



***[The 4<sup>th</sup> Triglav Circle on Zoom ---- 18 January 2025***

## **Background Paper: ] Addressing the Sciences and the Humanities**

The humanities and humanism evolved over centuries. In the Western world humanism can be traced back to Greece in the 5<sup>th</sup> century BCE. In Rome the concept evolved into ‘an ideal’ expressed as *humanitas*. Modern humanism emerged in the 14<sup>th</sup>/ 15<sup>th</sup> centuries focusing on philosophical thinking and moral concerns rather than religion. It was reflected in a number of studies—philosophy, history, literature, rhetoric, and training in the oratory.”<sup>1</sup>

The modern sciences emerged gradually from antiquity during the 15<sup>th</sup> - 17<sup>th</sup> centuries commonly referred to as the time of the ‘scientific revolution.’ It was preceded by developments in mathematics, physics, astronomy, biology and anatomy. During this period practical scientists, including Sir Frances Bacon, were replacing natural philosophers and their explanations of why things happen. The scientists invented instruments to measure and test their hypotheses with empirical evidence-based experimentation aiming to explain what and how things happened and to test the validity of their discoveries. They also established institutions to carry out these enquiries and to make new discoveries and inventions.<sup>2</sup>

The following sections consider: [1] The Humanities and the Sciences alternative and mutually supporting sources of knowledge [2] Ways to blend non empirical thoughts and scientific facts in respect to nature [3] The fundamental role of the humanities in the establishing ethics, [4] Appreciation of truths offered in poetry and thoughts of philosophers in the sciences when language is restricted to observable phenomena, [5] Searching for reality in the space where materiality appears to disappear in waves and particles of energy leaving only thinking to interpret what is happening above and beyond the geosphere.

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<sup>1</sup> Maria Papadouris, “*In Defense of the Humanities Upholding the Pillars of Human Understanding*,” ITHAKA JStor June 4 2024 quoting Perez Zagorin’s “On Humanism Past & Present.”

<sup>2</sup> Mark Cartwright, “*Scientific Revolution*,” in World History Encyclopedia, <https://www.worldhistory.org/image/18023/the-scientific-revolution-in-europe/>

## 1. The Humanities and the Sciences as Alternative and Mutually Supporting Sources of Knowledge

By the end of the scientific revolution the wisdom of the great philosophers of bygone years was challenged by an empirical approach to determining real knowledge. Empiricists firmly held that real knowledge is derived by the senses via observation and measurable, testable evidence.<sup>3</sup> The humanists had other ideas and defended the validity of metaphysics based on *a priori* reasoning, intuition and logic.

Konrad Raiser points out: *The decisive period is the time of David Hume and Immanuel Kant: in the succession of Hume, philosophy has adapted fully to the methodological requirements of scientific methods. The result is analytical philosophy. Kant has taken a different course...*

In the 18th century, the ascendance of experiential truth and the decline in respect for metaphysical knowledge occurred as empiricism was widely considered the only way humans could understand the physical universe and improve their material condition. Most prominently, David Hume rejected metaphysics as a legitimate source of knowledge and embraced studies validated by empiricism. He wrote “the only solid foundation”[for knowing] “must be laid on experience and observation.”

In his *The Critique of Pure Reason*,<sup>4</sup> Kant took exception to Hume’s thesis comparing differences between intuition about objects and the form of their appearance. He shaped his theory of metaphysics with concepts of synthetic and a priori knowledge. He regarded the former as ‘mere representations of things’ rather than ‘objects in themselves’, and the latter as “merely sensible forms of our intuition, not determinations given for themselves or conditions of objects as things in themselves...” Kant valued humankind’s intellectual capacity for reasoning, conceptualization, and speculation. He distinguished spiritual beliefs from metaphysics since he held that the existence of God was beyond the human capacity ‘to know’. He accepted, however, the idea that humans have the capacity for faith and the free will to consider such ideas.

In the 19<sup>th</sup> century, transcendentalist, Ralph Waldo Emerson recognized the distinction between scientism and humanism, using the vernacular of materialism and idealism.

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<sup>3</sup>[https://human.libretexts.org/Courses/Cosumnes\\_River\\_College/HUM\\_301%3A\\_Introduction\\_to\\_the\\_Humanities\\_\(Binder\)/10%3A\\_The\\_Age\\_of\\_Reason\\_and\\_Revolution/10.04%3A\\_The\\_Scientific\\_Revolution](https://human.libretexts.org/Courses/Cosumnes_River_College/HUM_301%3A_Introduction_to_the_Humanities_(Binder)/10%3A_The_Age_of_Reason_and_Revolution/10.04%3A_The_Scientific_Revolution)

<sup>4</sup>*Kritik der reinen Vernunft; 1781; second edition 1787.*

Emerson wrote:

*As thinkers, mankind have ever divided into two sects, Materialists and Idealists; the first class founding on experience, the second on consciousness; the first class beginning to think from the data of the senses, the second class perceive that the senses are not final, and say, the senses give us representations of things, but what are the things themselves, they cannot tell. The materialist insists on facts, on history, on the force of circumstances, and the animal wants of man; the idealist on the power of Thought and of Will, on inspiration, on miracle, on individual culture. These two modes of thinking are both natural, but the idealist contends that his way of thinking is in higher nature. He concedes all that the other affirms, admits the impressions of sense, admits their coherency, their use and beauty, and then asks the materialist for his grounds of assurance that things are as his senses represent them. ...Every materialist will be an idealist; but an idealist can never go backward to be a materialist.<sup>5</sup>*

In the first half of the 20<sup>th</sup> century, scientism continued to be the vaunted source of knowledge, this time, by the ‘authoritative influencers’ of the venerable Vienna Circle from its earliest gatherings in 1907 and through 1938. The Circle, among other groups, generally shared Hume’s perspective and discounted the value of non-scientific metaphysical thinking. As Hume had two centuries earlier, most participants in the Vienna Circle held that real knowing depended on sensible observation and experience. Among them, Karl Popper denied the validity of metaphysics based on empirical falsifiability, while Rudolf Carnap and other logical positivists rejected metaphysical claims as meaningless given their non verifiability<sup>6</sup>

Today the separation of knowledge into two academic categories—the Sciences and the Humanities is a fact. The physical sciences depend on empirical data and methodology for veracity. Consistent with prevailing scientism, the social sciences also focus on observable trends, structures, and patterns of human interactions and behaviors. The humanities, while giving empirical sources of knowledge their due, attribute fundamental importance to metaphysics and other non-empirical sourced knowledge. Continental philosophy, reflecting Kant’s influence, has less relevance as a source of meaningful knowledge and is replaced in

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<sup>5</sup>Ralph Waldo Emerson, “The Transcendentalist,” 1841. Introductory Paragraph.

<sup>6</sup> The “*Wiener Kreis*” (“Vienna Circle”) was an extraordinary group of philosophers, mathematicians, natural scientists, and humanities scholars who met regularly between 1924 and 1936 to develop and to propagate a scientific world view. After it dissolved it disbanded in WWII but its members continued working internationally. <https://geschichte.univie.ac.at/en/articles/vienna-circle-wiener-kreis>

many academic institutions by analytic philosophy, an empirical study of the use of language, including style, clarity of prose, and argumentative rigor.<sup>7</sup>

In many academic institutions sciences are increasingly popular, while enrollments in the humanities are declining. A number of facts explain the enthusiasm for the physical sciences. Most importantly, their applications in technology and informatics offer many opportunities for financially rewarding work, prestige, and other compensations. At the same time, the humanities require considerably more reading and reflection, while gainful employment in philosophy, literature, and the arts is not obvious for most people in the digitized, globalized world. Although of declining interest in the modern world, the humanities still offer the richness of a holistic understanding of Life.

Harmonious entanglement between these two schools, however, should be considered. The sciences provide the material facts to be observed and experienced. The humanities make known invisible thoughts and ideas about what is observed. They provide the foundation for conceiving values and ethics. They expand imagination; facilitate identification of positive differences between phenomena, and offer rich alternatives in the search for reality. Continental philosophy is particularly needed when experience and reality are bound and shaped by conditions best understood by way of studies in humanities.

### **Possible Questions**

*The humanities include philosophy, literature, poetry, history and the arts. Do you attach a particular importance to one of these branches? How do you view the role of the arts?*

*What are your views on the relevance of Emerson's statement today?*

*What are your views on the assertion that scientism is currently a prevalent facet of the spirit of the time?*

*Assuming society is reducing educational opportunities in the humanities in favor of expansion of the social sciences, of the cyber sciences, and of Science-Technology-Engineering- Mathematics [STEM]? What is its opportunity cost? For the benefit of what and for whom?*

*Under which conditions is meaningful cooperation or complementarity between the humanities and sciences possible today? Are there examples? ( This last question is relevant*

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<sup>7</sup> That experience and reality are bound and shaped by conditions best understood through philosophical reflection rather than exclusively empirical inquiry.  
[https://en.wikipedia.org/wiki/Continental\\_philosophy](https://en.wikipedia.org/wiki/Continental_philosophy)

for all the following sections). In what situations is it possible for the sciences and the humanities to work in harmony?

## 2. Nature

Arthur Dahl proposes:

*Much of what we appreciate in the humanities has its roots in higher dimensions, in finding ways to express spiritual qualities as the real human experience. Even the environment can be seen as reflecting these higher qualities of cooperation and reciprocity, and the experience of nature is often defined as spiritual. This reality does not contradict the reality studied by science but is complementary to it. ....*

In the 19<sup>th</sup> century, scholars curious about the living world gathered facts during their treks through fields, forests and untamed wilderness. Philosophy, poetry and art as well as scientific knowledge gave expression to their intuitions and sentiments inspired by multi-forms of life in nature. Among these scholars were two prestigious polymaths, Johann Wolfgang von Goethe, and Alexander von Humboldt whose writings and artwork made major contributions to civilization.

Goethe's thoughts on nature reflect transcendent ideas from earlier Platonic, Spinozian and Kantian writings. He merged poetic and cultural ideas with material facts in his holistic approach to nature. An example is his theory of color. Rejecting Newton's spectrum as the sole valid theory on this subject, he held that light and darkness are important ingredients of color, which he defined as a "degree of darkness". He also explored "the psychological impact of different colors on moods and emotions —" ideas derived by the poet's intuition, prescient insights corroborated by hard science ..., and purely delightful manifestations of the beauty of language."<sup>8</sup>

Humboldt's knowledge and skills sustained his work as a geologist, explorer, politician, philosopher, social critic, and artist. Firm in his belief, he wrote that the essence of Nature required detailed scientific knowledge as well as art, poetic thought, and intuition. In his late 80's, he summarized the knowledge and experience gained in his life work in a five volumes entitled *Cosmos*. Today, while long virtually forgotten, scientists and writers are again expressing appreciation for his contributions to the knowledge of nature. A significant part of his legacy is his influence on Charles Darwin, Ralph W. Emerson, Thomas Jefferson and John Muir among others. In a number of academic circles he is referred to, as he was known in the 19<sup>th</sup> century, the holistic discoverer of "nature" and the founder of "ecology."

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<sup>8</sup> *Goethe's Theory of Colours: Translated from the German; with Notes by Charles Lock Eastlake, R.A., F.R.S.* London: John Murray. 1840. [Archived](#) from the original on 12 December 2016. Retrieved 18 October 2017 – via Internet Archive

Admiration of landscapes, the wonders in the animal world, and a comfortable climate inspire Nature's advocates to defend earth's natural "home." In this context the humanities play a significant role in elevating Nature in the public's eye and inspiring political action to counter global warming, over-exploitation of natural resources, loss of bio-diversity, pollution and ecologically destructive technological advances. Artists and writers stir emotions and motivate actions against these threats. Spiritual insights, intuitive wisdom and poetic thought embodied in philosophy and literature stimulate imagination and enhance receptivity to policies promising protection of the natural environment. Moreover, these ideas complement scientific findings, hypotheses, and statistics.

Although too often conflated with the "environment" in political circles, nature still reflects metaphysical qualities known to poets and other sensitive souls and conveyed to the public through publications, stories, photography and art, music, and so forth. One might conclude that studies of humanities are essential to generate Love for nature.

### **Possible Questions**

*How does love for the planet and all the beauty and wonder it inspires become an effective motor for change.*

*Is the more common scientific ethic of fear prompted by controversial testimonies of climate change, exhaustion of natural resources, and pollution effective?*

*What are the disadvantages of conceiving and implementing "nature" politics only with scientific methods and knowledge?*

*Describe examples of initiatives that combine scientific and humanist approaches to restoring or protecting nature and/or the environment.*

*Is the example of Von Humboldt replicable?*

### **3. Ethics**

Konrad Raiser states emphatically, "There is no scientific way of approaching and shaping ethical values." *How then do the humanities approach and shape ethical values?"*

Studying the humanities is about what it means to be human, whether through the ability to understand different cultures and conditions of life, the nature of thought, the meaning of morality and behavior, and empathy for the other. In *The Power of the Humanities and a Challenge to Humanists*, Richard J. Franke argues that 'humanistic interpretation' "contributes to the tradition of interpretation." Franke considers that emotions and values are at the center of humanistic study, facilitating the exploration of the foundations of human experience." The interdisciplinary nature of the humanities promotes exploration of the higher

purposes and realities of life via the faculties of intuition, imagination, reason, and intuition. The same might be said for the formulation and implementation of human rights and laws guiding ethical choices.

Moreover, Franke suggested that the humanities lend themselves to critical thinking, defined as “that Socratic habit of articulating questions and gathering relevant information in order to make reasonable judgments.”<sup>9</sup> Through the humanities, one can approach topics from varied vantage points to develop a holistic understanding of them. Philosophers and other scholars have addressed the nonscientific dimensions of love, humility, compassion, detachment, and refinement of character as opposed to greed and selfishness in a materialist world. Sadly, the humanities have often been ignored by modern scholars in explorations of ethical issues, particularly regarding research ethics.<sup>10</sup>

Culture and the arts play major roles in societies’ ethical development. Philosophy, theology, and the arts are essential to harmonious societies and play strong roles in opposing tyranny in all its forms. They impart courage to face complex challenges including matters of choice and temptation.

Language and culture encapsulated in the written word, visual media, theater and dance are powerful tools connecting humankind to others, to nature and to the universe on primal and cerebral levels. Education is the key to human flourishing. It is essential that the humanities be strong elements in students’ curricula. The languages of art and culture help impart universal values and in turn find their place in the foundation of harmonious, mutually supportive societies.

In this context it is good to reflect on Plato’s idea as introduced by Immanuel Kant:  
*The light dove, in free flight cutting through the air the resistance of which it feels, could get the idea that it could do even better in airless space. Likewise, Plato abandoned the world of the senses because it posed so many hindrances for the understanding, and dared to go beyond it on the wings of the ideas, in the empty space of pure understanding.* — Immanuel Kant, *Critique of Pure Reason*

This quotation raises a number of questions including: Can a mind focused on metaphysics and divorced from the material human situation be useful ---‘as a dove in airless space’

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<sup>9</sup> Richard J. Franke, *The Power of the Humanities and a Challenge to Humanists*, Dædalus. Winter 2009. pp.14-17. [https://www.amacad.org/sites/default/files/publication/downloads/Daedalus\\_Wi09\\_03\\_Franke.pdf](https://www.amacad.org/sites/default/files/publication/downloads/Daedalus_Wi09_03_Franke.pdf)

<sup>10</sup>Op.cit.

without the hard lessons of errant human behavior?. If Plato is thinking he must abandon the political hindrances in his world, what is the purpose of ethics aside from beautiful words?

Also an important conveyance of human values is the artful and symbolic performance of rituals intended to influence human relations and behaviors.

In Japan such rituals include flower arranging and tea ceremonies. The Japanese art of flower arrangement, Ikebana, is a disciplined art form inspired by the philosophy of closeness to nature and is intended to direct the flower arranger to find beauty in line, form, and color.

In Africa, many symbolic ceremonies are presented to bring peace to a community and promote shared understandings in tribes:

According to Dr. Yirenkyi from Ghana:

*The value of rituals cannot be overlooked in a community. Rituals mark out the very important aspects of our everyday lives. The commencement of life, the survival of every community depends on the level of attention paid to the various rituals beginning of a new season, the initiation from one stage to another, ...healing, pacification, punishment among others are all done through rituals.*<sup>11</sup>

### **Possible Questions**

*Philosophy and the arts have important intrinsic and extrinsic values of benefit to societies. Discuss these values.*

*The humanities inform the performance of rituals and underpin symbolism to influence human behavior and thought. Consider some examples?*

*How do you interpret the lesson of the Dove in airless space?*

## **4. Languages**

Ralph Waldo Emerson argued that we consume culture to enlarge our hearts and minds. We start with the tiny circle of our experience, but gradually we acquire more expansive ways of

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<sup>11</sup>Yirenkyi, *Ritual Performative Ceremonies and Values in the African Context*, International Journal of African and Asian Studies www.iiste.org. ISSN 2409-6938 Vol.57, 2019 27 Department of Theatre Arts, University of Education, Winneba, Ghana



seeing the world. Peer pressure and convention may try to hem us in, but the humanistic mind expands outward to wider and wider circles of awareness.<sup>12</sup>

Atomic physicist Werner Heisenberg wrote:

*What is sacrificed in 'static' description is that infinitely complex association among words and concepts without which we would lack any sense ... that we have understood anything of the infinite abundance of reality.*<sup>13</sup>

*ce of reality.*<sup>14</sup>

He suggested finding truth in the broad way poets use language, as opposed to the loss of genuine understanding of phenomenon because of the stringent demands of language precision in the sciences.

In a discussion on the use of language in physics, Heisenberg argued that the emphasis on linguistic precision in his field often prevented physicists from gaining genuine understanding of earthly phenomenon. At the same time, he pointed out that there was truth in the broad way poets use language, calling up associations, multiple meanings, and intuitive connections.<sup>15</sup>

Every human civilization shares in some way such thoughts as love, humility, compassion, detachment, refinement of character, etc, as compared with the sensual or material experiences of being. These subjects have been the grist of philosophers and scientific thinkers for millennia. Today a relationship between the sciences and humanities continues to unfold in the intersection where scientific exploration meets philosophical reflection. This interdisciplinary relationship fosters a richer understanding of the human experience and poses questions without scientific boundaries. To approach these subjects requires thought and imagination.

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<sup>12</sup>Quoted by David Brooks in an Opinion entitled “How to Save a Sad, Lonely, Angry and Mean Society” in the New York Times. <https://www.nytimes.com/2024/01/25/opinion/art-culture-politics.html>

<sup>13</sup> Heisenberg’s words are summarized and quoted by Meghan O’Gieblyn “The Trouble with Reality”, *The New York Review of Books*, March 21, 2024 issue.

<sup>14</sup> Heisenberg’s words are summarized and quoted by Meghan O’Gieblyn “The Trouble with Reality”, *The New York Review of Books*, March 21, 2024 issue.

<sup>15</sup>Meghan O’Gieblyn *The Trouble with Reality*. New York Review of Books <https://www.nybooks.com/issues/2024/03/21/>

In sum, Heisenberg noted that the humanities were about generalizing and abstractions, whereas the sciences are about observation. We are limited in what we can observe, but not by what we can imagine. We need both the sciences and humanities in equal measure.

### **Possible Questions**

*Discuss your thoughts about the statement of Heisenberg?*

*Give examples of “Sweeping “truths” dressed in poetic language that provoke reflection”?*

*Suggest examples of broad, transversal connections of the Humanities that complement and complete ideas produced by the sciences.*

*What is the worth of a mind full of the rich vocabulary and thoughts fed by the arts and other studies classified as humanities?*

*What is a humanistic mind [as referred to by Emerson above]? How is it acquired? Why is it necessary to society? Can it be replaced by AI?*

### **5. What Is Reality? Seeking Answers in Science, Humanities, and Quantum Physics**

Richard Webb wrote: *Beneath all the world’s practical problems lies a huge quantum mystery. At a basic level, quantum physics predicts very strange things about how matter works that are completely at odds with how things seem to work in the real world. Quantum particles can behave like particles, located in a single place; or they can act like waves, distributed all over space or in several places at once. How they appear seems to depend on how we choose to measure them, and before we measure they seem to have no definite properties at all leading us to a fundamental conundrum about the nature of basic reality.*<sup>16</sup>

Arthur Dahl suggests: *In the quantum dimension, “reality” becomes ever more abstract and far from our direct experience. Recent scientific papers explore pure mathematics behind quantum theories or ask if there is a quantum theory of consciousness. The noosphere, on the other hand, looks at all the intangible dimensions of culture, from emotions and arts to philosophy. This could be extended further into what could be called spiritual reality.”*

In the late 1800’s and early 1900’s the study of quantum physics began with observations of atoms. This study did not fit under the rubric ‘classical physics’. Also referred to as quantum theory its research extended beyond the realms of traditional science and metaphysics to abstract mathematics and logic where formal science meets philosophy and religion in search

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<sup>16</sup>Richard Webb“ Quantum Physics : Our best basic picture of how particles interact to make the world”, *The New Scientist*. <https://www.newscientist.com/definition/quantum-physics>.

of truths about existence, consciousness, and ultimate reality.<sup>17 18</sup> At the most fundamental level, quantum physics refers to the study of matter and energy on the smallest scales. The purpose is to uncover the properties and behaviors of the building blocks of nature.

*In the beginning was the Word, and the Word was with God, and the Word was God. 2The same was in the beginning with God. 3All things were made by him; and without him was not any thing made that was made. 4In him was life; and the life was the light of men. 5And the light shineth in darkness; and the darkness comprehended it not. [Source: Holy Bible, King James Version; 1 John 1 1-2*

As the objects of quantum physics became increasingly abstract and beyond the pale of human perception, researchers and philosophers questioned the possibility of a discoverable reality. Leaving aside scientific conjecture these ideas found support in religion, logic, and philosophy. Belief in a rational creator or harmonious force controlling the natural world and the universe depended on theology, faith and/or philosophy. Newton's theories of space and gravity, Bohr's theory of quantum mechanics and Einstein's rejection of its probabilistic nature were all assumptions partly based in humanities.<sup>19</sup>

While researchers were delving deeper into matter in search of 'reality', other researchers were looking upward and outward from the geosphere to discover sources and sustaining forces of dynamic intelligent life. This story is told by Vladimir Zernadsky and Teilard de Chardin in what was a two stage process [1]the development of theoretical biosphere, [2] the emergence of the concept of the noosphere. Perhaps the third stage is Artificial Intelligence [AI].

In 1875, Austrian geologist Eduard Seuss used the term 'biosphere' in a chapter in his work on the History of the Alps. This word referred to 'the space on Earth where life can be found'. He is credited as being the first person to use this term.

Forty or so years later, this concept was picked up and developed by the Russian geobiochemist, Vladimir Vernadsky. The biosphere was detailed in *Biosphere*, his book published in 1926. He conceived the biosphere as the living envelope of the earth, a thin life-supporting stratum of the Earth's crust extending from the deep sea vents of the ocean to the

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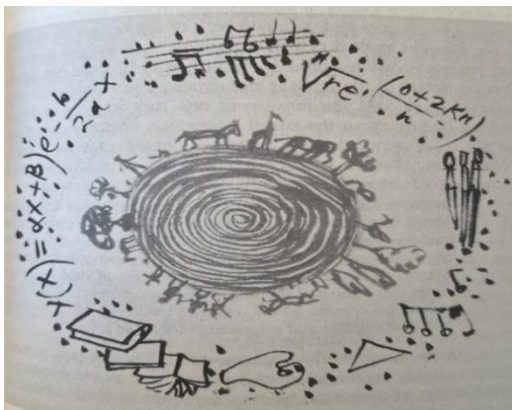
<sup>17</sup>Quantum physics, also known as quantum theory or quantum mechanics, is a fundamental branch of physics that examines the behavior of matter and energy at the smallest scales. It introduces us to a world where particles such as electrons, photons, and quarks exhibit peculiar behaviors that defy classical physics. *Abnurlion, Quantum Physics vs Quantum Mechanics, July 29, 2023.*  
<https://physicscalculations.com/quantum-physics-vs-quantum-mechanics/>

<sup>18</sup>See also Caltech science exchange for all the different concepts related here to.

<sup>19</sup><https://www.britannica.com/science/history-of-science>

atmosphere's lithosphere. In the envelope he distinguished inert matter, living matter, and energies radiated from the cosmos as inputs for life. These ideas were first presented while he was lecturing at the Sorbonne from 1922 to 1926.

In Paris, he shared theories and other ideas with the polymath Jesuit priest Teilhard de Chardin, a Bergsonian philosopher, theologian, and palaeontologist and the later's colleague, Eduard Le Roy, Bergsonian philosopher and mathematician. According to professor of semiology, Vyacheslav Ivanov, building on Vernadsky's notion of the biosphere as a living envelope, each of these men elaborated their understanding of the Noosphere. Influenced by their theological and/or philosophical backgrounds, Chardin and LeRoy coined the term noosphere and defined it "as a sphere of thought, conscious invention, and heartfelt union of souls". The noosphere results from some hominizing cerebral mutation, allowing "one to know and knowing what one knows", superimposed on the biosphere. They were thinking about the social interaction of many human individuals creating a super mind with all minds joined together. Considering the noosphere from a scientific perspective Vernadsky envisaged it as a higher stage in the evolution of the biosphere. For both men the crucial fact was the increasing cephalization taking place in the living world.<sup>20</sup>



### Spheres of Earth<sup>21</sup>

1. *Systems composing the observable planet: geosphere, cryosphere, hydrosphere, and atmosphere*
2. *The biosphere: the system that supports life: earth's soils, waters and air creating living matter supported and energized by the cosmos.*

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<sup>20</sup> Vyacheslav Ivanov, *Towards Noosphere*, in *Candles in the Dark: A New Spirit for a Plural World*, BBaudot, ed. Seattle: University of Washington Press. pp 187-190.

<sup>21</sup> Design of planetary spheres by Philippe Dumas

3. *The noosphere: the sum of all ideas, knowledge, and musical tones, the mind of minds*
4. *Artificial Intelligence: crystallization of the noosphere*

The increased cephalization and sophistication of thought in the noosphere is related by some scientists to the recent development of artificial intelligence [AI]. Professor Robert Wright, writer, prize winning journalist and Princeton lecturer, describes Artificial Intelligence as “the crystallization of the Noosphere.”<sup>22</sup>

As a field of computer science AI is a network of systems capable of performing tasks that would normally require human intelligence. In 1950, Alan Turing published the Turing Test, on which the visions, objectives and foundations of artificial intelligence have been based. AI is commonly considered a broad, multidimensional concept that is difficult to define precisely due to its ever-evolving nature. Technologies ranging from simple to complex self-driving systems are all considered AI.<sup>23</sup>

Crystallization of thinking from the body of intelligence swirling in the noosphere described as AI, illustrates potential for entanglement between a humanistic idea and a scientific idea. As a member of the faculty of the California Institute of Technology [CALTECH] explains: When two ideas, one generated by quantum science and one generated by a philosophical thought become entangled they remain connected in the same way that a ballet emerges from individual dancers. “In entanglement the two ideas are like a flock of birds becoming a whole entity unto itself without being in direct contact with one another.”<sup>24</sup>

Separating humanistic ideas and scientific ideas and considering one discipline more significant than the other is doing a disservice to humanity and is counter to nature as a product of the universe. As an entangled thought crystal of the noosphere, it tells us there is much more to an idea than a few brans of science empirically validated. Such entanglements suggest the need for necessary attention to both the Sciences and Humanities, because their ideas are so often naturally and necessarily entangled in the mystery of life. As I wrote in 2001, with ideas seemingly along the same vein as Heisenberg implies in the section 4. Languages” above

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<sup>22</sup>Robert Wright, “*Artificial Intelligence and the Noosphere*,” June 29, 2023  
<https://nonzero.substack.com/p/artificial-intelligence-and-the-noosphere>

<sup>23</sup>*Ibid.*

<sup>24</sup><https://Scienceexchange.caltech.edu/topics/quantum-science-explained/entanglement> :  
“:text=Caltech%20Science%20Exchange,Is%20It%20Important%3F

*Without linkages between information, knowledge, and wisdom or between technological change and the flourishing of the individual in non-material ways, modernization might just mean seeing the world abstractly, objectively, and generally quantifiably. Science and economy tend to become their own ends, offering humanity the prospect of life anchored in spiritually dormant societies...<sup>25</sup>*

## ***Epilogue***

A major research project on the Noosphere was completed in 2023 by Clement Vidal. In it he seeks ways to explain what the Noosphere is and what it could do for the world. Having studied the discoveries of Vernadsky and Chardin, he elaborates the “*Living Systems Theory*” to clarify two fundamental meanings: the noosphere as a planetary super organism and the noosphere as a sphere of mind, storing, processing and spreading information. [He] also presents two key aspects to better grasp the concept: the noosphere as a planetary major evolutionary transition and the noosphere as the emergence of something radically new, which might include a planetary consciousness, or a planet seeking to find or contact other noospheres”.<sup>26</sup>

The contribution of his work is the thoroughness of his research on the topic which is encyclopedic in pages of references to publications on the noosphere and its potential for facilitating globalization through the introduction of different entangled systems.

## **Possible Questions**

*What are your views on the relationship between quantum physics and the humanities? What do they have in common? How should they work together?*

*What is reality as revealed by the formal sciences? As revealed by the humanities?*

*Why is entanglement of ideas from each field important? Or is it really important?*

*Can we know what is real?*

*What are your views of artificial intelligence?*

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<sup>25</sup>*Candles in the Dark, op.cit., comment page 184..*

<sup>26</sup> Clément Vidal, *What is the noosphere? Planetary superorganism, major evolutionary transition and emergence*: Vrije Universiteit Brussel [VUB] 13 January 2024. <https://doi.org/10.1002/sres.2997> Vidal is a researcher at Vrije Universiteit Brussel [VUB] *Funding information: Funding for this research was provided by Human Energy, a nonprofit initiative.*