evolves. It is depicted as not having desires as a strategy to get the person to align with the desires of the Brahman.

4.3 The innate desire to grow

The Big Bang theory does not suggest that the Singularity was conscious though it considers it as the source of all the energy, matter, forces and activity.¹⁷ The same evolution is seen in the living things. Thus, Carl G. Jung says:

We would laugh at the idea of a plant or an animal inventing itself, yet... the mind has grown to its present state of consciousness as an acorn grows into an oak or as a saurian [reptile] developed into mammals.¹⁸

Psychologist Abraham Maslow has provided evidence from a number of disciplines to suggest that there is an innate tendency for growth among human beings:

1 *Psychotherapy*. The pressure towards seeking better health makes therapy possible. Therapy could not take place if there was no seeking of better health.

2 *Brain-injured soldiers*. A brain-injured soldier tries to reorganize his capacities after injury because he wants to self-actualize himself.

3 *Psychoanalysis*. Neuroses are a distorted version of impulse towards growth, towards perfection of development, towards the fulfillment of the person's possibilities.

4 *Creativeness*. The theory of art calls for a concept of growth and spontaneity.

5 *Child Psychology*. Healthy children enjoy growing and moving forward, gaining new skills, capacities and powers.¹⁹

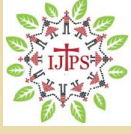
¹⁵ I am thankful to Ramprakash of Theosophical Society for drawing attention to this point.

¹⁶ I am thankful to Ashok Vohra for pointing to the need to explain this.

¹⁷ Robert L. Humphrey, *Cosmogenesis In Ancient Hindu Scriptures*, p. 12.

¹⁸ Jung, Carl G., *Man and his Symbols*, Doubleday Windfall, New York, 1964, p. 81:

¹⁹ Maslow, Abraham, *The Psychology of Being*, Van Nostrand Reinhold, 1968, p. 23.



We extrapolate this innate desire in the living beings backward to postulate that the Singularity had a similar desire to grow into the universe.

4.4 Wave-particle duality and false illusion

Emeritus Professor of Physics at Purdue University Kashyap Vasavada has concurred the modern theory that the particle is both a wave and particle with the concept of Maya in Hindu philosophy.²⁰ He refers to Shankaracharya's statement "Brahman is the only truth; the world is a false illusion" to support his case (Vivekchoodamani 20, quoted above). Indeed, quantum physics tells us that just as it is not possible to determine whether a particle is a wave or a particle. The idea can be extended to say that it is not possible to say what the world really is.

Shankaracharya, however, had made that statement in the context of a seeker not using his faculty of discrimination and taking the existing world for real and ignoring the real Brahman.²¹ He had no doubt that Brahman alone was real. The two ideas do not concord because Shankaracharya considers the Brahman to be real and the perception to be unreal; while Quantum Physics considers both wave and particle to be unreal.

Again, Vasavada says that the fact that it is not possible to clearly say where a particle is at a particular moment, concurs with the statement in the Isa Upanishad "It moves and it moves not; it is far and it is near..." (5). This requires reconsideration because the Sanskrit word for "move" in this verse "ej" means "stirs, moves, trembles, shakes."²² Thus the two statements may be mentioning different things. Quantum physics is telling strictly about movement while Isa Upanishad could be telling about shaking.

5. MATTER HAS CONSCIOUSNESS

5.1 All-pervading Brahman

The Hindu texts say that Brahman is all-pervading:

He is Brahma, He is Indra, He is Prajapati; He is all these gods; He is the five great elements—earth, air, akasa, water, light; He is all these small creatures and the others which are mixed... All this is guided by Consciousness, is supported by Consciousness. The basis of the universe is Consciousness. Consciousness is Brahman (Aitreya Upanishad 3:1:3).

The Spirit by whom this entire universe is pervaded is indestructible (Gita 2:17).

These verses indicate that Brahman not only pervades all existence including matter but also is conscious. This idea concurs with panpsychism.

5.2 Panpsychism and Orch-OR Theory

Philip Goff of Durham University says that "consciousness is a fundamental and ubiquitous feature of the physical world."²³ The Orchestrated Objective Reduction (Orch-OR) theory in quantum physics states that a particle can simultaneously exist at two places and be self-aware of its existence at the other location. We give below the Orch-OR theory in our words below:

²⁰ Kashyap, Vasavada, Concepts of Reality in Hinduism, p. 19.

²¹ The student must use discrimination which "is the capacity to know the real from the unreal" (Chinmayananda, Swami, *Talks on Sankara's Vivekchoodamani*, Central Chinmaya Mission Trust, Bombay, 1976, p. 31).

²² Monier Monier-Williams, *Sanskrit-English Dictionary*, p. 231. This is noted by Simoes, Stephanie, *Isa Upanishad*, Retrieved from https://www.academia.edu/17430464/Isha_Upanishad_Word_for_Word_Translation_with_Transliteration_and_Grammatical_Notes?auto=download, August 18, 2021.

²³ Goff, Philip, "About me," Retrieved from <https://www.durham.ac.uk/staff/philip-a-goff/>, October 23, 2021.

Standard quantum mechanics postulates that the same particle can be in two places at the same time. Which of these is seen can be an illusion, an approximation, a convenience, dependent on the observer’s viewpoint,²⁴ or a split in the observer’s awareness.

The Orch-OR theory states that there is a real physical distance between the two states that is not dependent upon the external observer. The particle itself is conscious of its simultaneous existence at the two locations and this is its proto-consciousness or subjective experience.²⁵

The common strand in the Hindu, panpsychist and Orch-OR theories are that every particle has consciousness. Kashyap Vasavada does not agree with this concordance saying that the Orch-OR model does “not compare Vedanta and modern physics.”²⁶ We, however, see no reason to keep them separate and suggest that the common strand in them is that every particle has consciousness.

6. BRAHMAN FROM VIRAJ, VIRAJ FROM BRAHMAN

6.1 The Framework

The Rig Veda and Atharva Veda say that the Primeval Being Purusha created the material world Viraj; and then Purusha was born from Viraj:

A thousand heads hath Purusha, a thousand eyes, a thousand feet. On every side pervading earth he fills a space ten fingers wide... *From him Viraj was born; again Purusha from Viraj was born* (Rig Veda 10:90:1, 5).

He indeed together brought beings; he indeed together went about beings; *being father, he became son of them* (Atharva Veda 19:53:4).

The sequence here is Purusha/Father > Viraj > Purusha/Son. Elsewhere the Atharva Veda only tells of the latter part of this sequence; They call Viraj the father of Brahman (8:9:7). Viraj verily was this [universe] in the beginning (8:10:1).

Here, only Viraj > Brahman is stated. The two sets of verses can be synchronized as Purusha/Brahman/Father > Viraj > Purusha/Brahman/Son. With this preliminary discussion, we have tried to depict our understanding of this sequence in six steps indicated in Figure 2.

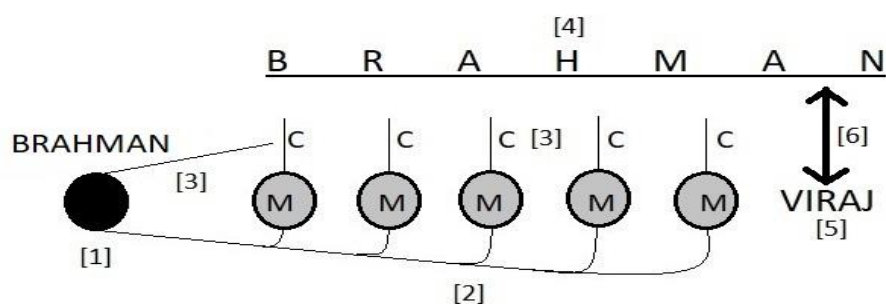


Figure 2: Brahman and Viraj

²⁴ This is same as particles having dual nature of wave and particles (Kashyap Vasavada, Concepts of Reality in Hinduism.)

²⁵ Hameroff, Stuart and Penrose, Roger, “Consciousness in the universe: A review of the ‘Orch OR’ theory,” in *Physics of Life Reviews* 11, (2014). Retrieved from <https://www.sciencedirect.com/science/article/pii/S1571064513001188>, August 17, 2021, p. 70-71.

²⁶ Personal communication by email August 20, 2021.



We briefly explain our understanding of these six steps below followed by detailed discussion of each step.

Step 1. In the beginning there was only fused matter-consciousness or Brahman as shown by the black circle on the left.

Step 2. The Brahman then wanted to become many. It split into infinite number of material particles depicted by grey circles. Each of these particles had dominant matter as indicated in “M” marked in these circles. Collectively these may be called Viraj. This step is mentioned as Brahman > Viraj in our discussion above.

Step 3. Simultaneously with Step 2, the consciousness of Brahman also split into infinite number of components as indicated in “C.”

Step 4. The consciousness component “C” of all the particles fused into one recreated Brahman—now only consciousness. This step is mentioned as Viraj > Brahman in our discussion above.

Step 5. The new Brahman now guides each of its constituent parts “M.” Thus, Brahman created the universe twice. First at Step 1, where Brahman as matter-consciousness split into matter and consciousness; and then at Step 5, where Brahman as pure consciousness guides the material particles.

Step 6. Brahman is continuously created by the fusion of the consciousness of the particles as in Step 4; and also continuously guides the particles as in Step 5. There takes place a continuous two-way communication between the pure consciousness Brahman and the constituent particles collectively called Viraj.

We now discuss each of the above six steps in detail.

6.2 Step 1: Fused material-consciousness of the Primeval Being

The Rig Veda says:

Then there was not non-existent nor existent: there was no realm of air, no sky beyond it (10:129:1).

A commentator from the Vedanta school interprets the phrase “not non-existent nor existent” as there was a “lack of gross forms such as the Universe and embodied selves.”²⁷ Translator of Rig Veda Satwalekar renders this verse as “Then there was not absence nor five elements...”²⁸ Both commentators agree that there was no matter or “gross form;” and there was also no soul as “embodied self.” Perhaps only matter-consciousness existed as a plasma like fused entity. We call this the primeval Brahman or Purusha. Thus the Brihadaranyaka Upanishad says that in the beginning only Purusha existed:

In the beginning, this (universe) was but the Purusha.²⁹ He reflected and found nothing else but himself. He first uttered, 'I am he'... (1:4:1-3).

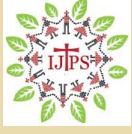
Translator Swami Madhavananda translates “Purusha” in this verse as “self (Viraj) of a human form.”³⁰ However, there is no statement equivalent to “human form” in the text hence I have omitted it. The result is that in the beginning there existed an undifferentiated entity.

²⁷ Srinivasan, “Nāsadiya Sūkta – Vedantic Commentary,” in *IndiaFacts*, Retrieved from <http://indiafacts.org/nasadiya-sukta-vedantic-commentary/>, **August 21, 2021**.

²⁸ Satwalekar, Sripad Damodar, *Rig Veda Simple Commentary*, Swadhyay Mandal, Pardi, 1985, Vol 4, p. 274.

²⁹ One translator translates “Purusha” as “self (Viraj) of a human form.” There is no statement equivalent to “human form” in the text hence I have omitted it (Madhavananda, Swami, (Trans), *The Brhadarnyaka Upanisad*, Advaita Ashram, Champawat, 1950).

³⁰ Madhavananda, Swami, (Trans), *The Brhadarnyaka Upanisad*, Advaita Ashram, Champawat, 1950



6.3 Step 2 and 3: Separation of Particulate Matter and Consciousness

The Brihadaranyaka Upanishad continues from the previous verse:

He (Purusha) parted this very body into two... From that came husband and wife... He was united with her. From that, men were born (1:4:1-3).

The person who is in the right eye is named Indra³¹... The person who is in the left eye is his wife, Viraj. The akasa that lies within the heart is their place of union (4:2:2-3).

The use of the term “wife” for Viraj needs explanation. The Manu Smriti mentions the male as the “seed” and the female as “soil”:

By the sacred tradition the woman is declared to be the soil, the man is declared to be the seed; the production of all corporeal beings (takes place) through the union of the soil with the seed (9:33).

We understand the seed as consciousness and the soil as matter. Thus, the mention of Viraj as “wife” corresponds with it being female or matter. On the other hand, Indra is a devta which we shall show subsequently is pure consciousness. The parting of the body into husband and wife may accordingly be understood as parting of the Primeval Being into consciousness and matter or the separation of Brahman into Indra (“C”) and Viraj (“M”) as depicted at Steps 2 and 3 in Figure 2. The Atharva Veda, however, also attributes consciousnesses to Viraj:

Viraj is speech, Viraj is earth, Viraj is atmosphere, Viraj is Prajapati, Viraj became death, the over-king of the perfectible... (9:10:24).

In parallel, the Sanskrit Dictionary defines Viraj as “ruling far and wide, sovereign, excellent, splendid.”³² We suggest the creation of the matter “M” at Step [2] and its subsequent evolution is mentioned here in steps from Brahman to speech (primeval sound Om) to matter (earth or “M”) to atmosphere to human being (Prajapati) and death. In other words this verse describes the movement from Step [2] to Step [6] skipping the intermediate steps [3], [4] and [5].

6.4 Step 4: Brahman is fused Universal Consciousness

We have shown that the Brahman split into matter and consciousness. We suggest that each particle of matter also had consciousness. The split matter-consciousness can then be depicted as “M/C.” Now we suggest that the consciousness component “C” of “M/C” of the split particles fused to make a collective consciousness that is known as Brahman as depicted at Step [4]. Thus it is said “Consciousness is Brahman” (Aitreya Upanishad 3:1:3). Dr. H. R. Nagendra, Chancellor of SVYASA Deemed to be University and his colleagues say: “One of the most important concept embedded in the Upanishads is the Consciousness. It is called as chit, prajna, chaitanya or Brahman.”³³ Kashyap Vasavada says that Brahman is the “universal cosmic super consciousness.”³⁴ The texts, however, seem to avoid giving a clear statement on Brahman being collective consciousness as indicated in the conversation between Gargi and Yajnavalkya:

Gargi: By what, pray, is the world of Brahman pervaded?

Yajnavalkya: Do not, O Gargi, question too much, lest your head should fall off. You are questioning too much about a deity about whom we should not ask too much. Do not ask too much, O Gargi (Brihadaranyaka Upanishad 3:6:1).

³¹ “Indha” in the original text.

³² Monier Monier-Williams, *Sanskrit-English Dictionary*, p. 982.

³³ T. K. Durga, *Consciousness in Upanishads*.

³⁴ Kashyap Vasavada, *Concepts of Reality in Hinduism*, p. 22.



We suggest that such diffidence is unnecessary. Brahman is pervaded by the consciousness of all the particles of the universe. Indeed, the Brihadaranyaka Upanishad elsewhere suggests that Brahman is made up of such consciousness:

‘As, dear boy, the bees make honey by collecting juices from different trees and reduce them into one essence, and there, as these juices have no such discrimination as “I am the juice of this tree, I am the juice of that tree”; even so, dear boy, all these creatures having merged into Being, do not know, “We have merged into Being.” (6:9:1-2).

‘These eastern rivers, dear boy, flow along to the east and the western ones to the west. They rise from the ocean and merge in the ocean, and become that ocean itself. And there as these rivers do not know themselves as “I am this river, I am that river”, even so, dear boy, all these creatures, having come from Being, do not know, “We have come from Being” (6:10.1-2).

The merging of the honey or the rivers indicates that the particles lose their separate identity and is depicted by us at Step [4].

Theosophical thinking supports this approach. It holds that “Human beings are the cells in the body of a Heavenly Man.”³⁵ Here fusion of the cells may be understood as fusion of consciousness “C” to form the Brahman as depicted at Step [4].

6.5 Step 4 Continued: Fused consciousness is more than sum of the parts

We find support for Brahman being collective consciousness from the panpsychists. There are two strands among them. The constitutive panpsychists hold that the total consciousness is the sum of the parts:

...facts about the consciousness of the animal are grounded in facts about the consciousness of its most fundamental parts... the grounded states of affairs are nothing over and above the grounding states of affairs... (the fact that there is a table wholly consists in the fact that there are atoms arranged table-wise)...

In contrast, the emergent panpsychists hold that the total consciousness is more than the sum of the parts:

...*animal consciousness is an extra layer of being causally dependent on but ontologically additional to the forms of consciousness that reside at the micro-level*” (italics added).³⁶

Here it is said that the animal consciousness is more than the consciousness of the parts of the animal body, mentioned here as “micro level.” In parallel, Neuroscientist Giulio Tononi postulates that the brain “consists of billions of neurons: think of them as if they were transistor like bits that, when tallied, sum to equal more than their parts. That increment above and beyond represents the degree to which any being, whether human or mule, remains conscious.”³⁷ We may clarify that Tononi’s discussion is limited to the “mind” and he does not consider matter to have consciousness as Philip Goff does.³⁸ Yet, Tononi and

³⁵ Lansdowne, Zachary F., “The Purusha Sukta | Planetary Logo | 101,” in Mathomathis, Retrieved from <https://mathomathis.com/the-purusha-sukta-101/>, August 22, 2021.

³⁶ Goff, Philip, “Panpsychism,” in *Routledge Encyclopedia of Philosophy*, (2019). Retrieved from http://www.philipgoffphilosophy.com/uploads/1/4/4/4/14443634/routledge_panpsychism.pdf. Retrieved October 24, 2021.

³⁷ Tononi, Giulio, “What Is the Fundamental Nature of Consciousness?” Excerpt, *Scientific American*, 2012, Retrieved from <https://www.scientificamerican.com/article/what-is-fundamental-nature-consciousness-giulio-tononi-excerpt/>, July 31, 2021.

³⁸ “Unlike traditional panpsychism, however, the IIT does not attribute consciousness indiscriminately to all things. For example, if there are no interactions, there is no consciousness whatsoever. For the IIT, a camera sensor as such is completely unconscious...” (Tononi, Giulio, “Consciousness as Integrated Information: A



Goff are in agreement insofar as the total consciousness being more than sum of the parts is concerned. The Orch-OR theory mentioned previously further states:

The particles are entangled with others in the environment. Hence, like individual particles, the entangled collective also becomes conscious of its existence at the other location and develops a proto-consciousness.³⁹

Sociologist Emile Durkheim gives a similar idea in the quote given at the footnote and expressed below in our words:

The society is collective ideas, beliefs, and sentiments that is produced from the fusion of individual consciences. This “collective consciousness” is *unique*. Just as water is a wholly new entity even though it is a combination of hydrogen and oxygen atoms, so also the collective consciousness is greater than the sum of the individual consciences.⁴⁰

Here it is said that the collective consciousness is greater than the sum of the individual consciences. These ideas concord with our submission that the Brahman is the fusion of the consciousness of the parts.

6.6 Step 4 Continued: “I” and “Brahman” are both sovereign

The fusion of individual consciousness is not complete. The constituent parts retain part of their individual consciousness. Thus, the texts place “I” and “Brahman” on equal footing:

All that is seen is Brahman. May I not neglect Brahman. May not Brahman reject me. May I have non-rejection, may I have non-rejection. (Kena Upanishad Preamble).

Look at the power of My divine mystery; in reality, I—the sustainer and creator of all beings—do not depend on them, and they also do not depend on Me (Gita 9:05).

Here “I” and “Brahman” are both independent and sovereign. The seeker is praying that at the individual level, his consciousness [3] may not neglect the Universal Consciousness [4]. And, at the collective level, the Universal Consciousness [4] may not reject the individual consciousness [3]. In distinction to above quote, other verses from the Gita seem to place the Brahman beyond the individual:

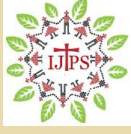
This entire manifestation is pervaded by Me in My unmanifest form. All living beings’ dwell in Me, but I do not dwell in them (9:04).

The verse may be understood as “I [*wholly*] do not dwell in them.” Thus understood these statements are consistent with the Brahman being the fusion of part consciousness of its constituent particles.

Provisional Manifesto,” in *Biology Bulletin*, 215: 216–242 (2008), quoted by Francis Fallon, “Integrated Information Theory of Consciousness,” in *The Internet Encyclopedia of Philosophy*. Retrieved from <https://iep.utm.edu/int-info/>, August 18, 2021).

³⁹ Stuart Hameroff, *Consciousness in the universe*, p. 70.

⁴⁰ “The society is an ensemble of ideas, beliefs, and sentiments of all sorts that are realized through individuals; it indicates a reality that is produced when individuals interact with one another, resulting in the fusion of individual consciences. This fusion of individual consciences is a *sui generis* (*unique*) reality. This means that the social fact, much as water is the product of the combination of hydrogen and oxygen atoms, is a wholly new entity with distinct properties, irreducible to its composing parts, and unable to be understood by any means other than those proper to it. In other words, society is greater than the sum of its parts; it supersedes in complexity, depth, and richness, the existence of any one particular individual. This psychic reality is sometimes... referred to by Durkheim with the term... collective consciousness” (Carls, Paul, “Émile Durkheim (1858—1917),” in *Internet Encyclopedia of Philosophy*, Retrieved from <https://iep.utm.edu/durkheim/>, September 5, 2020).



6.7 Step 4 Continued: Multiple Brahman

Question arises what is the extent of the universe, the consciousness of which is the Brahman? We have suggested previously that infinity *can* exist. The question then is whether universe is infinite and whether the consciousness of the universe, namely Brahman, is also infinite? The invocation of the Isa Upanishad throws light on this matter. We give below three translations of the verse with the translations of the Sanskrit word “पूर्ण” or “purna” in italics:

That Brahman is *infinite*. This phenomenal world is also *infinite*. But “this” is only a projection of “that.” If “this” is taken away, “that” remains *infinite* as before.⁴¹

That is *Whole*, this is *Whole*; from the *Whole*, the *Whole* becomes manifest; from the *Whole*, when the *Whole* is negated, the *Whole* alone is what remains.⁴²

The *whole* is all that is invisible. The *whole* is all that is visible. The *whole* was born out of the *whole*. When the *whole* is absorbed into the *whole*, the *whole* alone remains.⁴³

The word “purna” is translated either as “infinite” or as “whole.” Monier-Williams translates it as “filled with, abundant, rich, complete, all, entire” etc.⁴⁴ These verses suggest that Brahman is the consciousness of the one infinite universe. However, Mathematician Georg Cantor suggested that multiple infinities may exist.⁴⁵ The argument is like this:

[1] There are infinite natural numbers 1, 2, 3, 4...

[2] There are infinite squares of the natural numbers $1^1, 2^2, 3^3, 4^4$ or 1, 4, 9, 16...

The second infinity appears bigger than the first infinity. The same idea can be conveyed in another way:

3) Let us say we insert decimals between the numbers 1 and 2 as given in line [1] above. These numbers can be infinite such as 1, 1.1, 1.11, 1.111, 1.1111... The number of these numbers will be more than the numbers 1, 2, 3, 4... at line [1] because there additionally will exist infinite numbers between any two numbers at line [1].

Thus, we can have a number of infinities that are relatively big- and small and correspondingly we can have a number of Brahman that are relatively big- and small. The same idea is suggested by modern cosmologist in terms of multiple universes. We render the discussion in our words below.

There exists an ensemble of possible universes X, and an ensemble of really existing universes Y. Human universe Z lies in a small subset of Y. We cannot preclude that there may exist one or more universes Z.⁴⁶

The possibility of the existence of multiple Brahman could also be derived by understanding infinite as without beginning and without end. The Gita says:

⁴¹ Lokeshwaranand, Swami, *Isa Upanishad*. Retrieved from https://archive.org/details/ishavasyaupanishadswamilokeshwaranandar.k.mutt_202003_234_B, August 22, 2021.

⁴² Gurubhaktananda, Swami, *Isavasya Upanishad*. Retrieved from https://www.v0.chinfo.org/images/userupload/Reflections/19_Isavasya_Upanishad.pdf, August 22, 2021.

⁴³ Sastri, S. Sitaram, (Trans.), *The Isa, Kena & Mundaka Upanishads and Sri Sankara's Commentray*, G. A. Natesan & Co., Madras, 1905, Retrieved from https://rarebooksocietyofindia.org/book_archive/196174216674_10153237327691675.pdf, August 22, 2021.

⁴⁴ Monier Monier-Williams, *Sanskrit-English Dictionary*, p. 642.

⁴⁵ Dehornoy, Patrick, “Cantor’s infinities,” in *bibnum*, Retrieved from <http://www.bibnum.education.fr/sites/default/files/cantor-analysis-33.pdf>, August 26, 2021.

⁴⁶ Ellis, G. F. R., Kirchner, U., and Stoeger, W. R., “Multiverses and physical cosmology,” in *Mon. Not. R. Astron. Soc.* 347, 921-936 (2004). Retrieved from <https://academic.oup.com/mnras/article/347/3/921/1021585>, August 26, 2021.



O Lord of the universe, I see You everywhere with *infinite* form, with many arms, stomachs, faces, and eyes. O Universal Form, I see *neither your beginning nor the middle nor the end* (11.16).

The word used for “infinite” in this verse is “अनंत” or “without end.” Let us think of an ant in a football field. The ant can go only so far. The area that the ant can go is “vast.” But the field does not end at the last point reached by the ant. So there is “vast” remaining after the ant has covered the “vast.” Thus the word “अनंत” can mean either infinity as translated in above verse, or it can mean “vast” as discussed by us above. It follows that there can be many Brahman if Brahman is fusion of vast.

The later Theosophical thinking supports this approach. The early Theosophical thinking held that the Causeless Cause is the One Absolute, Infinite, Eternal Divine Principle. The later thinking in distinction held that the highest conception of the Divine was the “Solar Logos,” or the “God of our Solar System.”⁴⁷ If the Divine is God of the solar system, then we may postulate there would exist other Divine that are Gods of other planetary systems and galaxies. In view of above, we suggest that there could exist multiple Brahman. We have completed the discussion of Step [4] of Brahman being fusion of collective consciousness and we now move to Step [5].

6.8 Step 5: Material Universe guided by Brahman

The Hindu texts say that the Brahman guides and supports its constituent parts. We have quoted the Aitreya Upanishad above to the effect that “Consciousness is Brahman.” We give the longer quote below:

He is the origin—those born of an egg, of a womb, of sweat and of a sprout; He is horses, cows, human beings, elephants—whatever breathes here, whether moving on legs or flying in the air or unmoving. All this is *guided by* Consciousness, is *supported by* Consciousness. The basis of the universe is Consciousness. Consciousness is Brahman (3:1:3).

The fused consciousness guides its constituent parts. This idea is depicted in the downward arrow at Step [5] in Figure 2. This same idea is expressed by psychologist Carl G. Jung in terms of the influence of the unconscious on our decisions:

A man likes to believe that he is the master of his soul. But as long as he is unable to control his moods and emotions, or to be conscious of the myriad secret ways in which unconscious factors insinuate themselves into his arrangement and decisions, he is certainly not his own master.⁴⁸

Here Jung is describing the influence of the individual unconscious on the individual conscious mind. However, the individual unconscious is connected with the collective unconscious of which it is a constituent part. Thus the collective unconscious or Brahman may be said to guide the individuals or “all this” as said in the above verse.

6.9 Step 6: 2-way communication between Viraj and Brahman

We suggested at Step [4] that the consciousness of vast numbers of independent material particles fuses to make Brahman. We refer to these independent particles collectively as “Viraj.” We clarify that the Brahman is *fused* consciousness while Viraj is the independent material particles addressed *collectively*. The upward movement takes place

⁴⁷ United Lodge of Theosophists, “Original Theosophy and Later Versions: Five Main Distinctions To Be Considered,” in *Theosophy*. Retrieved from <https://blavatskytheosophy.com/original-theosophy-and-later-versions/>, August 22, 2021.

⁴⁸ Carl G. Jung, *Man and His Symbols*, p. 83.



individually as at Step [4] as well as collectively as at Step [6] in Figure 2. Viraj forms Brahman as depicted at and Brahman guides Viraj as at Step [6]. Thus, the Atharva Veda tells of Viraj ascending and descending in the world:

Viraj verily was this [universe] in the beginning.

She ascended; she descended in the house-holders fire.

She ascended; she descended in the fire of offering.

She ascended; she descended in the southern fire.

She ascended; she descended in the assembly.

She ascended; she descended in the gathering.

She ascended; she descended in address (*amantrana* or invitation) (8:10:1-7).

A similar concept is mentioned by the later Theosophists. It is said that the Planetary Logos “has worked ‘his’ way up to that state by passing through various grades of initiation.” This concurs with the ascending of the Viraj. Further, the “Universe comes into being as a result of the Logos being radiated forth from the Absolute.”⁴⁹ This concurs with the guidance given by Brahman.

6.10 Step 6 Continued: The nature of God

The relationship between the Universal Consciousness and Its constituents is brought out in the modern framework in the paradoxical nature of God. His wisdom seems counterpoised to His omnipotence. If it is said that God rules by his whims then His wisdom is questioned. On the other hand, if it is said that God rules according to rules external to him then He becomes subject to those laws and is no longer omnipotent.⁵⁰

This problem dissolves when the God is understood to be the fused Universal Consciousness. God rules by the collective desires of the constituents. These desires may appear whimsical to a particular constituent who may not comprehend the totality. God’s wisdom too is limited by the wisdom of His constituents. It is possible for God to go wrong—perhaps the decline of the Mayas and Incas was due to such lack of collective wisdom. He is “omnipotent” in the sense of the ability to implement the collective desires; but He is not omnipotent in the sense of going beyond the same collective desires.

Another commentator says that God’s wisdom is intrinsically good.⁵¹ Here we need to define what is “good?” We have suggested that every particle has a desire to grow. The fused consciousness of the particles then would also desire to grow. Thus, what leads to growth of the universe may be considered to be “good;” and that which leads to decline of the universe may be considered to be “bad.” Now, since God is made up of the consciousness of the particles that desire to grow, therefore, God will always embrace that which leads to growth or is “good.” However, this proposition assumes that the constituent parts will continue to want to grow. We have established the idea that all particles desire to grow *empirically* on the strength of observation of the acorn and human beings, not theoretically. There is no reason to say that this will always necessarily be so. It is conceivable that the particles may not desire to grow as indicated in historian Arnold J.

⁴⁹ United Lodge of Theosophists, “Original Theosophy and Later Versions: Five Main Distinctions To Be Considered,” in *Theosophy*. Retrieved from <https://blavatskytheosophy.com/original-theosophy-and-later-versions/>, August 22, 2021, p. 3.

⁵⁰ Kolakowski, Leszek, *Is God Happy? Selected Essays*, Basic Books, New York, 2013.

⁵¹ C.S. Lewis, *The Problem of Pain*, quoted in Ross, Kelly L., “Religious Value and the Antinomies of Transcendence, after Kant,” in *Philosophy of Religion*, Retrieved from <https://www.friesian.com/antinom.htm>, August 30, 2021.



Toynbee's concept of "loss of soul."⁵² We could conceive of a situation where decline can be "good" such as a person wanting to commit suicide. All we can say is that as per the presently observed situation the particles have a desire to grow. But they are free to not to want to grow. In that case, God will become anti-growth. That anti-growth God may still be "good" because that is what the universe may want at that time. In fact, the statement that "God is inherently good" is a tautology because the desire of the particles of the universe will be done by God and the same is good by definition.

7. DEVTA: THE COLLECTIVE CONSCIOUSNESS

7.1 Devtas are subsets of Brahman

The fusion of consciousness of all the particles of the universe is Brahman as said above. Similarly, the fusion of consciousness of a subset of the universe such as fire, earth, fish, human beings, Indians, Buddhists, etc. is called "devta." This definition is brought out in the Brihadaranyaka Upanishad. The sages were discussing "Brahman." At this time the following discussion took place:

Vidagdha: How many devtas are there, Yajnavalkya?

Yajnavalkya: Thirty-three.

Then Vidagdha repeatedly kept asking, "How many devtas are there, Yajnavalkya?" and Yajnavalkya sequentially replied, six, three, two, one and a half, and one. Yajnavalkya named the devtas at each of these numbers as follows:

Thirty-three: These include 8 elements (fire, earth, air, sky, sun, heaven, moon and stars); 11 senses and organs (eyes, ear, nose, tongue, skin, hand, feet, mouth, rectum, sexual organ and mind); 12 months, Indra and Prajapati.

Six: Fire, earth, air, sky, sun, heaven.

Three: Fire-earth, air-sky and sun-heaven.

Two: Matter and vital breath.

One and a half: Air that blows.

Lastly, Vidagdha asked "How many devtas are there, Yajnavalkya?" To which Yajnavalkya replied:

One: Brahman (3:9:1-9).

Here it is clearly said that the one devta was Brahman. This is so because the one devta is constituted of the consciousness of the entire universe which is also Brahman. The Rig Veda points in the same direction:

The devtas are later than this world's production (10:129:6).

Initially there was one undifferentiated Being—Brahman. At this time the consciousness of the universe was undivided. Subsequently, the Beings divided and the presiding deities of the divided parts were created. Thus we may conceive of the water devta Varun presiding over the collective consciousness of all particles of water. This idea is affirmed by the Chhandogya Upanishad saying that the devtas are psychic entities with no physical form who do not eat or drink (3:6:1ff).

The Theosophists come close to our understanding. They refer to the collective consciousness of the planet earth as "Planetary Logos;" and the presiding officers of the "spiritual kingdom" as "Chohans."⁵³ The word Chohans used in plural indicates there are

⁵² Rahim, Shahzada, *Beyond Civilization and History: A philosophical study of modernist and post-modernist perspectives on History*, Copyright Material, 2020. Retrieved from <https://philpapers.org/archive/ABBBCA.pdf>, October 24, 2021, p. 39.

⁵³ Zachary F. Lansdowne, *The Purusha Sukta*.

many Chohans. Thus, the “spiritual kingdom” would refer to the collective consciousness of subsets of universe while Chohans would refer to the presiding deities. They clarify that all human beings constitute the Planetary Logos while a group of human beings form a part of the same.⁵⁴ This idea concords with all human beings form the Brahman while a group of human beings form the devtas.

7.2 Durkheim and Jung

We would like to clarify the usage of certain terms before we proceed to develop concordance of devtas and modern psychology. The conscious mind is the seat of reason. Thus, we use the terms “conscious,” “conscious mind” and “reason” interchangeably. However, we suggest that there does not exist a “universal mind” because communication at the mental level takes place through spoken or written word or images and, therefore, cannot include the universe. On the other hand, unconscious communication can take place telepathically over vast areas. Thus, “collective unconscious” can encompass vast numbers.

The conscious and the unconscious mind are located in different part of the brain. Physiologists say that the seat of the conscious mind is the cerebrum in the middle of the brain;⁵⁵ while the brain stem has a role in the regulation of “cardiac and respiratory function, consciousness, and the sleep cycle.”⁵⁶ Of these, the cardiac and respiratory functions are unconscious. Thus, we may say that the conscious mind is located at the cerebrum while the unconscious mind is located at the brain stem. We visually depict the conscious mind as “M” located in the middle of the head (not to be confused with “M” used for matter in “Figure 2: Brahman and Viraj”); and the unconscious mind as “U” located it in the heart in Figure 3. Then we connect the “Cs” and “Ms” with dotted lines to denote their group- or collective dimensions.

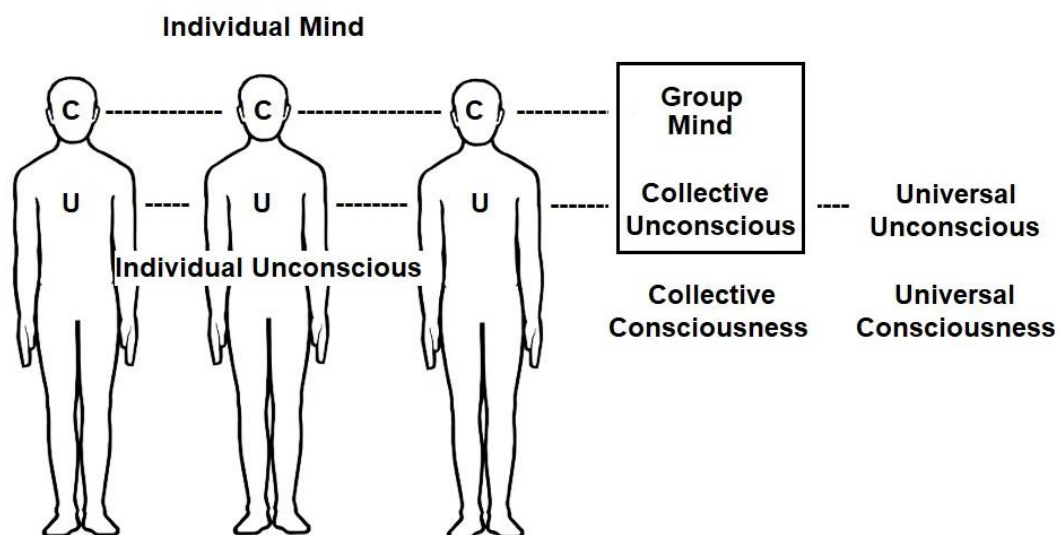


Figure 3: Group Mind, Collective Unconscious, Universal Unconscious, Collective Consciousness and Universal Consciousness.

⁵⁴ Zachary F. Lansdowne, The Purusha Sukta.

⁵⁵ Bowditch, Andrew and Bowditch, Matthew, “The Human Brain: Anatomy and Function,” in *Visible Body*, Retrieved from <https://www.visiblebody.com/learn/nervous/brain>, September 17, 2021.

⁵⁶ Lumen Learning, “The Brain Stem,” Retrieved from <https://courses.lumenlearning.com/boundless-ap/chapter/the-brain-stem/>, September 17, 2021.



We use the term “consciousness” to include the conscious as well as the unconscious mind. Consciousness, in turn, arises at various levels:

Individual consciousness: Combined individual conscious and unconscious mind.

Collective consciousness: Combined collective conscious and collective unconscious. The collective conscious is like the World Wide Web providing a pathway for sharing common thought and moving towards the making of a “global brain.”⁵⁷ Sociologist Floyd Henry Allport said that group mind is a mere collection of individual minds and does not have an independent existence of its own.⁵⁸ We understand the term “mind” to refer to the conscious mind here. Various subsets of human beings form their collective unconscious. A mother and her infant child, for example, can form a collective unconsciousness between them.

Universal consciousness: Combined universal unconscious to the exclusion of conscious since there exists no universal conscious mind.

Our interest lies in the collective consciousness which is the combined collective conscious and collective unconscious. Modern scholars acknowledge the existence of the collective unconscious variously as follows:

The collective unconscious may be a product of telepathic communication.⁵⁹

The interaction in social organizations leads to the development of an “unconscious substrate”⁶⁰ such as in the collective identity of the members of a labour union.⁶¹

The collective unconscious of all humanity is called “soul of humanity.”⁶²

Symbols. The symbols of social organizations have the same role as the collective unconscious in the society. “The contents of the collective unconscious are archetypes which are manifested in the form of organizational symbols in organizations.”⁶³

The contents of the collective unconscious are the result of man’s whole ancestry and are the matrix of experience from which all future ideas will come.⁶⁴

⁵⁷ Theiner, Georg and Wilson, Rob, “Group Mind,” Draft entry for Kaldis, Byron (ed), *Encyclopedia of Philosophy and the Social Sciences*, Sage Thousand Oaks, 2013.

⁵⁸ Allport, Floyd Henry, *The Group Fallacy in Relation to Social Science*, The Sociological Press, Hanover, New Hampshire, 1927, p. 2-12.

⁵⁹ Pillay, Srinii, “The Biology of Telepathy: Is brain-to-brain communication possible? Here's what research finds,” in *Psychology Today*, (2018), Retrieved from <https://www.psychologytoday.com/us/blog/debunking-myths-the-mind/201804/the-biology-telepathy>, September 23, 2020.

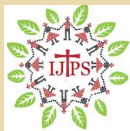
⁶⁰ “Jung calls ‘social facts,’ or elements of collective life that exist independently of and are able to exert an influence on the individual... His position then ultimately is that while the social fact is unmistakably a sui generis product of social interaction, it is produced and resides exclusively in this special substratum of the individual mind” (Carls, Paul, Émile Durkheim, p. 2, 8).

⁶¹ Carls, Paul, “Émile Durkheim, p. 23.

⁶² “In his 1916 essay, Jung distinguished between “the ‘personal,’ Freudian unconscious, filled with sexual fantasies and repressed images, and the ‘collective’ unconscious encompassing the soul of humanity at large,” (Jung, Carl G., *Collected Works*, Vol. 7, “The Structure of the Unconscious” (1916), quoted in Wikipedia, “Collective unconscious.” Retrieved from https://en.wikipedia.org/wiki/Collective_unconscious, September 7, 2020).

⁶³ Kocoglua, Ipek, Akguna, Ali Ekber and Keskinb, Halit, “The Collective Unconscious at the Organizational Level: The Manifestation of Organizational Symbols,” in *Procedia - Social and Behavioral Sciences*, Retrieved from <https://www.sciencedirect.com/science/article/pii/S1877042816315671>, September 7, 2020, p. 3-5.

⁶⁴ International Association for Analytical Psychology, “Abstracts of the Collected Works of C.G. Jung, “The Structure and Dynamics of the Psyche,” Retrieved from <https://iaap.org/resources/academic-resources/collected-works-abstracts/volume-8-structure-dynamics-psyche/>, October 24, 2021.



Because Spirit exists in all things that have life, as well as the universe as a whole, there follows a sense of interconnectedness between all life forms and natural and cosmic processes.⁶⁵

At the same time, modern scholars appear to refer to the collective consciousness in terms of nationalism.⁶⁶ This would include the conscious and unconscious minds. While other scholars dispute the importance of collective consciousness in explaining nationhood, they nevertheless acknowledge the existence of such consciousness.⁶⁷ These endorsements of the collective unconscious, we suggest, is referred to as devta in the Hindu stream.

8 THE TRINITY: BRAHMA, VISHNU AND SHIVA

8.1 Seven Psychic Centers

The Hindu system holds that there are seven major psychic centers or chakras are located at seven locations in the spinal cord as mentioned in Table 1. The six lower psychic centers are connected with different parts of the brain while the seventh is connected with all the lower six chakras. Swami Satyananda, doyen of Yoga and author of *Kundalini Tantra* says that these six chakras “are directly connected with the higher unilluminated centers of the brain... the six chakras serve as switches for turning on different parts of the brain.”⁶⁸ In order to avoid confusion it is clarified that another classification of the seven chakras is made in five “kosha” or sheaths as detailed at the endnote.⁶⁹ This classification, however, is not relevant for our discussion since they overlap with the seven chakras.

The five lower chakras are associated with the elements earth, water, fire, air and ether. This association arises from the correspondence of the psychic nature of a chakra with the nature of a particular element. For example, the Manipur chakra is considered to be the seat of “heat” in the body and is also associated with the element “fire.” The chakras are also associated with colours, senses and body regions as given in Table 1, and with particular animals, shapes, motor part of the body and other qualities that we omit for brevity.

Table 1: Qualities of Chakras.⁷⁰

Sl	Chakra	Physical Location	Element	Colour	Sense	Body region
1	Sahasrahara	Pineal Gland	-	-	-	Brain
2	Ajna	Cavernous Plexus	Mind	Brown	All	Third Eye
3	Vishuddhi	Laryngeal Plexus	Ether	White	Hearing	Throat
4	Anahata	Cardiac Plexus	Air	Smoky	Touch	Heart
5	Manipur	Solar Plexus	Fire	Red	Sight	Navel
6	Swadhishtana	Prostatic Plexus	Water	Silver white	Taste	Sex organs
7	Mooladhara	Sacral Plexus	Earth	Yellow	Smell	Anal region

⁶⁵ Durand, Kijrsten, *A Spiritual Framework of Organic Oneness: The Eco-Theological Shift Towards a Collective Ecological Consciousness*, Thesis, Florida Atlantic University, Boca Raton, 2017, p. 28-29.

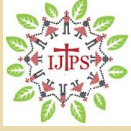
⁶⁶ Malczewski, E., “Durkheim and the nation,” *Istanbul Üniversitesi Sosyoloji Dergisi*, 39, 41–64. (2019). Retrieved from <https://doi.org/10.26650/SJ.2019.39.1.0013>, October 24, 2021.

⁶⁷ Majumdar, Margaret A., *Postcoloniality: The French Dimension*, Berghahn Books, New York, 2007, p. 127.

⁶⁸ Saraswati, Satyananda, *Kundalini Tantra*, Yoga Publications Trust, Munger, 1984, p. 23, 25.

⁶⁹ Brahmrandhra (chakra)=Anandamaya (kosha), Ajna and Vishuddhi=Vigyanamaya, Anahata=Manomaya, Manipur and Swadhishtana=Pranamaya, and Mooladhara=Annamaya (Sivananda, *Kundalini Yoga*, Divine Life Society, Shivanandanagar, 1994, p. 113, 84, 102, 92, and 88).

⁷⁰ Saraswati, Shantidharmananda, *Holistic Yoga*, SriKunj Sadbhavana Manch, New Delhi, 2004, p. 269-272.



The seven chakras are psychically connected with the corresponding chakras of other human beings and form their psychic auras. These auras can be understood as subsets of the collective unconscious. We have mentioned that the presiding deity of the collective consciousness of a subset of the universe is called devta. Now we suggest that one particular way these subsets can be constituted is at the seven chakras. The presiding deities of these seven auras are seven devtas. Thus, Swami Sivananda says:

The Chakras are centers of... vital force... the presiding Devtas of which are the names for the Universal Consciousness as It manifests in the form of these centers.⁷¹

This connection between the chakras and devtas is also indicated in the Atharva Veda: Time in the form of a horse pulls the world in the form of a chariot, it has seven rays, it has thousand eyes, it does not decay, it is strong. The wise ride on it. Its chakras are the worlds⁷² (19:53:1).

The seven rays refer to the psychic auras of the seven chakras. The thousand eyes could refer to the thousands of auras at each of these chakras made by subsets of human beings. The wise riding on the chakras tells of the wise having their psyche at these chakras under their conscious control. The worlds of the chakras refer to the psychic worlds. The Atharva Veda continues:

This time pulls the seven chakras. It has seven navels. It has ambrosia. It manifests these worlds. Time is the first deva and it keeps running (19:53:2).

The seven navels point to the seven physical centers in the spinal cord. The ambrosia indicates the state when the seven psychic dimensions are in harmony. The manifestation of the world refers to receiving signals from the worlds at these seven chakras. The time keeping running indicates that the movement of the breath has a corresponding movement of the psyche through the seven chakras.

We may mention that two commentaries by Satwalekar and Whitney do not give any explanation of the number seven that occurs thrice in these two verses. They also do not make any exposition of the association of chakras, navels and worlds.⁷³ We fill up that silence with seven devtas at the seven chakras.

8.2 Maslow and Jung

Psychologist Abraham Maslow helps build a concordance between the seven chakras and modern psychology. He has developed a seven-level hierarchy of needs: Physiological, Safety, Belonging, Esteem, Cognitive, Aesthetic, and Self-Actualization.⁷⁴ Dr. Diane Roberts Stoler, neuropsychologist and trauma therapist has drawn a concordance between Maslow's five lower needs and the lower five of the seven chakras in the spine as described by the Hindu psychology above.⁷⁵ Stoler has subsumed the higher three needs into one, namely, "self-actualization" as shown in Figure 4.

⁷¹ Sivananda, *Kundalini Yoga*, p. xi.

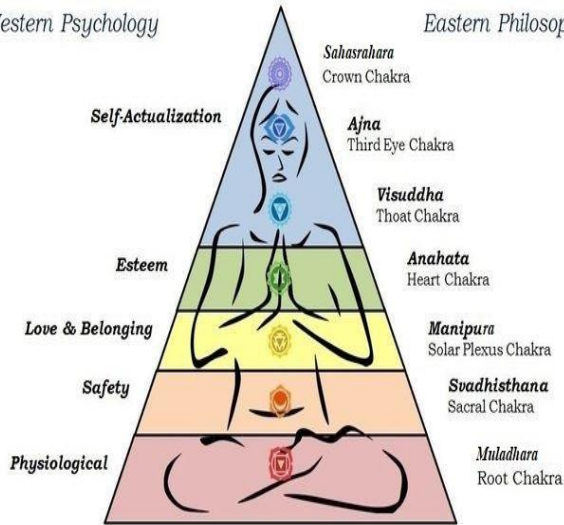
⁷² We translate "bhuwana" as worlds. Monier-Williams gives its meanings as "world, earth, place of being, abode, residence, a house" (Monier Monier-Williams, *Sanskrit-English Dictionary*, p. 760).

⁷³ Satwalekar, Sripad Damodar, *Atharva Veda*, Swadhyay Mandal, Pardi, 1985; and Whitney, William Dwight *Atharva-Veda Samhita*, Harvard University, Cambridge, 1905, Retrieved from <https://www.worldcat.org/title/atharva-veda-samhita/oclc/3011168>, October 23, 2021.

⁷⁴ Clark, Donald, "Maslow (1908 - 1970) Hierarchy of needs. 5 or 7 levels? Useful or useless?" Retrieved from <http://donaldclarkplanb.blogspot.com/2012/04/maslow-1908-1970-hierarchy-of-needs-5.html>, September 13, 2020.

⁷⁵ Stoler, Diane Roberts, "Maslow's Hierarchy vs. 7 Chakras- Interestingly Similar!" in *Psychology Today*, (2018), Retrieved from <https://www.psychologytoday.com/us/blog/the-resilient-brain/201804/maslows-hierarchy-vs-7-chakras-interestingly-similar>, September 21, 2020.

Western Psychology



Eastern Philosophy

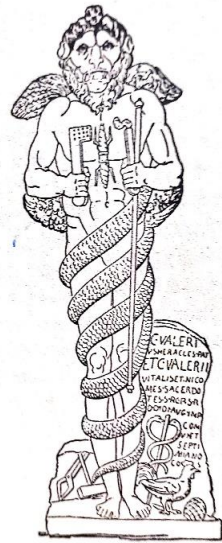


Figure 4: Correspondence of Maslow's need and Hindu psychology's chakras.

Figure 5: Roman Image

We have mentioned Swami Satyananda above to the effect that the chakras are switches for certain areas of the brain. Jung points in the same direction in his discussion of the Hindu Chakra system:

The chakras... are symbols. (The) word symbol... has to do... with a heap of material thrown together, which we... take as a whole.⁷⁶

The “heap of material” could refer to the psychic material repositied at the chakras. We feel the distinction between the term “symbol” used by Jung and the term “switch” used by Satyananda is more semantic than substantial. The overall picture is that there are seven psychic centers in the spine. These centers act as switches for particular areas of the brain. They have particular psychic qualities or needs that are represented by the five elements as shown in Table 2.

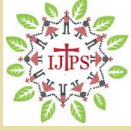
Table 2: Chakras, needs and psychic aspects.

Sl	Chakra	Physical Location	Need (Maslow)	Psychic Aspect (Jung) ⁷⁷
1	Sahasrahara	Pineal Gland	Self-Actualization	-
2	Ajna	Cavernous Plexus	Aesthetic	Receiving Command
3	Vishuddhi	Laryngeal Plexus	Cognitive	Spiritual
4	Anahata	Cardiac Plexus	Esteem	Consciousness
5	Manipur	Solar Plexus	Belonging	Emotions, Passion
6	Swadhishthana	Prostatic Plexus	Safety	Desire
7	Mooladhara	Sacral Plexus	Physiological	Unconscious, Latent

Jung associates the 6th Ajna Chakra with “Receiving Command” which is the location of the conscious mind according to the Hindu psychology. Consequently, the lower five chakras may be considered to be part of the “unconscious mind.” We may accordingly

⁷⁶ Jung, Carl G., Sonu Shamdasani (Ed.), *The Psychology of Kundalini Yoga*, , Bollingen Series XCIX, Princeton University Press, 1996, p. 60-61.

⁷⁷ Carl C. Jung, *The Psychology*, p. 76.



conceive of the brain in two parts—the conscious mind located at Ajna chakra; and the unconscious mind having switches at the five lower chakras in the spine. The seven centers in the spinal cord have been noted since ancient history. Joseph Campbell produces an image from ruins of a temple of a Roman Port dated to 190 CE in which a serpent is shown winding up in six turns up the human body and rests its head above the brow on the 7th turn as shown in **Eroare! Fără sursă de referință.**⁷⁸ The seven turns or centers likely correspond with the seven chakras.

Only limited evidence of the existence of the chakras in the spine is available from modern psychology. Japanese parapsychologist Hiroshi Motoyama has said that “there are significant difference in the physiological function of the organ associated with the chakra that the individual subjects claimed to have awakened.”⁷⁹ Professor of kinesiology Valerie Hunt of University of California tells of a direct correspondence “between the distinctive wave form [recorded on electromyograph] and the psychic’s description of the colour emanating from the chakra.”⁸⁰ Indeed these evidences may be considered to be weak. That is not surprising because the chakras do not have psychic qualities themselves and are only switches for specific parts of the brain.

8.3 Presiding Deities

Swami Sivananda associates the seven chakras with seven psychic regions. Here we have extracted his discussion of three specific chakras that we associate with the trinity of three devtas, namely, Vishnu, Shiva and Brahma:

When the consciousness evolves to Manipur, the [person] gets a glimpse of the higher *lokas* or planes of existence. Anahata belongs to the first of the immortal planes. Vishuddhi belongs to the fifth loka...⁸¹

“Loka” means “free or open space, intermediate space, region, the wide space or world...”⁸² In the context of the chakra, “loka” would be a “psychic” region. The location of devtas at the chakras is also mentioned by Shankaracharya: “The devtas located in the chakras tremble by the movement of consciousness in the spinal cord.”⁸³ We may think of the chakras as psychic receivers-cum-transmitters that are connected with the respective chakras of a number of other living beings thus forming a psychic cloud at that chakra. The presiding deity of such a psychic cloud is called a devta. However, there is no unanimity among the Hindu sages regarding the deity that presides over a particular chakra. We give our understanding of the devtas along with supporting evidences while acknowledging that there exists alternative identification of the particular devtas.⁸⁴

The presiding deity of Mooladhara chakra (element earth) is goddess Devi.⁸⁵

⁷⁸ Campbell, Joseph, *The Masks of God: Oriental Mythology*, Secker & Warburg, London, 1962, p. 262-266.

⁷⁹ Sivananda, *Kundalini Yoga*, p. 371.

⁸⁰ Sivananda, *Kundalini Yoga*, p. 376.

⁸¹ Sivananda, *Kundalini Yoga*, p. 100, 102, 109.

⁸² Monier Monier-Williams, *Sanskrit-English Dictionary*, p. 906.

⁸³ Shankaracharya, Adi, Shantidharmananda Saraswati (Trans.), *Yati Danda Aishwarya Vidhanam*,” Satyam Sadhana Kutir, Rishikesh, 2021, Verse 362.

⁸⁴ For example, Sivananda gives the deities of 4th to 6th Chakras as Siva, Maheshwara and Sadasiva (Sivananda, *Kundalini Yoga*, p. 21); while Shantidharmananda Saraswati, gives them as Isana, Pancavakra and Linga (Shantidharmananda Saraswati, *Holistic Yoga*, p. 270).

⁸⁵ “Devi Mother is the centre of the universe. She is seated in the Muladhara Chakra of every human being” (Dash, Durgamba, “Worship of Mother Kali,” in *Orissa Review*, November 2008, Retrieved from <http://magazines.odisha.gov.in/Orissareview/2008/November-2008/engpdf/1-5:pdf>, October 24, 2021); “Mula relates to Kali, the Goddess of Time who rules eternity as well. Mula relates to Adya Kali as the origin, the Mother of the Universe and ultimate creative force. It connects to the Muladhara or root chakra at the base of

The presiding deity of Swadhishthana chakra (element water) is Varun.⁸⁶

The presiding deity of Manipur chakra (element fire) is Vishnu;

The presiding deity of Anahata chakra (element air) is Shiva.⁸⁷

The presiding deity of Vishuddhi chakra (element ether) is Brahma.⁸⁸

There is no clarity on the presiding deities of the two highest chakras—Ajna and Sahasrahara. We make no comment on this since our purpose is to clarify the concept of devta which is primarily associated with the five lower chakras.

The psychic clouds and their presiding deities are limited by space. The Vishuddhi chakra of a number of persons can connect with each other and create one Brahma. The Vishuddhi chakra of another number of persons can connect with each other and create another Brahma. The same applies to the other chakras. We have depicted this in Figure 5 where we have shown three Vishnus, two Shivas and four Brahmas. These are the psychic clouds made by the constituent individuals. Thus, the Devi Purana says that there exist “millions of Brahmas and innumerable Vishnus” (59:21).

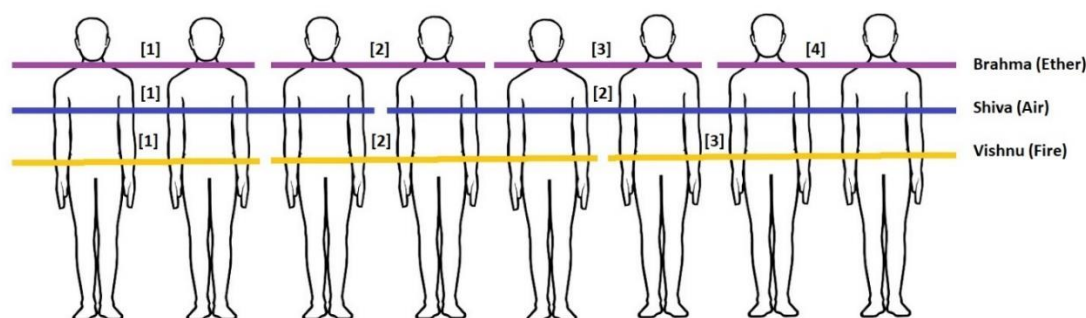


Figure 5: Three Vishnus, Two Shivas and Four Brahmas

To summarize, we suggest Vishnu, Shiva and Brahma are the presiding deities of the innumerable psychic clouds made at the Manipur, Anahata and Vishuddhi chakras of the constituent individuals.

8.4 Existence of Evil

We define “good” as that thought or action that is in sync with the Universal Consciousness; and “evil” as that which is contrary to the Universal Consciousness as shown in Figure 6. Each constituent part of Brahman has freedom. Some parts use the freedom in sync with the desires of Brahman. These are “good.” Other parts use the same freedom contra the desires of Brahman. These are “evil.” Some constituent parts will always act in sync and some will act contra hence the battle between good and evil takes place perpetually.

the spine and to the Kundalini Shakti, the serpent power” (Frawley, David, “The Shiva-Kali Axis in Vedic astrology and its Alignment in 2020,” in American Institute of Vedic Studies. Retrieved from <https://www.vedanet.com/the-shiva-kali-axis-in-vedic-astrology-and-its-alignment-in-2020/>).

⁸⁶ Sivananda, *Kundalini Yoga*, p. 21.

⁸⁷ Sivananda, *Kundalini Yoga*, p. 21.

⁸⁸ “The Divinity of the Vishuddhi Chakra is Brahma, the Creator, the symbol of Consciousness” (Puri, Maheshwarananda, “Vishuddhi Chakra,” in *Yoga in Daily Life*, Retrieved from <https://www.yogaindailylife.org/system/en/chakras/vishuddhi-chakra>, October 6, 2020); Saraswati, the consort of Brahma, “is the deity governing the fifth chakra, the vishuddha chakra” (Marin, Kim, “Speak Your Truth with a Clear Throat Chakra (Vishuddha),” (2016), Retrieved from <https://beyogi.com/vishuddha-chakra/>, October 6, 2020).

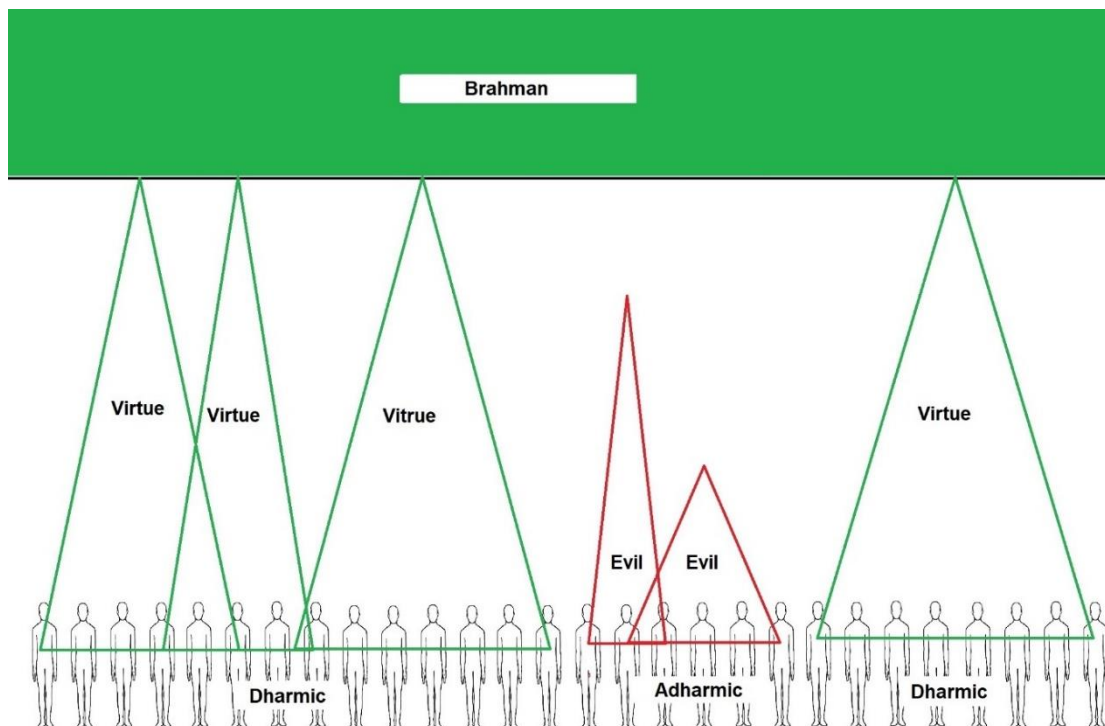


Figure 6: Virtue and Evil

8.5 Autonomy of the Collective Unconscious

Jung says that the personal unconscious holds the mental patterns or memory traces of the individual. Similarly, the collective unconscious holds the mental patterns or memory traces of a group. These mental patterns can be fused unconscious of the constituents. Thus, Jung says, “The collective unconscious consists of the sum of the instincts and their correlates, the archetypes.”⁸⁹ The collective unconscious, so to say, floats in the psychic world. It is constantly added to by the present memories. The infant is subjected to-, and inherits this collective unconscious at the time of her birth. Thus, Jung says, “The [psychic] form of the world into which [a person] is born is already inborn in him, as a virtual image.”⁹⁰ Indian Sage Aurobindo has explained this concept in terms of a changing-yet-continuous psychic entity:

The secret cosmic consciousness... creates also collective powers of consciousness which are large subjective formations of cosmic Nature; but it does not provide for them an organised mind and body, it bases them on the group of individuals, develops for them a group-mind, *a changing yet continuous* group-body.⁹¹

Aurobindo uses the term “group mind” to denote the conscious-and-unconscious mind or “collective consciousness” as we have defined above. He says the collective consciousness is changing continuously. It follows that the collective consciousness or the

⁸⁹ Carl G. Jung, “Carl Jung Quotes,” <https://www.brainyquote.com/authors/carl-jung-quotes>, Retrieved October 24, 2021.

⁹⁰ McLeod, Saul, “Carl Jung,” in *Simply Psychology*, (2018). Retrieved from <https://www.simplypsychology.org/carl-jung.html>, October 24, 2021.

⁹¹ Aurobindo, Sri, “The collective consciousness of Nature,” in Aurobindo, Sri, *The Life Divine*, Retrieved from <https://sriarobindostudies.wordpress.com/2011/05/09/the-collective-consciousness-of-nature/>, October 24, 2021.



devtas Vishnu, Shiva and Brahma at the Manipur, Anahata and Vishuddhi Chakras are changing continuously. Next, Jung says these archetypes are autonomous:

A man likes to believe that he is the master of his soul. But as long as he is unable to control his moods and emotions, or to be conscious of the myriad secret ways in which unconscious factors insinuate themselves into his arrangement and decisions, he is certainly not his own master. These unconscious factors owe their existence to the autonomy of the archetypes.⁹² Sociologist Emile Durkheim says that the collective consciousness acquires an independent existence of its own: (The collective consciousness is endowed) “with quite distinctive characteristics: it forms a determinate system with its *own life*... it is the *same in different locations*, classes, and occupations; it *connects successive generations* rather than changing from one to another; and it is *different from individual consciences*, despite the fact that it can be realized only through them.”⁹³

We discuss the four phrases marked in italics in the above quote. One, the collective consciousness forms *its own life*. Though formed by the “sum of the instincts and their correlates” in the words of Jung above, the collective consciousness becomes free of its constituents. In terms of Hindu concordance this supports the idea that Vishnu, Shiva and Brahma form their own life that is distinct from that of their constituents.

Two, the collective consciousness is the *same in different locations, classes, and occupations*. All constituent persons at different locations, classes, and occupations contribute to the making of the particular collective consciousness. Thus, the collective consciousness is same for all constituent persons at that particular location, class, and occupation. Let us say, 100 persons in a suburb are interested in making a good community garden. They form a collective unconscious even though they may live in different homes etc.

Three, it *connects successive generations rather than changing from one to another*. The collective consciousness is a moving psychic cloud. It is made anew every moment by the fusion of the thoughts of its constituents. New members are continually added while others get dropped just as the voter list changes from one election to the next. The statement “*rather than changing from one to another*,” we suggest, refers to there being no discrete transformation such as extinction of one collective conscious and creation of another. The transforms continually thus it connects successive generations.

Four, the collective consciousness is *different from individual consciences* since it is made by the fusion of individual consciences.

9. AVATARA: DESCENT OF THE COLLECTIVE UNCONSCIOUS

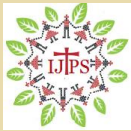
9.1 Avatara

The connection between and individual and the collective consciousness can take place at varying intensities, say, from zero+ to 100- percent. The lower level of connection may be understood as partial *avatara*. For example, every living person has some consciousness at the Manipur chakra which is in continual two-way communication with devta Vishnu. Thus, Ramana Maharshi says, “Everyone is an Avatar of God.”⁹⁴

⁹² Carl G. Jung, *Man and His Symbols*, p. 83.

⁹³ Durkheim, Emile, *The Division of Labor in Society*, 1893, in Robert Alun Jones, *Emile Durkheim: An Introduction to Four Major Works*, Sage Publications, Inc., Beverly Hills, 1986. Retrieved from <https://durkheim.uchicago.edu/Summaries/dl.html>, September 16, 2020.

⁹⁴ Ramana, Maharshi, *Peace*, 1931, Retrieved from <https://www.facebook.com/RamanaMaharshi/posts/the-following-article-was-first-published-in-the-september-1931-monthly-magazine/116880295131015/>, July 13, 2021.



However, the connection is *perceived* as “avatara” if it exceeds some unspecified level of connection “X.” The New World Encyclopedia explains:

Hindu traditions also typically distinguish between two different types of avatars: Those that are direct incarnations of Vishnu (*purna avatara*), and those in which the personality of Vishnu is only partially manifest (*ansa avatara*)... Among most Vaishnava traditions, Krishna is considered to be the highest kind of purna avatar. The ansa avatars, meanwhile, are generally not worshiped as the Supreme Being. This category of avatars is said to include the remainder of the Dasavatara, as well as many other incarnations.⁹⁵

We understand the “direct” incarnation to have a connection with the collective Vishnu at a level higher than “X” and partial incarnations to have the same connection at a level less than “X.” This connection is considered to be a “descent” of the collective consciousness which, in turn, is understood as Vishnu having taken avatara. This connection is not considered to be an “ascent” even though ascent does take place because the ascent is miniscule while the descent can be large. To illustrate, we may consider the collective to have a psychic weight of, say, 100,000 units. A contributing individual may have a psychic weight of, say, 10 units. In this situation a 5-unit descent from the collective to the individual would be “large” at 5/10; while a 5-unit ascent from the individual to the collective would be miniscule at 5/100000. Hence the descent is discussed in the literature widely while the ascent is mostly ignored. The descent takes place at different chakra, time, space and intensity as discussed below.

Chakra. The collective consciousness at Manipur, Anahata and Vishuddhi are personified as Vishnu, Shiva and Brahma. All three are said to have undertaken a number of avatars.⁹⁶

Time. Krishna said to Arjuna, “Both you and I have taken many births. I remember them all, O Arjuna, but you do not remember... I appear from time to time for protecting the good...” (Gita 4:5, 8). Here it is said that the collective consciousness at Manipur chakra descended in the past as well.

Space. The devtas have descended in a number of sages at approximately the same time though at different places. For example, the incarnations of Rama and Parusharama took place at the same time but separated by space.

Intensity. Between the avatars of Rama and Parusharama, and Krishna and Balarama, the former are considered to be “higher” avatars than the latter. This indicates differing levels of intensity.

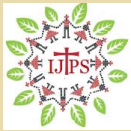
The Theosophists point towards the idea of descent: “The Chohans of the Hierarchy now on Earth ... work consciously carrying out the Will of the Planetary Logos in the planet...”⁹⁷ Here “Chohan” may be understood as avatara; “Hierarchy” may be understood as devta; and “Planetary Logos” may be understood as Brahman. This quote may thus be paraphrased: “The avatars of the devtas now on earth ... work consciously carrying out the will of the Brahman in the planet...”

The animals have chakras although their numbers and functions may differ. The fish, for example, “have a hive mind, or a collective mind that functions communally. They are all

⁹⁵ New World Encyclopedia, “Avatar,” in *New World Encyclopedia*, Retrieved from <https://www.newworldencyclopedia.org/entry/Avatar>, August 9, 2021.

⁹⁶ Swati, “The Complete List of 19 Avatars of Lord Shiva,” in *Vedicfeed*. Retrieved from <https://vedicfeed.com/avatars-of-shiva/>, July 13, 2021; Scientific Monk, “7 Avatars of Brahma, all you need to know,” Retrieved from <https://scimonk.com/index.php/2021/04/14/avatars-of-brahma/>, July 13, 2021.

⁹⁷ Zachary F. Lansdowne, *The Purusha Sukta*.



connected to a group chakra...⁹⁸ The collective consciousness of Vishnu may have descended in the group chakra of fish hence it is said that Vishnu incarnated as fish avatara. The boar and lion are mammals. Both have a spine and have seven chakras in the spine like humans.⁹⁹ The collective consciousness may have descended and impelled these animals to behave in a particular fashion hence it is said that Vishnu took avatara in them.

The concept of avatara has raised a number of questions given below in italics.¹⁰⁰ We give below our understanding of these in normal font.

The physical organs are formed through karmic residues. But by definition the avatara does not possess any karmic residues. Hence how is the gross body of an avatara formed? The avatara is born like any other person. Due to his karma of previous lives he is able to connect with the collective consciousness at a high level of intensity and attains avatara status. The statement that an avatara does not possess any karmic residues must be understood as having miniscule levels of karmic residues.

Does the human being become an Avatar by adoption? A human being connects with the collective consciousness with his own effort; followed by descent of the collective consciousness into him. This is not a one-way adoption of the individual by the collective but a 2-way interaction.

What is the difference between a divine descent and a revelation? A “divine descent” is a *continual* top-down part of live connection in the 2-way interaction between the collective consciousness and the individual. A “revelation” is an *occasional* top-down communication from the collective consciousness to the individual. The Quran was revealed to Prophet Mohammad is an *occasional* only top-down communication. The Hindu texts tell of worshippers getting occasional, mostly once in a lifetime, vision of their deity. This is similar to revelation.

What is the difference between an avatara and a divinized human being? An intensely divinized human being is an avatara.

Does the deity descend into an avatara only occasionally? The deity has a continual 2-way live connection with an avatara.

9.2 Descent of the Libido

The key point in the making of an avatara is the descent of the collective consciousness into the individual. This descent is spoken of by Jung in term of the activation of the collective images in the unconscious by the descent of the libido:

(In this passage) Jung equates the regression of libido with the descent to the underworld, which is conceived of as maternal... The entire book, in fact, is concerned with this struggle to return to and be re-delivered from the mother, who, as the underworld, symbolizes the matrix of those “*collective images (archetypes) that are activated by the libido’s descent*” (italics provided).¹⁰¹

⁹⁸ Smith, Jane Ma’ati, “Do Animals Have Chakras Like Humans?” in Chakra Healing Sounds, Retrieved from <https://balance.chakrahealingsounds.com/do-animals-have-chakras-like-humans/>, July 13, 2021.

⁹⁹ Komitor, Carol, “Healing Touch for Animals® Level 1 Workbook,” in Komitor Healing Method, Inc. (2017). Retrieved from <http://www.healingtouchforanimals.com/v/vspfiles/assets/images/HTALevel1Workbook.pdf>, October 24, 2021.

¹⁰⁰ We have extracted these questions from Parrinder, Geoffrey, *Avatar and Incarnation*, Faber and Faber, London, 1970.

¹⁰¹ Smith, Evans Lansing, “The Descent to the Underworld: Jung and His Brothers,” in Barnaby, Karin and D’Acierno, Pellegrino (eds.), *C.G. Jung and the Humanities: Towards a Hermeneutics of Culture*, Princeton University Press, Princeton, 1990, p. 251-64.



We give our understanding of this quote along with the phrases used by Jung: “The movement of consciousness is equated with the connection of the individual consciousness with the collective unconscious.” A distinction may be noted here. Jung uses the word regression that conveys a negative sense. He says the individual may struggle to break free from the collective unconscious. However, there is no inherent reason for this connection to be negative. It can just as well be positive. In that case, the connection makes one an avatara. Yoga and Tibetan meditation teacher Alex Myles points in the same direction:

Collective consciousness is a set of shared beliefs, throughout the energy of the whole universe and has always existed and will continue to exist throughout eternity... All minds are able to tap into and add to this knowledge and these minds consist of scientists, artists, philosophers and spiritual leaders.¹⁰²

Such tapping into the unconscious knowledge is done by the avataras.

CONCLUSION: CONCORDANCE

We summarize the concordance suggested in this paper as follows:

Hindu texts say that the Brahman desired to become many. This concurs with the innate desire to grow of all living beings.

Hindu texts say that Brahman pervades all existence. This concurs with the panpsychist view that all matter has consciousness.

Hindu texts say that Brahman was created from Viraj. This concurs with the panpsychist view that the consciousness of individual parts fuses into more than the sum.

The Hindu texts say there are numerous devtas. These are the collective consciousness of subsets of the universe or “gods” in modern parlance.

The Hindu Trinity of Vishnu, Shiva and Brahma are the collective conscious at the Manipur, Anahata and Vishuddhi chakras of a group of persons.

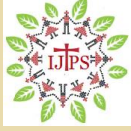
Certain individuals are able to establish a live 2-way communication with the collective consciousness. They are called avatara.

In this way Hindu concepts concord with modern scholarship. We suggest that presenting Hindu cosmological and psychological concepts in these terms can make Hinduism understandable to the modern mind.

Two implications of this discussion for present day Hinduism may be mentioned before concluding this paper. The above presentation calls into question the contemporary understanding of Sankara’s oft quoted statement “ब्रह्म सत्यं जगन्मिथ्या” or “Brahman is real, the world is unreal.” Implied is that the Brahman does not desire anything and the existent world is unreal and meaningless. In our view, this approach denies the desires of Brahman as manifested in this world. We understand that Shankaracharya may have made this statement as a teaching strategy to prod the individual to disengage from her personal desires and align with desires of the Brahman. However, it has been interpreted theoretically rather than strategically to suggest that the Brahman itself has no desires. In doing so, the Hinduism has actually denied the desires of Brahman. There is a need to restate this statement as “Brahman is real, the world is real.” Such restatement would encourage the Hindus to interact positively in the material world and lead to faster evolution of the Brahman.

Another area of re-examination is the focus on idol worship of avataras like Rama and Krishna. These individuals connected with the Brahman at the time that they lived. They

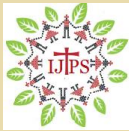
¹⁰² Myles, Alex, “Connecting to the collective consciousness,” in *Elephant Journal*, 2015. Retrieved from <https://www.elephantjournal.com/2015/11/connecting-to-the-collective-consciousness/>, July 13, 2021.



acted and contributed to the evolution of Brahman at that time. The Brahman of today is constituted of the universal consciousness of today. Its needs of evolution are different than the needs at the time of the avatars. However, in the idol-worshipping paradigm, one connects with the present Brahman via the past Brahman. It is like connecting with modern Germany with the Germany of before World War II. Furthermore, the intensity of connection between the worshipper and the Brahman gets diluted. In accessing the present Brahman through idol worship, one proceeds in the following steps: Worshipper > One of the many avatars of the past > One of the many Vishnu of the past > Brahman of the past > Brahman of the present. The connection of the present worshipper with the present Brahman thus gets diluted. There is a need to re-examine idol worship from this point of view.

BIBLIOGRAPHY:

- [1] Allport, Floyd Henry, *The Group Fallacy in Relation to Social Science*, The Sociological Press, Hanover, New Hampshire, 1927.
- [2] Aurobindo, Sri, "The collective consciousness of Nature," in Aurobindo, Sri, *The Life Divine*, Retrieved from <https://sriaurobindostudies.wordpress.com/2011/05/09/the-collective-consciousness-of-nature/>, October 24, 2021.
- [3] Barnaby, Karin and D'Acerno, Pellegrino (eds.), *C.G. Jung and the Humanities: Towards a Hermeneutics of Culture*, Princeton University Press, Princeton, 1990.
- [4] Bowditch, Andrew and Bowditch, Matthew, "The Human Brain: Anatomy and Function," in *Visible Body*, Retrieved from <https://www.visiblebody.com/learn/nervous/brain>, September 17, 2021.
- [5] Brustein, R. and Kupferman, J., "The creation of the world--according to science," in *Hist Philos Life Sci.*, 34(3):361-72 (2012). Retrieved from <https://pubmed.ncbi.nlm.nih.gov/23316566/>, August 15, 2021.
- [6] Campbell, Joseph, *The Masks of God: Oriental Mythology*, Secker & Warburg, London, 1962.
- [7] Carl G. Jung, "Carl Jung Quotes," <https://www.brainyquote.com/authors/carl-jung-quotes>, Retrieved October 24, 2021.
- [8] Carls, Paul, "Émile Durkheim (1858—1917)," in Internet Encyclopedia of Philosophy, Retrieved from <https://iep.utm.edu/durkheim/>, September 5, 2020.
- [9] Chinmayananda, Swami, *Talks on Sankara's Vivekhoodamani*, Central Chinmaya Mission Trust, Bombay, 1976.
- [10] Clark, Donald, "Maslow (1908 - 1970) Hierarchy of needs. 5 or 7 levels? Useful or useless?" Retrieved from <http://donaldclarkplanb.blogspot.com/2012/04/maslow-1908-1970-hierarchy-of-needs-5.html>, September 13, 2020.
- [11] Dash, Durgamba, "Worship of Mother Kali," in *Orissa Review*, November 2008, Retrieved from <http://magazines.odisha.gov.in/Orissareview/2008/November-2008/engpdf/1-5.pdf>, October 24, 2021.
- [12] Dehornoy, Patrick, "Cantor's infinities," in *bibnum*, Retrieved from <http://www.bibnum.education.fr/sites/default/files/cantor-analysis-33.pdf>, August 26, 2021.
- [13] Durand, Kjirsten, *A Spiritual Framework of Organic Oneness: The Eco-Theological Shift Towards a Collective Ecological Consciousness*, Thesis, Florida Atlantic University, Boca Raton, 2017.
- [14] Durga, T. K., Sridhar, M. K. and Nagendra, H. R., "Consciousness in Upanishads," in *International Journal of Sanskrit Research*, 4(5), (2018). Retrieved from <https://www.anantaajournal.com/archives/?year=2018&vol=4&issue=5&part=B&ArticleId=675>, August 18, 2021.
- [15] East, James, "Infinity Minus Infinity," in *Faith and Philosophy: Journal of the Society of Christian Philosophers*, 3(4), (2013), Retrieved from <https://core.ac.uk/download/pdf/216990711.pdf>, August 25, 2021.
- [16] Ellis, G. F. R., Kirchner, U., and Stoeger, W. R., "Multiverses and physical cosmology," in *Mon. Not. R. Astron. Soc.* 347, 921-936 (2004). Retrieved from <https://academic.oup.com/mnras/article/347/3/921/1021585>, August 26, 2021.
- [17] Frawley, David, "The Shiva-Kali Axis in Vedic astrology and its Alignment in 2020," in American Institute of Vedic Studies. Retrieved from <https://www.vedanet.com/the-shiva-kali-axis-in-vedic-astrology-and-its-alignment-in-2020/>.
- [18] Goff, Philip, "About me," Retrieved from <https://www.durham.ac.uk/staff/philip-a-goff/>, October 23, 2021.



- [19] Goff, Philip, "Panpsychism," in *Routledge Encyclopedia of Philosophy*, (2019). Retrieved from http://www.philipgoffphilosophy.com/uploads/1/4/4/4/14443634/routledge_panpsychism.pdf. Retrieved October 24, 2021.
- [20] Gurubhaktananda, Swami, *Isavasya Upanishad*. Retrieved from https://www.v0.chinfo.org/images/userupload/Reflections/19_Isavasya_Upanishad.pdf, August 22, 2021.
- [21] Hameroff, Stuart and Penrose, Roger, "Consciousness in the universe: A review of the 'Orch OR' theory," in *Physics of Life Reviews* 11, (2014). Retrieved from <https://www.sciencedirect.com/science/article/pii/S1571064513001188>, August 17, 2021.
- [22] Hawking, Stephen, "The Beginning Of Time," Retrieved from <https://www.hawking.org.uk/in-words/lectures/the-beginning-of-time>, September 12, 2021.
- [23] Humphrey, Robert L., "Cosmogogenesis In Ancient Hindu Scriptures And Modern Science," in *InSight: Rivier Academic Journal*, 11(1), (2015). Retrieved from https://www2.rivier.edu/journal/ROAJ-Spring-2015/J904_Humphrey_revised.pdf, August 15, 2021
- [24] International Association for Analytical Psychology, "Abstracts of the Collected Works of C.G. Jung, The Structure and Dynamics of the Psyche," Retrieved from <https://iaap.org/resources/academic-resources/collected-works-abstracts/volume-8-structure-dynamics-psyche/>, October 24, 2021.
- [25] Jung, Carl G., *Man and his Symbols*, Doubleday Windfall, New York, 1964.
- [26] Jung, Carl G., Sonu Shamdasani (ed.), *The Psychology of Kundalini Yoga*, , Bollingen Series XCIX, Princeton University Press, Princeton, 1996.
- [27] Kocoglua, Ipek, Akguna, Ali Ekber and Keskinb, Halit, "The Collective Unconscious at the Organizational Level: The Manifestation of Organizational Symbols," in *Procedia - Social and Behavioral Sciences*, Retrieved from <https://www.sciencedirect.com/science/article/pii/S1877042816315671>, September 7, 2020.
- [28] Kołakowski, Leszek, *Is God Happy? Selected Essays*, Basic Books, New York, 2013.
- [29] Komitor, Carol, "Healing Touch for Animals® Level 1 Workbook," in Komitor Healing Method, Inc. (2017). Retrieved from <http://www.healingtouchforanimals.com/v/vspfiles/assets/images/HTALevel1Workbook.pdf>, October 24, 2021.
- [30] Kragh, Helge, "Cosmology and the Origin of the Universe: Historical and Conceptual Perspectives" in *History and Philosophy of Physics*, Cornell University. Retrieved from <https://arxiv.org/abs/1706.00726>, September 3, 2020.
- [31] Kraugh, Helge, "The Origin and Earliest Reception od Big-Bang Cosmology," in *Publ. Astron. Obs.* 2008. 85:7-16.
- [32] Lansdowne, Zachary F., "The Purusha Sukta | Planetary Logo | 101," in Mathomathis, Retrieved from <https://mathomathis.com/the-purusha-sukta-101/>, August 22, 2021.
- [33] Lim, Emmanuel, "Before the Big Bang," Retrieved from https://webhome.phy.duke.edu/~mkruse/PHY105_S11/projects/Emmanuel_Lim_Ph105_project.pdf, August 17, 2021.
- [34] Loke, Andrew Ter Ern, "On beginningless past, endless future, God, and singing angels: An assessment of the Morriston-Craig dialogue," in *Neue Zeitschrift für Systematische Theologie und Religionsphilosophie*, 58(1): 57–66, (2016), Retrieved from <https://www.degruyter.com/document/doi/10.1515/nzsth-2016-0004/html>, August 25, 2021.
- [35] Lokeshwaranand, Swami, *Isa Upanishad*. Retrieved from https://archive.org/details/ishavasyaupanishadswamilokeswaranandar.k.mutt_202003_234_B, August 22, 2021.
- [36] Lumen Learning, "The Brain Stem," Retrieved from <https://courses.lumenlearning.com/boundless-ap/chapter/the-brain-stem/>, September 17, 2021.
- [37] Madhavananda, Swami, (Trans), *The Brhadarnyaka Upanisad*, Advaita Ashram, Champawat, 1950.
- [38] Majumdar, Margaret A., *Postcoloniality: The French Dimension*, Berghahn Books, New York, 2007.
- [39] Malczewski, E., "Durkheim and the nation," *Istanbul Üniversitesi Sosyoloji Dergisi*, 39, 41–64. (2019). Retrieved from <https://doi.org/10.26650/SJ.2019.39.1.0013>, October 24, 2021.
- [40] Marin, Kim , "Speak Your Truth with a Clear Throat Chakra (Vishuddha)," (2016), Retrieved from <https://beyogi.com/vishuddha-chakra/>, October 6, 2020.
- [41] Maslow, Abraham, *The Psychology of Being*, Van Nostrand Reinhold, New York, 1968.
- [42] McLeod, Saul, "Carl Jung," in *Simply Psychology*, (2018). Retrieved from <https://www.simplypsychology.org/carl-jung.html>, October 24, 2021.
- [43] Monier-Williams, Monier, *Sanskrit-English Dictionary*, Southern Publications, Madras, 1987.



- [44] Myles, Alex, "Connecting to the collective consciousness," in *Elephant Journal*, 2015, Retrieved from <https://www.elephantjournal.com/2015/11/connecting-to-the-collective-consciousness/>, July 13, 2021.
- [45] New World Encyclopedia, "Avatar," in *New World Encyclopedia*, Retrieved from <https://www.newworldencyclopedia.org/entry/Avatar>, August 9, 2021.
- [46] Parrinder, Geoffrey, *Avatar and Incarnation*, Faber and Faber, London, 1970.
- [47] Pillay, Srimi, "The Biology of Telepathy: Is brain-to-brain communication possible? Here's what research finds," in *Psychology Today*, (2018), Retrieved from <https://www.psychologytoday.com/us/blog/debunking-myths-the-mind/201804/the-biology-telepathy>, September 23, 2020.
- [48] Puri, Maheshwarananda, "Vishuddhi Chakra," in *Yoga in Daily Life*, Retrieved from <https://www.yogaindailylife.org/system/en/chakras/vishuddhi-chakra>, October 6, 2020.
- [49] Ragavendrasamy, B., Nanjundaiah, R. M. and Krishnamurthy, M. N., "Nāsadiya Sūktam: The earliest cosmology on origins of life," in *Int J Yoga - Philosop Psychol Parapsychol* 5:24-5, (2017).
- [50] Rahim, Shahzada, *Beyond Civilization and History: A philosophical study of modernist and post-modernist perspectives on History*, Copyright Material, 2020. Retrieved from <https://philpapers.org/archive/ABBBCA.pdf>, October 24, 2021.
- [51] Ramana, Maharshi, *Peace*, 1931, Retrieved from <https://www.facebook.com/RamanaMaharshi/posts/the-following-article-was-first-published-in-the-september-1931-monthly-magazine/116880295131015/>, July 13, 2021.
- [52] Robert Alun Jones, *Emile Durkheim: An Introduction to Four Major Works*, Sage Publications, Inc., Beverly Hills, 1986. Retrieved from <https://durkheim.uchicago.edu/Summaries/dl.html>, September 16, 2020.
- [53] Ross, Kelly L., "Religious Value and the Antinomies of Transcendence, after Kant," in *Philosophy of Religion*, Retrieved from <https://www.friesian.com/antinom.htm>, August 30, 2021.
- [54] Saraswati, Satyananda, *Kundalini Tantra*, Yoga Publications Trust, Munger, 1984.
- [55] Saraswati, Shantidharmananda, *Holistic Yoga*, SriKunj Sadbhavana Manch, New Delhi, 2004.
- [56] Sastri, S. Sitaram, (Trans.), *The Isa, Kena & Mundaka Upanishads and Sri Sankara's Commentray*, G. A. Natesan & Co., Madras, 1905, Retrieved from https://rarebooksocietyofindia.org/book_archive/196174216674_10153237327691675.pdf, August 22, 2021.
- [57] Satwalekar, Sripad Damodar, *Atharva Veda*, Swadhyay Mandal, Pardi, 1985.
- [58] Satwalekar, Sripad Damodar, *Rig Veda Simple Commentary*, Swadhyay Mandal, Pardi, 1985.
- [59] Scientific Monk, "7 Avatars of Brahma, all you need to know," Retrieved from <https://scimonk.com/index.php/2021/04/14/avatars-of-brahma/>, July 13, 2021.
- [60] Shankaracharya, Shantidharmananda Saraswati (Trans.), *Yati Danda Aishwarya Vidhanam*, Satyam Sadhana Kutir, Rishikesh, 2021.
- [61] Simoes, Stephanie, *Isa Upanisad*, Retrieved from https://www.academia.edu/17430464/Isha_Upanishad_Word_for_Word_Translation_with_Transliteration_and_Grammatical_Notes?auto=download, August 18, 2021.
- [62] Sivananda, *Kundalini Yoga*, Divine Life Society, Shivanandanagar, 1994.
- [63] Smith, Evans Lansing, "The Descent to the Underworld: Jung and His Brothers," in *C.G. Jung and the Humanities: Towards a Hermeneutics of Culture*, Karin Barnaby and Pellegrino D'Acerno (eds.), Princeton University Press, Princeton, 1990, p. 251-64.
- [64] Smith, Jane Ma'ati, "Do Animals Have Chakras Like Humans?" in *Chakra Healing Sounds*, Retrieved from <https://balance.chakrahealingsounds.com/do-animals-have-chakras-like-humans/>, July 13, 2021.
- [65] Srinivasan, "Nāsadiya Sūktam – Vedantic Commentary," in *IndiaFacts*, Retrieved from <http://indiafacts.org/nasadiya-sukta-vedantic-commentary/>, August 21, 2021.
- [66] Steiner, João E., "The Origin of the Universe," in *Estudos Avançados* 20(58), (2006), Retrieved from <https://www.scielo.br/j/ea/a/L4Cn5NyczfTBhdXTDsr4Kng/?lang=en&format=pdf>, August 15, 2021.
- [67] Stoler, Diane Roberts, "Maslow's Hierarchy vs. 7 Chakras- Interestingly Similar!" in *Psychology Today*, (2018), Retrieved from <https://www.psychologytoday.com/us/blog/the-resilient-brain/201804/maslows-hierarchy-vs-7-chakras-interestingly-similar>, September 21, 2020.
- [68] Sutter, Paul, "What happened before the Big Bang?" in *Space.com* (2020). Retrieved from <https://www.space.com/what-came-before-big-bang.html>, August 15, 2021.
- [69] Swati, "The Complete List of 19 Avatars of Lord Shiva," in *Vedicfeed*. Retrieved from <https://vedicfeed.com/avatars-of-shiva/>, July 13, 2021.



- [70] Theiner, Georg and Wilson, Rob, "Group Mind," Draft entry for Kaldis, Byron (ed), *Encyclopedia of Philosophy and the Social Sciences*, Sage Thousand Oaks, 2013.
- [71] Tononi, Giulio, "Consciousness as Integrated Information: A Provisional Manifesto," in *Biology Bulletin*, 215: 216–242 (2008), quoted by Francis Fallon, "Integrated Information Theory of Consciousness," in *The Internet Encyclopedia of Philosophy*. Retrieved from <https://iep.utm.edu/int-info/>, August 18, 2021.
- [72] Tononi, Guilo, "What Is the Fundamental Nature of Consciousness?" Excerpt, *Scientific American*, 2012, Retrieved from <https://www.scientificamerican.com/article/what-is-fundamental-nature-consciousness-giulio-tononi-excerpt/>, July 31, 2021.
- [73] United Lodge of Theosophists, "Original Theosophy and Later Versions: Five Main Distinctions To Be Considered," in *Theosophy*. Retrieved from <https://blavatskytheosophy.com/original-theosophy-and-later-versions/>, August 22, 2021.
- [74] United Lodge of Theosophists, "Original Theosophy and Later Versions: Five Main Distinctions To Be Considered," in *Theosophy*. Retrieved from <https://blavatskytheosophy.com/original-theosophy-and-later-versions/>, August 22, 2021.
- [75] Vasavada, Kashyap, "Concepts of Reality in Hinduism and Buddhism from the Perspective of a Physicist," in *Conference Proceedings: Quantum Reality and Theory of Shunya*, Springer, New Delhi, 2016.
- [76] Vishwanadha, Rayalu, "Origin Of the Universe: On Nasadiya Sukta of Rig Veda, in *vedaravindamu*, Retrieved from <https://vedaravindamu.wordpress.com/2011/10/11/origin-of-the-universe-nasadiya-sukta-of-rig-veda/>, August 15, 2021.
- [77] Whitney, William Dwight *Atharva-Veda Samhita*, Harvard University, Cambridge, 1905, Retrieved from <https://www.worldcat.org/title/atharva-veda-samhita/oclc/3011168>, October 23, 2021.
- [78] Wikipedia, "Collective unconscious." Retrieved from https://en.wikipedia.org/wiki/Collective_unconscious, September 7, 2020.
- [79] Winborn, Mark, "C.G. Jung on Archetypes and the Collective Unconscious," in *The Psychoanalytic Muse*, (2011). Retrieved from <http://psychoanalyticmuse.blogspot.com/2011/08/cg-jung-on-archetypes-and-collective.html>, September 7, 2021.



<https://doi.org/10.26520/ijtps.201.5.9.53-58>

PHYSICAL OR THEOLOGICAL APPROACH TO INVESTIGATE THE SHROUD IMAGE FORMATION BY UV RADIATION?

Prof. PhD. Giovanni FAZIO,

Università di Messina, Dipartimento MIFT
Viale Ferdinando Stagno d'Alcontres, I-98166 Messina
ITALY
E-mail: gfazio@unime.it

ABSTRACT

In this article, we ask ourselves if it is possible that Corona Discharge or Vacuum UV radiation may have been the tools to produce the Shroud body image. We are convinced that both are not appropriate mechanisms. In fact, the start of these processes is based on inconsistent hypotheses for the natural sciences, although all that follows is rational, reasonable and acceptable. However, the big initial mole remains. The complexity of this situation is such that it seems to be in a world in part Transcendent and in part Immanent. Therefore, independently from the possible results that in a next future could be obtained, due to identified photochemical processes, the Scientific Method cannot accept both the hypotheses and, consequently, the experiments. The same is also for the Theological approach which discards both proposals.

Keywords: Shroud of Turin; Body Image formation; Corona Discharge; VUV radiation; Stochastic process;

INTRODUCTION

The image that appears on the Linen of Turin is, obviously, the synthesis of an interaction between the corpse wrapped in the burial sheet and the fabric itself. Therefore, to obtain such a result there was a transfer of energy from the body to the above linen that wrapped it. Therefore, it is important for the scientists to find a source inside the sepulcher.

Many have been the attempts inspired by the different scientific areas, as physics and chemistry. Evidently, it is very difficult to extract the mechanism of the Shroud body image formation. In fact, none have had a full success. So, for some decades, the research on the Shroud of Turin has been and is focused on the action of the radiations.

The motivations of this tendency are:

- 1) The difficulty to find a reasonable solution with others non-radiative mechanisms.
- 2) The fact that the ionizing radiation has, generally, as result the oxidation of the flax and, therefore, its yellowing at the macroscopic level.
- 3) The description of the Transfiguration of the Nazarene, as it is described in the Synoptic Gospels (New American Bible, 2010).
- 4) The fashion of the emission of one radiation by the corpse wrapped in a funerary linen.

When the suitable mechanism will be found, only one among the possible hypotheses (which are that of false, that of a transcendental event and that of a natural event) will be



satisfied. In reality, we have not three mechanisms in competition, but three family of mechanisms in competition. This occurs because each of the three hypotheses appears with various processes.

These four Items make us think that these hypotheses don't lie in the world of the rational happenings. In the Immanent, for the scholars of the natural sciences, an acceptable solution could already have been found. Here, we are in the transcendental world where the scientific knowledge with his instruments is neither sufficient nor appropriate to study these events. In these cases, the natural sciences have only the possibility to affirm that such an event is happened without to be capable of describing how. In fact, for such an event, the description step by step is impossible (Fazio, 2020).

Nowadays, some scientists start their articles with incomprehensible hypotheses. We, in literature, have seen papers that describe the possibility of the protons (Rinaudo, 1993 and 1994; Antonacci, 2000 and 2012) and of the ultraviolet radiation (Fanti, 2010; Di Lazzaro et al., 2012) to reproduce in a linen an image as the one present on the Shroud of Turin (Mottern et al., 1980; Gilbert and Gilbert, 1980; Pellicori and Evans, 1981; Heller and Adler, 1981; Miller and Pellicori, 1981; Schwalbe and Rogers, 1982; Jumper et al., 1984). So, after reading the above articles on this topic, we have decided to investigate on these processes starting with hypotheses in conflict with the natural sciences.

However, the sole source of energy available in an ancient tomb of the first century it is the thermal one. The energy is naturally emitted due to the thermal state of the corpse which is warmer than the burial linen. Anyway, in the history of the natural sciences, no one has never seen a corpse that emits radiations. Thus, with this state of affairs, we have decided to investigate on the use of ultraviolet radiation as tool to obtain a copy of the above image.

1. ANALYSIS AND DISCUSSIONS

The interaction between radiant energy and organic substances develops with the absorption of the radiation energy by the organic substance (for example: linen) followed by the dissipation of energy through heat, emission of radiation (fluorescence or phosphorescence), transfer of the energy to another molecular entity or direct bond breaking (Feller, 1994).

Intellectual honesty wants us to inform shortly the readers that, unlike other scientists, we have considered a transfer of thermal energy because this last one is the sole present in an ancient sepulcher. The source of this energy is the corpse wrapped in the burial sheet. This hypothesis is not in contrast with the physics laws. We underline that a corpse can exceed even 40 degrees Celsius, sufficient to transfer a little quantity of energy to the linen that triggers a stochastic process. This is a mechanism that does not yield effects only when the transferred energy is zero (Fazio and Mandaglio, 2011 and 2012; Fazio et al., 2015 and 2019). In other words, to have such a process, the transferred energy must be in a little quantity.

This mechanism furnishes a latent result (after years or decades) and an uneven superficial distribution of the yellowed fibrils, the ones that yield the body image. In fact, the results of this process guarantee a yellowed fibrils distribution with an image intensity that, *versus* the body-sheet distance, is represented by a linear regression (Jackson et al., 1982 and 1984).

The scientific literature shows a great variety of radiative experiments proposing hypotheses that do not agree with natural laws. Also the two searches, which we investigate in this paper, have the above characteristic.

They are focused on the UV radiation-linen interaction (Fanti, 2010; Di Lazzaro et al., 2012). The first one on an intense Corona Discharge with plasma formation, heat and UV radiation; the second one on the use of a pulsed excimer laser (ArF) that yields UV radiation in the far ultraviolet with $\lambda = 193$ nm, that penetrates for about 200 nm.

Using a vacuum ultraviolet radiation with the above λ value no color appears, but the natural or artificial aging showed a Shroud-like coloring. So, they have obtained a latent coloring. Moreover, they claim that the most important result is to have identified photochemical processes capable of explaining the surface coloring and possibly to understand in details as the Shroud image has been produced (Di Lazzaro et al., 2012).

The other line of research is focused on Corona Discharge (Fanti, 2010). Here, it is necessary to have an electrical conductor immersed in a fluid dielectric (generally air). When, between the two electrodes, the voltage is very high and the current circulates, the electrons ionize the dielectric with production of ions and electrons pair, before absent. So, in this process, we will have positive ions and electrons moving towards their electrodes generating plasma, and also heat with UV radiation are produced. In other words, when the electrical field inside a conductor exceeds the value of the dielectric rigidity of the fluid ($3 \text{ kV}\cdot\text{mm}^{-1}$ for the dry air), Corona Discharge arises. This effect for his supporters represents the true architecture of the Shroud body image formation.

However, both cases display the same *modus operandi*: at first, there is a proposal that cannot be accepted by the natural sciences that later it is followed by reasonable logical operations, in line with the above sciences. In any case, the problems are already present at the beginning. In fact, it is not possible for anyone to accept the idea that a corpse can do what is described in their articles (Fanti, 2010; Di Lazzaro et al., 2012). Moreover, these radiations have not the possibility to color the fibrils that must turn yellow, with respecting to the ones that must maintain the background color.

It is evident that in the two experiments the Scientific Method (Rogers and Arnoldi, 2002) has not been respected from the scientists. Therefore, we believe that the problems related to the start of the two experiments must be of theological pertinence. In fact, in the initial part that is decisive, both show a transcendental event and the natural sciences, as already affirmed, are not adequate to investigate such phenomena.

At this point, it is much difficult to accept these two models even if one of these affirms to have obtained a linen fabrics with Shroud-like coloring (Di Lazzaro et al., 2012). We believe in this result but, in our opinion, it is different to obtain on the same linen a body image with all the known characteristics that the Shroud owns and that should be present in the image produced by at least one of the two experiments or both.

Now, also accepting the results already obtained, we ask ourselves:

1. How would it be possible for the above identified photochemical processes (Di Lazzaro et al., 2012) to yellow only and only the right fibrils leaving the background color to the others?
2. Is it certain that the yellowed fibrils (the ones that will yield the body image) will all have the same optical density?
3. Will be the yellow fibrils distribution of the obtained body image able to furnish an $I(z)$ correlation, between the density of the above fibrils and the body-sheet distance (Fazio et al., 2019; Jackson et al., 1982 and 1984), represented by a linear regression?

4. Could the possible presence of balms and perfumes (Pellicori, 1980; Curciarello et al., 2012; Boi, 2017 and 2020) modify the Shroud-like color?
5. Is it certain that the resolution of the obtained image will be about 5 mm? The function $I(z)$, extracted from the distribution in the (I,z) -plane appears many scattered. In fact, the correlation coefficient squared is $r^2 = 0.60$. However, the linear function is the best fit possible (Jackson et al., 1982 and 1984). Not accepting the above function is like admitting that there is no correlation between the density of yellowed fibrils (or intensity of image) and the body-sheet distance. This would be inadmissible. In our opinion, we should find the motivation that have yielded these anomalies. Here, it is necessary to remember that the idea of this trend starts from afar: Vignon (1902, 1902a, 1937 and 1938) and Delage (1902).

Recently, we investigated problems that involved the Transcendent and the Immanent (Fazio, 2020 and 2021). For us, these two areas of investigation are separate. However, we want to underline a difference between the above areas: while the events of the Immanent remain confined in your area, the ones of the Transcendent, instantly left a trace in the rational world. This must be so because the transcendental events have origin in their area but they are addressed to the Immanent area. In fact, to the natural science it is permitted to understand if such an event it is occurred without being able to say anything else.

In the two cases of our concern, the start of the two experiments is due to a transcendental event (the presence of a corpse that emits ultraviolet radiation) that goes on, in the Immanent, respecting the laws of the natural sciences. In our opinion, this occurs because some scientists wish to demonstrate that the Shroud body image formation is the result of a supernatural event. They don't take into account that the Miracle happens instantly (Fazio, 2020). Therefore, such an event occurs with infinite speed and for this reason it is and will always be incomprehensible for the physics, chemistry and other natural sciences. However, we agree with Fanti (2010) and Di Lazzaro et al. (2012) on the man of the Shroud: He is Jesus Christ of the New Testament, the Nazarene (Fazio, 2021).

The procedure that they have adopted to find the above formation mechanism, in its complexity, is not corrected. The beginning occurs irradiating a linen with electromagnetic radiation in the zone of the far ultraviolet, a non-natural event. Afterwards, they continue with natural procedure in the attempt to obtain a body image as close as possible to the Shroud one. This means that the man wrapped in the burial linen, il Nazarene, at a certain instant has emitted UV radiation of high energy (photons). That is, it is like if we understood a supernatural event, that occurs in a time $t=0$, describing it step by step.

CONCLUSION

We investigated two processes, in part realized, whose authors had and have in mind to reproduce a body image as it is on the Shroud of Turin. These two processes use both the UV radiation. In the first case, by Corona Discharge, it is yielded heat and UV radiation; in the second case, by pulsed excimer laser (ArF), it is possible to work in the far UV. For the authors, of the above lines of research, the use of ultraviolet radiation it is necessary to reach the result.

Differently of the above conviction, we remember that there are other scientists (Rogers and Arnoldi, 2002; Rogers, 2004 and 2005) certain that a corrected use of the Scientific Method applied to the Shroud of Turin does not agree with the choice of UV radiation. Also Schwartz (2021) affirms: "I principally believe there are properties of the



image that radiation cannot account for. I tend to favor chemical reaction.” Therefore, together with us, there are the other scholars that ask to discard the radiative hypotheses.

However, we reiterate that in the first century AD sepulcher there is only one available source of energy. It is the corpse wrapped in the burial linen that emits, with weak intensity, thermal energy. In our opinion, there are not other sources that the natural sciences could accept. Moreover, the existence of a correlation between the density of yellowed fibrils (or image intensity) and the body-sheet distance points towards a natural explanation rather than a transcendental one.

What we say is supported by the “Ockham’s razor” which is not a physical law but a philosophical razor used to eliminate improbable options: “Among competing hypothesis, the one with the fewest assumption should be selected.” (Soklakov, 2003). However, the above razor, starting with Newton, it has been appreciated by many scientists. This idea goes back at least as far as Aristotle, who wrote: “Nature operates in the shortest way possible.”

It is clearly evident, that investigating the Turin Shroud is very difficult for everyone. However, many scientific problems, sometimes with difficulty, have been resolved. Therefore, it is necessary to continue. Unfortunately, nowadays there are authoritative Shroud researchers that in their works involved the Creed, the spirituality and the emotionality. Differently, to study correctly the above archeological finding, the scientists must have as reference the laws of the natural sciences and apply the Scientific Method, as it happens for all the areas of research.

ACKNOWLEDGEMENTS: The Author thanks the Eng. Francesco Fazio for the help along the revision of the English text.

BIBLIOGRAPHY:

- [1] Antonacci, Mark. *The Resurrection of the Shroud*. M. Evans & Co., Inc, New York. 2000.
- [2] Antonacci, Mark. 2012. “Particle radiation from the body could explain the Shroud’s images and its carbon dating”, in *Scientific Research and Essay*, 7(29): 2613-2626.
- [3] Boi, Marzia. 2017. “Pollen on the Shroud of Turin: The Probable Trace Left by Anointing and Embalming”, in *Archaeometry*, 59: 316-330.
- [4] Boi, Marzia. 2020. “The Traces left on the Shroud by Anointing and Embalming”, in *Sindon*, 0: 26-30.
- [5] Curciarello, Francesca, Veronica De Leo, Giovanni Fazio and Giuseppe Mandaglio. 2012. “The abrupt changes in the yellowed fibril density in the Linen of Turin”, in *Radiation Effects and Defects in Solids*, 167: 224-228.
- [6] Delage, Yves. 1902. “Le Linceul de Turin. Lettre à M.C. Richet”, in *La Revue Scientifique*, 22: 683-687.
- [7] Di Lazzaro, Paolo, Daniele Murra, Antonio Santoni, Enrico Nichelatti and Giuseppe Baldacchini. 2012. “Superficial and Shroud-like coloration of the linen by short laser pulses in the vacuum ultraviolet”, in *Applied Optics*, 51: 8567-8578.
- [8] Fanti, Giulio. 2010. “Can Corona Discharge explain the body image of the Turin Shroud”, in *Journal of Imaging Science and Technology*, 54: 20508-1-11.
- [9] Fazio, Giovanni and Giuseppe Mandaglio. 2011. “Stochastic distribution of the fibrils that yielded the Shroud of Turin body image”, in *Radiation Effects and Defects in Solids*, 166: 476-479.
- [10] Fazio, Giovanni and Giuseppe Mandaglio. 2012. “Can a latent image explain the characteristics of the Shroud body image?”, in *Radiation Effect and Defects in Solids*, 167: 220-223.
- [11] Fazio, Giovanni, Veronica De Leo, Francesca Curciarello and Giuseppe Mandaglio. 2015. “Comparison among the Shroud body image formation mechanisms by the linen fibrils distributions”, in *The Journal of The Textile Institute*, 106: 896-899
- [12] Fazio, Giovanni, Giuseppe Mandaglio and Antonio Anastasi. 2019. “Describing, Step by Step, the Shroud Body Image Formation”, in *Heritage*, 2: 34-38.



- [13] Fazio, Giovanni. 2020. "The Shroud Body Image Generation. Immanent or Transcendent Action?", in *Scientia et Fides*, 8(1): 33-42.
- [14] Fazio, G. 2021. "A Theological Support, from Chalcedon, to the Shroud Image Natural Formation", in *International Journal of Theology, Philosophy and Science*, 8: 42-48.
- [15] Feller, Robert I. Accelerated aging: photochemical and thermal aspects. Dinah Berland Editor, The J. Paul Getty Trust, USA. 1994.
- [16] Gilbert, Roger Jr. and Marion M. Gilbert. 1980. "Ultraviolet-Visible Reflectance and Fluorescence Spectra of the Shroud of Turin", in *Applied Optics* 19: 1930-1936.
- [17] Heller, John H. and Alan D. Adler (1981) 'A chemical investigation of the Shroud of Turin' *Canadian Society of Forensic Sciences Journal* 14: 81-103.
- [18] Jackson, P. John, Eric J. Jumper and William R. Ercoline. 1982. "Three Dimensional Characteristic of the Shroud Image", in *IEEE 1982 Proceeding of the International Conference on Cybernetic and Society*, October 1982, pp. 576-579.
- [19] Jackson, P. John, Eric J. Jumper and William R. Ercoline. 1984. "Correlation of Image Intensity on the Turin Shroud with the 3-D structure of a human body shape", in *Applied Optics*, 23: 2244-2270.
- [20] Jumper, J. Eric, Alan D. Adler, John P. Jackson, Samuel F. Pellicori, John H. Heller and James R. Druzik. 1984. "A Comprehensive Examination of the Various Stains and Images on the Shroud of Turin", in *ACS Advance in Chemistry. Archaeological Chemistry III*, 205: 447-476.
- [21] Pellicori, F. Samuel and Mark S. Evans. 1981. "The Shroud of Turin through the microscope", in *Archaeology*, 34: 34-43.
- [22] Miller, D. Vernon and Samuel F. Pellicori. 1981. "Ultraviolet Fluorescence Photography of the Shroud of Turin", in *Journal of Biological Photography*, 49: 71-85.
- [23] Mottern, W. Robert, Ronald J. London and Rogers A. Morris. 1980. "Radiographic Examination of the Shroud of Turin. A Preliminary Report", in *Materials Evaluation*, 38: 39-44.
- [24] Pellicori, Samuel F. 1980. "Spectral Properties of the Shroud of Turin", in *Applied Optics*, 19: 1913-1920.
- [25] Pellicori, F. Samuel and Mark S. Evans. 1981. "The Shroud of Turin through the microscope", in *Archaeology*, 34: 34-43.
- [26] Rinaudo, Jean Baptiste. 1993. "Nouvel Mécane de Formation de l'Image sur le Linceul de Turin, Ayant Pu Entraîner une Fausse Radiodation Médiévale", in *Proceeding International Scientific Symposium, Rome* pp. 293-299.
- [27] Rinaudo, Jean Baptiste. 1994. "Proton Model", in *BSTS Newsletter* 38: 13-16.
- [28] Rogers, N. Raymond and Anna Arnoldi. 2002. "Scientific Method Applied to the Shroud of Turin. A Review", in <http://www.shroud.com/pdfs/rogers2.pdf> pp. 1-38.
- [29] Rogers, N. Raymond. 2004. "Frequently Asked Questions (FAQs)", in <http://www.shroud.com/pdfs/rogers5faqs.pdf> pp. 1-19.
- [30] Rogers, N. Raymond. 2005. "The Shroud of Turin: Radiation effects, aging and image formation", in <https://www.shroud.com/pdfs/rogers8.pdf> pp. 1-10.
- [31] Schwartz, M. Barrie. 2021. Personal communication.
- [32] Schwalbe, A. Larry and Raymond N. Rogers. 1982. "Physics and Chemistry of the Shroud of Turin. A summary of the 1978 investigation", in *Analytica Chimica Acta*, 135: 3-39.
- [33] Soklakov, N. Andrei. 2003. "Occam Razor as a formal basis for a physical theory", in *Foundation of Physics Letters*, 15(2): 107-135.
- [34] United States Conference of Catholic Bishop. 2010. "The New American Bible, Revised Edition.", in *Confraternity of Christian Doctrine Inc. Washington DC*.
- [35] Vignon, Paul. 1902. "Le Linceul Du Christ. Etude Scientifique", in *Libraires de l'Académie de Médecine. Masson et Cie Editeurs, Paris*. Reprinted in 1970 by University Books, New Hyde Park, New York.
- [36] Vignon, Paul 1902a. "Reponse à M. Vernes.", in *Revue Scientifique*, 22: 623-628.
- [37] Vignon, Paul and Edward A. Wuenshel. 1937. "The problem of the Holy Shroud", in *Scientific American*, 156: 162-164.
- [38] Vignon, Paul. 1938. "La Saint Suaire de Turin devant la Science, l'Archeologie, l'Histoire, l'Iconographie, la Logique", in *Masson et Cie Editeurs, Paris*.



<https://doi.org/10.26520/ijtps.201.5.9.59-69>

MONASTIC SPIRITUALITY IN THE TEACHING OF SAINT BASIL THE GREAT

Ph.D. Candidate Sorin Cristian NUCĂ,
“Ovidius” University of Constanta, Constanta,
ROMANIA,
Email: casiantom@gmail.com

ABSTRACT

The spiritual training of the exceptional beacon of the Cappadocian Fathers, Saint Basil the Great, influenced the subsequent ecclesial life, but especially the monastic one, by the divinely inspired rules, which became essential for all the subsequent monastic settlements, the fruits of the monastic spirituality according to his teaching being substantiated in the principles governing the life of the monastic community by love, obedience, teaching, knowledge, asceticism, without despising the hermitic (skete) life, trying to combine the most useful principles of both of these forms of monastic asceticism.

Keywords: spirituality; monasticism; monastic community (chinovie); asceticism; skete;

INTRODUCTION

The great beacon of the early Church, Saint Basil the Great¹, a spirit with celestial

¹ Information on Saint Basil the Great's life can be found in the most important source *Cuvîntul 43 (Sermon 43)* of Saint Gregory of Nazianzus in vol. *Viețile Sfinților (The Lives of the Saints)*, for the month of January, reprinted and completed with the approval of the Holy Synod of the Romanian Orthodox Church after the edition of 1901-1911, second edition, Publishing House of the Episcopate of Roman (Editura Episcopiei Romanului), 2001, p. 14, unfortunately this edition is altered, some paragraphs being absent, yet it is the only one accessible.

Pieces of news about Saint Basil the Great's life can be found as well in his own writings and especially in his letters (*Scrisorile*), 366 in all, in vol. *Saint Basil the Great, On the Holy Spirit / Despre Sfântul Duh. Corespondență (Epistole)*, translation, introduction, indexes and notes by Father Prof. Dr. Constantin Cornițescu and Father Prof. Dr. Teodor Bodogae, *PSB 12*, Editura Institutului Biblic și de Misiune al Bisericii Ortodoxe Române, 1988, then in:

a) *Cuvântul funebru în cinstea Sfântului Vasile* (Funeral Discourse in Honour of Saint Basil) uttered in 381 by Saint Gregory of Nazianzus and in vol. Fr. Prof. N. Donos, *Sf. Grigore de Nazianz, Apologia sau cuvântarea în care arată motivele care l-au îndemnat să fugă de preoție și Elogiul Sfântului Vasile* (Apology or Discourse showing the Reasons that Exhorted him to Run Away from Priesthood and Eulogy to Saint Basil), Huși, 1931, p. 118-204, *Cuvîntul 43* (Discourse 43), PG., 36, p. 493-608;

b) *Cuvântul funebru* (Funeral Discourse) uttered by his brother, Saint Gregory of Nyssa in PG, 46, p. 787-818;

c) *Viața cuvioasei Macrina* (The Life of Saint Macrina) by Saint Gregory of Nyssa in PG, 46, 959-1000, translated in Romanian by Fr. Prof. Dr. Teodor Bodogae, Sibiu, 1947;

d) *Cuvântul Sfântului Efreem Sirul* (Discourse of Saint Ephrem the Syrian), according to some pseudo-Ephrem in *S. P. N. Ephraem Syri Opera omnia quae existant graece, latine, syriace in sex tomos distributa, Roma e Bibliotheca Vaticana prodeunt*, Tomus 2, Romae, 1743, p. 289-296;

e) *Viața Sfântului Vasile cel Mare* (The Life of Saint Basil the Great), attributed to his friend (cousin) Saint Amphilochius of Iconia, is a work written in the eighth century in Greek and Latin at F. Combefis, SS. *Patrum Amphilochii Iconiensis, Methodii Patarensis et Andreae Cretensis opp.*, Paris, 1644, 155-225; only in Latin, in PG, 29, CCXCIV-CCCXVI;



lights, is the personality standing out among the bright precious stones of the golden age of the Church. He had a fruitful activity in almost all the ecclesial domains in his time, such as: dogmatic, moral, homiletic, pastoral-missionary, liturgical, canonical, caritative-social and, naturally, in the ascetic-monastic domain.

The spiritual training of the most prominent of the Cappadocian Fathers stands out by the saint's preparation in order to vitalize the monastic spiritual life since his epoch to this day, influencing, for example, the Athonite monastic life, by three factors: family, Church and school, recognized as well by the modern science of psycho-pedagogy as: genetic heritage (family tree), environment and education².

Regarding the genealogical tree³ (Exodus 20:5-6) of Saint Basil the Great, it reconfirmed the proverb: *If the root is holy, so are the branches* (Romans 11:16). Indeed both on his father's side, and of his mother's side, the spiritual heritage was exceptional, his grand-mother Macrina the Elder being holy and a disciple of Saint Gregory Thaumaturgus (the Miracle-Worker), and his mother, Saint Emilia, a martyr's daughter. Out of the ten children of Saint Basil's family, four are saints: himself, Saint Gregory of Nyssa, Saint Peter of Sebaste the Bishop and Saint Macrina the Young.

While his mother Emilia and Macrina the Elder had instilled in him the holy teachings, as they had received them from the tradition of the Church, his father, Basil⁴, was a famous rhetor, and initiated his son in sciences. He followed, after the education started in the family, the best known schools of his time at Caesarea in Cappadocia, at Constantinople and in Athens, where he will acquire a special friend, Saint Gregory the Theologian. Studying all the sciences of his time, Basil returned to his country and taught rhetoric. Following the example of his sister Macrina, whose fiancé had died, he decided to dedicate himself to the ecclesial mission, received baptism and entered monasticism.

*He showed a science much higher than the ordinary for people of his age and a strength of mores even much higher than his science.*⁵

There are apparently also experts who saw in the affirmation of Saint Gregory the Theologian that [Saint Basil] was priest among the Christians, even before having received the gift of priesthood, just rhetorical exaggeration, but in fact only universal priesthood has an eternal value, the other (hierarchical priesthood) risking being generally undoubtedly doomed.

The region in which Saint Basil the Great, Cappadocia, has a tumultuous history,

f) Finally, in the Church historians: Jerome, *De Viris Illustribus*, 116, Socrate, *Istoria Bisericească (Church History)*, IV, 26, Sozomen, *Istoria Bisericească (Church History)*, VI, 1.5-17, Teodoret, *Istoria Bisericească (Church History)*, IV, 19. 30, Filostorgiu, *Istoria Bisericească (Church History)*, II, 9, and also in Biblioteca lui Fotie, Cod. 137. 141-144. 191.

² Cucuș Constantin, *Educația religioasă (Religious education)*, Polirom Publishing House, Iași, 1999, p. 26.

³ Dr. Kenneth McAll, *Vindecarea arborelui genealogic (Healing the family tree)*, Harisma Publishing House, Bucharest, p. 47.

⁴ Pontus, says Saint Gregory the Theologian, *considered Basil the rhetor as a teacher for everybody of the good teachings and acts, during that time*, in vol. *Viețile Sfinților (The Lives of the Saints)*, for the month of January, p. 14 or in vol. Pr. Prof. N. Donos, *Sf. Grigore de Nazianz, Apologia sau cuvîntarea în care arată motivele care l-au îndemnat să fugă de preoție și Elogiul sfîntului Vasile (St. Gregory of Nazianzus, the Apology or speech in which he shows the reasons that prompted him to flee the priesthood and the Praise of St. Basil)*, Huși, 1931, p. 129, *Cuvîntul 43*, PG., 36, p. 493-608.

⁵ *Viețile Sfinților (The Lives of the Saints)*, for the month of January, p. 15 or in vol. Pr. Prof. N. Donos, *op. cit.*, p. 131.



entirely special, in which the Arian⁶ and the Semitic culture, Europe and Asia intertwined. The name Καππαδοκία is much older than the Persian dominion, having the sense of Cap(head, ending) of Dacia or Dochia⁷ (Deciana) (literally in Romanian), most probably the deity of justice and fertility of the earth at the Carpathians, Danube and the Black Sea. Specialists draw our attention to the fact that during the second sophistic age of the great Christian writers of Cappadocia “*the Aramaic continued to be lingua franca in numerous areas*”⁸ of Cappadocia and in its surrounding areas, even thousands of kilometers away⁹.

What is amazing linguistically, at least, and this is something I understood much better due to the experience in the Holy Mount Athos, is the fact that at least 50% of the words met in the Cappadocian Fathers’ original text (in Old Greek or more correctly said of Aromanian or Macedonian language) have sense in today’s Romanian, which demonstrate a continuity of over 2000 years of this language, whose representatives can rightly be considered a diaspora of the waves of Arians whose family tree root is according to all the evidence Carpathian-Danubian-Pontic, which is why throughout the work, whenever there are going to be theological implications of certain words borrowed by the Greek from the Aromanian language of the Wallachian-Dacian-Gethians and it will be a must to clarify these meanings, we will signal it.

The years spent by Basil the Great for the training by studies had become years of a spiritual, inner deformation (approx. 342-357), the lay environment had left its mark by the spirits of the world (vain glory, self importance) on the blessed heritage of the childhood which he had received thanks to his grandmother Macrina, of his mother Emilia and he was aware of it fully, extremely painfully, as a void that rips apart and that nothing else can fill.

1. THE MONACHAL LIFE OF SAINT VASILE THE GREAT AND THE MONASTERIES FOUNDED BY HIM

"Before the greatness of the Church's own way of life, the morality of the people he had met in Caesarea, Constantinople, and Athena was a baseness, a perversion"¹⁰. After the death of his father, attracted to monasticism, Saint Basil the Great decided to leave the world. Looking for a mentor, he initially found him in the person of Eustatius, a rigorous ascetic who had previously studied in Alexandria. From the church historian Sozomen [Church History III, 14; IV, 27 n.n.] we find that Eustatius (300-377; bishop of Sevestia 357/358¹¹) has the merit of being a beginner of monasticism in Asia Minor (Armenia,

⁶ Nicolae Densușianu, *Dacia Preistorică* (Prehistoric Dacia), Arhetip Publishing House, București, 2002, p. 680(n. 13), p. 803. Petre Morar, *Dacia Ariană* (Arian Dacia), https://www.academia.edu/4625746/Petre_Morar_Dacia_Ariana, cap.II.7 p. 2 (Românii hitiți și Egiptul Antic/ Hittite Romanians and Ancient Egypt).

⁷ Dr. Lucian Iosif Cueșdean, *Româna, Limba Vechii Europe*, (Romanian, The Language of Old Europe), Editura Solif, București, 2006, p. 59; George Cadar, *Ardahal, Despre originea, limba și mitologia vlaho-daco-geților* (Ardahal, about the origin, language and mythology of the Vlach-Daco-Getae), Proema Publishing House, Baia Mare, 2019, p. 29.

⁸ Pr. Dr. Liviu Petcu, *Îndumnezeirea omului după învățătura Sfântului Grigorie de Nyssa* (The deification of man according to the teaching of St. Gregory of Nyssa) Astra Museum Publishing House, Sibiu, 2013, p. 34.

⁹ Pr. Prof. Univ. Dr. Nicolae Achimescu, *Istoria și Filosofia Religiiilor. Religii ale Lumii Antice* (History and Philosophy of Religions. Religions of the Ancient World), Basilica Publishing House, Bucharest, 2015, p. 178, 210, 236; Gabriel Gheorghie, *Valah*, Editura Fundației Gândirea, București, 2012, p. 7-10.

¹⁰ Stelianos Papadopoulos, *Viața Sfântului Vasile cel Mare* (The life of Saint Basil the Great), Bizantină Publishing House, Bucharest, 2003, p. 62.

¹¹ *Ibidem*, p. 81.



Paphlagonia, Pontus and Cappadocia, but also in Constantinople) in an organized form.¹² We also learn that the old ascetic, aged with the parents of St. Basil the Great, promoted an apostolic, philanthropic and social spiritual life in the city, but aroused from the beginning the distrust of the clergy as his asceticism imposed celibacy and total poverty as ideal conditions of Christian life, isolating themselves from the parishes and the cult celebrated by married priests. Eustatius minimized the ritual aspect, and his asceticism was intended as a movement of harsimatic renewal of the institutionalized Church. Unfortunately, these deviations from the spiritual life led to doctrinal slippages reflected in his unity of vision with Macedonius of Constantinople, which consisted primarily in a moderate Semiarianism (common throughout Asia Minor).

Although, on the background of a rivalry between Eusebius of Caesarea, Cappadocia (future Bishop of Nicomedia) and Macedonius of Constantinople, the Synod of Gangra (in Paphlagonia, 340-341), condemned the ascetic “Eustatian” movement in 20 canons for the fact of representing a destabilizing factor for the official church.¹³

Coming from a family of martyrs and knowing an improvised, yet sincere monastic practice (through his mother and sister Macrina), Saint Basil had the occasion to know the monastic way of life promoted by Eustatius, yet discontent by its results, he turned his attention to the dedicated monastic centres of the East, respectively from the Holy Land. In *Epistle 223, 2* he mentions that he visited Syria, Palestine and Mesopotamia where he met hermits.¹⁴ At the same time, he also went to Egypt, out of the desire to meet Saint Athanasius the Great (around 295-373), “the pillar of the Orthodoxy” at the First Ecumenical Council, disciple of Anthony the Great (†356), who was however in exile at that time in the zones hard to access of Thebaid, inaccessible to Basil the Great.

Although he did not have the chance to know personally the representatives of the monasticism of Egypt, Anthony and Pachomius the Great, who had passed into eternity, Saint Basil the Great knew, however, the Pachomian monasticism in the person of the different monks met during the pilgrimage through Egypt, where he actually stayed for a few whole months (the whole spring, the summer and a part of the autumn of 357¹⁵). The teaching of the desert left an undeletable, unique mark on him, characterized by visitations of the divine grace, but also by moments of the persecution initiated by the Arians against the Orthodox clerics who were persecuted, mocked, thrown out on the roads naked, half dead, becoming some of them confessors of the faith.¹⁶

On the way back, he also wanted to meet the ascetics of Palestine and Syria. Thus, he passed through Gaza, where Avva Ilarion had been needed for some time, an example of combining monasticism with missionary work, whose disciples he could meet in person. At Caesarea in Palestine he saw again the city where Origen had lived for a time, the teacher of

¹² Cf. J. Gribomont, *Dictionnaire de Spiritualité* IV/2 (1961), col. 1708-1712; Diac. Ioan Ică jr., „The Vigilant Ones - Eastern Apostolic Monasticism: The Destiny and Metamorphoses of a Forgotten Charism” in ***, *The Breviary and the Lives of the Vigilant Monks*, translation and afterword by the deacon Ioan Ică jr., Deisis Publishing House, Sibiu, 2006, p. 238.

¹³ Diac. Ioan Ică jr., „The Vigilant Ones...”, p. 240.

¹⁴ Saint Basil the Great, *Writings. Part III*, translation, introduction, notes and indexes by Priest Prof. Dr. Constantin Cornișescu and Priest Prof. Dr. Teodor Bodogae, col. „P.S.B.”, vol. 12, I.B.M.B.O.R. Publishing House, București, 1989, p. 458.

¹⁵ *Ibidem*.

¹⁶ Saint Athanasius the Great, *Writings, Part II, Epistles, The Life of Our Reverend Father Anthony*, col. PSB 16, transl., introd. and notes by Pr. Dumitru Stăniloae, Publishing House of the Biblical and Mission Institute of the Romanian Orthodox Church, Bucharest, 1988, p. 219.



St. Gregory the Thaumaturgist, the spiritual father of Macrina the Elder, the grandmother of St. Basil the Great.¹⁷ The return route also included the fortress of Antiochia and the area between the Tigris and Euphrates, populated by monks.

Elucidated about the path he had to follow, returned to Caesarea in Cappadocia in the late autumn of 357, St. Basil the Great gladly finds the old bishop Dianiu of Caesarea, who baptized him on this occasion (358). After taking this step, he also decided on the division of the wealth he felt as a burden, incompatible with monastic life.

We can say that in the winter of 358 he retired to the property he had left in Anissa, in order to need himself as a monk after the model seen in the East, responding on this occasion to Bishop Eustatius' request to make rules to improve the lives of his monks. He may have used the notes he had made during his trip to the East, remembering the virtues and needs of the ascetics¹⁸ there. Although he had not yet reached the age of 30, he managed to concretize his native-spiritual gift and the experience gained, by writing and, later, completing what would become the spiritual code of Christian monasticism.¹⁹

At Anissa he did not forget his friend Gregory, whom he invited to work together after his consent during his studies at Athena, through an epistle in which he also presents a guide to the life of an ascetic chinovia. The principles were very harsh, specific to youthful zeal, but he would later revise them, moving the ascetic community to the city and giving it a philanthropic character.

Summarizing this guide of Saint Basil the Great, we further present its main elements: the peace of mind, the research of the Holy Scriptures, the prayer program.

The "peace of mind" is rightly considered the eye of the soul²⁰, the beginning of cleansing²¹ is achieved by giving up worldly worries²² and leaving off bad habits.²³

The Holy Scriptures²⁴, sources of divine teaching²⁵, mediate the habit of godliness²⁶, the nourishment of the soul²⁷. From their constant study one reaches the discovery of the saving truth in response to the problems of the Christian life.²⁸

It can be seen in this epistle, the overwhelming weight of a day that St. Basil the

¹⁷ Stelianos Papadopoulos, *The Life of Saint Basil the Great...*, p. 72-73.

¹⁸ The word comes from the archaic Romanian verb "to sharpen"/a ascuti - asceticism (ασκηση) and has as its spiritual meaning the stringing of all the senses and the attention that must be sharpened in order to penetrate the mysteries, like the cherubs with many eyes. Hence the word ski/schi (u) t (σκητη), so used in monasticism, originating from the shield. It is no coincidence that the old name of Dobrogea is Sci (u) thia Minor. Just as the shield is used as a defense in battle (war), the hermitage/skete is a defense against the lust of the eyes, the body, and the pride of life (I John 2:16). Both are part of the same lexical family which only in Romanian is so complete and rich, later being borrowed like many other words in Greek. In ancient times (about 2000 years BC) the whole of Asia was called Scythia, as we can see on ancient maps.

¹⁹ As main monastic writings, we mention: *Moral Rules* (80), *Great Rules* (55), *Small Rules* (318), *Ascetic Constitutions* and ascetic canons and epistles.

²⁰ Saint Basil the Great, *Writings. Part III*, Epistle 2, II, p. 117. See for quotations from this epistle and the translation from col. „PSB”, vol. 18, I.B.M.B.O.R. Publishing House, Bucharest, 1989, p. 531-536.

²¹ Saint Basil the Great, *Writings. Part III*, Epistle 2, II, p. 119.

²² Saint Basil the Great, *Writings. Part III*, Epistle 2, II, p. 118.

²³ Saint Basil the Great, *Writings. Part III*, Epistle 2, II, p. 118.

²⁴ Saint Basil the Great, *Writings. Part III*, Epistle 2, II, III, p. 119.

²⁵ Saint Basil the Great, *Writings. Part III*, Epistle 2, II, p. 118.

²⁶ Saint Basil the Great, *Writings. Part III*, Epistle 2, II, p. 119.

²⁷ Saint Basil the Great, *Writings. Part III*, Epistle 2, II, p. 119.

²⁸ Saint Basil the Great uses the parables of the lives of the righteous of the Old Testament as a model to follow in the Christian or monastic life. "For example, one who loves virginity often reads the story of Joseph, learning from his deeds how to keep himself clean."



Great gives to the soul, in contrast to the concern for bodily needs, reserving an hour for the latter, but 23 hours for the soul.²⁹ Prayer, all the time, day and night, receives a special place, in order to acquire a quality in which the presence of God becomes constant: "For it is the good prayer that makes a clear conception of God take root in the soul, and the abode of God in us consists precisely in having God firmly in mind. Only then do we become temples of the Spirit, when the steadfast thought of Him is no longer interrupted by earthly cares, and when the mind is not disturbed by fleeting passions."³⁰ The rest of the body becomes, in his opinion, something secondary, a necessity of the fallen nature, but it is subject to rules which are intended not to hinder the faith of the believer from the great troubles of salvation.³¹ Replacing sleep with vigilance and vigilance is a face of the resurrection of the soul that provides the perception of God's presence. The nocturnal peace, says Saint Basil the Great, "rests the soul", that is, protects it from passions and intensifies its power to do good (virtue), if it is accompanied by the recognition of sins, the will to correct and summon the divine help.³²

The activity of Saint Basil the Great "was not limited only to the founding of this monastery in Pontus. It was just like a model, a guide after which he founded many other places as a place for monastic associations. This results even from Rule 54 as well as from the testimonies of the historians Rufin and Sozomen."³³ By this rule, it was decided that at certain places or times, the heads of the monastic communities should analyze the difficult moral problems and give solutions by judging several.

2. THE ORDER OF MONASTIC LIFE

At the call of Bishop Dianius to come to Caesarea in Cappadocia, he leaves the monastery on the river Iris and is appointed after the ordination to the priest, preacher at the Diocesan Center out of the need to respond to the intensified challenges of the Aryans. Saint Basil the Great will fulfill this obedience until the sleep of Dianius, followed on the throne by Eusebius, when he returns to Pontus³⁴, resuming his ascesis with his friend Gregory. In Anissia, the two theologians will compile, in addition to the philocal anthology of Origen's works, the two ascetic treatises that comprise the principles of public life: *The great and the small rules*. It is believed that Saint Basil used in the writing of the text some of the rules / regulations for organizing the older monasteries in the East, especially in Egypt³⁵ (probably the Pachomian or Tabenite Chinovites³⁶).

Comparing the ordinances of St. Basil with those of St. Anthony and Pachomius, there is a resemblance in substance and, often, in form. The order of Saint Basil differs from the older ones, deepening the spiritual part and less the external one. "All his ordinances are based on reason and sometimes seem to be the simple fruit of his sharp mind and not the fruit of the skill gained through life, through daily experience."³⁷

²⁹ Saint Basil the Great, *Writings. Part III*, Epistle 2, VI, p. 122.

³⁰ Saint Basil the Great, *Writings. Part III*, Epistle 2, IV, p. 120.

³¹ Saint Basil the Great, *Writings. Part III*, Epistle 2, VI, p. 122.

³² Saint Basil the Great, *Writings. Part III*, Epistle 2, p. 122-123.

³³ Archdeacon Ioan N. Floca, "Saint Basil the Great, reorganizer of monastic life", in vol. *Studia Basiliana I, worship at 1630 years*, second edition revised, added and edited by Emilian Popescu and Adrian Marinescu, Basilica Publishing House Of the Romanian Patriarchate, Bucharest, 2009, p. 504.

³⁴ See *Epistle 8*, vol. St. Basil the Great, *Writings. Part III*, p. 130-141.

³⁵ See *Epistle 23*, vol. St. Basil the Great, *Writings. Part III*, p. 159.

³⁶ See *Epistle 23*, vol. St. Basil the Great, *Writings. Part III* p. 159.

³⁷ Archdeacon Ioan N. Floca, "Saint Basil the Great, reorganizer...", p. 506.



Saint Basil the Great teaches that in order to live perfectly according to the evangelical law, it is necessary to give up the world. There are many kinds of life that involve worldly renunciation, but people have been forced in all these ways and they can lead to the purpose of the Christian life: salvation, holiness. "Saint Basil finds that the most appropriate kind of life rejected by the world is the monastic one, so-called idiorhythmic, when, living in the same monastery, the monks lead a life locked in their cells and this as opposed to the ascetic, lonely life, not the one led by the disciples of St. Anthony, but the one that St. Basil saw in his places, the lonely life without supervision and guidance, in which you cannot escape the connections with the world and the laity.

Such a solitary life did not lead straight to the target and was bound by too many difficulties, although it is above the public life. St. Basil placed this kind of monasticism in which he wanted to gather all that is best in the lonely ascetic life and to remove all that he found in it unsuitable for reaching the goal. And the monastic life he founded was lonely, but trapped in a trunk, where everyone could feel as if they were alone."³⁸

3. PRINCIPLES OF ORGANIZATION AND FUNCTIONING OF MONASTIC LIFE

Among the fundamental principles of the inner (inner) life, Saint Basil establishes the following:

- a) The principle of love or love for God and people;
- b) The principle of voluntary renunciation or poverty;
- c) The principle of asceticism, restraint, self-denial or virginity;
- d) The principle of isolation, living alone with respect to housing;
- e) The principle of living in communion with those who have the same goal, having everything in common;
- f) The principle of unconditional obedience to the superior of the community / chinovia;
- g) The principle of combining the research of Holy Scripture and prayer with work;
- h) The obligation to take the Eucharist as often as possible, daily if possible, as a sign of communion.

He based all these on the teaching of Holy Scripture, showing their practical value and how they were carried out by the followers of the Lord's commandments and how they can be applied in the community in which they live.³⁹

There are also principles (norms) that regulate the external aspects of the organization of monastic life: the rules or norms of living refer to: a) the way of organization; b) leadership and administration of monastic life; c) upon receipt in the monastic society; d) the behavior of the monks; e) internal and external relations; f) goods administration; g) training of disciples, h) unitary organization (monastic discipline); i) monastic justice; j) patient care; k) leaving the framework of the monastic / monastic society etc.⁴⁰

4. THE TARGET / PURPOSE / FRUITS OF MONASTIC LIFE

"If the source and essence of spirituality is the Holy Spirit of God, the area over which He pours out abundantly, working and bearing fruit to perfection, is the very being of the believer. This creates a natural connection between the source and the entire course of the

³⁸ Teofan Zăvorăţul, *The rules of monastic life*, Sophia Publishing House, Bucharest, 2002, p. 175.

³⁹ Archdeacon Ioan N. Floca, "Saint Basil the Great, reorganizer of monastic life", p. 510.

⁴⁰ Archdeacon Ioan N. Floca, "Saint Basil the Great, reorganizer of monastic life", p. 517.



believer's spiritual life.”⁴¹

"God's commandments must be fully fulfilled for spiritual advancement, St. Basil says categorically: *If it were not necessary for the purpose of salvation, all the commandments would not have been written, nor would the unconditional observance of all have been commanded.*⁴²"

"Regarding the spiritual life of the Christian, it can certainly be noticed that it has an immediately achievable object here, by perfecting the personality of the Christian, the other objective being in the perspective of acquiring the kingdom of heaven. Between the two objectives there must be the correlation that a Christian spirituality demands through the virtuous transition from a form of living, always to a higher one, from the being of the old man to the new one. "(Col. 3, 9-10).

This change for the better as a guarantee of the perfection of human nature (Homily in Psalm 44⁴³), is itself a path to heaven, the way to heaven, and the transformation of corruption into incorruption, the gain of true spiritual treasures, and the tasting of God's goodness. 33⁴⁴).

All this, as well as other benefits, means communion with God, friendship and living in Him. *He who has the steadfastness and unchangeability of that friendship in Christ, ... only the perfect can truly know the beloved*⁴⁵. Or the same is shown: *So, on the one hand, the real life is Christ, and on the other hand, our living in Him is the true life.*⁴⁶

An essential note of the spiritual work is the very fullness of life, the remembrance of death caused by sin, to life in Jesus Christ.⁴⁷

Saint Basil the Great says: *With Your resurrection you gave us to rise from men to God.*⁴⁸ Then he says: *And it was not enough, that He made us alive from the dead, but also bestowed upon us the dignity of His divinity, and prepared for us the eternal rest, which surpasses in glory and joy all human thought.*⁴⁹

It should be noted here the observation of some theologians that, for St. Basil, the notions of *perfection* or *consummation*, *sanctification* and, implicitly, *deification* are found unified on a higher level where they have their origin, i.e., in the work of the Holy Spirit, the very Holy Trinity.⁵⁰ The fact is also explained by the fact that there is a close connection between the believer's being and his aspiration for perfection. The believer not only reflects in his being a whole spirituality, but himself becomes a valuable factor in its affirmation.

Through the work of *holiness*, *perfection*, *deification*, and the *contemplation of the beauty of the archetype*, the Holy Spirit makes possible the resumption of the image of God by all who allow themselves to be blossomed by the dew of grace; and as this image is one,

⁴¹ Timotei Sevcicu, *The spirituality of Saint Basil the Great*, in "Saint Basil the Great, reorganizer of monastic life", in vol. *Studia Basiliana I, worship at 1630 years*, second edition revised, added and cared for by Emilian Popescu and Adrian Marinescu, vol III, Basilica Publishing House of the Romanian Patriarchate, Bucharest, 2009, p. 313.

⁴² Saint Basil the Great, *The Great Rules*, Prologue II, P.G. XXXI-893B.

⁴³ P.G. 29, 364D-365A; C, p. 180-181.

⁴⁴ P.G. 29, 388A;C, p. 203.

⁴⁵ *Homily on Psalm 44*, P.G. 29, 392 C-D; C, p. 208-209; *Moral rules III*, 2, P.G. 31, 705 C-D – 708A.

⁴⁶ *Homily on Psalm 33*, P.G. 29, 372 C-D; C, p. 189.

⁴⁷ *Moral rules III*, 2, P.G. 31, 913 C.

⁴⁸ Saint Basil the Great, *Molitfa II*, P.G. 31, 1684A.

⁴⁹ *The Great Rules II*, 4, P.G. 31, 916A.

⁵⁰ Benoit Pruche, in vol. *Basile de Cesarée, Traité du Saint Esprit*, introduction, traduction et notes par Benoit Pruche, OP col. S.Chr. 17, Paris, 1947, p. 94.



its realization in all is manifested by the union with one, the one and only true God.

The teaching of the Holy Spirit and divine grace is a powerful impetus for the believer in the spiritual ascent to the heights of Christian perfection. The means of traversing the ascent are those that the Church itself puts at hand. Saint Basil envelops everything with the authority of personal experience, the validity of his principles being verified by those who followed his example.

It would seem that his teachings concern more a high level, which could be achieved only by the saints, preferably clergy. Of course, for those who have chosen a certain way of life, the duties are increased, but the other believers are not excluded from these duties either. The essence is the same, the difference lies in the stage of realization of the precepts of the Gospel.

“The spirituality of Saint Basil does not detach from the real plans of life, but concerns, in concrete terms, the elevation of the believer in communion with others by promoting the values and ideals of Christian and human unity. His thinking, enriched by a high experience, is one of the most important contributions to the affirmation of Orthodox spirituality, opening in the hearts the gates of eternal beauty.”⁵¹

“The way of life conceived by St. Basil and experienced in the fraternities founded and led by him proved superior, coming from principles based on the reality of monastic life, which imposed them and became widespread taking concrete forms in the various systems experienced from then until today. Today its norms are still the foundation of the organization of monastic life in the whole Church and constitute the main guide regarding the current organization of monasticism within our Church ”⁵² as those in the Holy Mount Athos are.

CONCLUSION

The monastic spirituality in the teaching of Saint Basil the Great proves to us that monasticism is a mountain hard to climb, yet for the Christian getting ready as it is fit for this purpose with the gift of the Holy Spirit, by continually pushing the natural limits, one can note progressively that God does not give the Spirit with measure, and without rules (principles) it is not possible to delight in the gifts of the Holy Spirit. This great beacon of the Church and of the whole world obtained these fruits that he shares with all having as fundament the triad: family, Church and school or family tree, environment and education.

BIBLIOGRAPHY:

- [1] ***, *The funeral discourse* spoken by his brother, St. Gregory of Nice in P.G. 46, pp. 787-818.
- [2] ***, *The discourse of St. Ephrem the Syrian*, according to some pseudo-Ephraim in *S. P. N. Ephraem Syri Opera omnia quae existant graece, latine, syriacein sex tomos distributa, Roma e Bibliotheca Vaticana prodeunt*, Tomus 2, Romae, 1743, pp. 289-296.
- [3] Achimescu, Nicolae, *History and Philosophy of Religions. Religions of the Ancient World*, Basilica Publishing House, , Bucharest, 2015.
- [4] Saint Athanasius the Great, *Writings, Part II, Epistles, The Life of Our Reverend Father Anthony*, Col. PSB 16, transl., Introd. and notes by Fr. Dumitru Stăniloae, Publishing House of the Biblical and Mission Institute of the Romanian Orthodox Church, Bucharest, 1988;
- [5] Cadar, George, *Ardahal, About the origin, language and mythology of the Vlach-Daco-Getae*, Proema Publishing House, Baia Mare, 2019.
- [6] Cucoș, Constantin, *Religious education*, Polirom Publishing House, Iași, 1999.

⁵¹ Timotei Sevcicu, *The spirituality of Saint Basil the Great...*, p. 324-327.

⁵² Arhid. Ioan N. Floca, „*Saint Basil the Great, reorganizer of monastic life*”, p. 520.



- [7] Cueșdean, Lucian Iosif, *Romanian, Language of Old Europe*, Solif Publishing House, Bucharest, 2006.
- [8] Densușianu, Nicolae, *Prehistoric Dacia, Arhetip Publishing House, Bucharest*, 2002.
- [9] Donoș, N., *St. Gregory of Nazianzus, the Apology or speech in which he shows the reasons that prompted him to flee from the priesthood and the Praise of St. Basil*, Huși, 1931, pp. 118-204; PG. 36, pp. 493-608;
- [10] Filostorgiu, *Church History (II, 9)*, translation by Dorin Garofeanu, introductory study, chronological table, explanatory notes and annexes by Dragoș Mîrșanu, Polirom Publishing House, Iași, 2012.
- [11] Floca, Ioan, „*Saint Basil the Great, reorganizer of monastic life*”, in vol. *Studia Basiliiana I, worship at 1630 years*, second edition revised, added and edited by Emilian Popescu and Adrian Marinescu, Basilica Publishing House of the Romanian Patriarchate, Bucharest, 2009, pp. 500-522.
- [12] Gheorghe, Gabriel, *Wallachian*, Gândirea Foundation Publishing House, Bucharest, 2012;
- [13] Ică jr., Ioan, „*The Vigilant Ones - Eastern Apostolic Monasticism: The Destiny and Metamorphoses of a Forgotten Charism*” in ***, *The Breviary and the Lives of the Vigilant Monks*, translation and afterword by the deacon Ioan Ică jr., Deisis Publishing House, Sibiu, 2006, pp. 238-246.
- [14] Ieronim, *De viris illustribus, 116*.
- [15] McAll, Kenneth, *Healing the family tree*, Harisma Publishing House, Bucharest, 1993.
- [16] Morar, Petre, *Arian Dacia*,
https://www.academia.edu/4625746/Petre_Morar_Dacia_Ariana.
- [17] Papadopoulos, Stelianos, *The life of Saint Basil the Great*, Byzantine Publishing House, Bucharest, 2003.
- [18] Petcu, Liviu, *The deification of man according to the teaching of St. Gregory of Nyssa*, Astra Museum Publishing House, Sibiu, 2013.
- [19] Photius, *Bibliotheca or Myriobiblion* (Cod. 1-165), translated by John Henry Freese, digitized edition available at http://www.tertullian.org/fathers/photius_03bibliotheca.htm (visit of September 25, 2021).
- [20] Basile de Cesarée, *Traité du Saint Esprit*, introduction, traduction et notes par Benoit Pruche, OP col. „Sources Chrétiennes”, vol. 17, Paris, 1947.
- [21] Seviciu, Timotei, “*Saint Basil the Great, reorganizer of monastic life*”, in vol. *Studia Basiliiana I, worship at 1630 years*, second edition revised, added and edited by Emilian Popescu and Adrian Marinescu, Basilica Publishing House of the Romanian Patriarchate, Bucharest, 2009, pp. 305-329.
- [22] Saint Basil the Great, Writings. Part I, in col. “P.S.B.”, vol. 17, transl. Fr. D. Fecioru, Publishing House of the Biblical and Mission Institute of the Romanian Orthodox Church (I.B.M.B.O.R.), Bucharest, 1986.
- [23] Saint Basil the Great, Writings. Part II, in col. “P.S.B.”, vol. 18, transl. Iorgu D. Ivan, I.B.M.B.O.R. Publishing House, Bucharest, 1989.
- [24] Saint Basil the Great, Writings. Part III, in col. „P.S.B.”, vol. 12, translation, introduction, notes and indexes by Priest Prof. Dr. Constantin Cornițescu and Priest Prof. Dr. Teodor Bodogae, I.B.M.B.O.R. Publishing House, Bucharest, 1989.
- [25] Saint Gregory the Theologian, "Word 43" in vol *The Lives of the Saints*, January, reprinted and added with the approval of the Holy Synod of the Romanian Orthodox Church after the 1901-1911 edition, the second edition, the Episcopia Romanului Publishing House, 2001, pp. 14-44.
- [26] Saint Basil the Great, *Correspondence (Epistles)*, trans. Fr. Constantin Cornițescu and Fr. Teodor Bodogae, in: *St. Basil the Great, Writings. Part III. Sfântul Vasile cel Mare*,
- [27] *About the Holy Spirit. Correspondence (Epistles)*, translation, introduction, indexes and notes by Priest Prof. Dr. Constantin Cornițescu and Priest Prof. Dr. Teodor Bodogae, in col. „P.S.B.”, vol. 12, Publishing House of the Biblical and Mission Institute of the Romanian Orthodox Church, Bucharest, 1988.
- [28] Saint Basil the Great, *About the Holy Spirit*, trans. Fr. Constantin Cornițescu and Fr. Teodor Bodogae, in: *St. Basil the Great, Writings. Part three*, PSB 12, EIB, Bucharest, 1988.
- [29] Saint Basil the Great, *Molitfa II, P.G.* 31, 1684A.
- [30] Saint Basil the Great, *Homilies to the Psalms*, trans. Fr. D. Fecioru in vol. *Writings*, part I.



- [31] Saint Basil the Great, *Homilies and speeches*, trans. Fr. D. Fecioru in vol. *Writings* part I.
- [32] Saint Basil the Great, *The Great Rules*, trans. Iorgu D. Ivan, in: St. Basil the Great, *Writings*, part two, „P.S.B.”, vol. 18, E.I.B.M.B.O.R., Bucharest, 1989.
- [33] Saint Basil the Great, *The Little Rules*, trans. Iorgu D. Ivan, in: St. Basil the Great, *Writings*, part two, „P.S.B.”, vol. 18, Editura.I.B.M.B.O.R., Bucharest, 1989.
- [34] Saint Basil the Great, *Writings*. Part III, translation, introduction, notes and indexes by Priest Prof. Dr. Constantin Cornițescu and Priest Prof. Dr. Teodor Bodogae, in col. „P.S.B.”, vol. 12, I.B.M.B.O.R. Publishing House, Bucharest,1989.
- [35] Saint Basil the Great, Saint Pachomius the Great, Saint John Casian, Saint Benedict, *The Ordinances of the monastic life*, a collection composed by Saint Theophanes the Locked, Sophia Publishing House, Bucharest,2005.
- [36] Saint Basil the Great, *Spiritual Interpretation of the Psalms*, trans. Father Dumitru Fecioru, I.B.M.B.O.R. Publishing House, Bucharest, 2006 (see also P.G. 29).
- [37] Socrates, *Church History*, IV, 26, translated by Iosif Gheorghian, Bucharest, 1897.
- [38] Sozomen, *Church History*, VI, 1.5-17, translated by Iosif Gheorghian, Bucharest, 1897.
- [39] Theodoret, Bishop of Cyrus, *Writings I, part II, Church History*, in col. „P.S.B.”, vol. 44, translated by Fr. Prof. Vasile Sibiescu, I.B.M.B.O.R.
- [40] *The life of the pious Macrina by Saint Gregory of Nice* in PG, 46, 959-1000, translated into Romanian by Fr. Prof. Dr. Teodor Bodogae, Sibiu,1947.
- [41] *The life of Saint Basil the Great*, attributed to his friend (cousin) Saint Amphilochus of Iconia, is a work written in the eighth century in Greek and Latin by F. Combefis, SS. *Patrum Amphilochii Iconiensis, Methodii Patarensis et Andreae Cretensis* opp., Paris, 1644, 155-225; only in Latin, in PG, 29, CCXCIV-CCCXVI.
- [42] Visarion, Bishop, *The Old Orders of Monastic Life*, Dobrușa-Soroca Monastery, 1929.
- [43] Saint Theophanes the Locked, *The Orders of Monastic Life*, Sophia Publishing House, Bucharest, 2002.



<https://doi.org/10.26520/ijtpps.201.5.9.70-77>

TECHNOLOGY AT THE CROSSROADS: A CALL FOR TRANSFORMATIVE TECHNOLOGY IN THE POST-PANDEMIC ERA

Ph.D. Christine Carmela R. RAMOS,

Mapúa University

PHILIPPINES,

Email: 1ccrramos@mapua.edu.ph, 2tinrams@gmail.com

ABSTRACT

Globalization is viewed in this work as a critical concept by which we understand the transition of human society into the post-pandemic era. In this vein, this paper attempts to look into the process of globalization and its central feature, technology. Technology has become a global force that affects political, social, ethical, and environmental.

The ancient Greeks, such as Plato and Aristotle, who lived in aristocratic societies, rejected discourse on technology as unworthy. Social, political, and theoretical activities, rather than technical, were deemed as the highest forms. Plato, for instance, alluded to the artisans merely as the cheapest form of metal compared to gold associated with the philosopher-rulers, while silver is equivalent to the warrior class. Technological change, defined as "progress," is seen as an inevitable process in modern history. This paper explored issues of globalization and the implications of technology, employing crucial viewpoints of Martin Heidegger, acknowledged as one of the powerful and influential philosophers of the 20th century. Specifically, this paper explored "machination (Machenschaft)" and Heidegger's Technik (Technology) or Gestell (Enframing). Machination is not just human conduct but the act of manipulation. It is a revelation of beings as a whole as exploitable and manipulable objects. The world seems to be a collection of present-at-hand thing with no intrinsic meaning or purpose, a cold place where we cannot put down any roots. All we can do is calculate and control. We observe and measure everything. We make things go faster and faster. Thus, there is a need to discuss and recognize issues related to technology. Heidegger's thoughts offer analytic tools that contribute to a critical understanding of the multidimensional effects, risks, and possibilities brought about by modernity and its globalization..

Keywords: Domination; Globalization; Modernity; Science; Technology;

1. INTRODUCTION: TECHNOLOGY AS AN IDEOLOGY

There have been many topics regarding the issue of science and technology. However, the author chose to approach the problem of globalization from philosophical and ethical viewpoints. The author's reflections on ethical issues articulate the relationship between globalization and technology, both of which had become inscribed to the dynamics of modernity and modern social existence. The paper explored the tripartite relationship of globalization, technology, and ethics in dealing with the spontaneous experiences of global citizens, such as the political, legal, economic, and cultural, in an accelerating phase of the level of integration comprising bonds between states.

Science and technology are not a single phenomenon. In the present era, they have become an ideology. Technology cannot mean only products such as machinery,



electronics, or other public consumer goods. Technology includes our whole attitude toward the human world, not just as an object. It also provides knowledge and consciousness and our powers of abstraction. In the modern era, this attitude is manifested theoretically in science and technological innovation. In a broader sense, science and technology are the culture itself.

It follows that decision-making should consider the social, ethical and technological, and scientific domains (Cam 1999, 192). Since science and technology have dramatically influenced human existence and what is essential to us, it has become vital to determine their consequences to our values and aspirations. Rapid changes contest the discovery of what is fundamental to our existence. In this context, Heidegger's philosophical reflection has a crucial role.

Natural cycles are not regulated by natural rhythms anymore; instead, in an artificial environment characterized by the results of technology (Cam 1999, 197). Our present age is stamped by the latest inventions that sometimes can be overwhelming. Technology is not only the copy of the "first nature" but a "second nature," replacing nature itself. The success of technology in developing itself is faced with the inability and lack of humanistic knowledge to answer the fundamental problems of masses such as poverty, ignorance, and famine. On the other hand, rationalistic and positivistic ideas tend to take over all understanding acquired by reflection or, even more, from faith. The presence of a relation between the material and metaphysical, the physical and non-physical realms, and between heaven and earth tend to be rejected or found objectionable.

Whether individual or as species, human achievement is measured by success in mastering science and technology in this century, we cannot isolate ourselves and live without technology. Technology has influenced all matters that were considered the right of God in His creation in the past. Exact science and technology had functioned as the "savior" with the ability to save and liberate human beings from ignorance, underdevelopment, and poverty. Although the facts may show a different tendency, the rich and the poor gap has grown substantially. Science and technology have become the most distinctive symbol of human autonomy.

Humanity has separated itself from its cosmic relation and other realities. On the other hand, modernization seems to be dominated by a materialistic truth instead of a non-materialistic one. The priority is put on physical needs, even to the extent of destroying our spiritual ones. It might seem that the condition of civilization is unnecessarily dramatized. However, we have to realize that science and technology were developed initially to free people by solving their problems in life. If they are out of control, they create complexities and complications in life that can appear as the destruction of the environment, isolation, and the loss of sensitivity to human spirituality (Cam 1999: 19). This means that people have lost spiritual contact with each other, the environment, surrounding nature, and anything with transcendental characteristics. Modern technology has sacrificed humanity and the world together, leading to their destruction.

2. STATEMENT OF THE PROBLEM

What is distinctive about this paper is that the author had adopted a philosophical framework in articulating the relationship between globalization and technology, both of which had become inscribed to the dynamics of modernity and modern social existence, particularly in the Philippines. Issues of globalization and the implications of technology are brought into play employing crucial viewpoints of Martin Heidegger, acknowledged as



one of the powerful and influential philosophers of the twentieth century. Risks and possibilities brought about by modernity and its globalization is brought into play from the perspective of Martin Heidegger.

Further, this paper deliberated on the ethical implications of globalization and technology. This study suggested that philosophy should not withdraw from the leading aspects of daily life and experience but rather could facilitate envisioning a global community that emphasized a non-violent transformation. Finally, the author also reflected on a new world *ethos*, the cultural ideology of consumerism, e.g., the loss of the sense of "real" in favor of "imaginary" things.

3. METHODOLOGY

This paper attempted to look into the process of globalization and its central feature, technology. Risks and possibilities brought about by modernity and its globalization is brought into play from the perspective of Martin Heidegger.

What is Heidegger's stature as a thinker? This is too difficult to answer. Nevertheless, his influence is immense on Rudolf Bultmann, Karl Rahner, Paul Tillich, Ludwig Binswanger, Emil Staiger, and the writings of Richard Rorty and H.L. Dreyfus and many others.

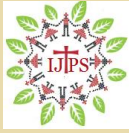
For Heidegger, the greatest danger is that calculative thinking someday may come to be accepted and practiced as the only way of thinking. Heidegger calls the utter availability and sheer manipulability the essence of technology. The danger is not the destruction of nature or culture but a restriction in our way of thinking, a leveling of our understanding.

4. FINDINGS: CYBERAGE AND GLOBALIZING TRENDS

Global communications and technology mediate the chronic intensification of patterns of interconnectedness to which it gives rise. Globalization, as viewed in this work, is a critical concept. This study suggested that philosophy should not retreat from the leading aspects of daily life and experience. Instead, it could facilitate envisioning a global community that emphasized a non-violent transformation and social and political creativity in planning and using science and technology.

Our power and efficiency are continually escalating -- but questioning and reflection are declining. Quality is reduced to quantity. This mathematization of the world does away with all sacredness. Heidegger speaks of the "flight of the gods" and "the death of the moral, Christian god." In this technological perspective, ultimate goals like serving God, society, our fellows, or even ourselves no longer make sense. Thus, humanity becomes a resource to be used -- but notably, enhanced -- like any other.

A. Heidegger's philosophy underscored that humanity is reduced as a stockpile in service to, and on-call, for technological purposes. Revealing or "exploitation" of nature happens. However, revealing never comes to an end. The crux of that methodology lies in its character as an explicating (*Erklaren*) of the actual relationships subsisting among the elements composing an object-sphere that appears within the purview of the ground plan that orients and governs specific work. The plan provides a fixed perspective that, as it was, captures reality and sets it over against the viewer in some kind of predictable pattern. However, the reality that is schematized in advance is itself anything but static and straightforward. No matter where or under what aspect it is grasped, it is filled with complexity and perpetually changing.



Science needs, therefore, beyond its rigorous adherence to its projected ground plan, a way of proceeding that can allow it to deal with complexity and with a change of every sort by discerning among all the elements in its object-sphere, precisely in their changefulness, interrelations that it can categorize and hence comprehend (Lovitt and Lovitt 1995, 275). This clarifying explication (*Erklärung*) that is wrought out through the methodology of modern science is constitutive for science itself. Science remains aware that the laws that it propounds, at least insofar as its knowledge of them are concerned, and are not laws in an absolute sense but "hypotheses." They have established bases for their work, fixed beforehand by available data, and accepted adequately as deserving of belief.

However, at the same time, they are always in need of verification and constantly being tested, whether through experiment or the interpretation of other sources, even as they are being applied. Thus, the explication of reality that science accomplishes has always a twofold character. "It accounts for an unknown through a known," Heidegger (1977, 121) says, "and at the same time it verifies that known utilizing that unknown."

Through the application of this method, the extent of the reality that has been brought into the horizon of scientific knowledge, e.g., the range of that which has become secured as intelligible in the light of one ground plan and one set of hypotheses or another, steadily grows. It is just this reliably secured knowledge that modern science as research is bent on achieving. How scientific work structures itself in carrying itself forward is explicitly determined by that goal. New findings do not so follow those already made as merely to augment their number.

Instead, they throw light upon them, now confirming the interpretation accorded to them, now demanding the revision of that interpretation. As this happens, earlier discoveries and hypotheses are taken up into those that succeed them (Heidegger 1977, 124). Science, we might say, builds itself forward.

For science in the highly standardized and specialized form that it has now assumed, rich opportunities lie open. Results of research can be readily exchanged and confirmed; joint projects can be undertaken. Particular methodologies can be borrowed or combined across the disciplinary lines, and the knowledge and talents of research workers can be readily shared. Thus, far from losing themselves in fragmentation due to their specialization, the sciences are, through its means, actually establishing the solidarity and unity appropriate to them. More and more, calculating is becoming dominant in every science. Increasingly, the information handled in all the sciences and exchanged among them is stripped of extraneous details regarding the phenomena it concerns. The computer is assuming an increasingly central place in scientific research, and data processing is becoming all-important.

B. Ihde (1991, 55) explains further Heidegger's reversal of the usual understanding of the relationship between science and technology. This is to say, and if the dominant view claims that technology is applied sciences, then, in Heidegger's version of the relationship, science may be said to be a peculiar kind of "applied" technology. At the least, this is an inversion of Platonism and may, in a curious sense, even continue to be called existential materialism. Ihde argued that "such an inversion specifically understood as a deliberated gestalt shift may first seem counter-intuitive. In Heideggerian inversion: science, rather than being the origin of technology, or technology as the application of science, becomes the tool of technology."

The systematic application of science to technology stirred a promise to research and modernization that promised an essential technological answer to all material wants.



Endless growth in calculating devices of innumerable kinds flourished. Today, the typewriter gives way to the word processor that is far more useful than handwriting and typewriting.

The combination of technological advancements, the opening and dominance of world markets, the campaign of worldwide implementation of the neo-liberal development paradigm of deregulation and liberalization, and intensifying business competition that has resulted in a global economic restructuring and integration are called globalization. Take, for instance, the computer business. Its trend has something to do with human creativity and innovativeness. The thrust is "to create something new," not copy others' products. Furthermore, companies market their manufacturing plants in Southeast Asia, China, and the United States.

For example, Samsung Electronics, a South Korean firm, has a development network in the US, Japan, Britain, Russia, India, and China. Samsung acquires its knowledge on production from Japan while research and development are patterned from the US. In the previous years, it was the leading maker of 256 megabytes (Mb) DRAM (Dynamic Random-Access Memory) chips. Finally, strategic alliance causes IT vendors and even electronic manufacturers to tie up with different projects.

As a result, to maintain their position in the global marketplace, some sectors invest in computers due to economic and social benefits despite their high price. Through merging assets, Dell Computers and Sony, for instance, are coming up with easy-to-use products. Their production, through alliances, gains more profits and cuts down costs (*Ibon Facts and Figure* 1996, 3-4).

Computers are becoming more and more a part of who we are as human beings. Along this line, issues regarding cyber technology with biotechnology developments and genome research arise. Ethical implications in the field of nanotechnology, as well as biochip implant technology, make it more difficult for us to separate certain aspects of our humanity from our technology. Computing devices are not seen as a mere extension but a part of our clothing and even of our bodies.

C. Most authors claim that normative confusion and ceaseless self-expansion define modernity and are merely reflected in technology as we know it. They resolve that humanity must move beyond supposedly neutral sociological, environmental, technological, spiritual, and philosophical explanations of how technologies arise and begin raising questions about the proper relationship between humanity and the shaping of technological order.

In *The global imperative*, Clark (1997, 35-44) proposed a sketch of globalization. According to his study, the globalization process is inseparable from the industrial system that organizes production power. He purported that globalization was made possible by society's ability to fashion the bulk flow technologies anywhere on the planet. Clark's eco-materialistic views have profound ecological implications for Heidegger's philosophy. According to Heidegger, nature had been a target of domination, awaiting mastery. Clark incriminates "entropy" while Heidegger considers the manipulability of both human beings and nature the supreme danger of the essence of technology.

Roszak (1969, 7), in *The making of counter culture*, raised issues on technocracy. He means that "society in which those who govern justify themselves by appeal to technical experts who, in turn, justify themselves by appeal to scientific forms of knowledge." Beyond the authority of science, there is no other appeal. For Roszak, the roots of technocracy reached deep into our cultural past and are ultimately entangled in the scientific



worldview of the West. His counter-culture questions the validity of the conventional scientific world and provides a critique of this dominant culture.

Corollary with Heidegger's thinking, Roszak (1969, 236) argues that our very existence is diminished when our concept of society is limited to objective consciousness. We become manipulated by science and technology. Roszak underscores that there must be a stance of life that seeks not simply to muster power against the misdeeds of society but to transform our concept of reality.

Ellul's *The technological society* argued that the technical phenomenon had become the defining political ideology of all modern societies. "Technique" or the technological mindset transforms means to ends to make value out of instrumental ones. Further, a technique has led to a confusion of means and ends in which society tends to transform the former into the latter. Finally, he called for an improbable spiritual transformation in response to the domination of technology.

For Morison (1966, 197), in *Men, machines, and modern times*, the system may have acquired a mass, scale, intricacy, and internal rate of change that made it increasingly difficult for human beings to live comfortably with it. While we significantly increased the production from each conversion, we also introduced numerous beneficial design modifications and succeeded in producing more. He argued that humanity has failed to advance the general understanding of the process. The problem is not scientific, but simply humanity.

In *One Dimensional Man*, Marcuse (1964, 50) deliberated upon "the logic of domination." Both inner and outer nature has been suppressed in the struggle for survival, at first against nature and later against other human beings in class society. He found the secret of psychic exploitation in repressive sublimation that led him to determine that technology affects society in its own right. Technology is independent of the social form under that it is organized. Liberation begins when we untie the domination.

The transcendent truth he invoked as a standard by which to evaluate society is not a realm apart from historical reality or a region of eternally valid ideas. It transcends the given historical reality. Ultimately, Marcuse sees, in art and religion, the rejection of social domination. Technical thinking, however, has taken over in every domain of life, human relationships, governments, and other fields.

5. CONCLUSION

How are we to assess the significance of Heidegger's questions? From the study on Heidegger and technology, the author has come to concur with Heidegger's vision, particularly concerning the outlook on globalization, namely, that "the goal of self-authentic self-determination by the individual is to be stripped of technological rationality, in its exploitative feature, that is the sole standard and guide in planning and developing the available resources for all" (Marcuse 1964, 251). The author agrees with Heidegger of rationality and the dominant tendencies of modern culture toward an ever more rational world. In its ever-greater progress, the rational mind increasingly reduced that which was not reasonable; reason was synonymous with the sensible (Featherstone 1995, 271-272).

The joint operation of technology and specialization, furthermore, restyle our environment and habits of attention in such a way that we run the risk of being turned into roles or animate abstractions; not turned into Platonic forms, through the actual passionate reaching toward an ideal, but rather into the type characters of comedy, in which each actor plays an assigned role predictably as though his life was something mechanical encrusted on



the living (Brumbaugh 2018, 219). Probably, no age has talked more about "authenticity" but had less of it than our own. What we find in Greek poetry, medicine, and daily life, an awareness of the world in its full vividness and qualitative complexity, and engagement in politics, art, and ideas, dims because it has so little encouragement in our society.

Globalization is a choice. It is a commitment, determination, and perseverance, which is more an effort of the heart than the mind alone. To achieve, we must commit. Only the heart can engage. To live an abundant life is to pursue our desires, our inner selves. We go after what fulfills us before making more money.

Nevertheless, though our understanding of things and ourselves as resources to be ordered, enhanced, and used efficiently has been forming since Plato, we are not trapped with that understanding. For Heidegger, once we realize that technology is our latest understanding of being, in our practices, not just as a matter of reflection -- we have stepped out of the technological sense of being (Guignon 1993, 306). We then see that what is most important in our lives is not subject to efficiency. Indeed, the drive to control everything is precisely what we do not control. This transformation in our sense of reality, this overcoming of thinking in values and calculation, is precisely what Heideggerian thinking seeks to bring about. Efficiency for its own sake is not the only end for humanity, dictated by reality itself, but just our current understanding.

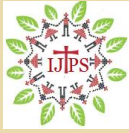
In a world complacent with numerous advances in science and technology, it is no surprise that our goals and desires are tempered by the material society in which we find ourselves. Yet in *The Question Concerning Technology*, Heidegger (1977, 317) upholds: *For questioning is the piety of thought*. He urges us to strive to inspire to embrace independent thinking, look outside the system, and question what they are surrounded by. We are responsible for instilling value systems that will provide succeeding generations with a hunger for furthering the accepted boundaries and challenging preconceptions.

ACKNOWLEDGMENTS

Remembering Ernesto (+) and Chalita (+), the author's parents. Thanks also to her siblings for their continuous support and love for all her endeavors. She extends her gratitude to her relatives, friends, students and colleagues for their contributions to discourses in philosophy and their support to her person.

BIBLIOGRAPHY:

- [1] Bradley, Stephen, *et al.*, *Globalization, technology, and competition: The fusion of computers and telecommunications in the 1990s*, Boston, Harvard Business School Press, 1993.
- [2] Brumbaugh, Robert, *Plato for the modern age*, London, Muriwai Books, 2018, p.219.
- [3] Cam, Philips, *et al.*, *Philosophy, culture and education: Asian Societies in transition*. Seoul, ORUEM Publishing House, 1999. p.19, 192,197.
- [4] Caputo, John, *Demythologizing Heidegger: Aletheia and the myth of Being*. Bloomington, Indiana University Press, 1993, 182.
- [5] Clark, Robert, *The global imperative*. Colorado, Westview Press, 1997, p.35-44.
- [6] Ellul, Jacques, *The technological society*, New York, Vintage Books, 1964.
- [7] Featherstone, Mike, *Global modernities*. London, Sage Publications, 1995, p. 271-272.
- [8] Feenberg, Andrew, *Questioning Technology*, London, Routledge, 1999, p. 195.
- [9] Germain, Randall, *Globalization and its critics: Perspectives from political economy*. UK, Palgrave Macmillan, 2013.
- [10] Guignon, Charles, *The Cambridge Companion to Heidegger*, Cambridge, Cambridge University Press, 1993, p.306.
- [11] Heidegger, Martin, *Discourse on thinking (Gelassenheit)*, Translated by John Anderson and Hans Freund, New York, Harper and Row, Publishers, 1969.



- [12] Heidegger, Martin, *Early Greek Thinking*, Translated by David Farrell Krell and Frank Capuzzi, New York, Harper and Row, 1975.
- [13] Heidegger, Martin, *Letter on humanism*, David Farrell Krell, New York, Harper and Row, 1977.
- [14] Heidegger, Martin, *Contributions to Philosophy (From Enowning)*, Bloomington, Indiana University Press, 2000.
- [15] Heidegger, Martin, *On Time and Being*, Chicago, University of Chicago Press, 2002.
- [16] Heidegger, Martin, *Basic writings: Martin Heidegger*. Translated by David Farrell Krell, New York, Routledge, 2010.
- [17] Heidegger, Martin, *Poetry, Language and Thought*. New York, Harper Publishers, 2013.
- [18] Heidegger, Martin, *Heidegger and the question concerning technology and other essays*, Translated by William Lovitt, New York, Harper Torch books Publishers, 2017.
- [19] Ibon Facts and Figures. "Technobabble on information technology." Ibon Foundation, Vol. 19. No. 21, (November 1996), p.3-4.
- [20] Ihde, Don, *Instrumental realism. The interface between philosophy of Science and Philosophy of Technology*, Bloomington, Indiana University Press, 1991, p.55.
- [21] Kockelmans, Joseph, *Heidegger and science*, Washington, University Press of America, 1985, p.250.
- [22] Langan, Thomas, *The meaning of Heidegger: A critical study of an existentialist phenomenology*, New York, Columbia, p.1959, 159,196,199,174.
- [23] Lovitt, Charles William and Harriet Brundage Lovitt. *Modern technology in the Heideggerian perspective*. New York, The Edwin Mellen Press, 1995, p.275, 430-432.
- [24] Marcuse, Herbert. *One-dimensional Man*. London, Routledge and Keegan Paul, 1964, p.50-251.
- [25] Morison, Elting, *Men, machines, and modern times*. Massachusetts, MIT Press, 1966, p.197.
- [26] Polt, Richard. *Heidegger: An introduction*. New York, Cornell University Press, 2013.
- [27] Roszak, Theodore, *The making of a counter-culture*, New York, Double Day and Co. Inc., 1969, p.236.
- [28] Zimmerman, Michael, *Heidegger's confrontation with modernity: Technology, politics, art*, Bloomington, Indiana University Press, 1990, p. 231,233,247.



INTERNATIONAL JOURNAL OF THEOLOGY, PHILOSOPHY AND SCIENCE

AIMS

International Journal of Theology, Philosophy and Science (IJTPS) is a scholarly journal dedicated to the areas of philosophy and theology. This journal was founded with the aim of publishing high quality and original scholarly papers written at by the junction between philosophy, theology and science. International Journal of Theology, Philosophy and Science is one which belongs to the *Ideas Forum International Academic and Scientific Association (IFIASA)*.

PURPOSE

IJTPS provides the opportunity to examine the altogether truth-claims found in theology, philosophy, and sciences, as well as the methods found in each discipline and the meanings derived from them.

Theology and Philosophy are the basis of intellectual and scientific life. The study of Philosophy developed considerably, as did Theology and the sciences.

This interdisciplinary Journal presents a scientific balanced picture of the possibilities inherent in human discourse revealed by God's vision and Science. This Journal provides a platform for the latest scientific research theological and moral-education, encouraging approaches from different areas and points of view.

Therefore, the theme of the journal is, from the beginning, a religious one with a wide opening towards universal cultural values.

SUBJECT AREAS

IJTPS promotes interdisciplinary approaches to any of the world's religious/philosophy, and various fields:

PHILOSOPHY, THEOLOGY, THEORETICAL OR METHODOLOGICAL DISCUSSIONS, THOUGHTS, IDEOLOGIES AND PHILOSOPHIES, PHILOSOPHY OF RELIGION, PSYCHOLOGY OF RELIGION, ROLE OF RELIGION IN CULTURE AND SOCIETY, RELIGIOUS ETHICS,

ABSTRACT AND INDEX- IJTPS is abstracted and indexed in:

ERIH PLUS
CEEOL
CROSSREF
EZB, WORLDCAT

HOW TO SUBMIT THE PAPER

The author should submit the paper via e-mail to the executive editor at: ijtps_journal@yahoo.com

Articles published in the International Journal of Theology, Philosophy and Science will be distributed under the terms and conditions of the Author's Contract.

PLAGIARISM POLICY

The editorial board is very strict regarding plagiarism. The journal believes that taking the ideas and work of others without giving them credit is unfair and dishonest. The editorial board retains the absolute authority to reject the review process of a submitted manuscript if it is suspect at plagiarism or subject to plagiarism.