

# The Acropolis

Philosophy for today



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Autumn Edition - Science - Philosophy - Society - Environment and more





## What is The Acropolis?

In ancient Athens the Acropolis, literally meaning the High City, was the place which supported the highest ideals of the people.

The founder of New Acropolis International, Professor George Livraga, chose this name to capture the key objective of philosophy; that we as individuals build a new high city within, that we discover the heights of our own potential, so that we may externally build a new high city, a new and better world, together. The Acropolis magazine is motivated by this objective and aims to share inspiring content, combining all the major endeavours of philosophy, art, science, education and culture.

## About Us

New Acropolis is an international organisation working in the fields of philosophy, culture and volunteering. Our aim is to revive philosophy as a means of renewal and transformation and to offer a holistic education that can develop both our human potential as well as the practical skills needed in order to meet the challenges of today and to create a better society.

For further details please visit: [www.acropolis.ie](http://www.acropolis.ie)





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## Editorial:

### Tribute to Delia Steinberg Guzmán: a great philosopher and humanist has passed away!



**"Every human being who develops his or her inner life, every human being who understands others better, who understands the world better, is undoubtedly a useful person for himself, a person who is useful to others and useful to the universe."**

- Professor Delia Steinberg Guzmán (1943-2023)

It is with great sadness that we have learned of the death of Delia Steinberg Guzmán. She was President of the international organisation New Acropolis from 1991 to 2020, having succeeded its founder Jorge Angel Livraga.

The immense legacy of Delia Steinberg Guzmán, will be one of a Philosopher who made accessible to all, the spirit of a philosophical discipline that not only nourishes the head but also cares for and fulfils the soul, revealing to individuals their authentic nature.

What was extraordinary about Delia Steinberg Guzmán was her tireless ability to act as a bridge between traditional philosophical thought and our modern world, adapting the message in the most coherent and intelligible way. Today, her work and her legacy are enabling her successor (1), in turn, to hold high the torch of spiritual humanism into the next generation.

#### Her life

Professor Delia Steinberg Guzmán (1943-2023) was President of the New Acropolis International Organisation for twenty-nine years. From 1972 to 1991, she was Director of New Acropolis in Spain, during which time the institution's activities extended to more than thirty Spanish cities. From 1975 to 1991 she was coordinator of New Acropolis' activities in Europe. When the founder, Professor Jorge Ángel Livraga Rizzi, died in 1991, she was elected International President of New Acropolis, taking on the management and coordination of the institution's cultural and educational work in the fifty plus countries where it operated.

Her interest in culture and education as tools for personal development led her to promote humanitarian, cultural and philosophical actions throughout her life. Here are some of her most notable actions:

In 1982, with the aim of promoting new musical values, she set up the international piano competition that bears her name, acting as a member of the jury and giving a boost to the artistic careers of young music professionals. The Delia Steinberg International Piano Competition is held every year in Madrid, Spain and welcomes young pianists from all over the world.

She published numerous articles in magazines and newspapers on subjects related to practical philosophy, psychology, ancient civilisations, astrology, etc in her native Spanish language, which many have been translated into French, English, German, Russian, Portuguese and Greek.



In 1972, she founded and edited the Spanish magazine Cuadernos de Cultura, where she published numerous articles promoting the practical application of philosophy to everyday life.

She has written and published over thirty books and manuals, some of which have been translated into English.

(1) Carlos Adelantado Puchal, current international director of New Acropolis since 2020

Alain Impellizzeri  
Director of New Acropolis Ireland

## Leaves are Falling - Autumn is Calling

Over the course of 2023, The Acropolis Magazine will publish four quarterly editions delving into the four essential archetypes of culture as understood in antiquity; those of Beauty, Justice, Wisdom and the Sacred, which can express their form through Art, Politics, Science and Religion.

For this Autumn issue we explore the ideal of Science as the discipline which searches for the True, in its various forms.

All articles in the magazine are contributions by members of New Acropolis. Research and views expressed in each article are those of the individual authors and may not represent the collective views of New Acropolis.

We hope you enjoy!

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Alain Impellizzeri – Director  
Pascale Naveau – Editor  
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Tim Leahy – Contributor



# WHERE IS EVERYONE?

Are we alone in the universe?





**'Two possibilities exist: either we are alone in the universe or we are not. Both are equally terrifying.'**

**- Arthur C. Clarke**

There are many profound questions in science and philosophy that remain unanswered: "What is life?", "What is the meaning of existence?" and "What is consciousness?" are just a few examples. Another big question that remains unanswered by either science or philosophy is whether there is extraterrestrial life in our universe, other than life on Earth. As well as being a subject matter of science fiction for more than a century, this question has been contemplated for millennia. Many ancient Greek and Roman philosophers believed that the earth was the centre of the universe, a way of viewing the cosmos known as the "geocentric" model. Religious beliefs also placed God, or gods, at the centre of things, supporting the geocentric model. Aristotle and Ptolemy were strong supporters of geocentrism, though their writings do not explicitly reference potential life elsewhere in the universe.

"Cosmic pluralism" is the idea that the universe contains many worlds like our own, worlds on which life may exist. Some Greek philosophers supported cosmic pluralism. Panspermia is the hypothesis that life exists throughout the universe, and first came to earth from space in the form of microbes carried by meteors, asteroids or comets. Panspermia was first proposed by the Greek philosopher Anaxagoras (c. 5th C. BCE). Another ancient Greek philosopher, Democritus (5th C. BCE) believed that there were many worlds, some growing, some decaying; some with no sun or moon, others with several. He believed that every world had a beginning and an end and that a world could be destroyed by collision with another world. Greek philosopher Epicurus (4th C. BCE) taught that the universe was infinite, and that there were many other worlds in it. In the Mediaeval period, some Islamic scholars supported cosmic pluralism, though support was tempered by the dominance of the Greek geocentric model, and by theological considerations.

Giordano Bruno, a 16th century Italian Renaissance philosopher was interested in cosmology, the study of the origins and nature of the universe. He believed that the stars that he saw in the night sky were in fact other suns, like our own Sun, with their own planets orbiting them. Further, he proposed that those distant "exoplanets" (as we now call them) might have civilisations living on them.

The 20th century brought many scientific and technological developments, including the space age. The scientific discipline of "astrobiology" was founded. Astrobiology is the study of all aspects of life in the universe, including the mechanisms of life itself and the study of environments that support it. You may have seen plants growing out of tiny cracks in a pavement or a wall and wondered at their resilience, their ability to survive against the odds. Life, once it evolves, is extremely tenacious at survival. Extremophiles -

organisms that thrive in extreme conditions on Earth - showcase the adaptability of life. Microbes living in acidic hot springs, deep-sea hydrothermal vents, and frozen Antarctic landscapes demonstrate that life can flourish in seemingly inhospitable environments. This lends credence to the possibility that life could develop on planets with conditions quite different from Earth's.

The discovery of organic molecules on celestial bodies such as comets and meteorites also adds to the argument for extraterrestrial life. These molecules are the building blocks of life and suggest that the ingredients necessary for life's formation are not unique to Earth. The presence of amino acids, the basic components of proteins, in such environments fuels the imagination regarding the potential for life's emergence elsewhere. Recent discoveries in the field of astrobiology have expanded the range of possible habitats. Subsurface oceans on moons like Europa (a moon of Jupiter) and Enceladus (a moon of Saturn) offer the prospect of environments where life could evolve away from the direct influence of sunlight. These oceans, warmed by tidal forces generated by their parent planets' gravity, could create niches for unique forms of life.

### **Where is everyone?**

If the universe is infinite, and contains countless trillions of stars and planets, shouldn't it be teeming with life? If life could evolve on Earth, then why not on many other planets or their moons? But why haven't we detected or made contact with them? This is called the "Fermi Paradox", coined after Italian-American physicist Enrico Fermi who, in 1950 asked the question "Where is everyone?" - meaning where are all the extraterrestrials. Astronomers have been searching for exoplanets for about 30 years, and so far, have found more than five thousand of them. The assumption is that most, if not all stars in the Milky Way galaxy have one or more planets. Earth lies in the habitable or "Goldilocks" zone of the Sun - not too hot (like Venus) and not too cold (like Mars) - "just right", to quote Goldilocks in "The Three Bears". The significance of the Goldilocks zone is that water can exist in liquid form, essential for biological life as we know it to exist.

The SETI Institute (Search for ExtraTerrestrial Intelligence) was founded in California, USA in 1984. Its mission is to detect signs of extraterrestrial life - specifically intelligent life - in space. The scientists at SETI do this by attempting to detect signals coming from our neighbouring stars in the Milky Way galaxy. Radio telescopes, massive receivers of radio signals, from around the world are used to collect signals. SETI scientists analyse those signals to determine whether they are normal, everyday emissions from space (or from earth), or whether they are that special signal that indicates an intelligent source. No such signal has been detected, so far...

We now have a number of space based telescopes that can detect the chemicals in exoplanet atmospheres.

# Encountering extraterrestrial life would challenge our moral and ethical frameworks. We would need to consider how our values apply to beings with potentially different moral systems.

Exoplanets with primitive lifeforms may exhibit what are known as “bio signatures”. Such signatures could for example include oxygen, carbon dioxide, ammonia or methane. Exoplanets may also exhibit “techno signatures” - detectable evidence of past or present technology. These could include radiation from cities, industrial centres, and space-based satellites. Elements and compounds associated with industrial pollution in the atmosphere could be another signature. Such evidence could be a strong indicator for the presence of a technologically advanced civilisation.

## Impact on Humanity

Contact with an extraterrestrial intelligence could take a number of forms. Finding a technological artefact not from this world would be one. Another would be the detection of a signal containing a message from outer space. A third, and most profound, would be the arrival of an alien species in our solar system. Each of these scenarios has been explored in science-fiction books, movies and television for decades. The 1997 movie “Contact” featured Jodie Foster as a SETI scientist who one day detects a signal from space. That signal is found to contain instructions on how to build a machine to enable contact with an alien civilisation. The movie examines the conflict between scientists who want to build the machine and make contact, and religious zealots who are opposed to it. The 2016 movie “Arrival” describes events surrounding the appearance on earth of twelve spaceships, in disparate locations around the globe. As many countries race to communicate and negotiate with the aliens, the question of who would speak for humanity in such a scenario is examined.

The discovery of extraterrestrial life would reshape our scientific understanding, and would likely lead to a new age of technological and scientific developments in space travel. The discovery would also send ripples through the philosophical landscape. Philosophers would engage in profound debates about the implications of the discovery, as they seek to redefine our philosophical foundations in light of a broader cosmic perspective. It could challenge our perceptions of human identity, our morality, our place in the universe,

and religious and spiritual beliefs. The discovery would challenge the uniqueness of human identity. For centuries, humans have considered themselves as the pinnacle of creation, but the existence of other intelligent beings would undermine this anthropocentric view. We would have to rethink what makes us distinct and special in a universe perhaps teeming with diverse life forms.

Encountering extraterrestrial life would challenge our moral and ethical frameworks. We would need to consider how our values apply to beings with potentially different moral systems. Questions would arise about how to treat extraterrestrial life - whether with empathy and respect, or with fear and caution. This could lead to discussions about the universality of moral principles and our responsibilities as custodians of life in the universe.

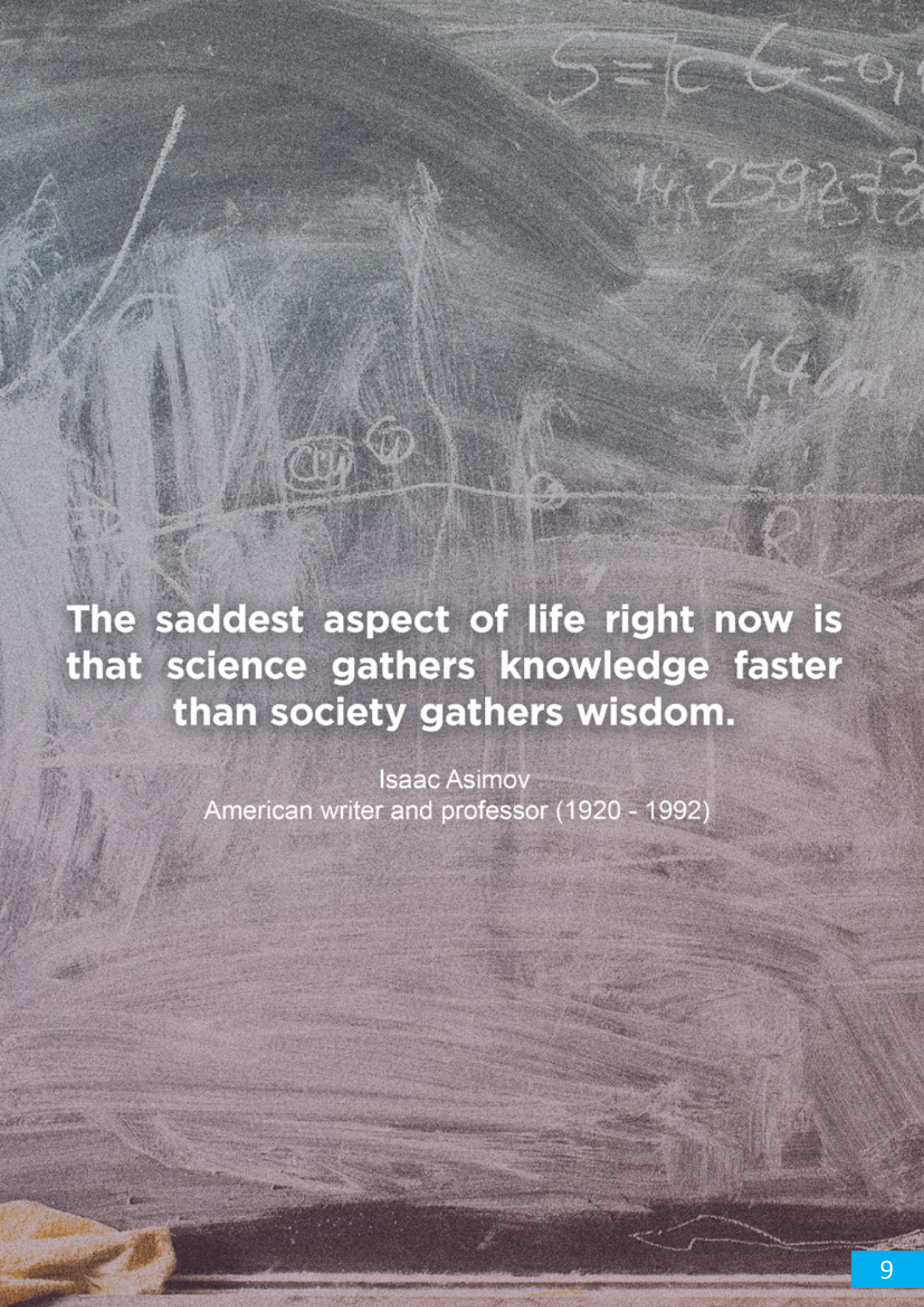
The discovery might force us to reconsider our place in the cosmos. Humanity's view of our perceived central role might be replaced with a humbler view of our cosmic significance. Our sense of isolation in the vastness of space would likely be diminished, as we realise that we are part of a broader interstellar community.

Religious dogma would likely be challenged in the light of the existence of other intelligent beings. Many religious belief systems portray humans as unique and central to creation. Philosophical discussions would revolve around how different belief systems handle the theological implications of extraterrestrial life, perhaps leading to reinterpretation and adaptation of those beliefs.

So, are we alone? Mankind has considered this question for thousands of years, but it remains unanswered. As we continue to invest in scientific research, technological development and space exploration, we will get closer to unravelling one of humanity's most profound mysteries. Answering that question has the potential to reshape our understanding of the universe and our place within it, opening up new frontiers of knowledge and exploration.

Tim Leahy





**The saddest aspect of life right now is  
that science gathers knowledge faster  
than society gathers wisdom.**

Isaac Asimov  
American writer and professor (1920 - 1992)



# Knowing your *left* from your *right*

Scientific Investigation into Hemisphere Differences

"The brain needs two streams of consciousness, one in each hemisphere, but they are like two branches of a stream that divide round an island and then reunite."

Iain McGilchrist, *The Matter with Things*

One of the many mysteries in science is the origin of consciousness. What is it, where does it come from and are there different forms of consciousness? Within the human being, the brain may emit or transmit consciousness but how each hemisphere is involved in everything differs. There is an old paradigm of the left and right brain, where the left brain is logical, deals with facts, maths, science and knowledge and the right brain deals with feeling, images, philosophy, religion and believing. This view of the brain is outdated and due to the pioneering work of Iain McGilchrist, a neuroscientist, philosopher and psychiatrist we now have a new hypothesis on left and right hemispheres. In his book, *The Master and His Emissary*, McGilchrist has shed new light on hemisphere differences in the brain. He explains that each hemisphere is involved in everything but how each hemisphere is involved is different. In this article, we will explore some of the findings explained in *The Master and His Emissary*, findings discovered through neuroscience, neuropsychology, philosophy and other fields.

One of the first puzzles discovered with the brain is why there are two hemispheres and not one sphere! The brain supposedly gains its power through the number of neural connections but by dividing the brain down the "middle" it has limited the number of connections. McGilchrist proposes a reason nature has done this. It is due to the need to have two forms of simultaneous attention. The left hemisphere has a narrow focused attention for the purpose of controlling or utilising the world around it while the right hemisphere has a broad open vigilant attention to see the big picture. Take the example of a rabbit, it has to focus on searching for its food but at the same time it needs to have a vigilant and open attention so as not to be eaten. The human brain functions in the same manner, each hemisphere attends to the world around it in a different way. The left hemisphere has a focused attention, allowing it to make use of objects, whereas the right hemisphere has an open, wider attention to things around it. As a result, the right hemisphere perceives things as an integrated whole within its context, while the left hemisphere tends to abstract objects from their context and breaks them into components, subsequently reconstructing a 'whole' in a markedly distinct manner. A good analogy is that

the left hemisphere is like a microscope and the right hemisphere is like a telescope.

These two forms of attention lead to consequences in how one perceives and conceives the world. The left hemisphere's narrow form of attention fragments the world, focusing on one thing to see the detail but at the expense of seeing the whole. It analyses things but in the process loses the sense of interconnectivity with the whole, takes things out of context and deals with them in an isolated static way. The left hemisphere picture of



life is pixelated. The right hemisphere takes all those pixels and forms an interconnected whole that is able to give context and meaning to the whole pixelated picture, to see the why of things whereas the left hemisphere is more focused on the how.

As the left hemisphere fragments elements, it sees them in a discrete way, it tends to put things together in a mechanistic manner, like pieces of a jigsaw puzzle that are static and lack movement. The analogy of



the left hemisphere as a computer is very apt. The computer sees life in a black and white fashion, has a logic of yes or no, it is very good at analysing and creating processes or procedures, but the computer is not able to see the life in everything, it is not able to read between the lines or to empathise, to put itself in other people's shoes. The drawback is that should an issue arise in the right hemisphere or if the left hemisphere takes excessive control, our connection with reality diminishes, and we exist within a virtual realm constructed of representations or maps that are only approximations of life, and the left hemisphere latches onto the map it has constructed which tends to be inanimate and reductionist. The two hemispheres need to work together as an integrated unity.

The right hemisphere and the left hemisphere as discussed need to work together as a whole but it is the right hemisphere that needs to lead, to be in charge while the left hemisphere is at the service of the right hemisphere. This is the reason why the title of McGilchrist's book is called *"The Master and his Emissary"*, the right hemisphere should be the master and the left hemisphere should be the emissary. The right hemisphere knows the why, gives meaning to things and the left hemisphere executes the instructions given to it. What happens when the left hemisphere becomes the master and the right hemisphere takes a more passive role? If we take what we have learned so far about the hemispheres, it is a world that is more

**"At the moment [Education] is about shovelling information into people, not training them to critical thinking, to think imaginatively...education is drawing our faculties within people, it is not shovelling facts into people, that is the reverse of education"**

focused on things, on utility, less empathetic, sees life and nature more in a reductionist and mechanistic manner. From this description it is clear that our society today is more in the grip of the left hemisphere and our culture has a right hemisphere deficit.

What can be done to address this imbalance? McGilchrist lists a couple of ways that can tackle this divergence. One is to become aware of the nature of hemispheres' differences in our lives and the more substantial element is to change our approach to education. McGilchrist continues: "At the moment [Education] is about shovelling information into



Illustrations - Vladimir Ivankin

people, not training them to critical thinking, to think imaginatively...education is drawing our faculties within people, it is not shovelling facts into people, that is the reverse of education". Nelson Mandela said that "Education is the most powerful weapon you can use to change the world", a sentiment shared by Plato, Confucius and other ancient philosophers. The philosopher Fernand Schwarz in his book *"Concentration & Inner Awakening"*, published by New Acropolis, gives a guide on how to educate the mind. One of the first exercises is to get to know our mind, which at a superficial level looks calm but observing it more closely it becomes clear that it never rests. This constant mental chatter leads to distraction and lack of focus which has a harmful effect. There are other exercises in the book from the Tibetan Buddhist tradition that alleviate the dissipation of the mind and explains the journey of consciousness to gradually master oneself.

In conclusion, the work of Iain McGilchrist teaches us about the importance of recognizing and embracing the unique functions of both hemispheres of the brain and how their interplay influences our perception of reality, our actions, and the course of human history and culture. Achieving a balance and integration of both hemispheric functions is seen as essential for a more complete and meaningful individual and collective life. His work has rediscovered the different nature of the hemispheres as explained in many myths across the world and different schools of philosophy as affirmed by McGilchrist himself.

Michael Ward



# The Age Old Cure

Historical perspective on health





Have you ever wondered how people in different times perceived the concept of health? It's a fascinating journey that takes us through history, exploring how our understanding of health and disease has evolved over centuries. From ancient civilizations to the modern era, let's delve into the changing perspectives on health and disease and consider where medicine might be headed in the future.

### **Ancient Times: The Mystical Connection**

In the distant past, people believed that health and disease were closely tied to mystical forces. Spirits, spells, and gods were thought to be responsible for illnesses. The idea was that spirits could invade the body, causing diseases as a form of punishment for wrongdoing. Tribes relied on healers who possessed supernatural abilities to diagnose and treat illnesses through rituals, amulets, and incantations.

### **First civilizations: Harmony with Nature**

As civilizations like Mesopotamia and Egypt emerged, the view of health shifted to include a balance between nature and well-being. Philosophy and medicine were intimately linked to each other. Many different cultures, such as Chinese, Tibetan, Indian, American, and Greek shared similarities in perception of sickness and health. For example, ancient Greeks and Romans, notably Hippocrates and Galen, considered the body's harmony with nature as essential for well-being. Health was characterized by equilibrium in the body, while disease was seen as an imbalance that needed restoration. Those thinkers emphasized the importance of diet, exercise, and a balanced lifestyle for maintaining good health. Primary intervention was correcting the diet, followed by medication and lastly by surgery – quite opposite to what is sometimes considered today.

“...I will use those dietary regimens which will benefit my patients according to my greatest ability and judgment, and I will do no harm or injustice to them...” - extract from The Hippocratic Oath.

Much attention was given to public health and the prevention of diseases, while opportunities for individual treatment were still limited at the time. Those public measures included hygiene, sanitation, clean water supply and sewage, and waste disposal.

### **Middle Ages: The Influence of Religion**

During the Middle Ages, religious beliefs strongly influenced perceptions of health. In Europe Christianity played a significant role in shaping these views. Health was considered as the outcome of a good relationship with God, while illness was often seen as a test from God or a result of sins. The healing process combined faith, prayer, and herbal remedies, which were directed to healing both soul and body. Many medical practices were inherited from the Greeks and the Romans. However, the establishment of hospitals marked a significant step in healthcare. Most of the time everyone

was welcome to the hospital, reflecting the words from the Bible: "I was sick, and you cared for me" (Matthew 25: 26), although diseases like leprosy led to social isolation due to religious beliefs.

### **Renaissance: Scientific Awakening**

The Renaissance period brought a shift toward scientific exploration. The emphasis moved from divine intervention to the study of the human body through anatomy and observation as well as alchemical making.

Paracelsus introduced the idea that diseases had both physical and spiritual origins. "Medicine is not only a science; it is also an art. It does not consist of compounding pills and plasters; it deals with the very processes of life, which must be understood before they may be guided." – Paracelsus.

**Philosophy and medicine were intimately linked to each other. Many different cultures, such as Chinese, Tibetan, Indian, American, and Greek shared similarities in perception of sickness and health.**

Descartes saw the human body as a perfect clockwork mechanism. Studying it was necessary for "repairing" or healing. Since then, the mechanistic view on physiology and health has been widely accepted, also in modern medicine. While public health was still considered essential, individualism also gained traction, with personal well-being becoming a priority. Many ethical aspects of medicine started to be in focus, including euthanasia and abortion. "If a physician presumes to take into consideration in his work whether life has value or not, the consequences are boundless, and the physician becomes the most dangerous man in the state." - Christoph Wilhelm Hufeland.

### **Modern Times: Scientific Discoveries**

With the advent of the modern era, scientific progress reshaped how we approach health. Medicine gradually started to focus more on curing diseases rather than preserving health, aligning more with the natural sciences than natural philosophy. The patient became more and more an object. Experimentation, statistics, and causal thinking became the basis for medical research, solidifying the Cartesian view on health. The discovery of germ theory provided a breakthrough in understanding how infections lead to diseases. External



Hippocrates and Galen from Anagni Italy Photo: Nina Aldin Thune

infectious agents became the dominant explanation of the disease, and their eradication – the main clinical response. Discovery of antimicrobials and vaccination revolutionized medicine and helped to almost eradicate those diseases that used to cause global epidemics centuries ago.

Individual and social circumstances were also acknowledged to contribute towards health and disease. Rudolf Virchow's definition of health focused on the body's ability to regulate itself, and disease appeared as a result of "insufficiency of regulatory mechanisms". The difference between disease as the objective state and illness as subjective and social state was in focus as well as differentiating "bad" and "ill" in the case of crimes. Dietetics started to lose its essential role in maintaining health and serve only the purpose of providing sufficient nutrients.

### Today: A Holistic Outlook

In contemporary times, the understanding of health has evolved to encompass multiple aspects in addition to only physiology. The World Health Organization redefined health as a state of complete physical, mental, and social well-being, rather than simply the absence of disease. This holistic approach acknowledges the interconnectedness of various aspects of our lives. While a scientific mechanistic view on health is still largely accepted, there are trends for integration and personalisation appearing in medicine. Multiple aspects, considered important for health by ancient civilizations and neglected in the modern era, reemerge nowadays,

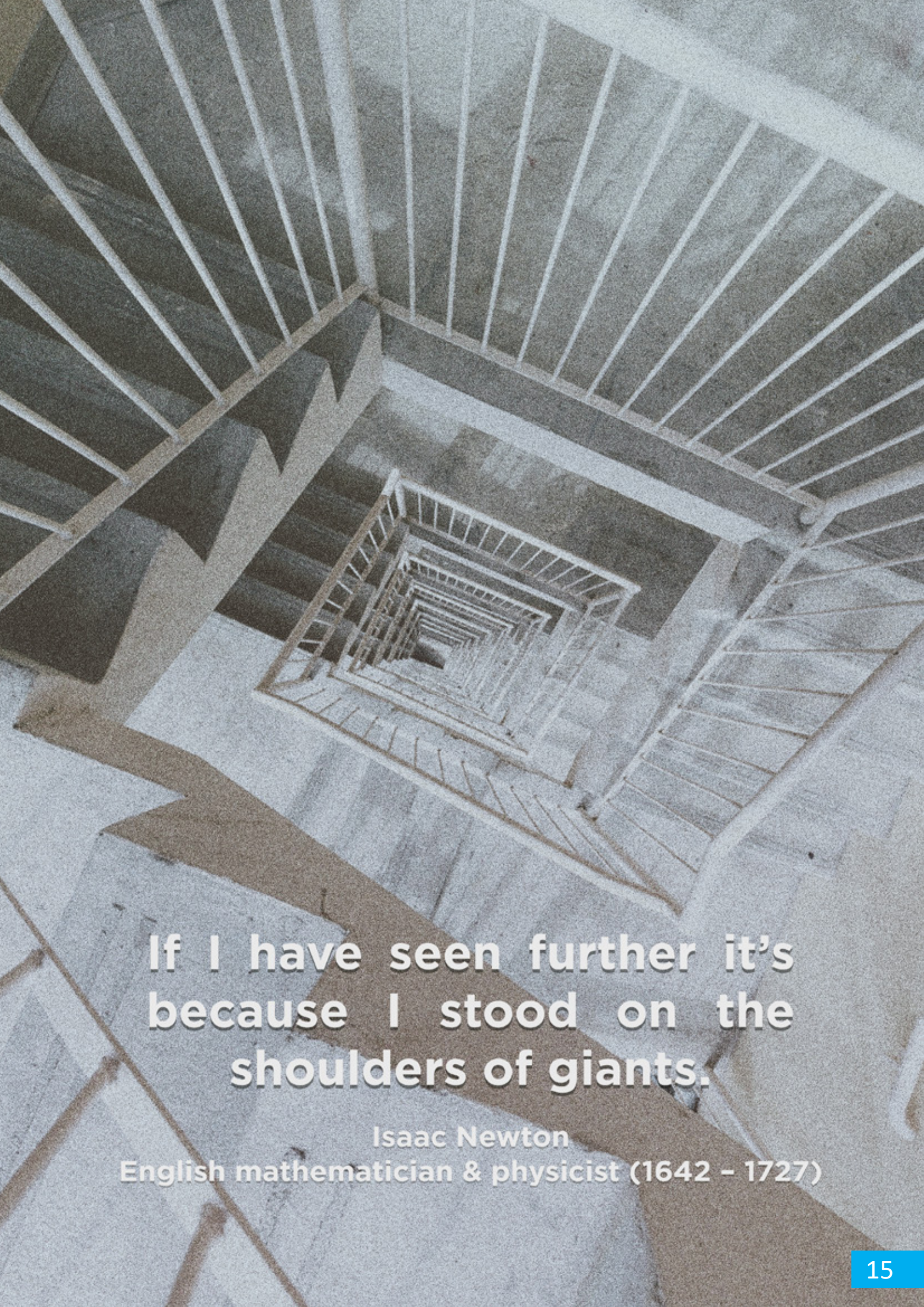
supported by recent scientific discoveries. Those include a healthy diet, physical exercise, and mental well-being. Once again maintaining health appears to be essential in addition to treatment of already established diseases.

### In Conclusion

The history of the concept of health is a journey of transformation, influenced by cultural beliefs, scientific revelations, and philosophical ideas. From mystical origins to evidence-based medicine, our understanding of health has come a long way. Nevertheless, at all times it reflected our vision of how the Universe works and what is our place in this world. Starting from the point where health was considered as a unity and harmony with nature, through the period of purely mechanistic view on well-being, we now turn back to the holistic perspective. As medicine advances, the fusion of ancient and timeless wisdom and modern science holds the promise of a more comprehensive approach to health. By embracing a holistic perspective that considers physical, mental, emotional, and social well-being, we can shape a healthier future for ourselves and generations to come.

Maxim Nosenko





**If I have seen further it's  
because I stood on the  
shoulders of giants.**

Isaac Newton  
English mathematician & physicist (1642 – 1727)





Photo by Tara Winstead

# AI and I

## The Challenge of Coexisting with AI

AI is not a new phenomenon. Humankind, since its beginnings, has tried to create machines and automata, either to place them at our service or to extend our human capabilities. Many of these stories reflect the admiration for these creations and, at the same time, the fear of losing control over these advanced technologies. We might recall some Greek myths, such as the creation of Talos, the bronze giant killed by Medea, or the ivory statue of Galatea brought to life by Pygmalion. In the Middle Ages there were other legends about the creation of living beings, such as the enigmatic Baphomet of the Templars or the homunculi of Paracelsus. To this, we can add the Jewish traditions about the creation of the Golem, a clay being, who was animated by means of a magic ritual. In modern times we have the monstrous creation of Dr. Victor Frankenstein, in Mary Shelley's novel, or the wooden boy Pinocchio, created by the carpenter Gepetto in Carlo Collodi's novel. In both cases, a call is made to the responsibility of science and human action to stay within ethical guidelines, a fundamental element as we shall see later on.

Other automatons – a word coined by the Greeks – were also invented: artifices or devices that functioned like the mechanism of a clock, appearing to behave autonomously or intelligently. The first “robots” – a term derived from the Czech word for forced labour – emerged in the 20th century. Interestingly, in his Politics [1], Aristotle advocated for the creation of automatons to perform mechanical tasks, as it could lead to the elimination of slavery by rendering it unnecessary.

The development of artificial intelligence (AI) began in the 1950s. Since then, it has aimed to mimic human intelligence, first using algorithms or logical instructions to achieve a specific goal, followed by expert systems that relied on accepted knowledge. As machine learning systems were introduced, the dependence on a limited set of knowledge was eliminated. Neural networks were then developed to handle complex data and non-linear relationships, while artificial vision enabled pattern recognition to imitate human interactions with the environment. Finally, natural language processing was introduced to allow interaction with human beings. Though still not highly advanced, the rapid progress of this technology never ceases to amaze us. It is now possible to create voices, photos, and even videos that simulate human appearance, and in the near future, we may lose the ability to differentiate between fact and AI-generated fiction.

Some of the inventions we've discussed have provoked fear, as they possess the potential to be more powerful than us, replace us, or be exploited to dominate the world. In addition, some machines' close resemblance to humans can be unsettling. These deviations pose a challenge for coexisting with machines.

### Ethical issues

We face a number of ethical concerns related to AI, such as:

**Algorithmic discrimination** - This issue arises due to AI systems being trained on data that may contain cultural and social biases, resulting in discrimination



and injustice in domains such as employment, housing, and loans. Numerous instances of algorithmic bias have been documented. [2]

**Lack of transparency in algorithms** - This issue arises because the decisions made by many AI algorithms are opaque and difficult to understand, making it challenging to audit their use. This is particularly concerning in domains such as healthcare, where AI decisions can have significant implications for individuals' health and well-being.

**Who is responsible when an AI algorithm makes a bad decision?** - Is it the programmer, the company that implemented it, or the algorithm itself? If we define "taking responsibility" as having a heightened sense of duty or commitment to established norms and assuming the positive or negative consequences of our actions, it becomes apparent that there is a nexus between responsibility and consciousness, so again we have a problem with the actions of AI.

**Should autonomous weapons, e.g. drones, be permitted to carry out police or military operations?** - Allowing this could lead to the escalation of conflicts and the loss of human control over the use of military force. The fantasy tale of the Terminator series could become a reality if a "Skynet"-like system capable of independently controlling the U.S. military arsenal would exist.

It is critical to ensure that human beings retain control and responsibility for decisions that impact their welfare or lives in critical areas such as medicine, social justice, national security, and defence. It is not advisable to grant AI absolute control over its actions.

AI is penetrating domains where we believed ourselves unsurpassable. We thought we are the only rational animals. Across many cultures and traditions, the mind has been the defining feature that differentiates us from other animals. However, machines have progressively emulated and surpassed human abilities, and it is no longer just strength or physical capabilities. Initially, it was mathematical calculations, and today, it is common knowledge that a basic calculator or our smartphones can complete a ten-digit division faster than us. Next, memory: a small chip can now store more books than the famous Library of Alexandria. AI has also demonstrated remarkable pattern recognition abilities, which enable it to quickly recognize similarities and

differences, for example, for better spatial orientation when handling a map. Recently, AI has achieved breakthroughs in natural language processing, demonstrating the ability to translate, summarise, or write texts more proficiently than humans. In addition, we are discovering the power of AI's artistic capabilities in image creation, music, and poetry by learning from previous styles and combining elements of their training to generate novel outputs, just like we do.

### Human Intelligence

Critics of AI say that its use prevents us from developing some human mental capacities, such as reading, reflection, memory, writing, etc. We must admit that the mind is a fundamental element in the development of the human being. In esoteric traditions it is suggested that the "divine spark" or mental spark is essential to human nature, and that the task of the human being is to discover and cultivate this talent through spiritual practice and the search for truth. But machines have no such concepts of purpose or transcendence. If we lose our mental aptitudes, we could become "less human".

We have long considered ourselves to be the only intelligent beings, as animals, although they may exhibit intelligent behaviour, are not aware of it. This is the fundamental difference between us and other creatures. While AI machines may be highly intelligent or even surpass us in some areas, they lack self-awareness and the ability to make independent decisions. They are tools designed to help humans achieve specific objectives, but they do not possess an understanding of

themselves or the world around them. AI is not a replacement for humans, but rather an extension of our abilities through highly advanced programming. It is not a form of human knowledge, as the human mind is not a computer.

People's amazement by the intelligent capabilities of AI is mostly due to the focus on abstraction and reasoning, while ignoring its ability to replicate other human aspects such as emotional or social intelligence. In this sense, it could be argued that machines are not truly intelligent if we define intelligence as the ability to choose between different options or situations, understand them, and synthesise information to make the best decision. Human beings possess creativity, imagination, empathy, critical thinking, curiosity, and passion, elements that AI does not possess. AI processes information through a set of logical and mathematical instructions. It is deterministic and cannot make autonomous or creative decisions beyond

In his Politics, Aristotle advocated for the creation of automatons to perform mechanical tasks, as it could lead to the elimination of slavery by rendering it unnecessary.

what it was programmed to. Humans learn through subjective experiences and exploration, but AI only uses mathematical and statistical patterns. Furthermore, machines have no intentions or purposes; they can only operate based on instructions given to them. They do not have goals or desires like human beings.

The misuse of AI in society can have negative consequences. For example, in the case of Cambridge Analytica and Facebook, AI was used to manipulate the outcome of elections and referendums. Additionally, certain AI-powered search engines have become a “truth machine,” influencing the way people perceive and understand information. The implementation of China’s Social Credit System is also concerning. This AI system evaluates and monitors citizens’ and businesses’ behaviour in various aspects of daily life, including finance, education, security, health, and morality, and awards points accordingly. These points can be used to obtain benefits, such as access to public services, loans, employment, and travel.

And yet, despite our misgivings, we must acknowledge that AI’s objectivity, ability to process vast amounts of data, and consider numerous factors in decision making could greatly assist in organising society. AI systems, with their superior computational power, rationality, and lack of subjectivity and prejudice, could potentially be fairer than humans and even participate in governing our society. They could also lead to safer transportation with fewer accidents than human drivers.

Moreover, because they are always available and can communicate with us, perhaps they could be our companions, at least for the hundreds of millions of elderly people who live in solitude in this dehumanised world. This is already happening in Japan, for example. Curiously, the excessive technologization of society has turned us into more isolated, more solitary beings, and yet the remedy could be precisely to implement more technology.

In conclusion, we need a “friendly AI [4]” which considers the long-term consequences of AI actions and decisions. The goal would be to create systems that are not only efficient, but also safe and beneficial to society. To this end, we need to design them with ethical values and to be able to learn and adapt as they are used. And in addition, we should urge governments to collaborate with the scientific community on legislation that protects individual rights and sets criminal limits on the misuse of AI. This will require companies to sit down with institutions and governments, psychologists, philosophers, and human rights organisations to ensure that all aspects of this technology have been considered.

Juan Carlos del Rio

\*Article has been edited by magazine team for translation purposes

[1] “For if every instrument could accomplish its own work, obeying or anticipating the will of others, like the statues of Daedalus, or the tripods of Hephaestus, which, says the poet, “of their own accord entered the assembly of the Gods;” if, in like manner, the shuttle would weave and the plectrum touch the lyre without a hand to guide them, chief workmen would not want servants, nor masters slaves.” Politics, Ch. II “On Slavery.”

[2] In books with such clear titles as *Weapons of Mathematical Destruction: How Big Data Increases Inequality and Threatens Democracy*, by Cathy O’Neil; *Algorithms of Oppression: How Search Engines Reinforce Racism*, by Safiya Umoja Noble; or *Data vs Democracy: How Big Data algorithms shape our opinions and alter the course of history*, by Kris Shaffer.

[3] Other interesting books are *Google and the Myth of Universal Knowledge*, by Jean-Noël Jeanneney, or *Googled: The End of the World as We Knew it*, by Ken Auletta.

[4] We use the term coined by Eliezer Yudkowsky. You can read about it at <https://www.kurzweilai.net/what-is-friendly-ai>





**The greatest enemy of  
knowledge is not ignorance,  
it is the illusion of knowledge.**

**Stephen Hawking**  
English theoretical physicist and cosmologist  
(1942 - 2018)



# Cause and Effect

The Relationship of Science and Philosophy



Socrates (Wikimedia Commons)



Science and philosophy are two fields of human investigation with a long and rich history of interaction. Both aim to explore the nature of reality and the implications of human actions. However, the relationship between science and philosophy is not always harmonious, as they often differ in their methods, assumptions, and conclusions. In this article, I will explore some of the main aspects of this connection, and how they have evolved over time.

The first question when considering this bond is: what are philosophy and science? This is not an easy question to answer, as there is no single definition or criterion able to capture the diversity and complexity of philosophical and scientific practices.

Philosophy was a discipline that included science, anatomy, astronomy, and other fields of inquiry until the modern era, when these subjects gradually became distinct and specialized. The exact timing and causes of this separation are complex and varied, but some factors that contributed to science and philosophy as distinctive disciplines were the development of modern instruments for scientific investigations (e.g. telescope. Microscope etc). the rise of empiricism as the dominant approach to scientific knowledge and the general diversification of all scientific fields.

Moreover, another relevant aspect to consider when defining philosophy are the key concepts that distinguish philosophy in the classical view and philosophy as an academic discipline.

- The purpose of philosophy: In the classical view, is a way of life, a pursuit of wisdom and happiness, and a guide for moral and political action. Philosophy is not just a theoretical inquiry, but a practical activity that aims to transform oneself and one's society. In the academic view, philosophy is a scholarly discipline that investigates the fundamental nature of reality, knowledge, and values. Philosophy is mainly concerned with developing arguments, theories, and concepts that can address various philosophical problems and questions.

- The method of philosophy: In the classical view, philosophy is based on dialogue, dialectic, and personal experience. Philosophy is not a fixed doctrine, but a dynamic process of questioning, examining, and testing one's beliefs and assumptions. Philosophy relies on rational intuition, common sense, and ethical judgement. In the academic view, philosophy is based on analysis, logic, and evidence. Philosophy is not a subjective opinion, but an objective inquiry that follows the rules of reasoning and argumentation. Philosophy relies on empirical observation, scientific methods, and formal systems.

- The content of philosophy: In the classical view, philosophy is focused on the big questions of life, such as what the meaning of existence is, what is the good life, what is justice, and what is the best form of government. Philosophy is also interested in exploring

the nature of the human soul, the role of emotions, and the sources of happiness. In the academic view, philosophy is divided into various branches and subfields, such as metaphysics, epistemology, ethics, logic, aesthetics, and philosophy of science. Philosophy is also interested in examining the foundations of other disciplines, such as mathematics, physics, psychology, and linguistics.

Philosophy, in sum, since its beginnings has incorporated two meanings, which throughout history, and for various reasons, have tended to be separated or understood as a whole: a way of living and a way of knowing, or understanding Nature, in its visible and invisible elements. As a way, a methodology for understanding Nature, the human being and the Mind, Philosophy can be divided into various branches or subfields:

**Metaphysics:** The study of the basic principles of reality, including abstract concepts such as existence, causation, identity, time, and space etc.

**Epistemology:** The study of the sources, limits, and justification of knowledge, such as perception, memory, reason, testimony, etc.

**Ethics:** The study of the values and criteria of conduct, such as morality, justice, virtue, duty, etc.

**Logic:** The study of the rules and methods of valid thinking and argumentation, such as deduction, induction, abduction, etc.

**Aesthetics:** The study of the nature and value of art and beauty, such as taste, judgment, expression, etc. These branches are not mutually exclusive or exhaustive, as there may be other aspects or topics that are relevant or important for philosophy. Moreover, these categories are not always clearly distinguished or separated by philosophy, as there may be connections, interactions, or overlaps between them.

**Science** is defined as the systematic and objective study of the natural and physical world through observation, experimentation, and reasoning. This definition implies that science involves a process of inquiry that aims to discover and explain facts, laws, and theories about reality. Science also requires a method of validation that can test and verify the results of inquiry. Science is not based on personal opinions, beliefs, or preferences, but on empirical evidence and logical arguments. As examples of science we have physics, chemistry, biology, astronomy, psychology, and sociology: they focus on specific aspects or levels of reality, with different and specific concepts, methods, and applications that contribute to the advancement of human knowledge and technology.

The features that are typically associated with science are:

**Empiricism:** observation and experimentation are the primary sources of data and evidence in science. The aim is to test hypotheses and theories against the

actual facts, and to revise or reject them if they are contradicted by the results.

**Rationality:** logic and mathematics are the key tools of reasoning and analysis. Science aims to construct coherent and consistent explanations or predictions based on the available evidence, and to avoid logical fallacies and contradictions.

**Objectivity:** methods and conclusions have to be impartial and unbiased. Science aims to eliminate personal preferences, prejudices, and emotions from influencing its results, and to subject its claims to peer review and criticism.

**Progress:** expansion and improvement of knowledge and understanding of the natural world are crucial objectives. Science aims to discover new facts, laws, and principles, and to address problems and challenges that arise from its inquiries.

These features are not exclusive or exhaustive, as there may be other aspects that are relevant or important for science. Moreover, these features are not always perfectly realised or fulfilled by science, as there may be limitations, difficulties, or controversies that affect its practice. Nevertheless, these criteria can serve as a useful guide for identifying and evaluating scientific research.

The relationship between science and philosophy is complex and dynamic, as they both influence and challenge each other in various ways. Some of the main aspects of this relationship are:

**Foundation:** Philosophy provides the conceptual framework and presuppositions for science. Philosophy defines and clarifies the basic concepts and terms that science uses, such as causation, law, theory, evidence, etc.

**Criticism:** Philosophy challenges the assumptions and implications of science. Philosophy questions the metaphysical commitments and consequences of scientific theories, such as realism, determinism, reductionism, etc. Philosophy also assesses the ethical issues and dilemmas that arise from scientific discoveries, such as responsibility, risk, benefit, etc.

**Inspiration:** Science provides the empirical information for philosophy. Science reveals new facts and phenomena about the natural world that stimulate philosophical curiosity and inquiry. Science also offers new models and analogies for philosophical reasoning and explanation that enrich philosophical imagination and creativity.

**Collaboration:** Science and philosophy cooperate and complement each other in various ways. Science and philosophy share common interests and goals in understanding the nature of reality, expanding knowledge, and exploring values. Science and philosophy also benefit from each other's insights and

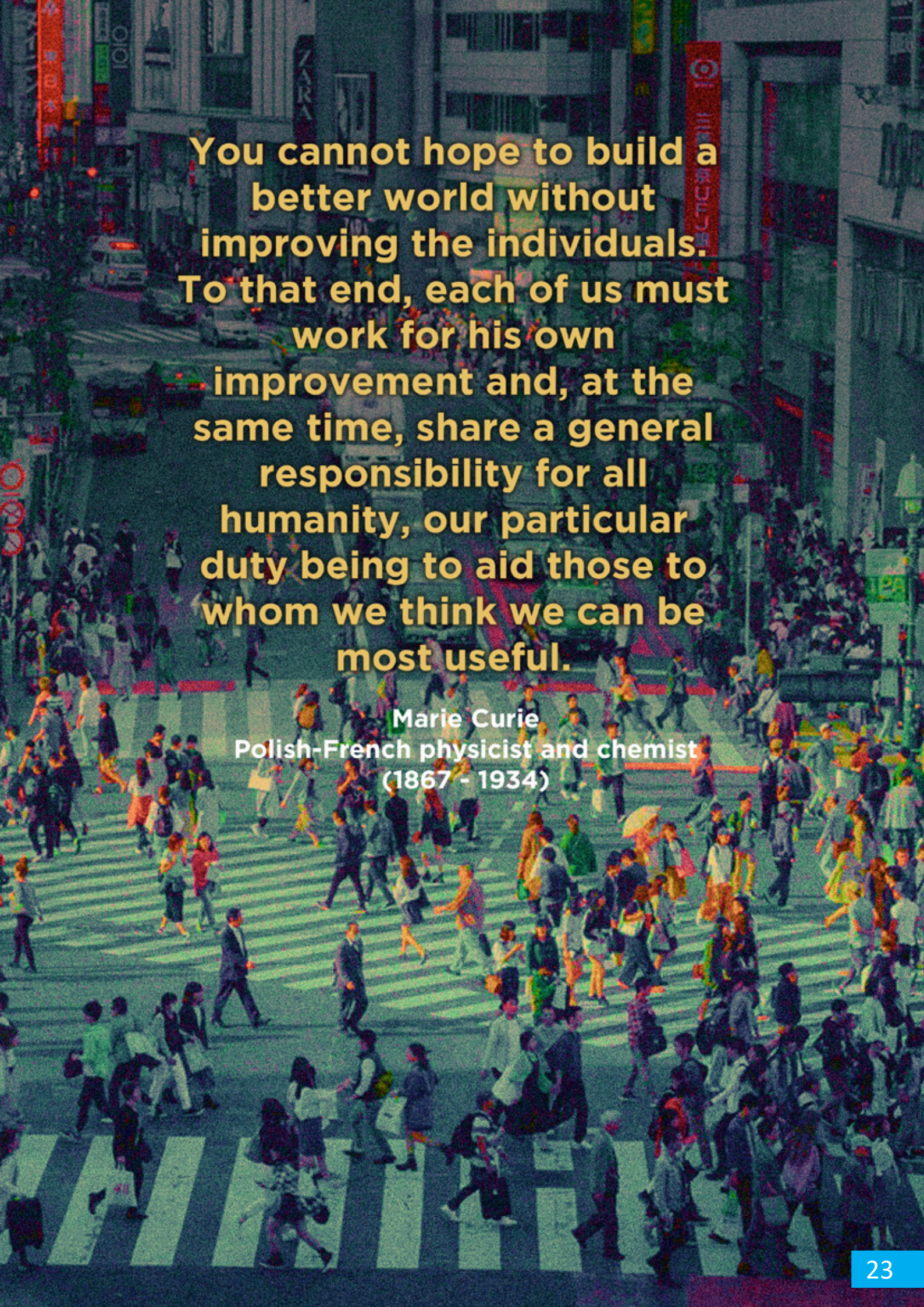
perspectives in resolving problems and challenges that require interdisciplinary approaches.

The history of science and philosophy, especially in modern times, is marked by periods of harmony and conflict, convergence and divergence, integration, and separation. The current state of this relationship is characterised by both continuity and change, as science and philosophy continue to interact and influence each other in new and diverse ways.

Science can influence living a philosophical life by inspiring curiosity and wonder about the natural world and its mysteries, leading to a philosophical attitude of inquiry and exploration. The tools of science can support the philosophical research of truth and meaning by providing empirical evidence and logical arguments for or against various philosophical claims and theories, leading to a philosophical attitude of evaluation and justification. The general attitude of the scientist of challenging the status quo leads to questioning existing beliefs and assumptions about reality and ourselves, leading to a philosophical attitude of reflection and revision. Through confrontation with the boundaries of nature and the opportunity of overcoming them, science offers practical solutions and ethical guidance for various problems and dilemmas, leading to a philosophical attitude of integrity and responsibility. In conclusion, science and philosophy are two fields of human inquiry that have a complex relationship. Both aim to understand the nature of reality, knowledge, and implications of human actions, but they differ in their methods, assumptions, and conclusions. Their relationship is marked by various aspects, such as foundation, criticism, inspiration, and collaboration. The relationship between science and philosophy is also dynamic and evolving, as it changes over time. Science and philosophy are both valuable and important for human culture and civilization, as they contribute to the advancement of knowledge and wisdom.

Marta Terrile



A high-angle, wide shot of a very busy city street, likely in Japan, showing a large crowd of pedestrians crossing a wide zebra crossing. The street is lined with tall buildings, some with vertical signs, and the scene is filled with the movement of many people in various directions. The text is overlaid on the upper half of the image.

**You cannot hope to build a  
better world without  
improving the individuals.  
To that end, each of us must  
work for his own  
improvement and, at the  
same time, share a general  
responsibility for all  
humanity, our particular  
duty being to aid those to  
whom we think we can be  
most useful.**

**Marie Curie**  
Polish-French physicist and chemist  
(1867 - 1934)



# DIGGING DEEP

## The Science of Soil

While we live on the earth, on its soil, how much do we know about it? How do we care for it?

A very brief look into the nature of soil, its history and composition can help us to better understand its role and impact in nature and therefore to gain a better sense of how our behaviour, our choices can impact its health and therefore the health of planet Earth and its ecosystem.

### An insight in the formation of soil

According to the Catholic bible, God created the earth around 4000 to 5500 years ago. Different views about the beginning of life on earth can be found in many different traditions, often talking of the passage from chaos and darkness to light and order. They place this beginning at various moments in time.

Today's science refers to the big bang theory which was first written about in a paper in 1931 by George Lemaître, a Belgian cosmologist and a Catholic priest. The big bang was the moment estimated to have taken place some 13.8 billion years ago, when the universe formed after the explosion of a tiny dense fireball.

The earth is considered to be 4.5 billion years old. However, soil has not been around for such a long time. In geological terms, it is considered to have appeared around 450 million years ago. The earth's conditions were harsh with frequent and massive meteor impacts. When the meteor bombardments subsided, 3.8 billion years ago, liquid water started forming the basis of future soils by eroding the planet's rocky crust and breaking down the minerals that would later make the soil.

Microbial mats developed, producing large volumes of organic matter, using the energy of the sun. This gave the first soil on earth: organic matter mixed with minerals from eroding rocks. However, this soil could not support plant growth due to its poor water retention.

Moving forward in time, to approximately 460 million years ago, evidence suggests that rootless plants, mosses, liverworts began inhabiting the earth. These plants may have played a key role in decreasing global temperatures by removing carbon dioxide and storing it in both living and dead biomass. This cooling of the earth's temperature led to widespread glaciation.

Then around 410 million years ago the emergence of miniscule terrestrial invertebrates had a considerable

impact on soils. When they burrow and eat, they mix organic matter such as decaying plants, fungi and animals with the broken down rock, thus contributing to the formation of many of today's soils.

In spite of all this, it is not until 65 million years ago that we see the emergence of grassland soils.

Soil organisms (which live in the soil) keep the soil and the earth healthy. Hence the soil is not only living, but also growing, moving, ever changing. It needs air and water to stay alive.

A healthy living soil provides for our daily needs: food, trees, medicine, ink, paper... It supports all living activities: eating, travel, housing, livestock...

### The structure of soil:

When digging down into soil, we can see various layers called Horizons:

- O Horizon: the top layer, plant litter which decomposes in nutrients to enrich the soil.
- A Horizon: a living layer, known as top soil, where fungi and bacteria live, where plants grow best. It is typically 8 to 20 cm deep.
- B Horizon: subsoil
- C Horizon: has less living organisms
- Bedrock

The soil that includes living and non-living organisms is called ecosystem. These small organisms (like Springtails and other Hexapods) chew up dead grass and leaves into small pieces which bacteria and fungi can then decompose so they become part of the soil. This organic matter is one of the major components of a healthy soil. However, since the industrial revolution and the subsequent introduction of fertilisers and continuing over production of farmlands, many soils globally have been greatly affected.

### The Carbon cycle

A healthy soil plays a large role in the carbon cycle and the earth's atmosphere. Carbon is found throughout the earth and is a vital component for all living organisms. The amount of carbon on our planet never changes, although it circulates through different locations, from being stored in living and non-living matter to being released into the atmosphere.

Plants absorb carbon which is being used during photosynthesis. They then store that carbon as





Image: elizabeth lies - wikimedia

carbohydrate within the plant and also release some of it down into the soil through their roots. The carbon given off by plants through their roots is used as food for underground organisms. Carbon is also released from the soil into the atmosphere when plants and other organisms respire, as decomposition occurs, and when the soil is distributed through digging and tilling.

The atmospheric carbon combines with oxygen to become carbon dioxide, which is a greenhouse gas, it absorbs and then re-emits energy back to the earth. Therefore, the more carbon dioxide in the air the warmer the temperature is, both on land and in the ocean. The warmer temperatures also increase the amount of water vapour present in the atmosphere, increasing temperatures even more. If we want to maintain the planet in its current state, we need to balance the use of carbon so as it is getting stored at the same rate as it is getting released.

Unfortunately, human activities have led to a change in balance between the amount of carbon stored on earth and the amount of carbon present as carbon dioxide in the atmosphere. These activities include increasing the disturbance of soil through land clearing and tilling, deforestation, building upon previously planted land, and burning increasing amounts of fossil fuels.

### **The healthy nitrogen organic cycle**

The main source of nitrogen, which is necessary for plants to grow and develop seeds, is found in organic matter. Soils commonly contain one to four percent organic matter which is largely composed of plant and animal residues. However, the nitrogen found in organic matter is largely in forms which plants cannot use. So in order for plants to be able to use the nitrogen found in organic matter, it is converted by the bacteria living in the soil. Nitrogen is then taken up by the plant's roots and converted into organic substances in the plants, such as enzymes, proteins and chlorophyll. When the plant dies, it decays and becomes part of the organic matter pool in the soil. And the healthy cycle continues.

Synthetic nitrogen, which is currently used extensively in conventional fertilisers, helps farmers in the short term to produce higher yields to feed a growing world population. However, when nitrogen is not fully utilised by the growing crops, the excess leaks from the farm fields and negatively affects air and downstream water quality. This excess nitrogen can contribute to ground level ozone, higher amounts of climate changing

greenhouse gases, and it can affect the protective ozone layer high in the earth's atmosphere. Excess nitrogen has also contributed to acid rain, polluted drinking water and caused oxygen depletion.

Currently there are zones where nature is dying, as we are witnessing in Lough Neagh in Ireland, which has seen severe algae growth due to excessive pollution from farm and domestic sewage and this causes serious damage to aquatic wildlife and more. Ironically Lough Neagh provides forty percent of the drinking water for Northern Ireland which is now damaged through human activity.

If we continue to degrade the earth's soil at the rate we are now, the world could run out of topsoil in about sixty years according to Maria-Helena Semedo of the UN's Food and Agriculture Organization. Without topsoil, the earth's ability to filter water, absorb carbon, and feed people plunges and presently we are losing twenty four billion tonnes of fertile top soil every year.

In the past, indigenous peoples around the world treated the natural environment as their Mother Earth. Their traditions and belief systems meant that they regarded nature with deep respect. They had a strong sense of place and belonging in their homeland. For example, the Irish Druid's belief was that if people polluted the lakes, bad things would happen to them. These cultures fostered knowledge and ways of life that match up well with modern notions of sustainable use of natural resources and If we are to survive as a species we must reconnect with the cycles of life and to return to a more natural and holistic form of agriculture, which respects nature rather than just use it for purpose and profit.

"The land is our mother, the rivers our blood."  
A Native indigenous North American saying.

David Murtagh

“The most beautiful thing we can experience is the mysterious. It is the source of all true art and science. He to whom the emotion is a stranger, who can no longer pause to wonder and stand wrapped in awe, is as good as dead — his eyes are closed.”

Albert Einstein  
German-born physicist (1879 -1955)







# Philosophy Culture Volunteering



## Philosophy

To be a philosopher is a way of life which is committed to the best aspirations of humanity.

Philosophy, when it is practical, is educational.

It helps us to know ourselves and to improve ourselves.

## Culture

The practice of human values is the basis for a model of active and participative Culture, which brings out the qualities of each person, broadens the horizons of the mind and opens the human being up to all the expressions of the spirit.



## Volunteering

Volunteering is the natural expression of a spirit of union with life and humanity, which manifests in the practice of values such as unselfishness, and a commitment to strive for the common good.

It is by practicing the universal values of philosophy that we can deeply transform ourselves and turn our ideas into action.

The practice of philosophy develops self-confidence, moral strength and resilience to face the difficulties and crises of life. It allows us to become an actor of change in our lives and around us.

Our introductory course in practical philosophy offers a series of theoretical and practical classes to progress in self-knowledge, to practice taking advantage of every circumstance in life without forgetting to develop solidarity with others.

For more on our courses, public talks and activities you can contact us:

**Email:** [info@acropolis.ie](mailto:info@acropolis.ie)

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