Syntropy Journal
www.sintropia.it/journal
ISSN 1825-7968
2024: 1-15

A Syntropic Model of Consciousness

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Consciousness, the "*feeling of being alive*" is still a mystery. Neuroscientists tend to assume that consciousness emerges from matter, whereas quantum scientists tend to assume that matter emerges from consciousness.

In this paper we suggest that consciousness is a property of a symmetric and complementary energy to physical energy. This hypothesis was first put forward by the mathematician Luigi Fantappiè and the paleontologist Pierre Teilhard de Chardin. Fantappiè noted that the fundamental equations which combine special relativity with quantum mechanics have a "*physical*" solution for energy, that describes energy which diverges forwards in time and a "*non-physical*" solution which describes energy that diverges backward in time.

The qualities of the non-physical energy match the mysterious qualities of life: energy concentration, increase in differentiation and complexity.

Since this energy propagates from the future it is invisible to us. Whereas physical energy is visible and can be perceived, non-physical energy is invisible and can be felt.

1. The unphysical solution of energy

The equation $E=mc^2$, commonly associated with the work of Albert Einstein, was first published in 1890 by Oliver Heaviside[2] and then refined by Henri Poincaré[3] in 1900 and Olinto De Pretto[4] in 1903, who registered it at the *Regio Instituto di Scienze* and then published it in a paper together with the senator and astronomer Giovanni Schiaparelli.

It seems that the Energy-Mass equation reached Einstein through his father Hermann who was the owner of the "*Privilegiata Impresa Elettrica Einstein*", working in the development of street lighting in Verona together with Olinto De Pretto.

But the $E=mc^2$ had a major problem, it did not consider motion, the momentum, which is also a form of energy. Einstein solved the problem by adding the momentum and published in 1905, in his Special Relativity, the more complex energy/momentum/mass equation:

$$E^2 = p^2c^2 + m^2c^4$$

which relates energy (E), momentum (p) and mass (m)

[1] Ulisse Di Corpo and Antonella Vannini: www.sintropia.it
[2] Auffray J.P., *Dual origin of E=mc2*:http://arxiv.org/pdf/physics/0608289.pdf
[3] Poincaré H., *Arch. néerland. sci.* 2, 5, 252-278 (1900).
[4] De Pretto O., *Lettere ed Arti*, LXIII, II, 439-500 (1904), Reale Istituto Veneto di Scienze.

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This equation is a double order equation and has two solutions for energy: a positive time solution, which describes energy that diverges from the past to the future, and a negative time solution, which describes energy that diverges backward in time from the future into the past. Since we move forward in time, the backward in time diverging energy turns into a converging, attractive force.

In 1905 energy flowing backward in time was considered impossible. Einstein solved the problem by removing the momentum from the equation and going back to the $E=mc^2$, which has only a forward in time solution. He could do this since the speed of physical bodies is practically nil compared to the speed of light.

Everything worked fine until 1924 when Wolfgang Pauli discovered that the spin of subatomic particles (which is a momentum) nears the speed of light. Quantum mechanics requires the extended *energy/momentum/mass* equation, with its inconvenient backward in time solution!

The first equation that combines Special Relativity and Quantum Mechanics dates to 1926 and was formulated by the physicists Klein and Gordon. This equation has two solutions: a backward in time (advanced waves) and a forward in time (delayed waves). The advanced waves solution was rejected, since it implies retrocausality which was considered impossible.

The second equation was formulated in 1928 by Paul Dirac. Dirac was trying to solve the paradox of the backward in time energy solution, but he found the electron and the neg-electron (now named *positron*) that propagates backward in time. Positrons were observed experimentally in 1932 by Carl Anderson[5].

Shortly after Pauli wrote an essay with the famous psychologist Carl Gustav Jung. Starting from the dual solution of the fundamental equations he posits that we live in a supercausal world, with causes acting from the past and attractors acting from the future.

In 1933 Heisenberg, who had a strong charismatic personality and a leading position in the institutions and academia, declared the backward in time solution impossible. From that moment, anyone who ventures into the study of the backward in time solution is discredited, loses the academic position, the ability to publish and to talk at conferences.

2. Syntropy

Luigi Fantappiè had studied pure mathematics at the Normale di Pisa, the most exclusive Italian University, where he had been classmate of Enrico Fermi. Well known among physicists, in 1951 he was invited by Oppenheimer to become a member of the exclusive Institute for Advanced Study in Princeton and work directly with Einstein.

Fantappiè could not accept that Heisenberg had rejected half of the solutions of the fundamental equations in a totally subjective way. In 1941, while listing the properties of the forward and backward in time energy solutions, Fantappiè realized that the forward in time solution is governed by the law of *entropy* (the word entropy is the combination of the Greek words *en*=diverging and *tropos*=tendency), whereas the backward in time solution is governed by a symmetrical law that he named *syntropy* (from the combination of the Greek words *syn*=converging and *tropos*=tendency).

[5] Anderson C.D. (1932) *The apparent existence of easily deflectable positives*, Science, 76:238 (1932).

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Entropy is the tendency towards energy dissipation, the famous second law of thermodynamics, also known as the law of heat death or disorder. On the contrary, syntropy is the tendency towards energy concentration, increase in differentiation, formation of structures and organization.

Listing the mathematical properties of syntropy Fantappiè recognized the mysterious qualities of life and in 1942 he wrote a book titled "*The Unified theory of the physical and biological world*," in which he suggests that the physical/material world is governed by the law of entropy, whereas life is governed by attractors that retroact from the future and follow the law of syntropy.[6]

The future is invisible, and life constantly mediates the visible and physical universe with the invisible and immaterial universe of syntropy and vital energies.

In a letter to a friend Fantappiè describes the discovery of syntropy with the following words:

"*In the days just before Christmas 1941, as a consequence of conversations with two colleagues, a physicist and a biologist, I was suddenly projected in a new panorama, which radically changed the vision of science and of the Universe which I had inherited from my teachers, and which I had always considered the strong and certain ground on which to base my scientific investigations. Suddenly I saw the possibility of interpreting a wide range of solutions (the anticipated potentials) of the wave equation which can be considered the fundamental law of the Universe. These solutions had been always rejected as "impossible", but suddenly they appeared "possible", and they explained a new category of phenomena which I later named "syntropic", totally different from the entropic ones, of the mechanical, physical and chemical laws, which obey only the principle of classical causation and the law of entropy. Syntropic phenomena, which are instead represented by those strange solutions of the "anticipated potentials", should obey two opposite principles of finality (moved by a final cause placed in the future, and not by a cause which is placed in the past) and differentiation, and non-causable in a laboratory. This last characteristic explains why this type of phenomena has never been reproduced in a laboratory, and its finalistic properties justified the refusal among scientists, who accepted without any doubt the assumption that finalism is a "metaphysical" principle, outside Science and Nature. This assumption obstructed the way to a calm investigation of the real existence of this second type of phenomena; an investigation which I accepted to carry out, even though I felt as if I were falling in an abyss, with incredible consequences and conclusions. It suddenly seemed as if the sky were falling apart, or at least the certainties on which mechanical science had based its assumptions. It appeared to me clear that these "syntropic", finalistic phenomena which lead to differentiation and could not be reproduced in a laboratory, were real, and existed in nature, as I could recognize them in the living systems. The properties of this new law, opened consequences which were just incredible, and which could deeply change the biological, medical, psychological, and social sciences*."

3. The invisible side of reality

We continuously experience forces and entities that we cannot observe directly but which exist objectively, independently of any human perception.

One such force is gravity.

[6] Fantappiè L. (1942) *Sull'interpretazione dei potenziali anticipati della meccanica ondulatoria e su un principio di finalità che ne discende*. Rend. Acc. D'Italia, n. 7, vol 4.

Suppose we hold a small object like a pencil between our thumb and forefinger and then release it. We observe that it falls to the floor, and we say that the force of gravity causes it to fall.

But do we see any downward force acting upon the pencil, something pulling or pushing it? Clearly not.

We do not observe the force of gravity at all. Rather we deduce the existence of some unseen force (called gravity) acting upon unsupported objects to explain their otherwise inexplicable downward movement.

According to the energy/momentum/mass equation half of the forces acting in the universe are entropic (visible) and half are syntropic (invisible) and nothing takes place without the interplay of both these forces. Gravity is described as a backward-in-time diverging force. But, since we move forward-in-time, this backward diverging force is for us a forward converging force.

Equations show that forward diverging forces cannot exceed the speed of light, whereas backward diverging forces can never propagate at speeds lower than that of light.

Consequently, if the entropy/syntropy hypothesis is correct, we should observe that gravity propagates at an instantaneous speed.

But can we perform experiments in order to measure the speed of propagation of gravity? The answer has been provided by Tom van Flandern (1940-2009), an American astronomer specialized in celestial mechanics.

Van Flandern noted that no aberration is observed when measuring gravity and that this puts the propagation of gravity at a speed higher than 10^{10} the speed of light.[7,8,9]

With light the aberration is due to its limited speed. For example, light from the Sun requires about 500 seconds to travel to Earth. So, when it arrives, we see the Sun in the sky in the position it occupied 500 seconds ago rather than in its present position. This difference amounts to about 20 seconds of arc, a large and noticeable amount to astronomers. From our perspective, the Earth is standing still, and the Sun is moving. So, it seems natural that we see the Sun where it was 500 seconds ago, when it emitted the light now arriving.

Consequently, the light from the Sun strikes the Earth from a slightly displaced angle and this displacement is called aberration. Light aberration is due entirely to the finite speed of light.

If gravity propagated with a finite speed we would expect gravity aberration. The Sun's gravity should appear to emanate from the position the Sun occupied when the gravity now arriving left the Sun. The Earth should "run into" the gravitational force, making it appear to come from a slightly displaced

[7] Van Flander T. (1996), *Possible New Properties of Gravity*, Astrophysics and Space Science 244:249-261.
[8] Van Flander T. (1998), *The Speed of Gravity What the Experiments Say*, Physics Letters A 250:1-11.
[9] Van Flandern T. and Vigier J.P. (1999), *The Speed of Gravity – Repeal of the Speed Limit*, Foundations of Physics 32:1031-1068.

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angle equal to the ratio of the Earth's orbital speed to the speed of gravity propagation.

But observations indicate that none of this happens in the case of gravity! There is no detectable delay for the propagation of gravity from Sun to Earth. The direction of the Sun's gravitational force is toward its true, instantaneous position, not toward a delayed position, to the full accuracy of observations. Gravity has no perceptible aberration, and this tells that it propagates with infinite speed.

Van Flandern notes that gravity has some curious properties:

- One of them is that its effect on a body is apparently completely independent of the mass of the affected body. As a result, heavy and light bodies fall in a gravitational field with equal acceleration.
- Another is the seemingly infinite range of gravitational force. Truly infinite range is not possible when forces are conveyed forward-in-time.
- The other curious property of gravity is its instantaneous action and propagation which can be explained only if we accept that gravity is a backward-in-time diverging force.

3. Complementarity

The energy/momentum/mass relation shows that the visible/diverging reality and the invisible/converging reality are united by the same equation.

We can write, for example:

$$E_{total} = E_{visible} + E_{invisible}$$

The total energy is the sum of visible and invisible energy. Reality is visible and invisible. The visible reality expands and is governed by the law of entropy, whereas the invisible reality contracts and is governed by the law of syntropy.

We can write:

$$E_{total} = E_{entropic} + E_{syntropic}$$

The first law of thermodynamics states that energy is constant, since it cannot be created or destroyed, but only transformed. We can therefore replace energy with the number 1 and write:

$$1 = Entropy + Syntropy$$

$$Entropy = 1 - Syntropy$$

$$Syntropy = 1 - Entropy$$

These expressions show that entropy and syntropy are complementary parts of the same unity.[10]

[10] Mario Ludovico, Syntropy: definition and use, Syntropy Journal, 2008, 1, (139-201)

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They also show that syntropy is profoundly different from negentropy. Syntropy and negentropy should not be confused together, since negentropy is defined as the opposite of entropy:

$$negentropy = -entropy$$

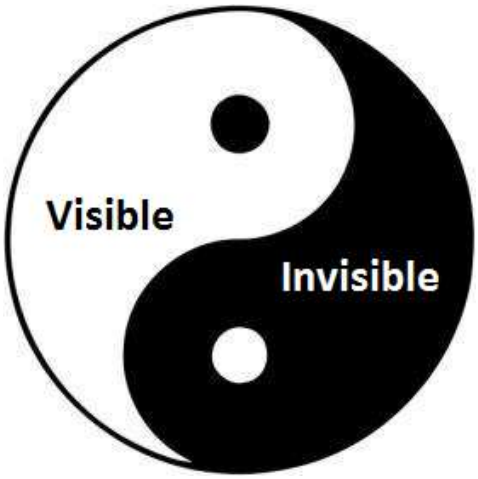
On the contrary syntropy is defined as the complement to entropy.

4. Duality

The description of two complementary forces, one diverging and one converging, one visible and one invisible, one destructive and one constructive, can be found in many philosophies and religions.

In the Taoist philosophy all aspects of the universe are described as the interplay of two complementary and fundamental forces: the yang principle, which is diverging, and the yin principle which is converging.

These two forces are part of a unity. In the visible side of reality, when one increases the other decreases, but their balance remains unchanged. This law is masterfully represented in the Taijitu symbol, that is the union of these opposite forces, the yin and the yang, the diverging and converging forces whose combined action moves the universe in all its aspects: the sexes, seasons, day and night, life and death, full and empty, movement and repose, push and pull, dry and wet. Water takes on yang steaming form and yin icy form. Within the yin there is yang, and within the yang there is yin.



Taijitu symbol

In the Taijitu the yang principle is represented by the white color and has entropic properties, whereas the yin principle is represented by the black color and has syntropic properties. The Taijitu is a wheel that rotates constantly, changing the proportion of yin and yang (syntropy and entropy) in the visible and the invisible sides of reality. The Taijitu shows that a property of complementarity is that opposites attract each other. This property is well known in physics, but it is also true at the human level where people on opposite polarities are attracted to each other, as in males and females. Since the balance of these opposite forces remains unchanged, the Taoist philosophy suggests that the aim is to harmonize the opposites, thus creating unity.

In Hinduism the law of complementarity is described by the dance of Shiva and Shakti, where Shakti is the personification of the female principle and Shiva of the male principle. They represent the

primordial cosmic energy and the dynamic forces that are thought to move through the entire universe. Shiva has the properties of the law of syntropy, whereas Shakti has the properties of the law of entropy, and they are constantly combined in an endless cosmic dance. Shakti can never exist apart from Shiva or act independently of him, just as Shiva remains a mere corpse without Shakti. All the matter and energy of the universe results from the dance of the two opposite forces of Shiva and Shakti. Shiva absorbs Shakti energy, turning it into a body and pure consciousness, the light of knowledge. According to Hinduism intelligence comes from the future (Shiva), whereas fearsome, ferocity and aggressiveness comes from the past (Shakti). Shakti is the energy of the physical and visible world whereas Shiva is the consciousness which transcends the visible world. However, each aspect of Shiva has a Shakti component, linked to the physical world. The evolution of this endless dance between Shakti and Shiva has the function to bring life towards Unity.

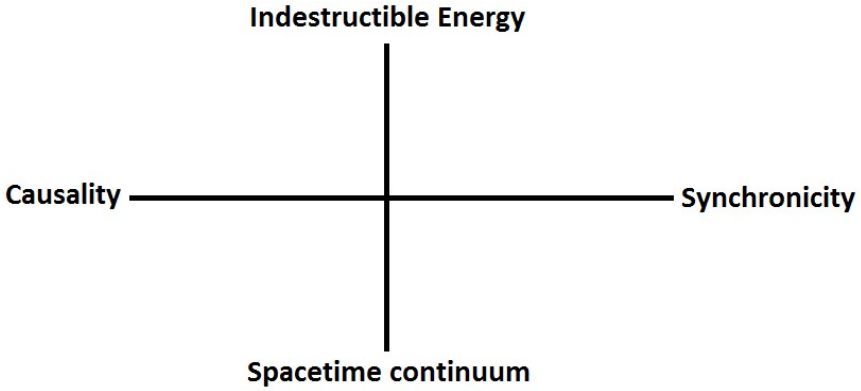
In the psychological literature of the 20th century Carl Gustav Jung and Wolfgang Pauli added synchronicities (i.e. syntropy) to causality (i.e. entropy). According to Jung, synchronicities are the experience of two or more events that are apparently causally unrelated or unlikely to occur together by chance, yet they are experienced as occurring together in a meaningful manner.

The concept of synchronicity was first described in this terminology by Carl Gustav Jung in the 1920s. The concept does not question, or compete with, the notion of causality. Instead, it maintains that just as events may be grouped by causes, they may also be grouped by finalities, a meaningful principle. Jung coined the word synchronicities to describe what he called "*temporally coincident occurrences of acausal events*." He variously described synchronicity as an "*acausal connecting principle*," "*meaningful coincidence*" and "*acausal parallelism.*"

Jung gave a full statement of this concept in 1951 when he published the paper Synchronicity - *An Acausal Connecting Principle*, jointly with a related study by the physicist Wolfgang Pauli.[11]

In Jung's and Pauli's description causality acts from the past, whereas synchronicity acts from the future. Synchronicities are meaningful since they lead towards a finality, providing a direction to events which correlates them in an apparently acausal ways.

Jung and Pauli described causality and synchronicity acting on the same indestructible energy. They are united by this energy, but at the same time they are complementary.



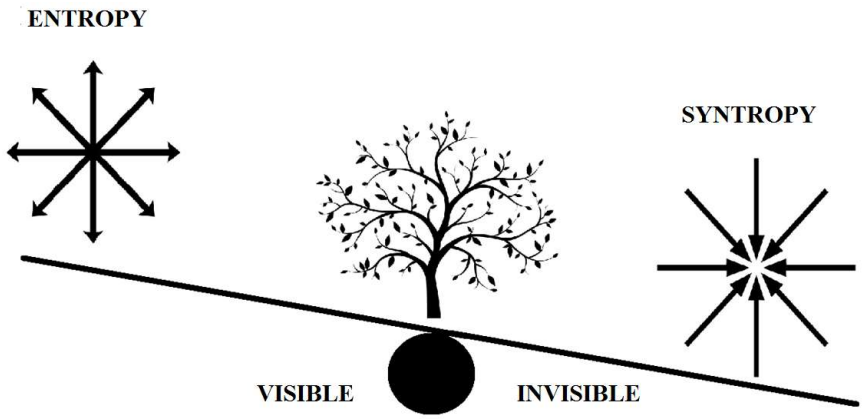
This game between entropy and syntropy can also be clearly seen in metabolism. Syntropy

[11] Jung C.G. (1951), Synchronicity - An Acausal Connecting Principle, Princeton University Press, www.amazon.com/Synchronicity-Connecting-Principle-Collected-Bollingen/dp/0691150508

concentrates energy in ever smaller spaces increasing order and organization, but since the concentration of energy cannot increase indefinitely, at some point, the system releases energy and matter, thus activating the opposite process of entropy and an exchange of energy and matter with the environment. Exchange between life and the environment results in a continuous process of construction and destruction which allows life to evolve. Exchange reveals the principle of complementarity which is a fundamental property of life at all its levels of organization, from the organic/biological level to economics.

In metabolism *Entropy* corresponds to *Catabolic* processes, which transform higher level structures into lower-level structures with the release of energy in the form of chemical energy (ATP) and thermal energy, and *Syntropy* corresponds to *Anabolic* processes, which transform simple structures into complex structures, for example nutritive elements into biomolecules, with the absorption of energy.

In the entropy/syntropy hypothesis complementarity is represented with a seesaw where entropy and syntropy play at opposite sides. Life is in the middle.



Entropy and Syntropy constantly playing, transforming energy

This representation clearly shows that when entropy goes down syntropy rises and when entropy rises syntropy goes down. It also shows that we can act on the invisible side of reality, just by reducing or increasing the entropy level of the visible plane. If we want to reduce syntropy we increase entropy, if we want to increase syntropy we need to decrease entropy.

5. The feeling of life

Wheeler, Feynman[12] and Fantappiè showed that advanced waves (i.e. syntropy) behave as absorbers whereas delayed waves (i.e. entropy) behave as emitters. Fantappiè adds to this description that living systems, because of the fact that they are syntropic, are energy absorbers and the energy balance is therefore always positive, in favor of absorption.

The assertion that living systems absorb energy is consistent with the fact that nearly all the energy used by humanity derives from biological masses: wood, coal, petrol, gas and biofuels.

[12] Wheeler J. e Feynman R. (1945) *Interaction with the Absorber as the Mechanism of Radiation*, Review of Modern Physics (17);

The distinction between absorbers and emitters provides an interesting insight into one of the basic properties of life: the "*feeling of life*". According to Damasio the "*background feeling*" which is the equivalent of the "*feeling of life*" is the fundamental element of consciousness and life.[13]

The background feeling of absorbing energy can be considered the essence of life itself and of the feeling of life. If this is correct, it would follow that the feeling of life, consciousness, is a direct consequence of advanced waves.

The equivalence "*feeling of life = advanced waves*" leads to the assumption that systems based on the positive energy solution (entropy), as for example machines, computers and AI (Artificial Intelligence), will never be endowed with the "*feeling of life*" independently from their complexity, whereas systems based on the negative energy solution (syntropy), as for example life itself, should always have a "*feeling of life*", independently from their complexity.

6. Anticipatory systems

Pre-stimuli activations seem to play a key role in the survival and welfare of all living systems. Robert Rosen (1934-1998), a theoretical biologist, professor of biophysics at the Dalhousie University, coined the expression "*Anticipatory Systems*" to describe this strange property of living systems:

"*I was amazed by the amount of anticipatory behavior observed at all levels of the organization of living systems (...) systems that behave as true anticipatory systems, systems in which the present state changes according to future states, violate the law of classical causality according to which changes depend solely on past or present causes. We try to explain this behavior with theories and models that exclude any possibility of anticipation. Without exception, all the theories and biological models are classical in the sense that they only seek causes in the past or present.*"[14]

The neurologist Antonio Damasio discovered that neural damages localized in the prefrontal regions of the brain, especially in the ventral and medial sectors and in the right parietal region, are systematically associated with decision making deficits. These damages are linked with the impaired perception of emotions and feelings. It seems that without feelings the process of reasoning and decision making is no longer oriented towards the future.

In 2007, during her PhD, Antonella Vannini formulated the following testable hypothesis:

"*If life is supported by syntropy the parameters of the vital systems which support life, such as the autonomic nervous system, should show retrocausal activations."*

Various experiments had already shown anticipatory pre-stimuli reactions of skin conductance and heart rate. One of the first studies was performed in 1997 by Dean Radin[15] who monitored heart rate, skin conductance and fingertip blood volume in subjects who were shown a blank screen for five

[13] Damasio A.R. (1999), *The Feeling of What Happens. Body and Emotion in the Making of Consciousness*, Heinenann, London 1999.
[14] Rosen R. (1985) Anticipatory Systems, Pergamon Press, USA 1985.
[15] Radin D.I. (1997), *Unconscious perception of future emotions: An experiment in presentiment*, Journal of Scientific Exploration, 11(2): 163-180.

seconds and randomly selected calm or emotional picture for the following three seconds.[5] Radin found significant differences, in the autonomic parameters preceding the exposure to emotional versus calm pictures. In 2003 Spottiswoode and May replicated Radin's experiments, adding controls to exclude artifacts and alternative explanations. Results showed an increase in skin conductance 2-3 seconds before emotional stimuli were presented (p=0.0005).

Similar results have been obtained by other authors, using various parameters of the autonomic nervous system, for example: McCratly, Atkinson and Bradley,[16] Radin and Schlitz[17] and May, Paulinyi and Vassy.[18]

Antonella Vannini conducted four experiments using heart rate measurements to study the retrocausal hypothesis of the parameters of the autonomic nervous system. Results were strong both from a quantitative and a statistical point of view. Detailed information is available in the book "*Retrocausality: experiments and theory.*"[19]

It is interesting to note that although the anticipatory reactions of the parameters of the autonomic nervous system are strong and clear, this information is processed at an unconscious level, and it is not transferred at the conscious level of the rational brain.

A dissociation between feeling the future and the ability to use rationally this information was assessed.

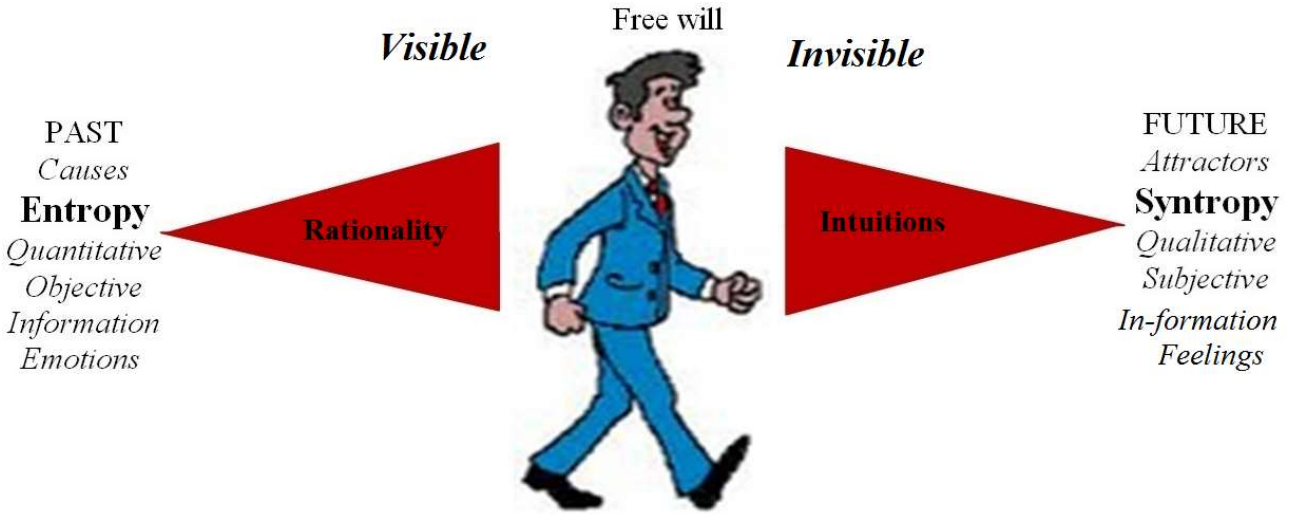
7. The mind

In his paper "*Chaos, Quantum-transactions and Consciousness*"[20] Chris King starts from Einstein's energy/momentum/mass equation and speculates that free will arises from the fact that we are faced with bifurcations between information arriving from the past (causality-entropy) and in-formation arriving from the future (retrocausality-syntropy).

Retrocausality (-*E*) would be felt whereas causality (+*E*) would be perceived and processed rationally. This constant antagonism between feelings and rationality forces into a state of free will.

[16] McCratly R (2004), Atkinson M and Bradely RT, *Electrophysiological Evidence of Intuition: Part 1*, Journal of Alternative and Complementary Medicine; 2004, 10(1): 133-143.
[17] Radin DI (2005) and Schlitz MJ, Gut feelings, intuition, and emotions: An exploratory study, Journal of Alternative and Complementary Medicine, 2005, 11(4): 85-91.
[18] May EC (2005), Paulinyi T and Vassy Z, *Anomalous Anticipatory Skin Conductance Response to Acoustic Stimuli: Experimental Results and Speculation about a Mechanism*, The Journal of Alternative and Complementary Medicine. August 2005, 11(4): 695-702.
[19] Vannini A and Di Corpo U, *Retrocausality: experiments and theory,* ISBN 9781520275956.
[20] King C.C. (2003) *Chaos, Quantum-transactions and Consciousness*, NeuroQuantology, Vol. 1(1): 129-162;

ISSN 1825-7968

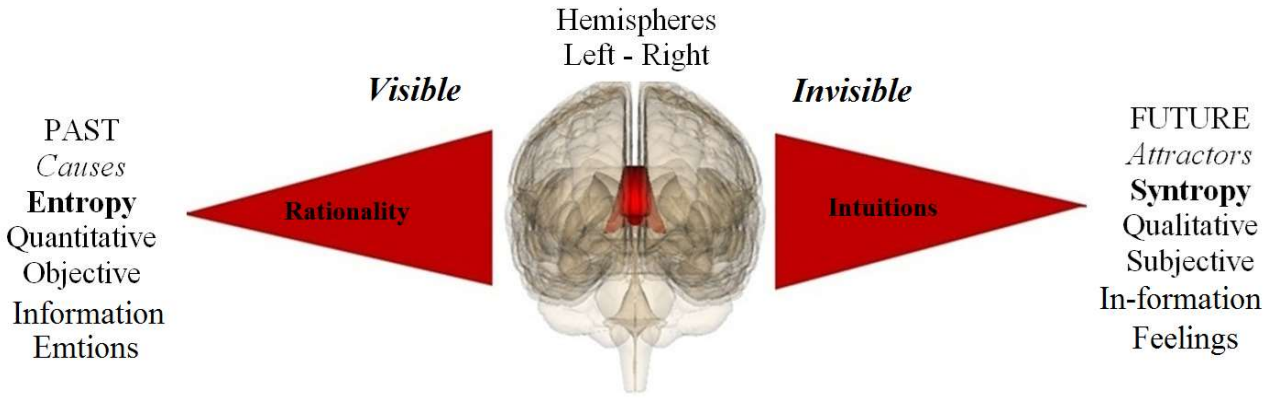


Supercausal model of free will

Free will is usually considered to be at the basis of all the actions of human beings, but it absolutely contradicts the assumption that only classical causality and determinism are real.

Since the forward and the backward in time energy solutions are perfectly balanced, similar amounts of information and in-formation are received. This might explain the perfect division of the brain into two hemispheres.

We can replace the previous drawing of the human being with that of the two hemispheres of the brain, where the left hemisphere is the seat of the "forward in time" rational brain and the right hemisphere is the seat of the "backward in time" intuitive brain.

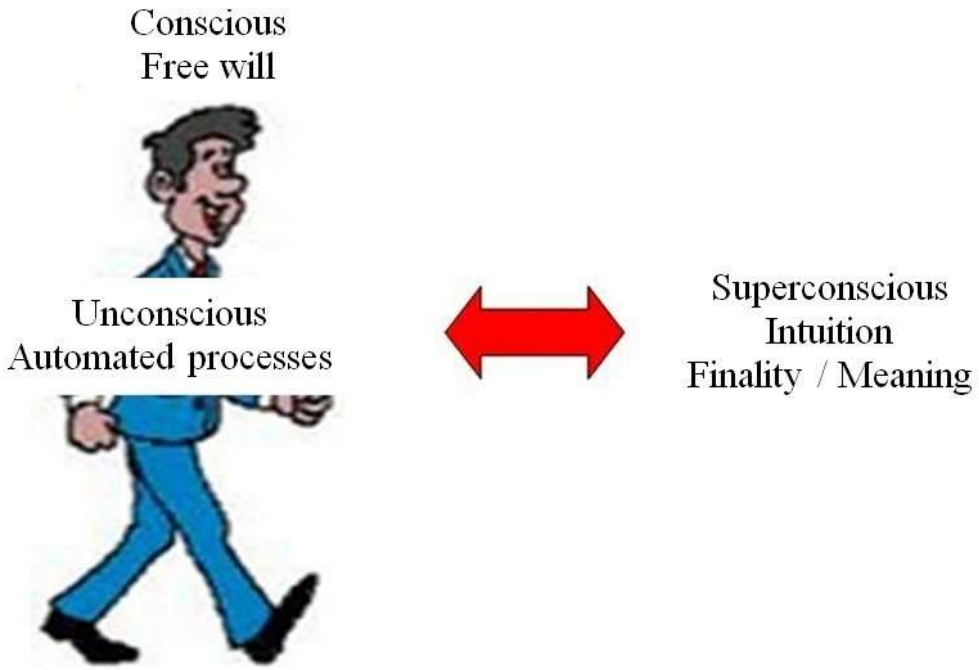


The rational brain is analytical, and it is characterized by objective and quantitative information, whereas the intuitive brain is global, and it is characterized by subjective and qualitative feelings.

The Syntropic model of consciousness adds to the brain, the autonomic nervous system and the attractor and describes the mind as organized on three levels:

- the *conscious mind* which is associated to the brain.
- the *unconscious mind* which is associated to the autonomic nervous system.
- the *super-conscious mind* which is associated with the attractor.

ISSN 1825-7968



The *conscious mind* on which we are tuned during the time we are awake connects us to the physical reality. The conscious mind chooses between feelings that come from the autonomic nervous system and information that comes from the physical plane of reality. This continuous state of choice is at the basis of free will.

The *unconscious mind* governs the vital functions of the body, therefore called involuntary, such as heartbeat, digestion, regenerative functions, growth, development and reproduction. In addition, it implements highly automated programs, which allow us to perform many complex tasks, without having to think continuously about them, such as walking, riding a bicycle, driving, etc. The autonomic nervous system supplies the body with syntropy, and it is therefore the seat of feelings that inform us about the connection with the attractor. The unconscious mind can be accessed during dreams or using techniques of relaxation and altered states of consciousness such as hypnotic trance.

The *superconscious mind* is our attractor, the source of syntropy, the energy of life, which guides towards wellbeing and happiness. The superconscious mind provides us with a mission, a purpose, and uses intuitions, insights, dreams and visions. It provides intelligence, knowledge and answers to problems. It leads towards more intelligent and perfect designs which are the outcome of the contribution of all the individuals who share the same attractor.

8. Attractors

In 1963 the meteorologist Edward Lorenz[21] discovered that small changes in the initial conditions can amplify and make any prediction impossible. Lorenz also found the existence of an attractor which greatly amplifies the initial perturbations. He described this situation with the words:

[21] Lorenz E. (1963) *Deterministic Nonperiodic Flow*, Journal of the Atmospheric Sciences, 1963, Vol.20, No.2, pp.130-140.

"*a flutter of a butterfly's wings in the Amazon can cause a hurricane in the United States*."

Attractors generate fields, such as the gravitational field, the magnetic field, the electrical field, the quantum field. These fields are invisible but bring parts together and allow communication which is invisible and intelligent. All our information/experiences arrive to the attractor, the attractor naturally selects only those which are advantageous and disseminates them to all the other individuals. This mechanism has been described by Rupert Sheldrake as morphic fields.

The evolutionary paleontologist Teilhard de Chardin discovered that species evolve within tracks, informed by attractors. He formulated the hypothesis that life and the entire universe evolve towards a unifying point, an attractor, which he named the "Omega Point". He saw the need to extend science to an anti-entropic energy, with syntropic properties:

"*Reduced to its essence the problem of life can be expressed like this: accepting the two principles of conservation of energy and entropy, how can they assimilate without contradiction, a third universal law (which is expressed by biology), that of the organization of energy? ... the situation becomes clear when we consider, at the basis of cosmology, the existence of a sort of anti-entropy ... In other words, not just one kind of energy, but two different energies; two energies which cannot transform directly one into the other, because they operate at different levels ... The behavior of these two energies is so completely different and their manifestations so completely irreducible that we might believe they belong to two completely independent ways of explaining the world. And yet, as the one and the other, are in the same universe, and evolve at the same time, there must be a secret relationship.*"[22]

Experiments show that water is the substance through which the attractor of life manifests. This might help to explain how homeopathic remedies work. Homeopathy was discovered by Samuel Hahnemann, a German physician, and it is based on the so-called principle of similarity, according to which the appropriate remedy for a particular disease is given by a substance that, in a healthy person, causes symptoms like those seen in the ill person. Homeopathy uses water for its remedies. The patient is administered a remedy in which the substance (or active ingredient) is strongly diluted in water: the higher the dilution, the greater the power of the remedy.[23]

The paradox is that the most powerful homeopathic remedies are those that do not contain a single molecule of the active ingredient. Having removed the active ingredient by dilution, it is believed that the effects are due to a placebo effect and not to an actual effect of the remedy. But attractors work in the opposite way! The active ingredient, when in water, follows the butterfly effect and the most diluted ones, when correctly placed in the attractor become the most powerful ones.

Western medicine refuses homeopathy since the effects cannot be explained in a classical way, but still the results are tangible and can be tested experimentally

9. Love

We continuously produce maps of the physical world which entropy has inflated towards infinite. Syntropy, on the contrary, has focused consciousness towards the infinitely small.

[22] Teilhard de Chardin P. Le phénomène humain. Ed. du Seuil 1955.
[23] Paolella M., Homeopathic Medicine and Syntropy, Syntropy Journal, 2014 (2): 1-29

ISSN 1825-7968 2024: 1-15

When we compare ourselves to the physical world, we find to be equal to zero and this is incompatible with our feeling of being alive:

$$\frac{I}{Universe} = 0$$

Compared to the universe I am equal to zero

Being zero is incompatible with our feeling of being alive. Hamlet's "*to be or not to be*." This leads to feeling worthless, aimless and depressed. We need to provide a purpose to our life, otherwise we go nowhere. Many think they can do this by increasing the numerator:

$$\frac{I+judgment+wealth+popularity+power+\cdots}{Universe} = 0$$

However, we can increase the numerator indefinitely, but compared with the infinity of the physical universe the result is always zero, and we continue to feel depressed and useless.

The solution is provided by the Theorem of Love:

$$\frac{I \; x \; \cancel{Universe}}{\cancel{Universe}} = I$$

When I compare myself to the universe
and I am united to it through love, I am always equal to myself

The Theorem of Love tells that:

- Only when our inner world unites with the outer world, we overcome the identity crisis.
- love provides this unity (I x Universe).
- love allows to shift from duality (I = 0) to non-duality (I = I).

Love is synonymous with unity. When we converge our heart fills with warmth, joy and love. But when we diverge, we feel void, pain and we experience the conflict between being and not being. Love provides the aim and meaning to life.

Love is the attractor of life which brings parts together. The unity of our Self is strengthened when we love, when we are converging. When, on the contrary cohesion diminishes our personality shatters. Love is therapeutic since it brings together our parts and makes them cooperate.

ISSN 1825-7968 2024: 1-15

It is interesting to note that since love reinforces the Self, it also increases individualization and differentiation, nonetheless it leads towards unity. It seems a contradiction, but unity and diversity go together.

Epilogue

The scientific revolution that was started by Newton and Galileo divided culture in two parts: on the one side science, capable of studying the entropic aspects of reality, and on the other side religion, dedicated to the syntropic aspects of reality, such as the soul and the final causes.

Extending science to syntropy implies a profound change in the cultural balance between science and religion, which Fantappiè describes as follow:

"*Let us conclude by looking at what we can say about life. What makes life different is the presence of syntropic qualities: finalities, goals, and attractors. Now as we consider causality the essence of the entropic world, it is natural to consider finality the essence of the syntropic world. It is therefore possible to say that the essence of life is the final causes, the attractors. Living means tending to attractors. But how are these attractors experienced in human life? When a man is attracted by money, we say that he loves money. The attraction towards a goal is felt as love. We now see that the fundamental law of life is this: the law of love. I am not trying to be sentimental; I am just describing results which have been logically deducted from premises which are sure. It is incredible and touching that, having arrived at this point, mathematical theorems start speaking to our heart!"*

Fantappiè stated that nowadays we see written in the book of nature - which Galileo said was in mathematical characters - the same laws of love that we find written in the holy books of the major religions.

"*[...] the law of life is not the law of hate, the law of force, or the law of mechanical causes; this is the law of non-life, the law of death, the law of entropy; the law which dominates life is the law of finalities, the law of cooperation towards goals which are always higher, and this is true also for the lowest forms of life. In humans this law takes the form of love, since for humans living means loving, and it is important to note that these scientific results can have great consequences at all levels, particularly on the social level, which is now so confused. [...] The law of life is therefore the law of love and differentiation. It does not move towards leveling and conforming, but towards higher forms of differentiation. Each living being, whether modest or famous, has its mission, its finalities, which, in the general economy of the universe, are important, great and beautiful.*"