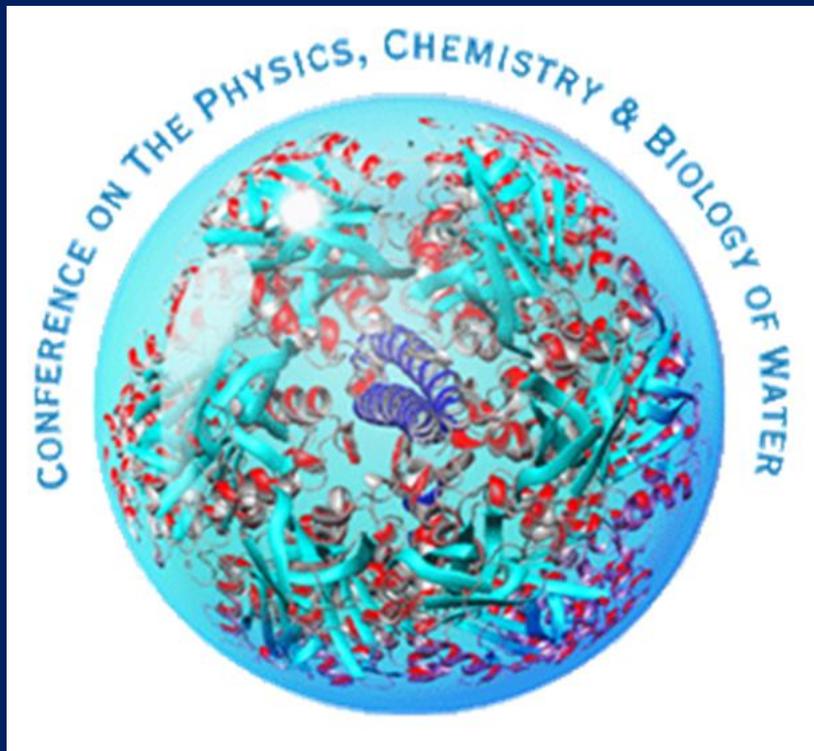


# THE TWELFTH ANNUAL CONFERENCE ON THE PHYSICS, CHEMISTRY AND BIOLOGY OF WATER

Sofia, Bulgaria, October 26-29, 2017



**James L. Oschman, Ph.D.**

Nature's Own Research Association  
Dover, New Hampshire  
USA

[www.energyresearch.us](http://www.energyresearch.us)

[joschman@aol.com](mailto:joschman@aol.com)

# *A new look at memory and morphic resonance*

Friday October 27

Session 3

12.05-12.40

Fb/glen weimer



**Man is equally incapable of seeing the nothingness  
from which he emerges and the infinity in which he is engulfed.**

~ Blaise Pascal, 1623-1662

- The morphic field
- Regeneration of limbs and organs
- Memory and consciousness
- Memory in water
- Memory in space
- The structure of space

# Memory in water at this conference:

- Won H. Kim
- Vladimir Voeikov
- Others

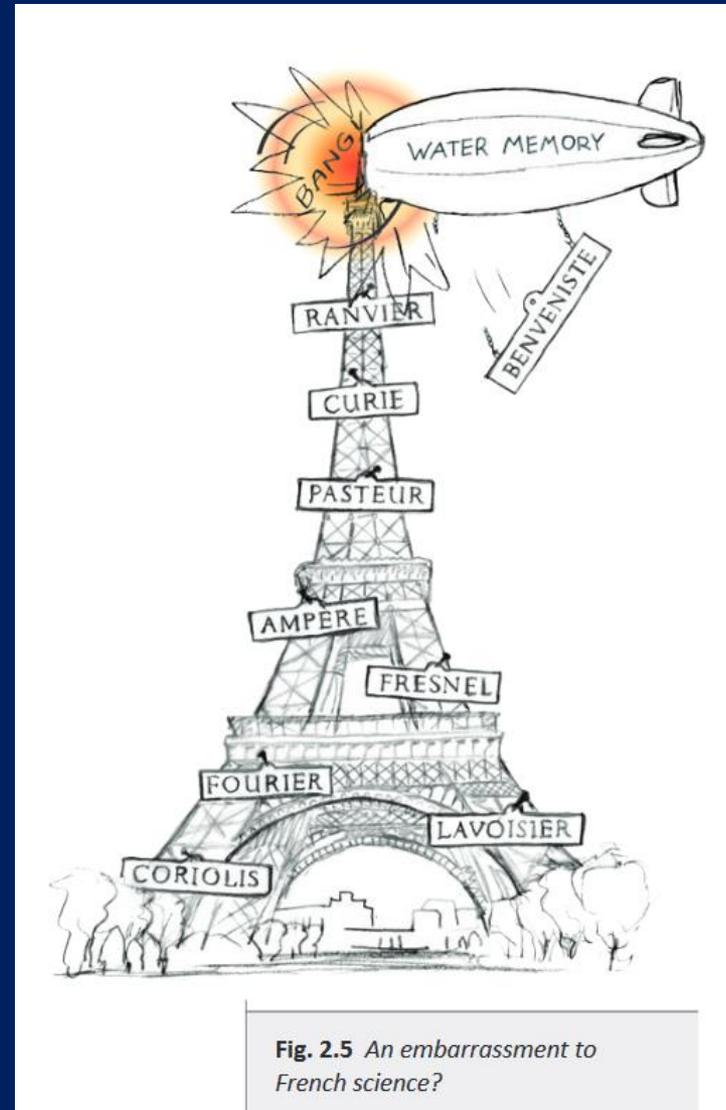
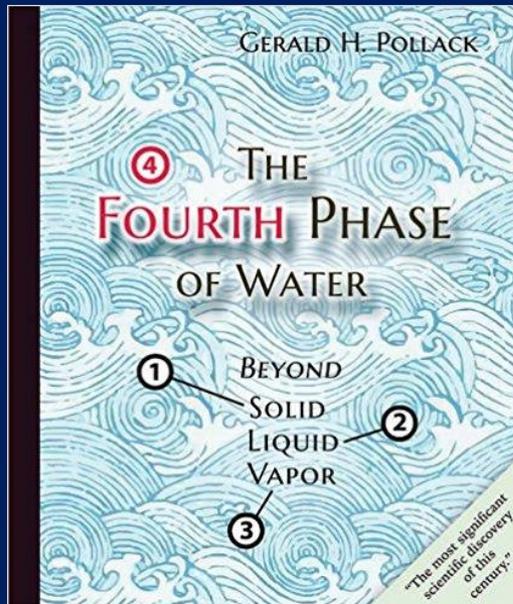
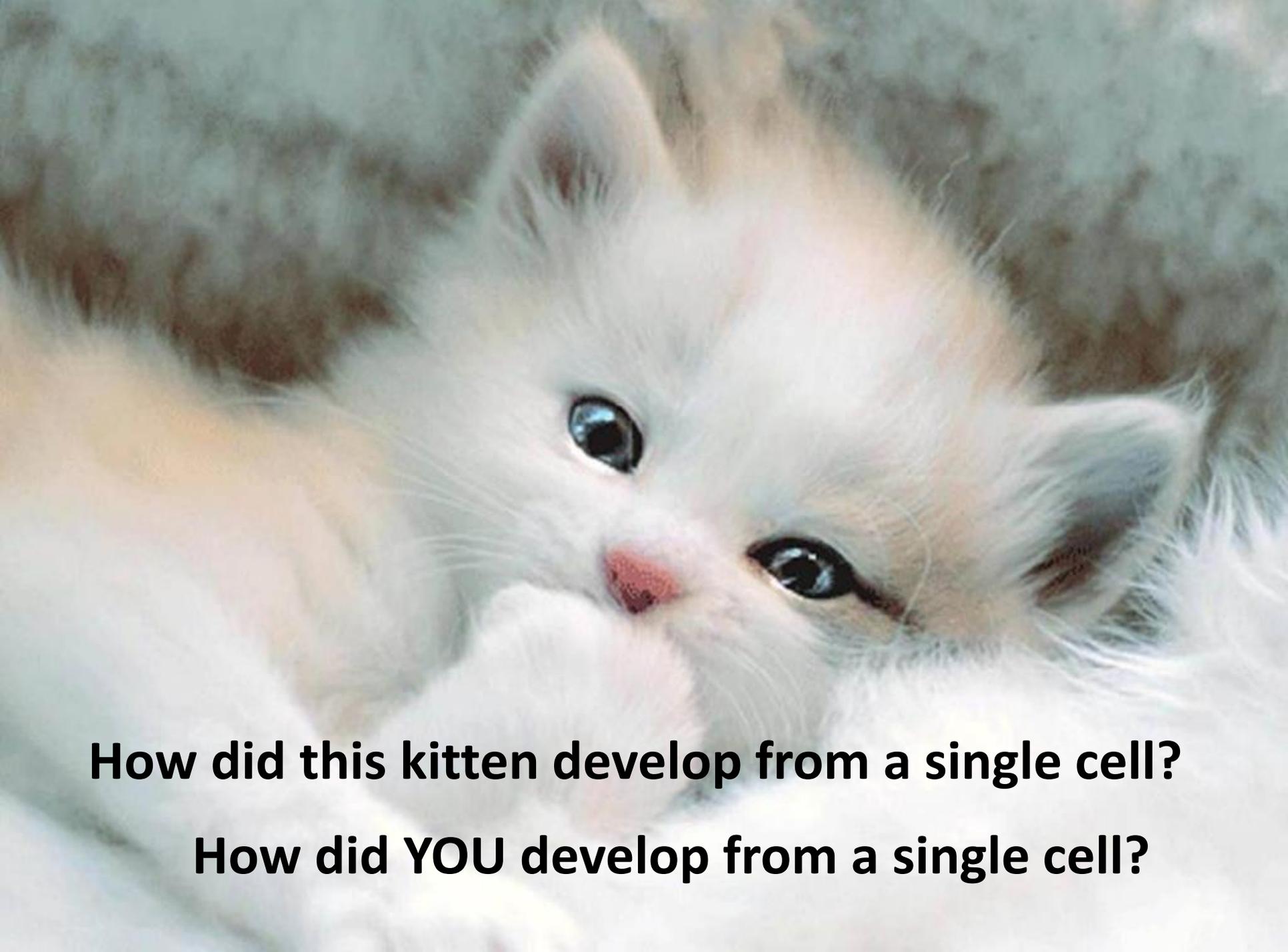


Fig. 2.5 An embarrassment to French science?

The origin of form in living organisms may be the most important unsolved mystery in science.



**How did this kitten develop from a single cell?**

**How did YOU develop from a single cell?**

One of the most important unsolved problems in science: *The origin of form in living systems.*



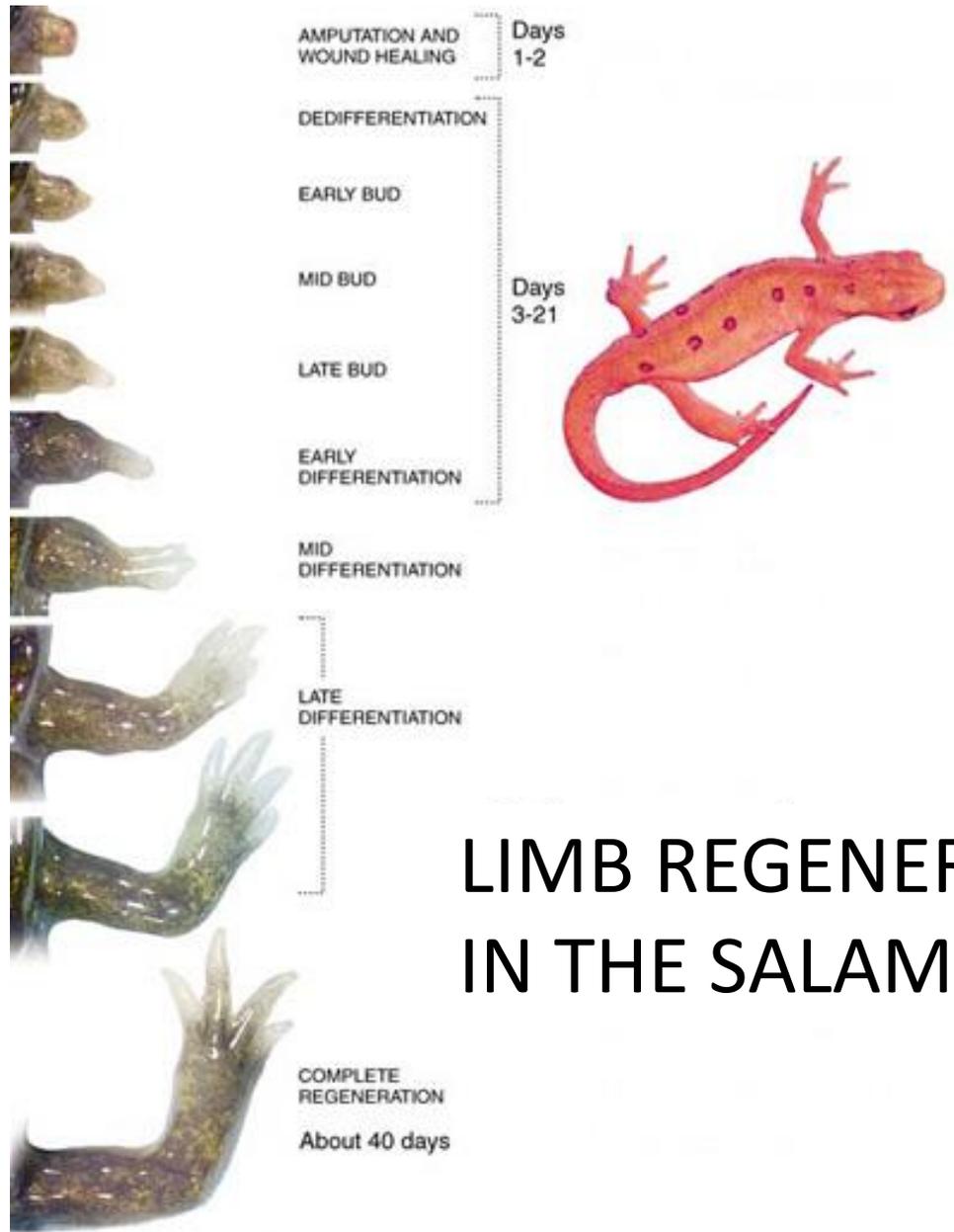
Unsolved problems may be unsolved because they are difficult. If they were easy, we would already have solved them.

OR:

They may be easy to solve but we can't solve them because the answers are simpler than we can think!

Salamanders can regenerate limbs and organs.  
Why can't humans?

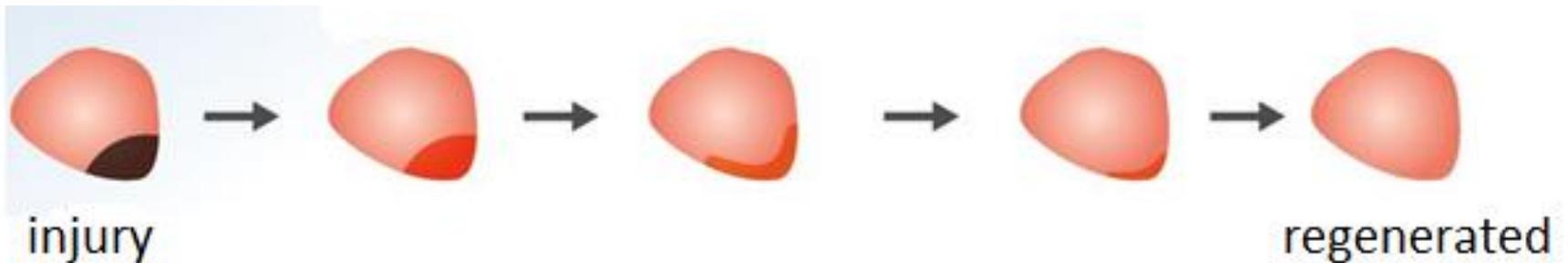




# LIMB REGENERATION IN THE SALAMANDER



## HEART REGENERATION IN NEWTS AND SALAMANDERS:

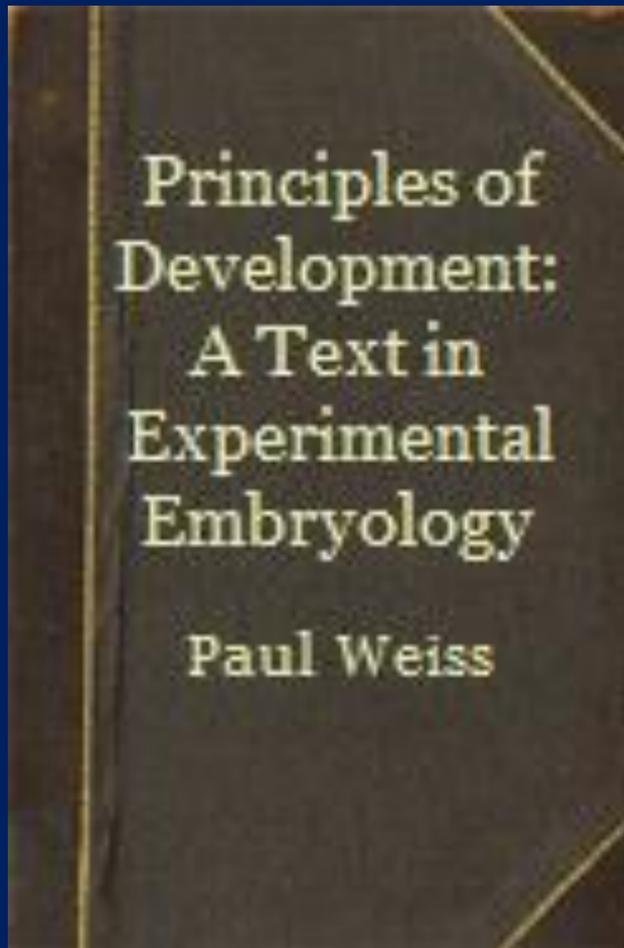


Full regeneration of the heart occurs within 60 days after amputation of up to 1/4 of the apical myocardium.

The origin of form is a problem that is widely thought to be solved, but it is not solved.

Most people assume that DNA  
is the blueprint of life.

*IT IS NOT!*



Paul A. Weiss  
1898-1989

1939:

Growth is the creation of mass whereas morphogenesis is the shaping of that mass.

# Biokinetics and Biodynamics of Human Differentiation

## Principles and Applications

**E. BLECHSCHMIDT, M.D.**

*Professor Emeritus and Former Director, Anatomical Institute  
University of Göttingen, Göttingen, West Germany*

**R. F. GASSER, Ph.D.**

*Professor, Department of Anatomy  
Louisiana State University Medical Center, New Orleans, Louisiana*

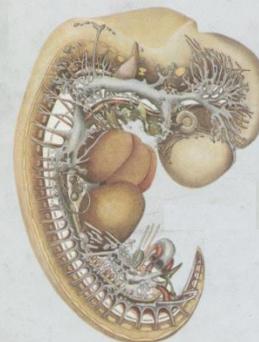
In a revolutionary departure from traditional concepts of human differentiation, this volume refutes Haeckel's biogenetic law and offers a perspective of the developing embryo as a single unit rather than as a number of isolated parts. Basing its information on important new knowledge of the three-dimensional organization of metabolic fields, this groundbreaking study warrants reading by thoughtful professionals in a number of fields concerned with embryonic differentiation. It will particularly interest anatomists, developmental physiologists, biologists, specialists in experimental medicine, and all those occupied with the study of malformations.

CHARLES C THOMAS • PUBLISHER, LTD. • SPRINGFIELD • ILLINOIS • U.S.A.

1978

# The Ontogenetic Basis of Human Anatomy

A Biodynamic Approach  
to Development from  
Conception to Birth



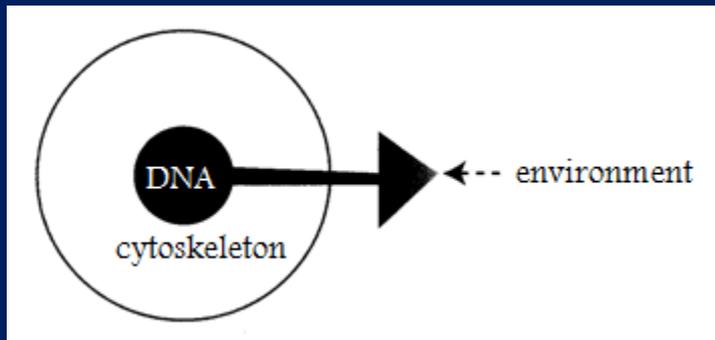
**Erich Blechschmidt**

Edited and Translated by Brian Freeman

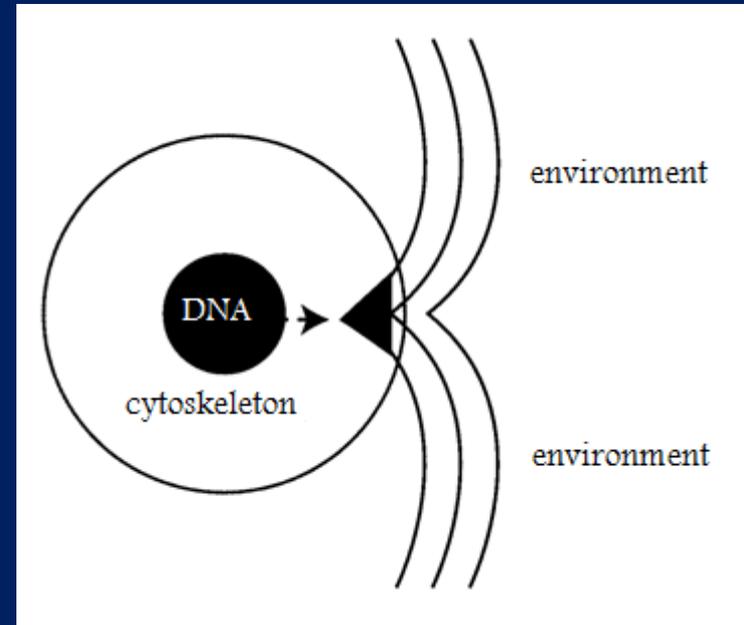
2004

## The Blechschmidt and epigenetic model:

The standard model:



Inside-out direction of development  
controlled by the DNA.  
“DNA is on top”



Outside-in direction of development.  
The environment is active and the  
genes are reactive. “DNA is on tap”

The conventional theory attempts to squeeze all of the hereditary characteristics of organisms into the genes.

There are many problems with this model:

- Hereditary = genetic; but only about 1% of the human genome codes for proteins.
- The total amount of DNA inherited has little to do with the complexity of the organism.
- Some amphibian species have 100 times more DNA than others.
- A cell in the lily plant contains about 30 times more DNA than a human cell.

## Fields have been thought to organize morphogenesis:

- Hans Spemann, 1921
- Alexander Gurwitsch, 1922
- Paul Weiss, 1923
- Lund, 1947
- Harold Saxton Burr, 1972
- **Rupert Sheldrake, 1981**
- Michael Levin, 2003

# These fields were called:

- Developmental
- Embryonic
- Mitogenic
- Morphogenic

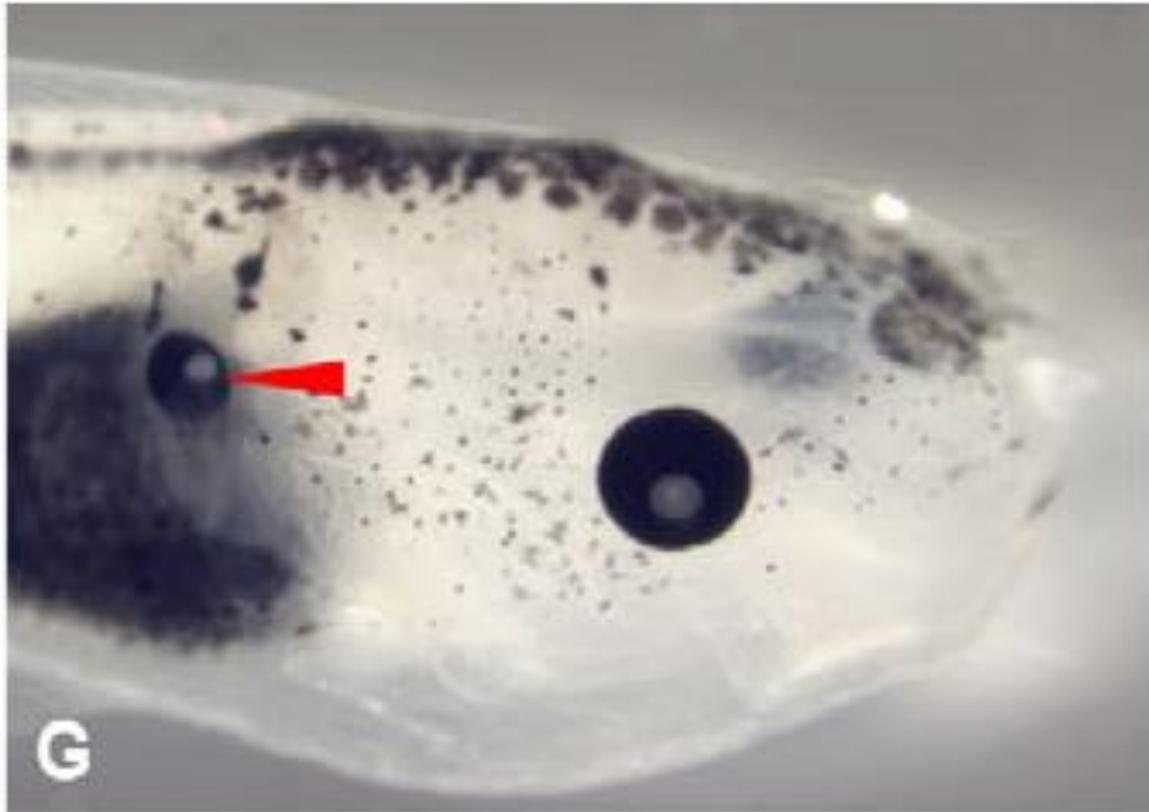
# Michael Levin



Cancer can be viewed as a disease of geometry. Tumor tissue results from growth which is not patterned appropriately because it is unable to perceive or execute morphogenetic cues.

**What and where are these cues?**

Electromagnetic fields are an integral part of information flows in some morphogenetic processes.



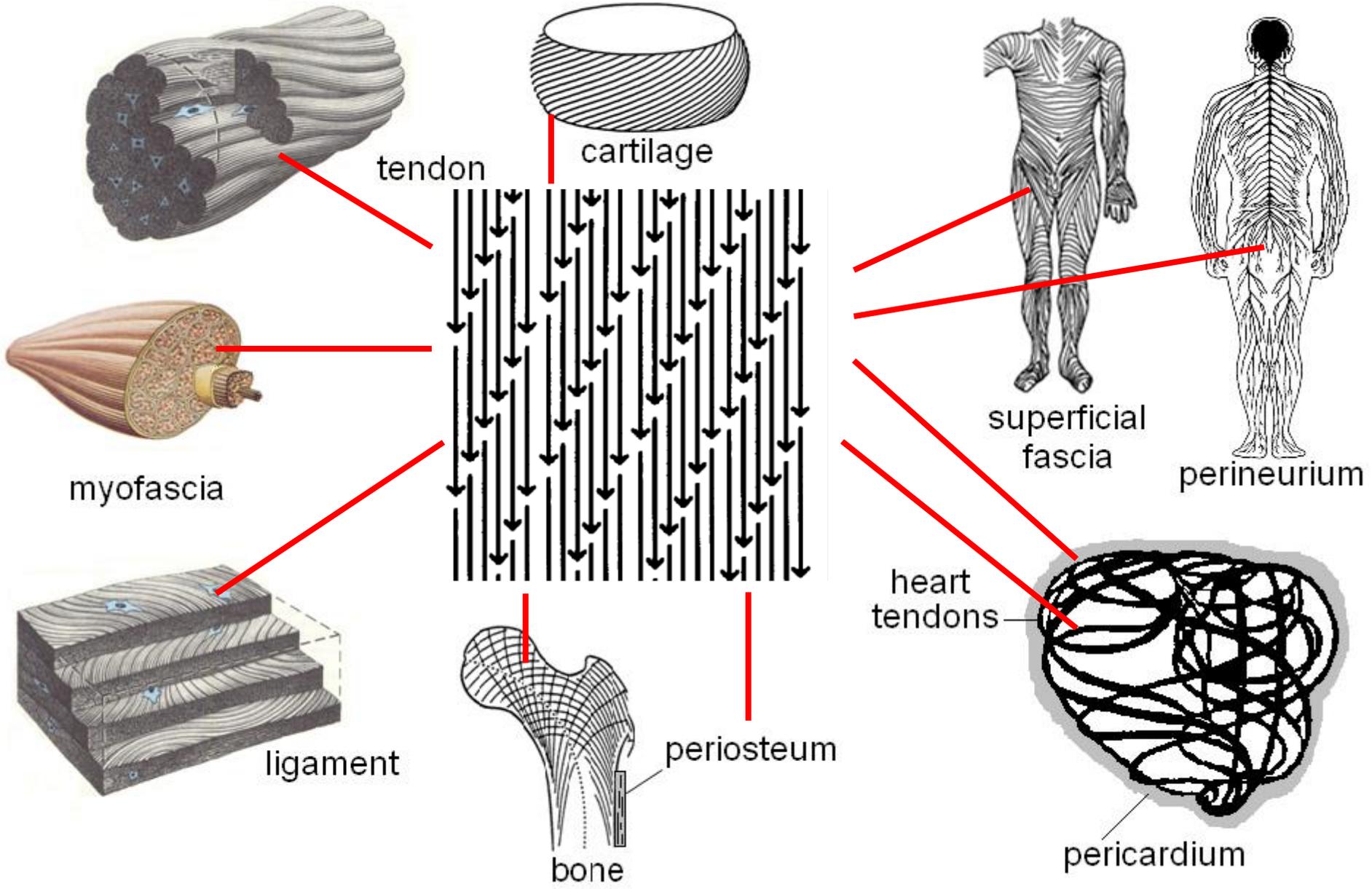
## Ectopic eye tissue in tail

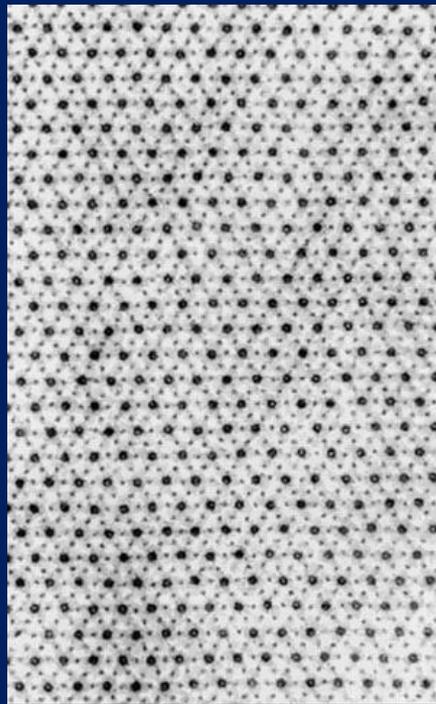
Pai, Aw, Shomrat, Lemire & Levin, 2012. Transmembrane voltage potential controls embryonic eye patterning in *Xenopus laevis*. *Development* 139, 313-323.

From the perspective of quantum electrodynamics, electromagnetic fields are comprised of:

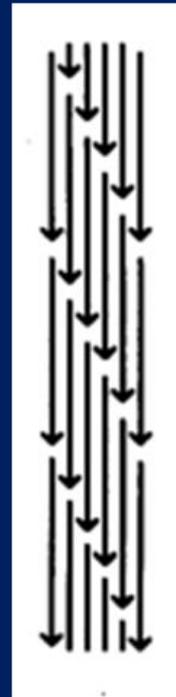
- Electric fields
- Magnetic fields
- Potential fields
- Spin or torsion fields

All of these tissues are composed of crystalline arrays of collagen.

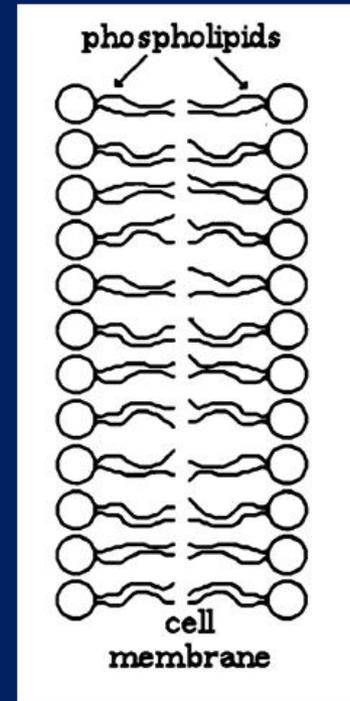




muscle



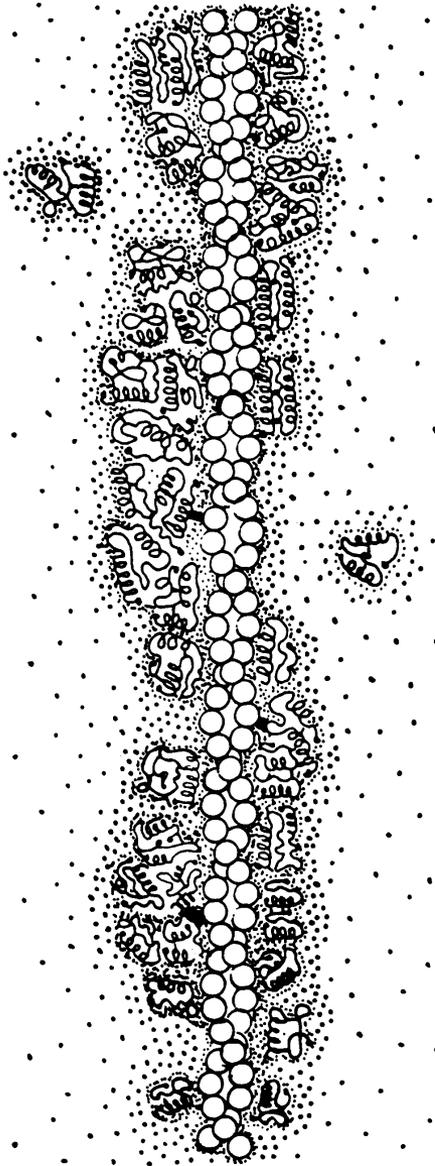
collagen



cell membranes

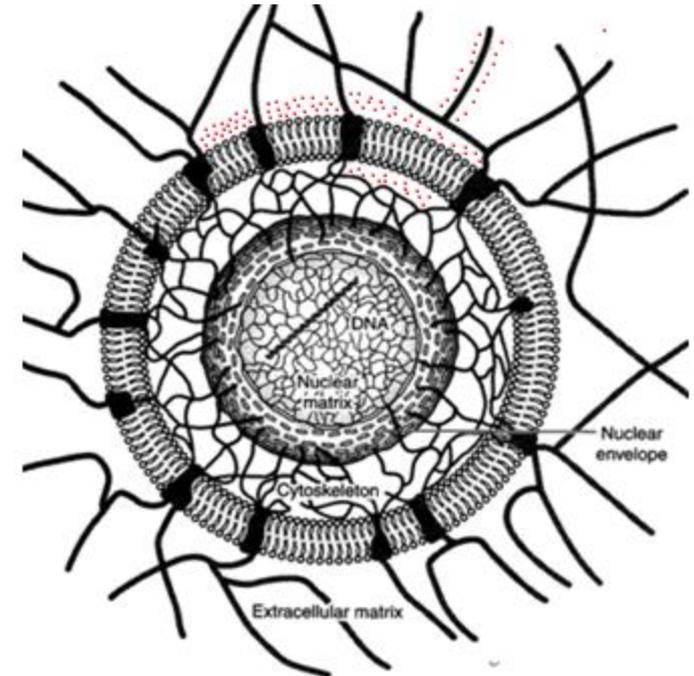
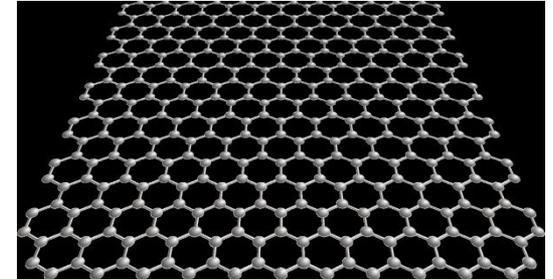
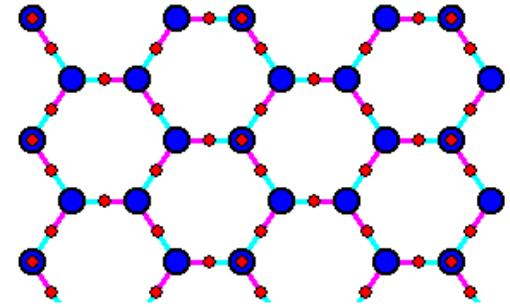
Muscles, connective tissues, and cell membranes are composed mainly of molecules packed closely together as liquid crystals.

200Å



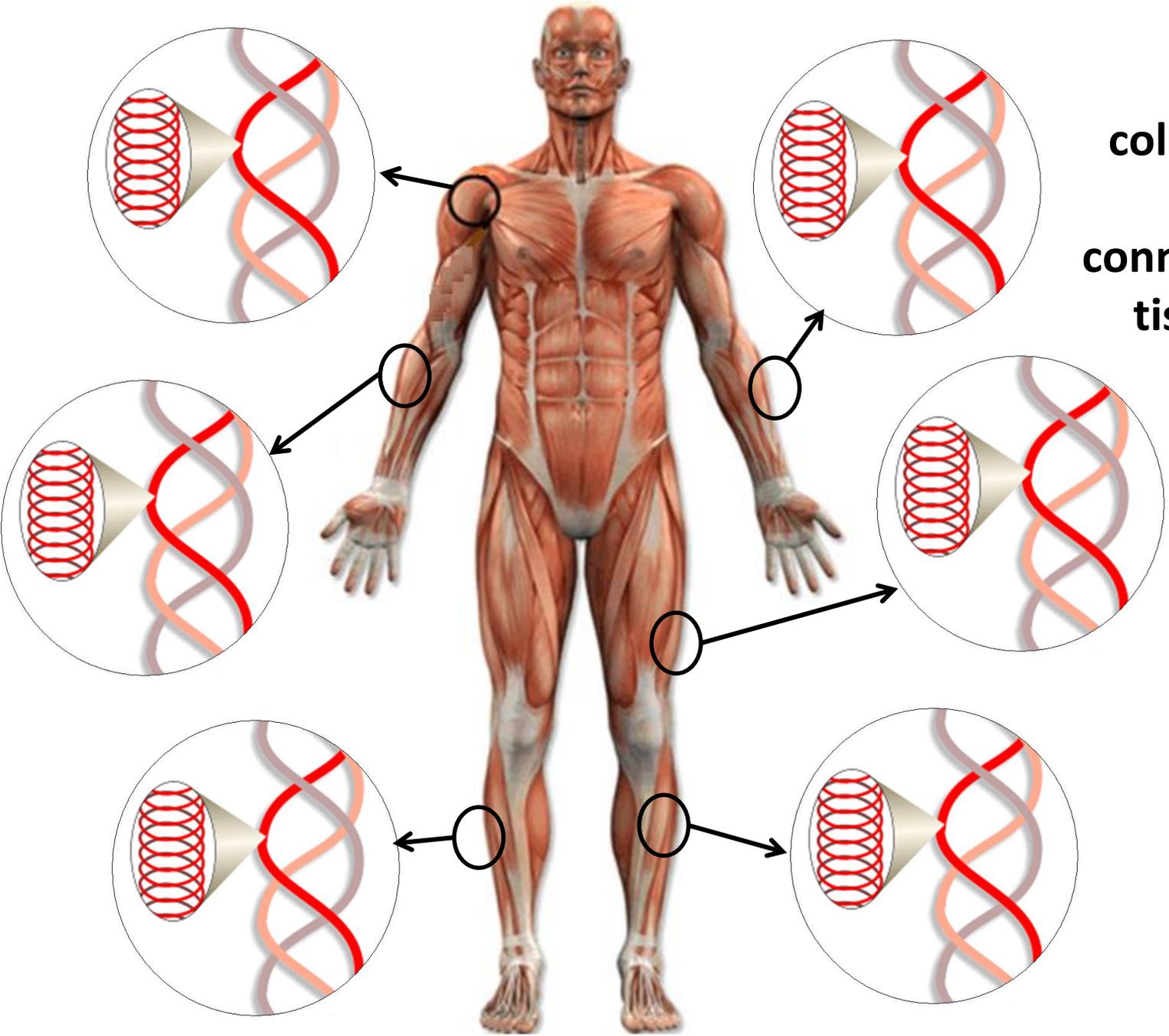
F-ACTIN

99 % of the molecules in the body are water molecules. Most of these EZ water molecules are located at interfaces, i.e. at the surfaces of other molecules (average of 10,000 waters per protein) and at surfaces of cells.

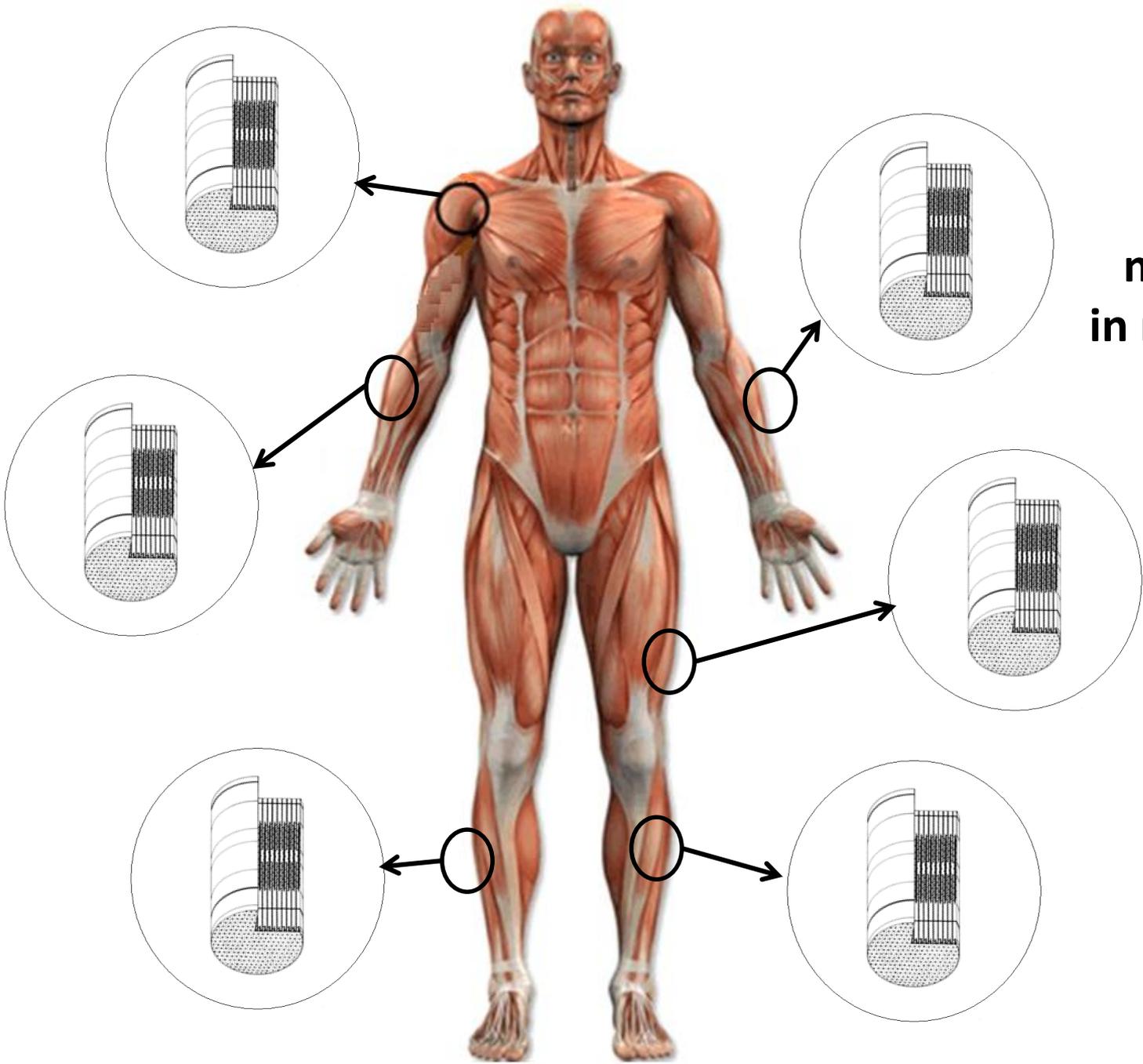


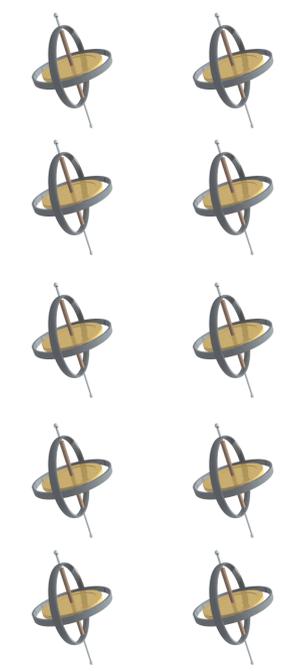
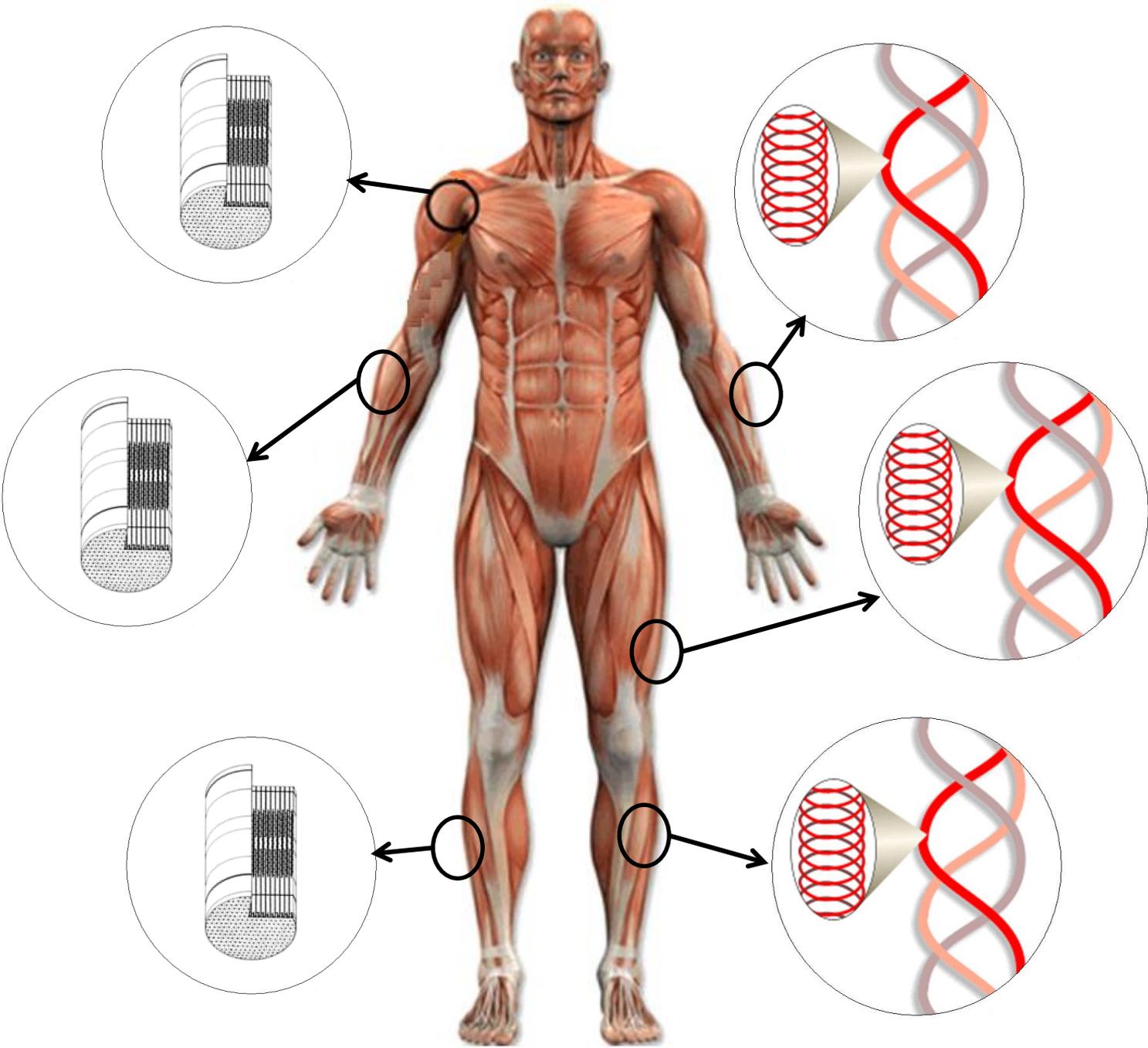
Most of the proteins in the body  
are helical and are organized  
vertically:

**collagen  
in  
connective  
tissue**

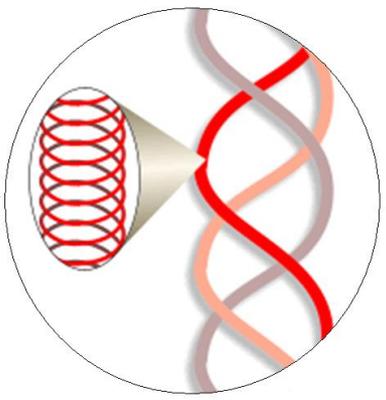
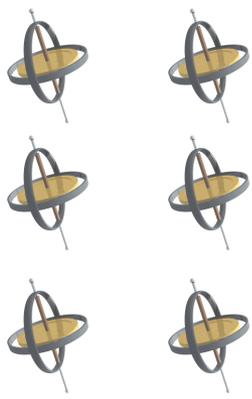
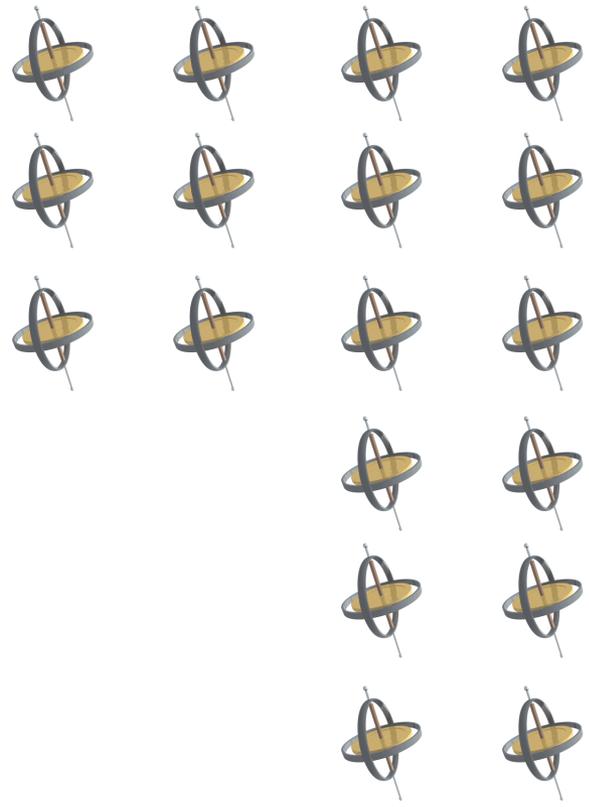
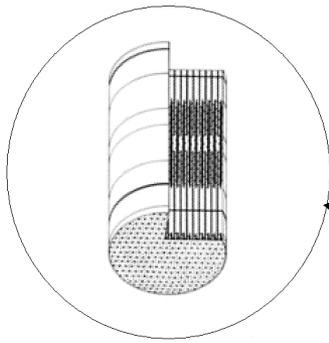


**actin  
and  
myosin  
in muscles**



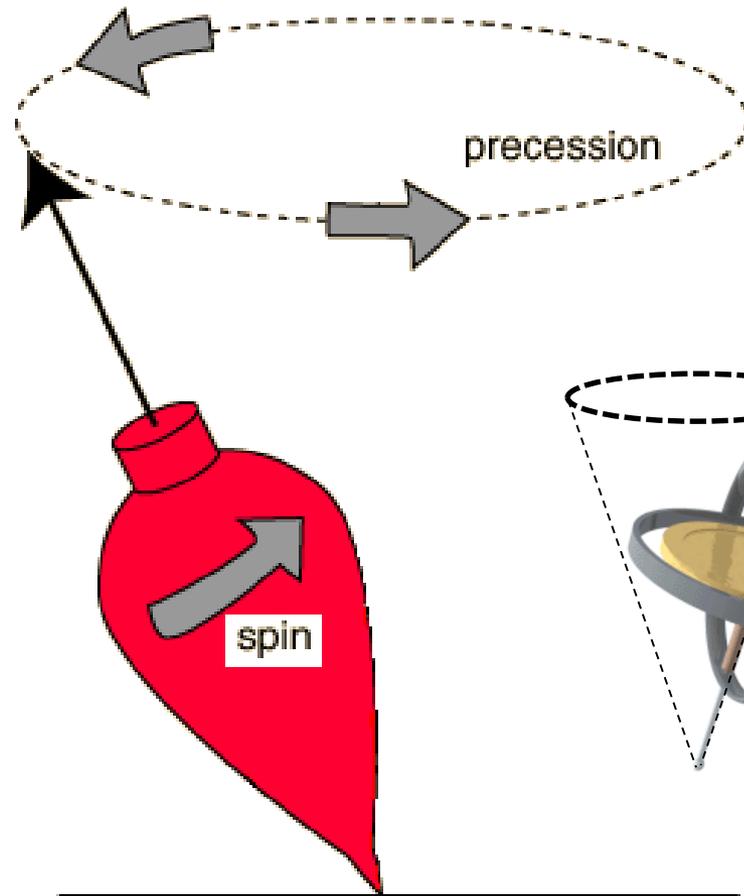
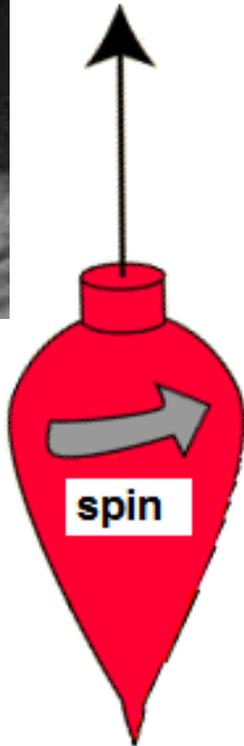


**These helical actin, myosin, and collagen molecules order a massive number of spinning water molecules.**





Joseph Larmor  
1857-1942

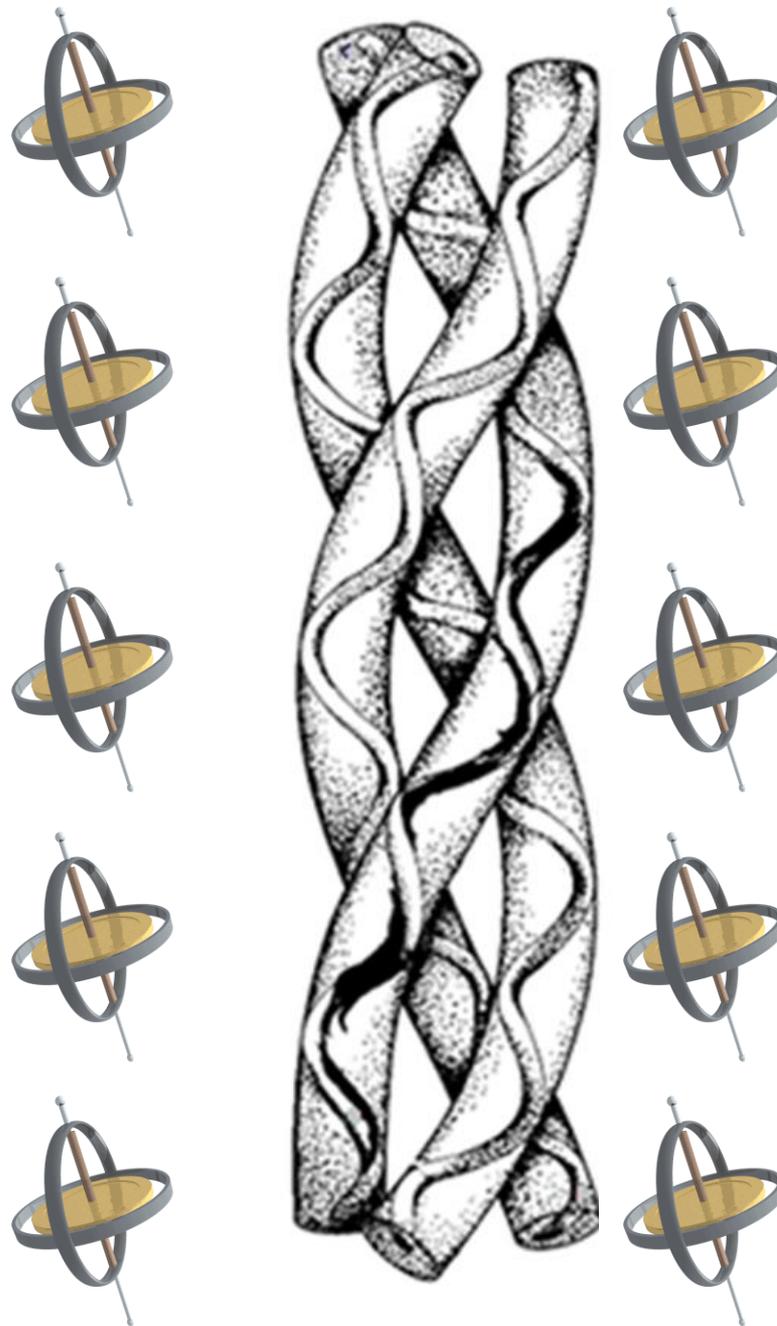


Protons and electrons have a property known as spin. The situation can be compared to the spinning top. In the absence of an external field, there will be a certain spin axis. If an external field is applied, the spin axis will tilt and precess – the spin axis of the particle will sweep out a conical surface. The frequency causing the precession is known as the Larmor frequency, named after Sir Joseph Larmor, an Irish physicist and mathematician.



***When the energy level in these liquid crystals reaches a certain point, the molecules begin to vibrate coherently, leading to the emission of coherent light = radiance.***

This arrangement partially explains the extreme sensitivity of living matter to external environmental fields.

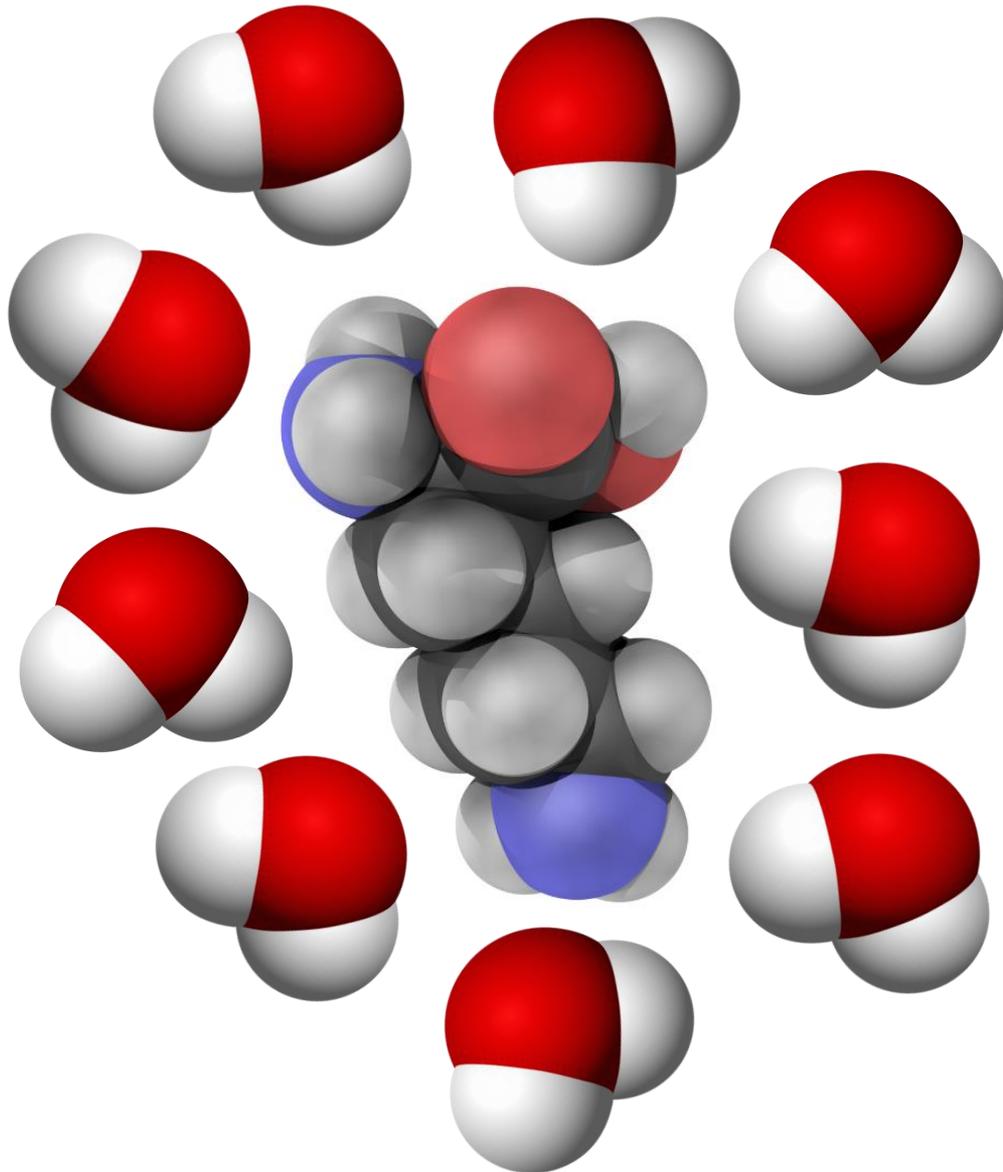


At the 2013 conference I suggested that EZ water associated with the surfaces of molecules might act to match the impedance of space with that of living matter and thereby allow information to flow two and from living forms and the fabric of space.

The importance of impedance matching is summarized in the work of Charlene Bohm:

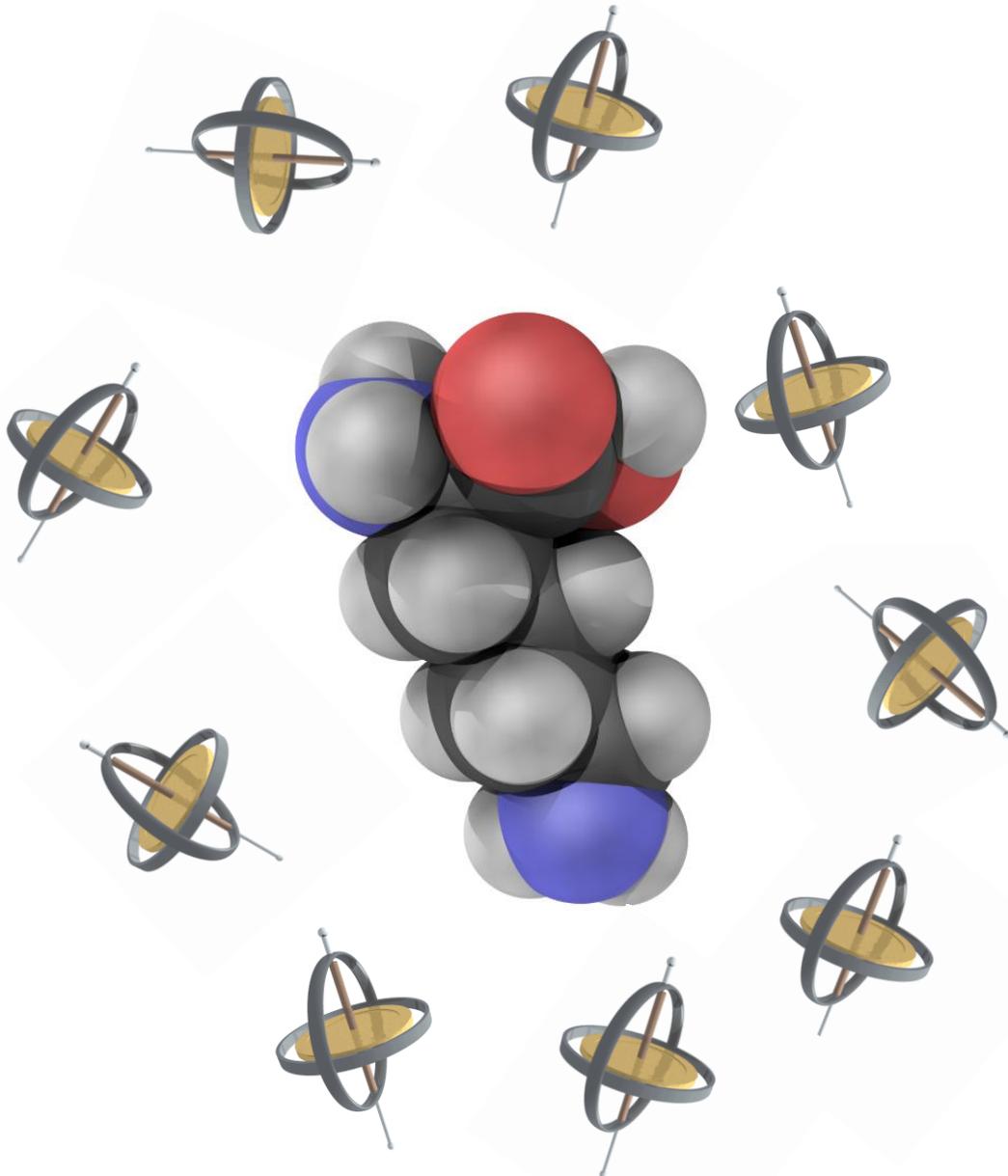
Bohm, C.A. 2007. United States Patent 7,280,874, issued Oct 9, 2007 -- Methods for determining therapeutic resonant frequencies.

# Lysine

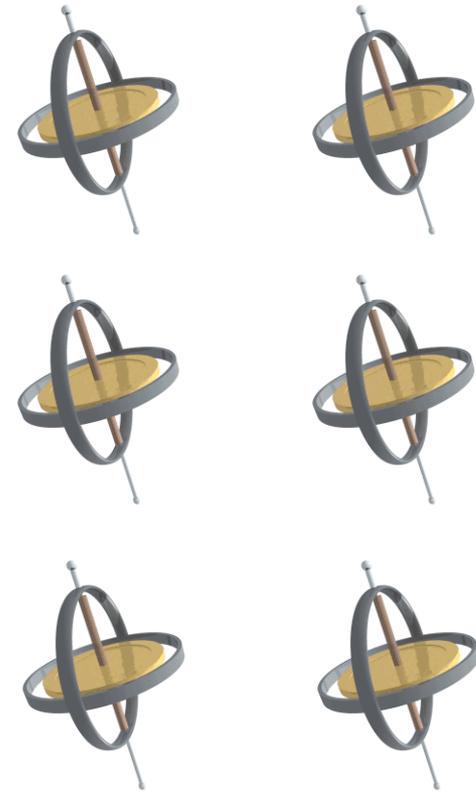
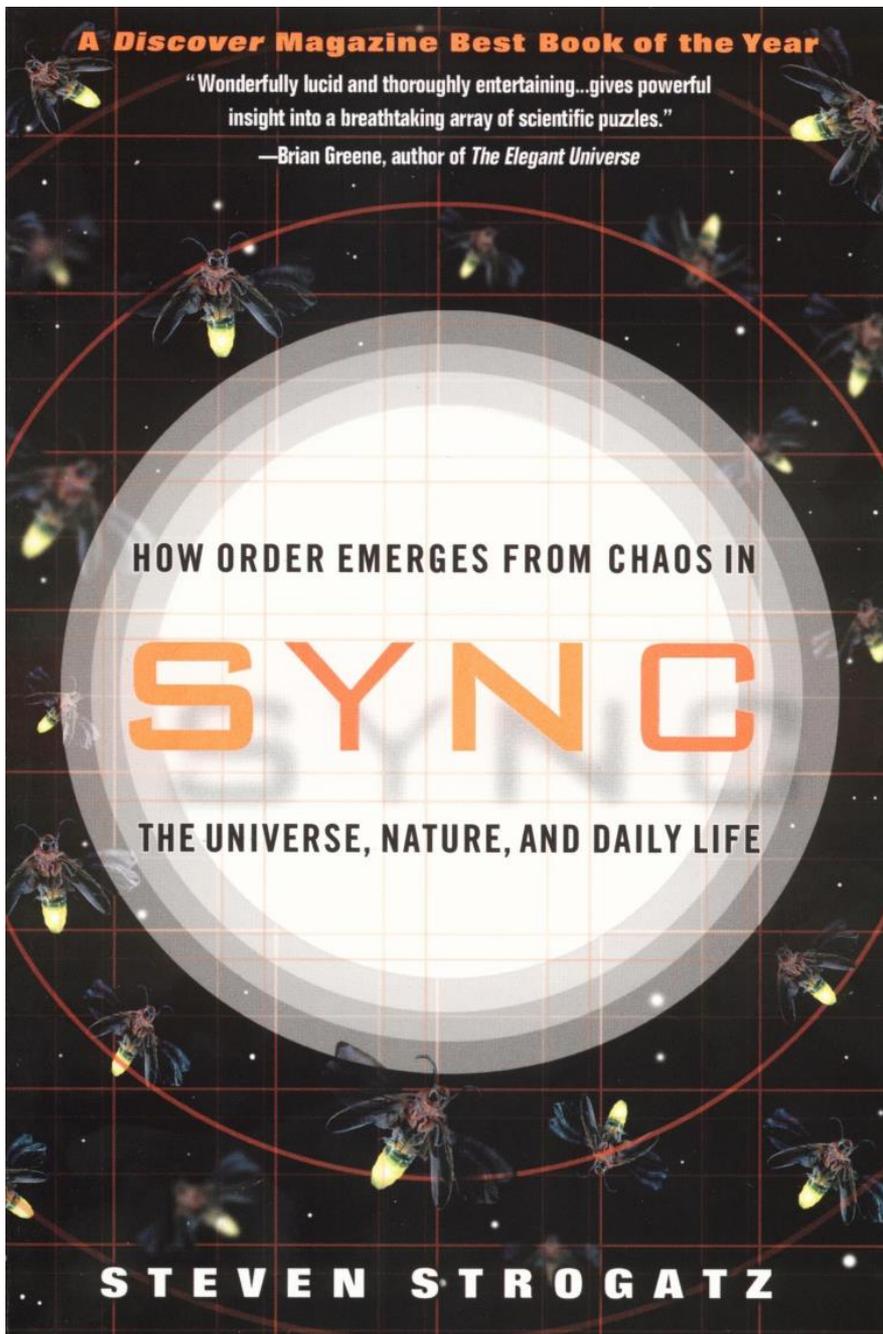


Hypothesis: Spinning EZ water molecules couple the quantum information field (morphic field) to the molecular structure and *vice versa*.

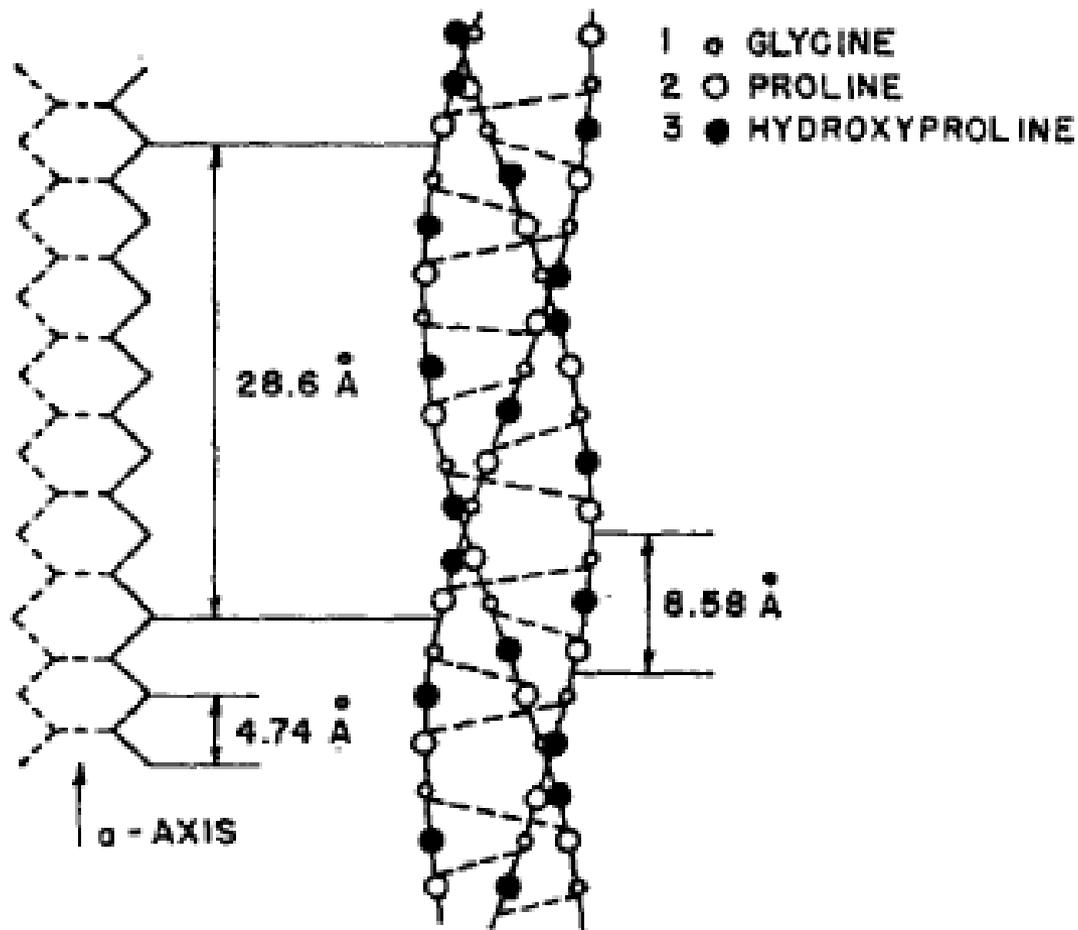
# Lysine



Hypothesis: Spinning EZ water molecules couple the quantum information field (morphic field) to the molecular structure and *vice versa*.

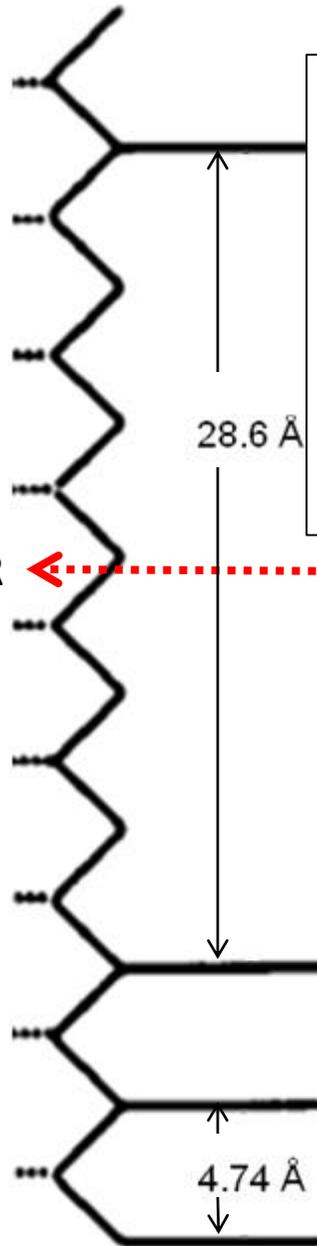
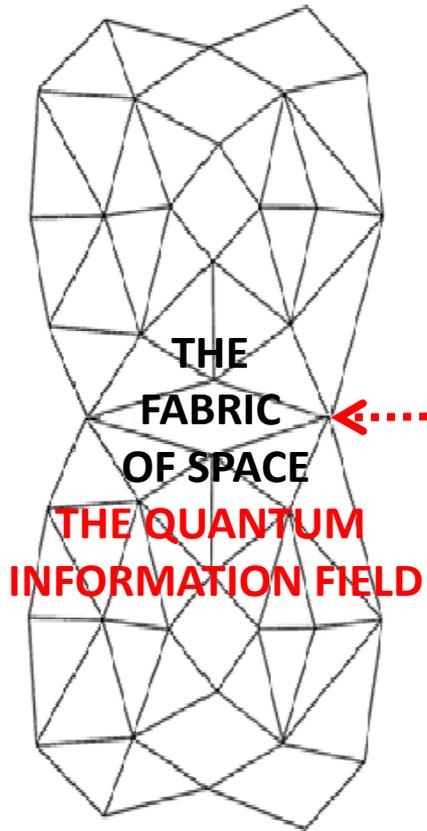


Nature uses every available channel to allow her oscillators to talk to one another.



**The spacing of amino acids along the collagen backbone is optimal for binding water molecules.**

Berendsen, H.J.C., 1962. Nuclear magnetic resonance study of collagen hydration. *Journal of Chemical Physics* 36:3297-3305.



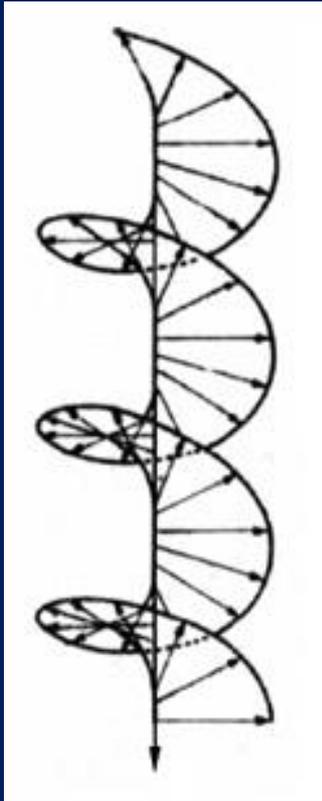
**HYPOTHESIS:**  
PHYSIOLOGY, HEALTH, AND MORPHOLOGY DEPEND ON QUANTUM INFORMATION EXCHANGES BETWEEN THE FABRICS.

**THE HELICAL FABRIC OF LIFE**

**NOTE THAT THE ARROWS ARE BI-DIRECTIONAL.**

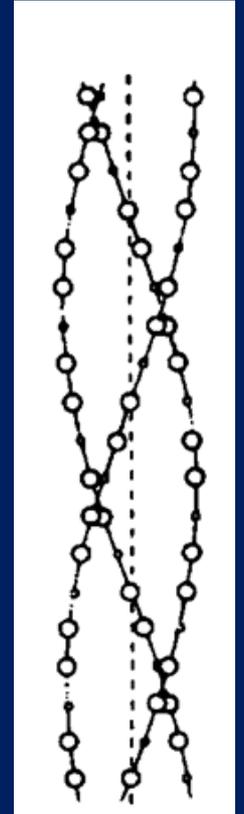


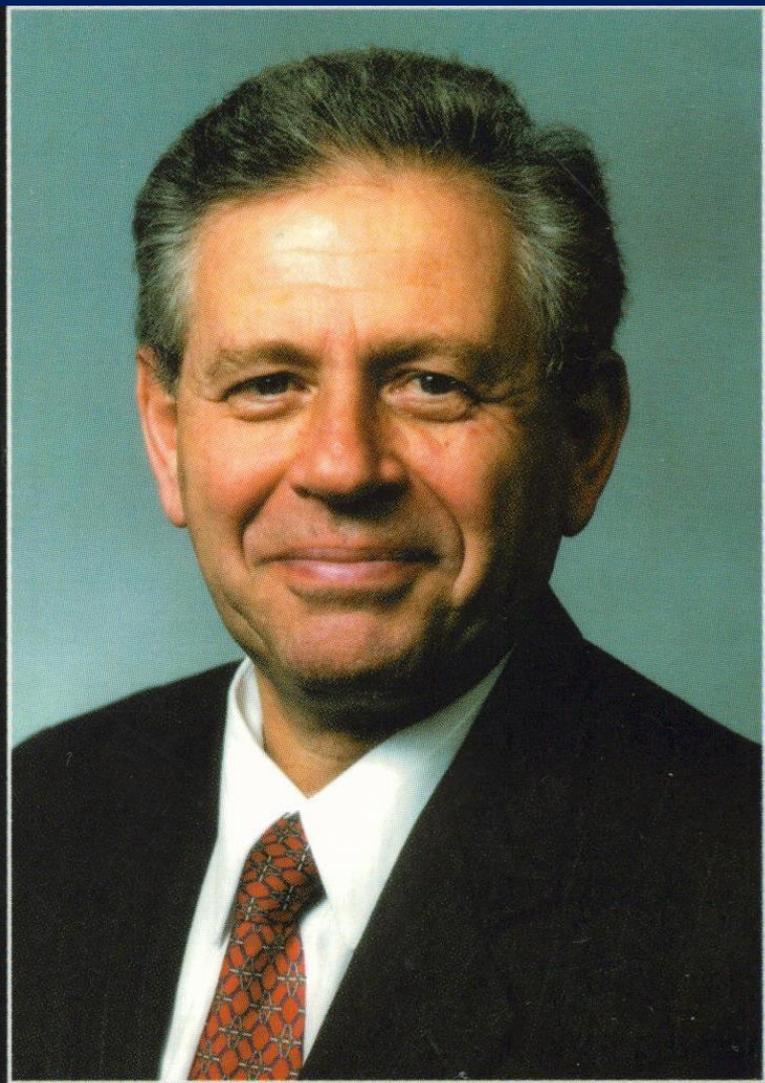
# Both the fabric of space and the fabric of the body have spiral grains.



light  
spirals  
through  
space

energy  
spirals  
through  
molecules

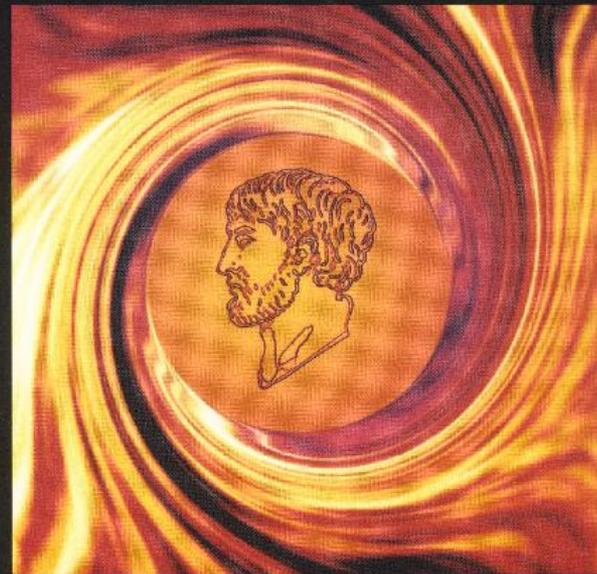




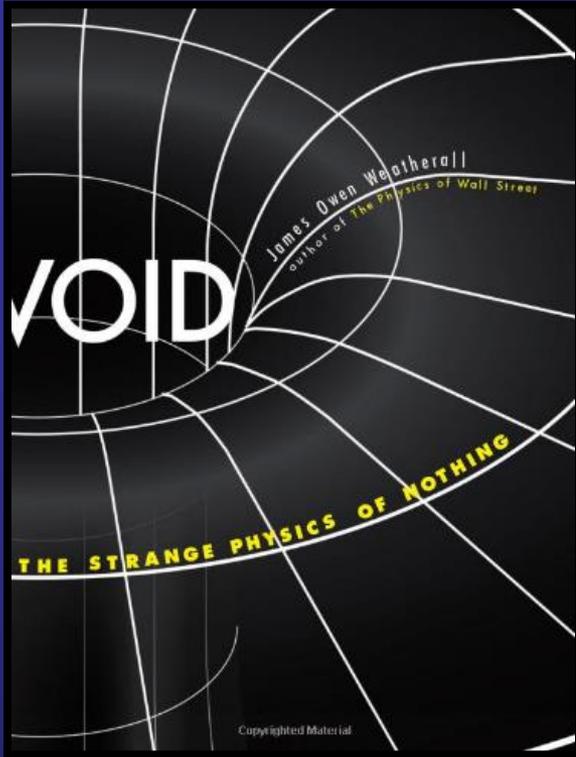
Vladimir B. Ginzburg

*Spiral Grain  
of the Universe*

In Search of  
the Archimedes File



Vladimir B. Ginzburg



James Owen Weatherall (2017):

## *Void: The Strange Physics of Nothing:*

Space is a plenum - Aristotle, Descartes and Leibniz

Space is an empty void – Newton

Space is an aetheric medium - Maxwell

Space-time is a curved fabric – Einstein

Space is an infinite sea of particles and energies – Dirac

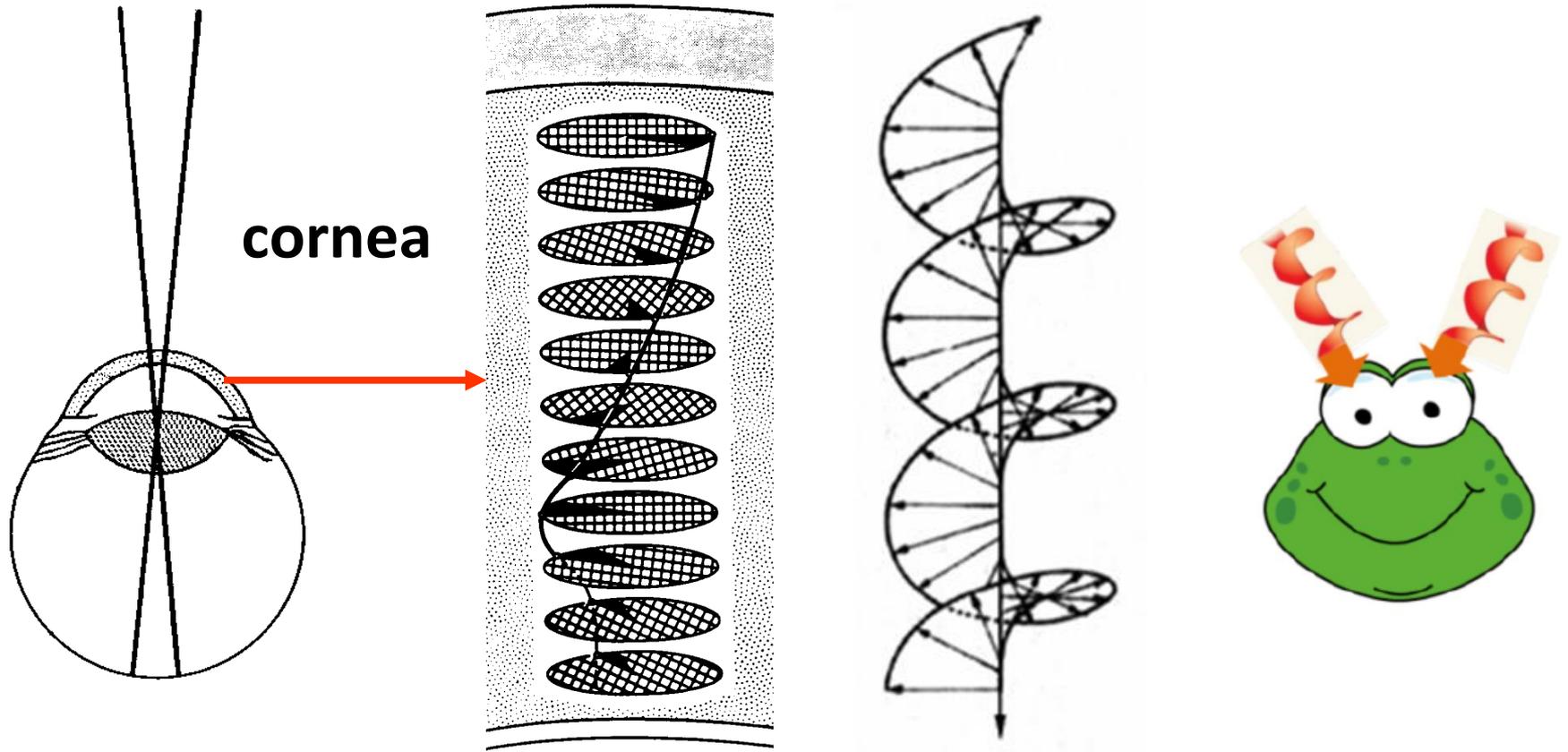
Space is a plenum – quantum physics

The fabric of space is helical.

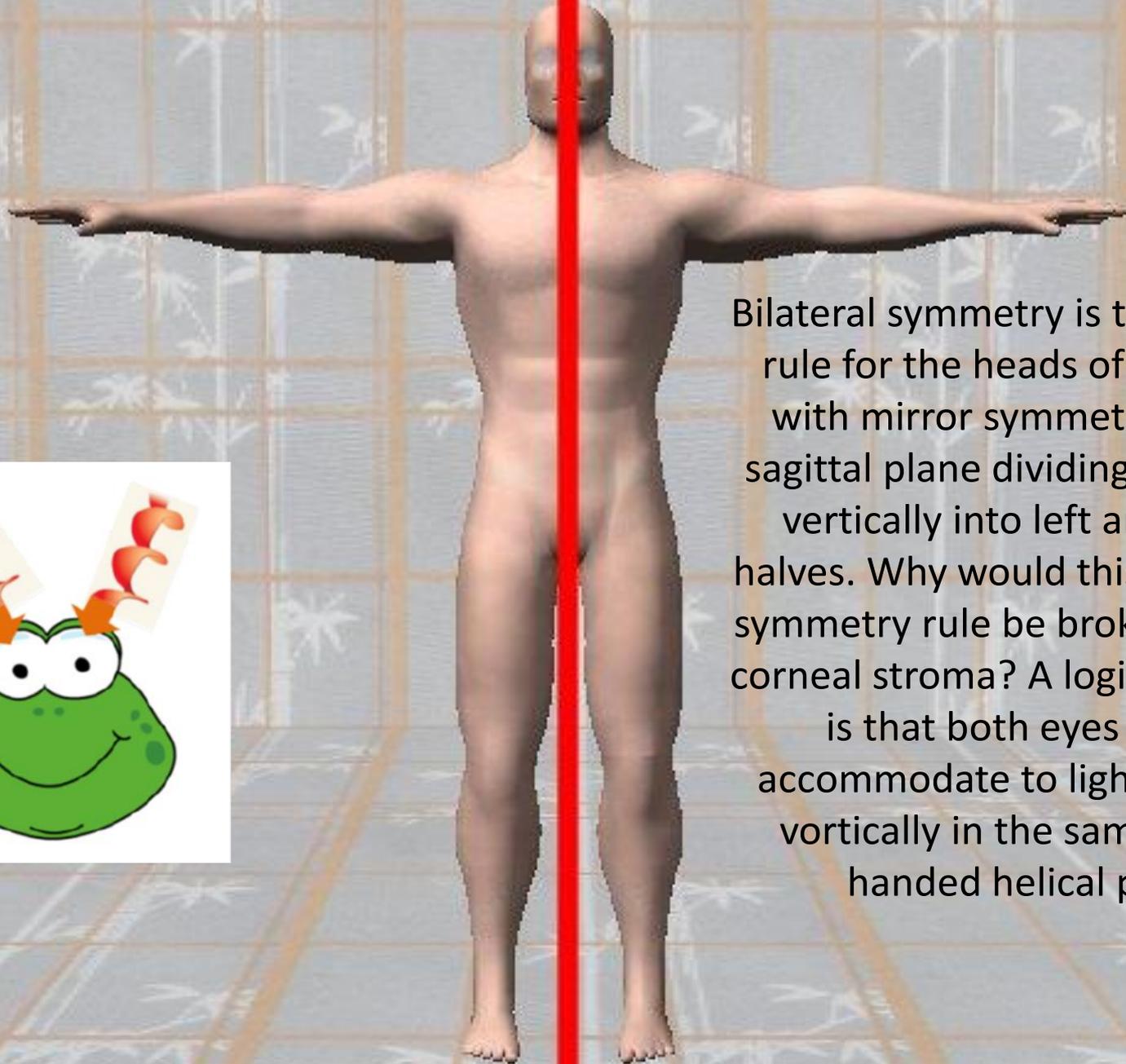
Many physicists do not like the idea that space has structure, but we can prove it with biology.

<http://www.omicsonline.com/open-access/vortical-structure-of-light-and-space-biological-implications-2090-8369-1000112.php?aid=41736>

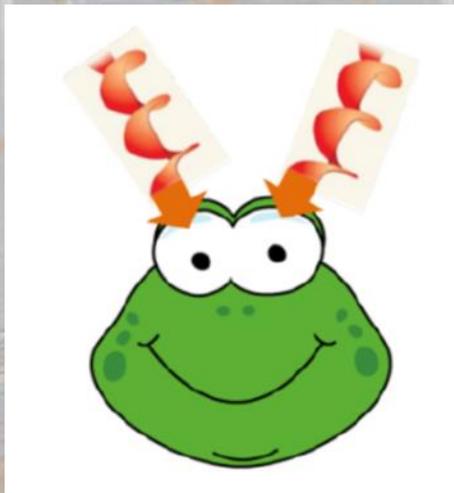
Biology confirms the vortex  
structure of space and light:

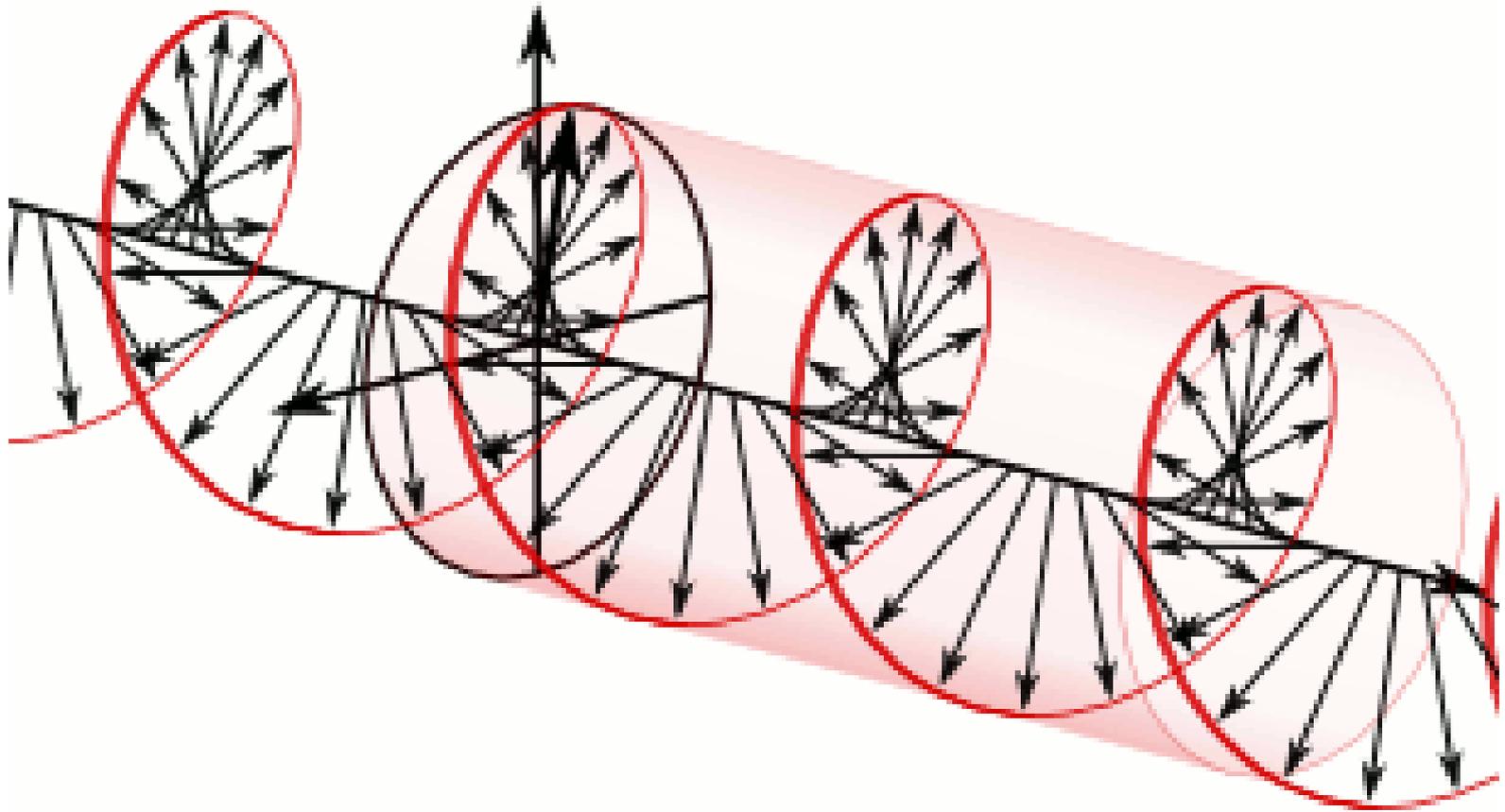


**Light spirals into both eyes in a right-handed helix.**



Bilateral symmetry is the general rule for the heads of animals, with mirror symmetry in the sagittal plane dividing the body vertically into left and right halves. Why would this universal symmetry rule be broken for the corneal stroma? A logical answer is that both eyes must accommodate to light moving vortically in the same right-handed helical path





Note the spiral form of the electromagnetic field. This form is thought to arise from the spiral grain of space described by Ginzburg and demonstrated by the corneal stroma in the eye.

# *Morphogenetic fields*



**Rupert Sheldrake:**  
Memory and morphology depend on morphic resonance – a resonance across time.

*Revised and Expanded*

**A New  
Science  
of Life**

**Rupert  
Sheldrake**

**The Hypothesis  
of Formative  
Causation**

First published  
1981

A Revised and Expanded Edition of *A New Science of Life*

# MORPHIC RESONANCE

THE NATURE OF  
FORMATIVE CAUSATION

"Rupert Sheldrake's contributions will be  
recognized one day on the same level  
as those of Newton and Darwin."  
DEEPAK CHOPRA

RUPERT SHELDRAKE

"Engaging, provocative . . . a tour de force."  
*New Scientist*

MORPHIC RESONANCE &  
THE PRESENCE  
OF THE PAST  
THE HABITS OF NATURE

RUPERT SHELDRAKE

# Critiques of the morphic field::

- Not measurable
- No evidence
- Inconsistent with data from genetics and embryology

Consider the possibility that the morphic field, and our memories, reside in the fabric of space – the quantum information field.

Consider the possibility that EZ water has a crucial role as an interface between the quantum information field and living systems.

# What is the fabric of space.



Less dense?

Dense?

The reason the morphic field is difficult to study is because the fabric of space and the quantum information field are difficult to study.

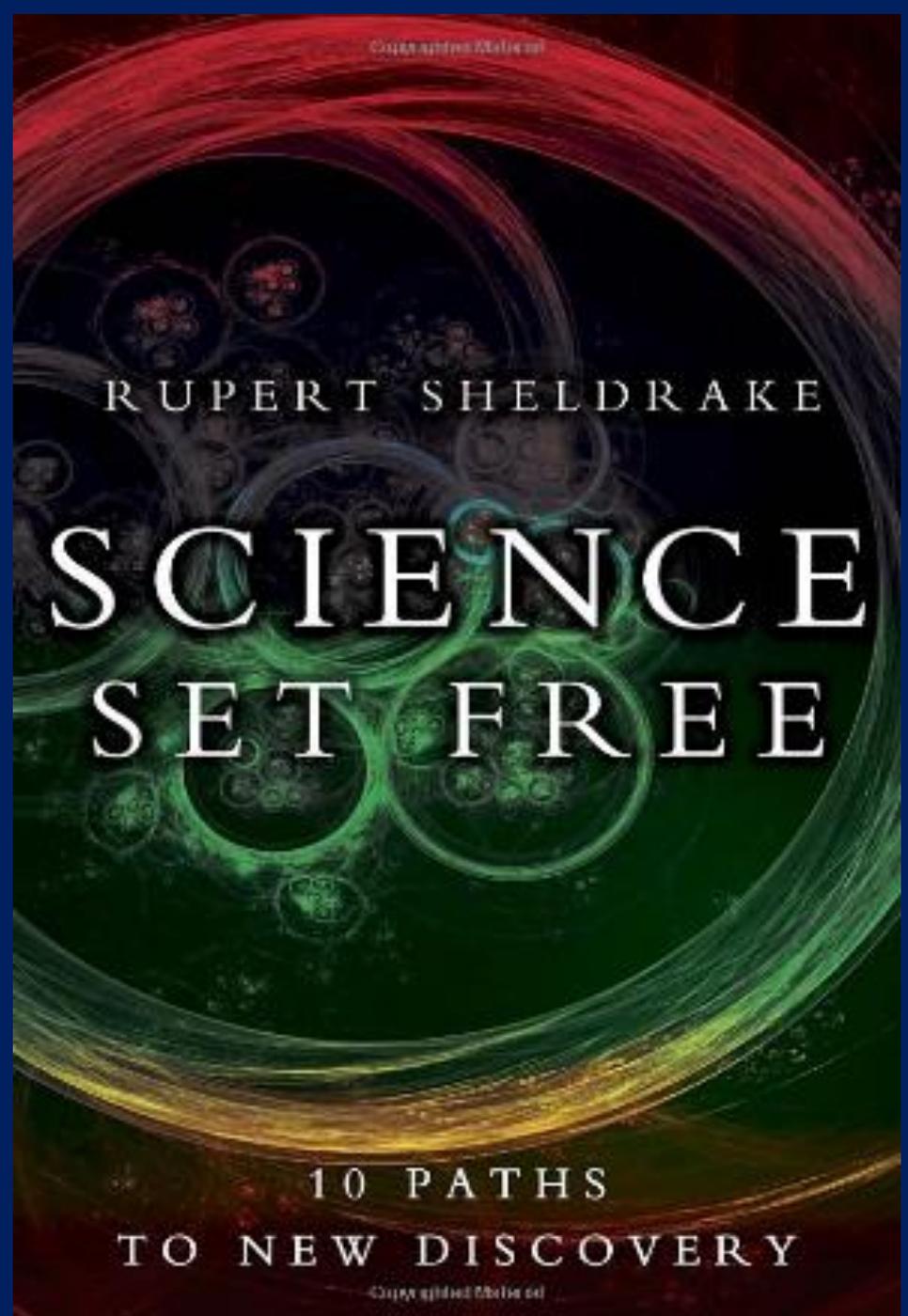


# ***Rupert Sheldrake: Morphic Resonance:***

- Morphogenetic fields give rise to all forms.
- Matter assumes form when it resonates with a field.
- The fields involved are not classical electromagnetic fields.
- Morphogenetic fields are derived from a body's own past actions and from the structures and actions of ancestors.
- Fields act across space and time.

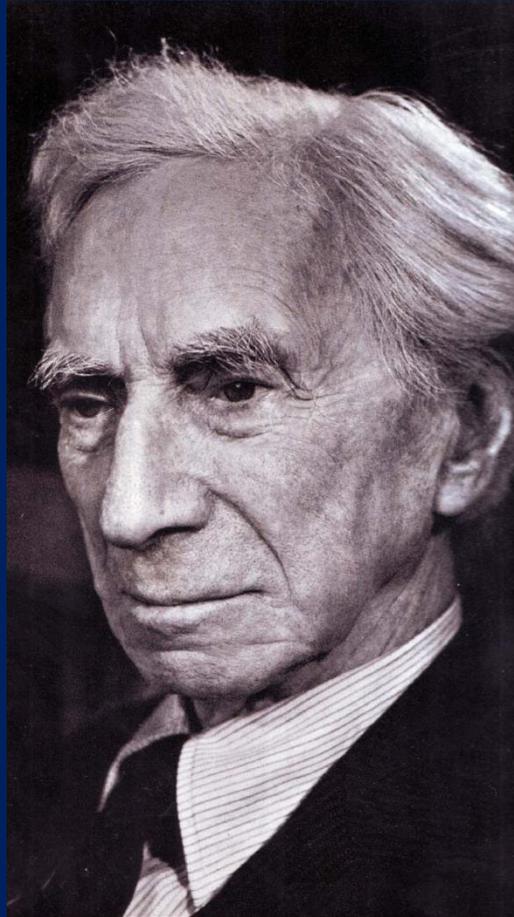
At the 2013 Water Conference  
Rupert Sheldrake reviewed his  
book, *The Science Delusion* (2012)  
titled in the US as *Science Set Free:  
10 Paths to New Discovery*.

In this book,  
Sheldrake pointed out  
that leading  
philosophers have  
generally agreed  
that memory and  
consciousness are  
**not** in the brain:





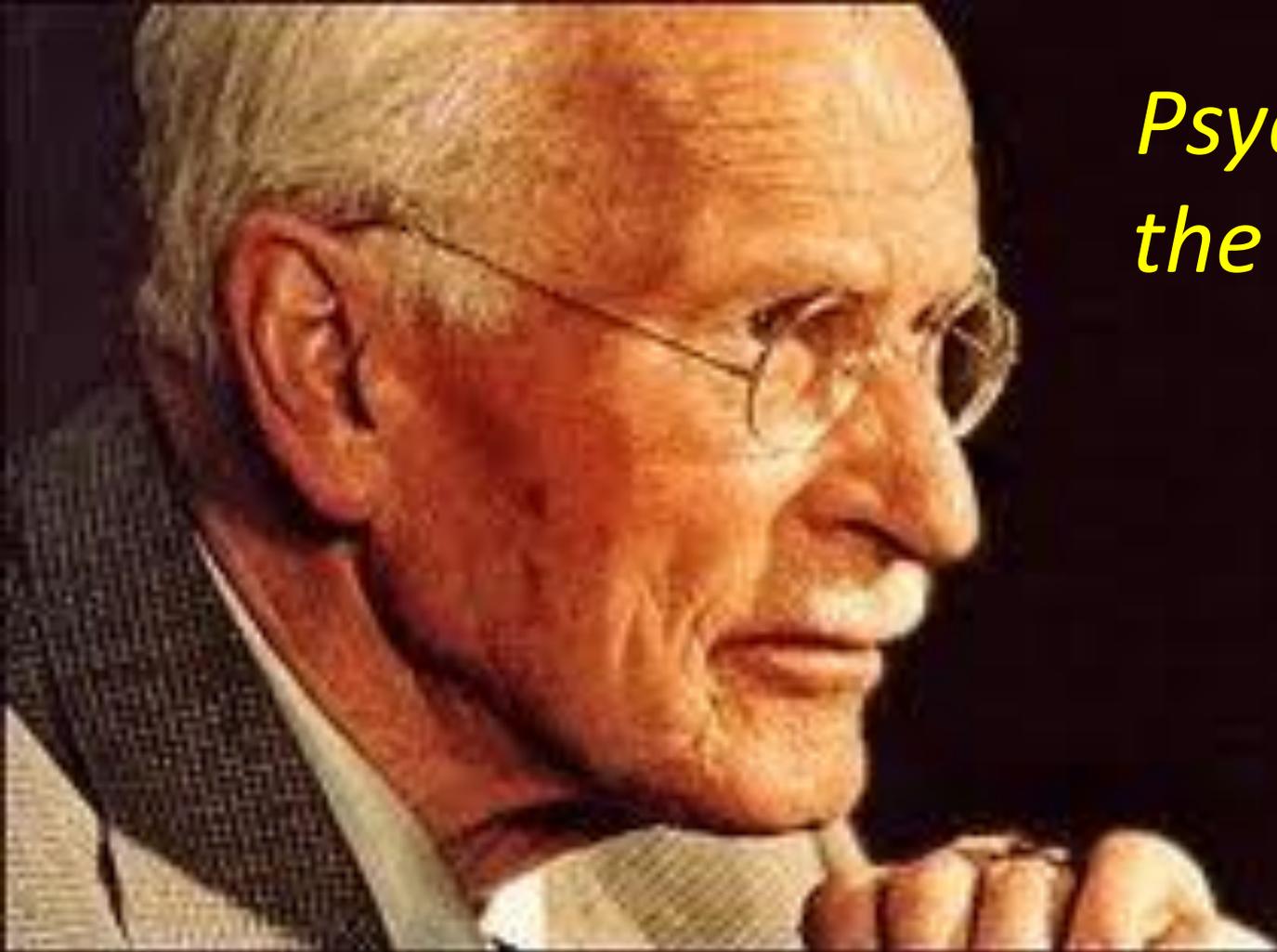
Plotinus (205-270):  
Memories reside in the soul.



Bertrand Russell (1872-1970):  
There is a kind of causation that connects  
things across time.



Ludwig Wittgenstein (1889-1951):  
Memory is not stored in the brain.

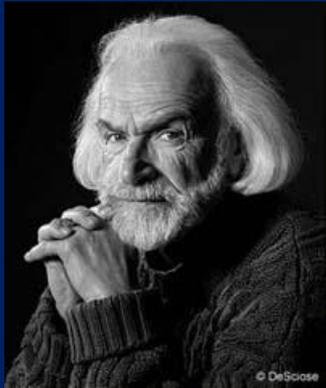


*Psyche is not in  
the head or the  
brain.*

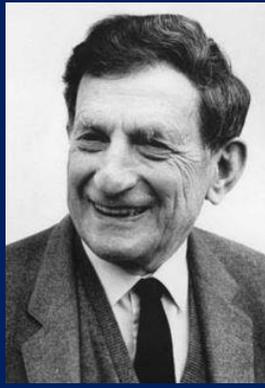
*~Karl Jung*

# Modern scholars are looking outside the body for the mechanisms of consciousness:

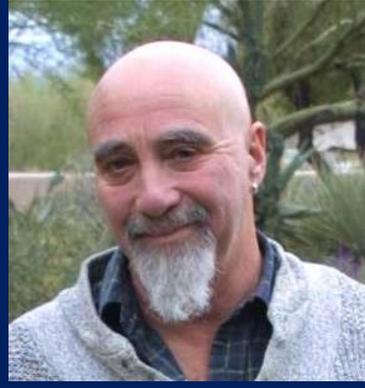
- Neuroscientists
- Philosophers
- Quantum physicists
- Cosmologists
- Cell biologists
- Astrophysicists
- Physicians



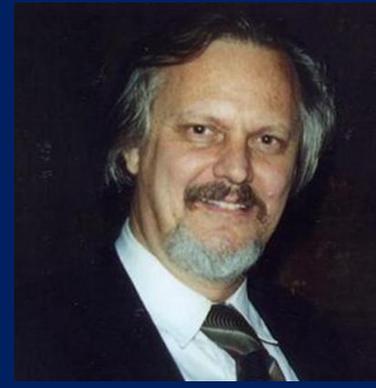
**Karl H. Pribram**  
Neurosurgeon



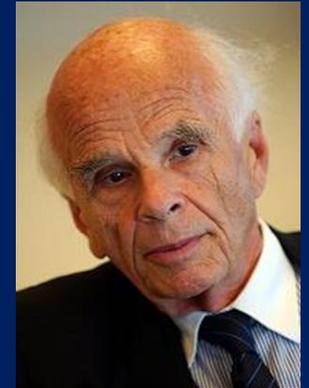
**David Bohm**  
1917-1992  
theoretical physicist



**Stuart Hameroff**  
anesthesiologist



**Richard L. Amoroso**  
Cosmologist & Philosopher



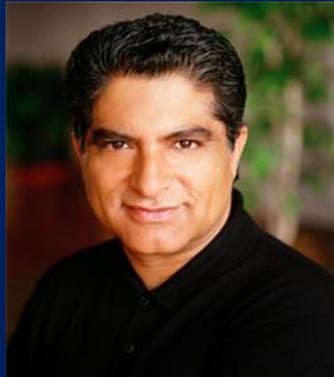
**Ervin László**  
Philosopher



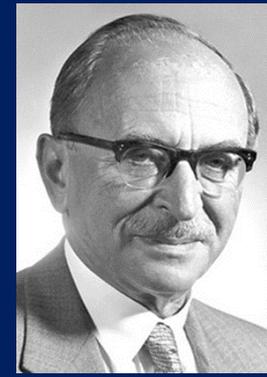
**Edgar Mitchell**  
Engineer, astronaut



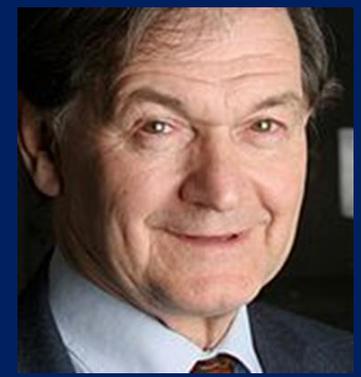
**Hiroomi Umezawa**  
Quantum Physicist



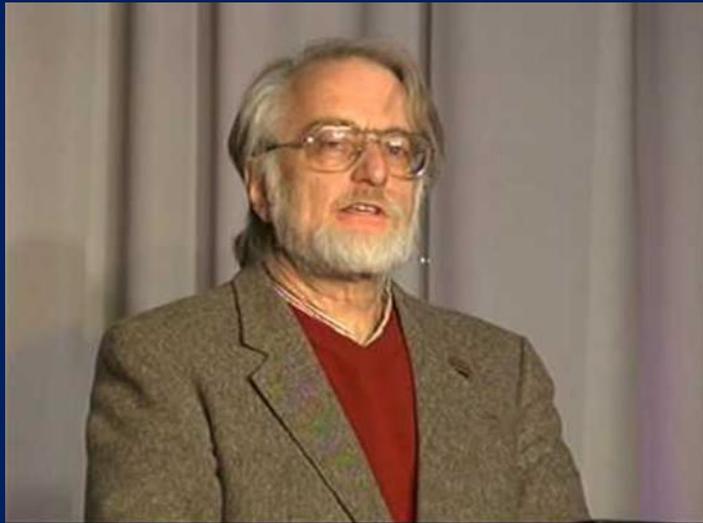
**Depak Chopra**  
Endocrinologist



**Dennis Gabor**  
Inventor of holography



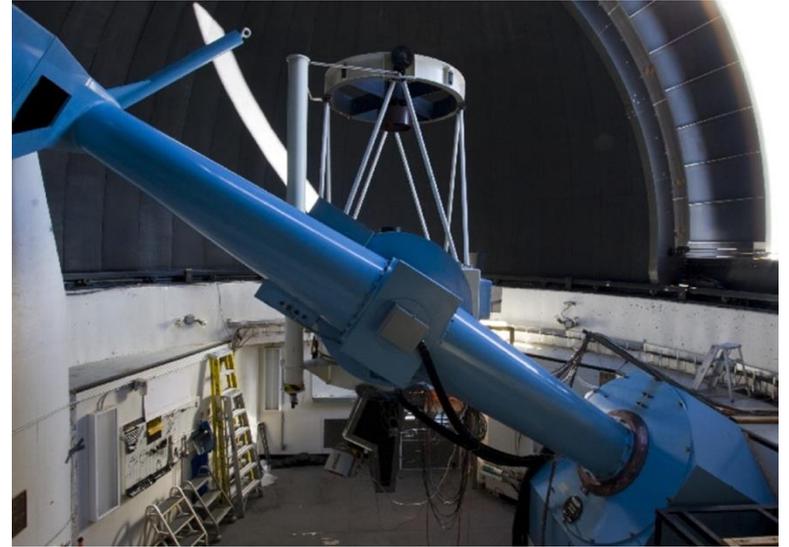
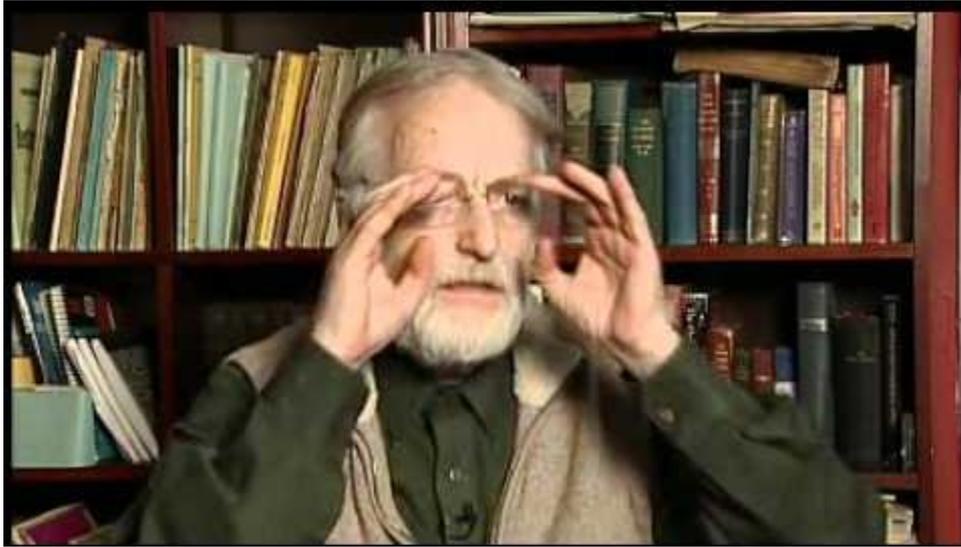
**Sir Roger Penrose**  
mathematical  
physicist



John Veltheim  
Developer of BodyTalk

Rudolph E. Schild  
Astrophysicist





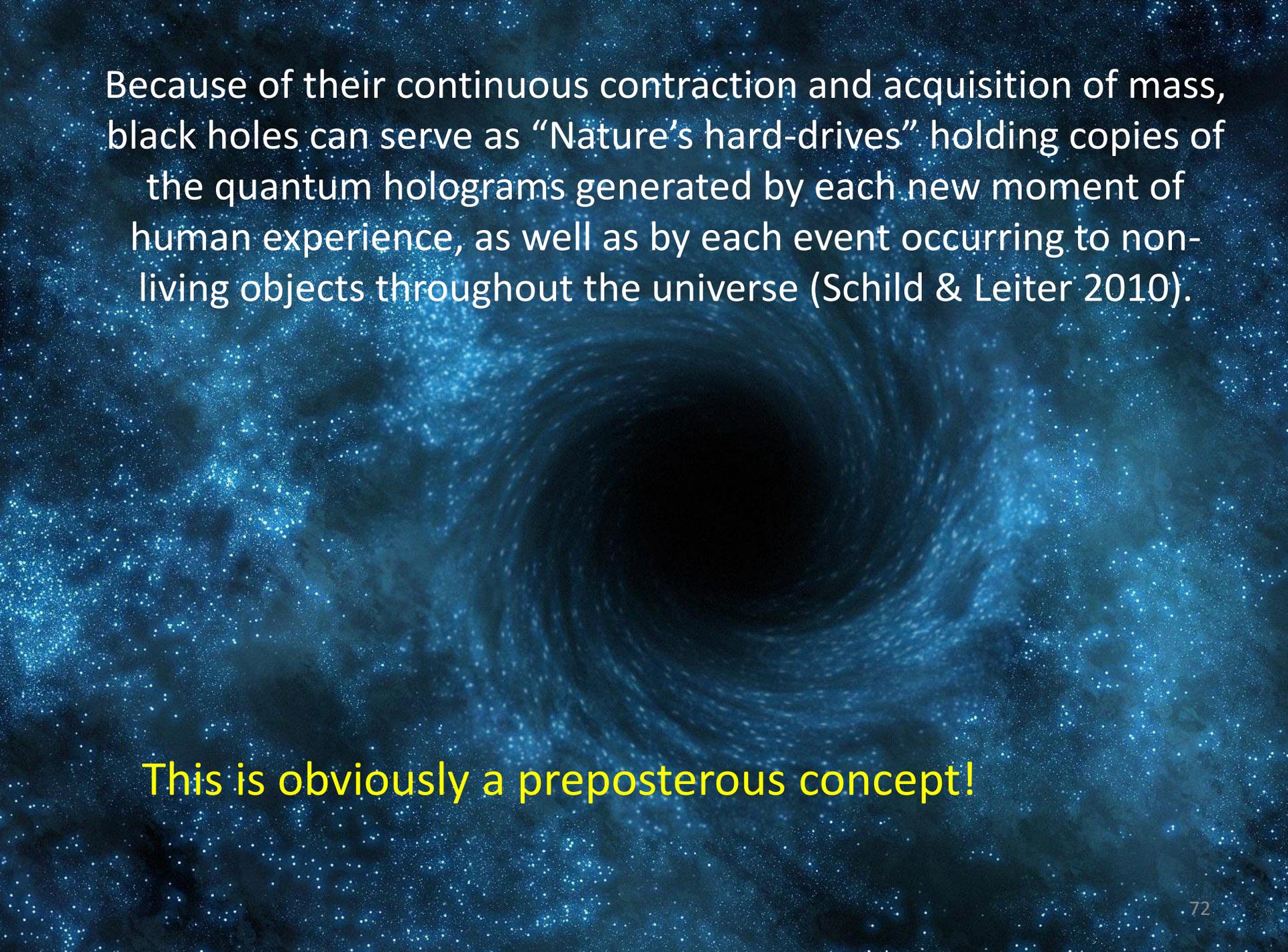
Rudolph E. Schild, PhD is an astrophysicist at the Harvard-Smithsonian Center for Astrophysics, editor of the *Journal of Cosmology*, and Director of the 60 inch Tillinghast telescope on Mt. Hopkins in Arizona.

# **Consciousness and the Universe**



The Journal of Cosmology  
Harvard University  
2011

**Quantum Physics,  
Evolution, Brain & Mind**



Because of their continuous contraction and acquisition of mass, black holes can serve as “Nature’s hard-drives” holding copies of the quantum holograms generated by each new moment of human experience, as well as by each event occurring to non-living objects throughout the universe (Schild & Leiter 2010).

**This is obviously a preposterous concept!**

How could thoughts and events here on Earth be conveyed to the edges of black holes billions of light-years away?

Spin or torsion or scalar fields have velocities billions of times the speed of light. They can reach any point in the universe virtually instantaneously.

This outrageous idea has been verified independently by scientists in Russia and in Switzerland.

Although torsion effects are usually weaker than electromagnetism, they are widespread and result in new phenomena.

The velocity of torsion waves has been estimated to be from 1000 to 1 billion times the speed of light.

~Nikolai Kozyerv

Confirmation of  
the velocity of spin waves:

The perfect nonlocal correlation of distant spin states suggests that information can travel between widely separated measurements of electrons in an entangled spin state at velocities greater than the speed of light.



**Nicolas Gisin**

According to Einstein, this is impossible. Gisin speculates that some "influence" coming from "outside space and time." affects experiments. Gisin says he means by this that "there is no story in space and time" to account for nonlocality. This is because the collapse of probabilities is instantaneous, and therefore not "in time?") and happens everywhere, "in all space?".

Nicolas Gisin has been called  
“the quantum philosopher.”



**Nicolas Gisin**

**Beyond the speed of light:**

We have seen how this interesting idea can be experimentally tested. Hence, it is time to take seriously the idea that Nature is able to produce nonlocal correlations.



Nicolas Gisin

# Quantum Chance

Nonlocality,  
Teleportation and Other  
Quantum Marvels

*Foreword by Alain Aspect*

 Springer

Nicholas Gisin:

Photons  
moving  
at billions of  
times the  
speed of light.

*Spin acts as the source of the torsion field, just as electric charge and mass produce electromagnetic and gravitation fields, respectively.*

~Panov, 1997

# The Spin Force

A Collection  
of Articles  
and Observations

Buryl Payne Ph.D.

Torsion is a widespread and important form of radiation which couples particle spins together, and propagates through space as a twisting wave.

Since all elementary particles, such as electrons and protons, have spin, this means that torsion is a universal force which has been overlooked by Western physics.

Torsion appears to be the missing ingredient which makes it possible to develop a true science of consciousness and understand the nature of life.

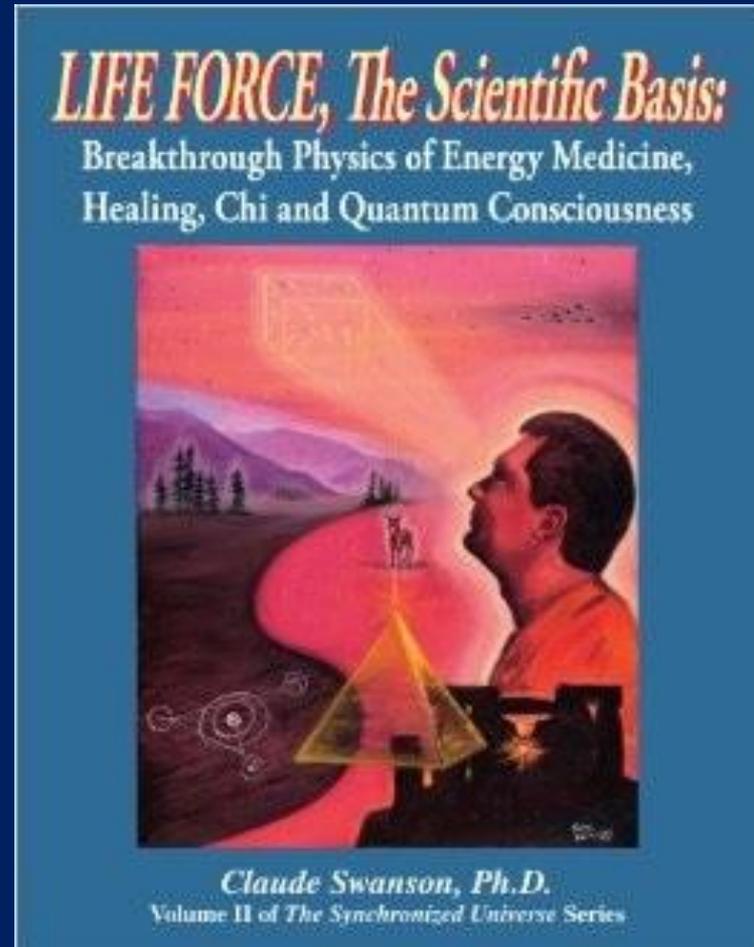
~Claude Swanson, 2008

These *subtle energy* terms are unfamiliar to most Western physicists and biologists, but have been given careful attention by Russian and some European scientists:

- Pilot waves
- Scalar fields
- Vector fields
- Spin fields
- Torsion fields



Claude Swanson



There is some literature in English.

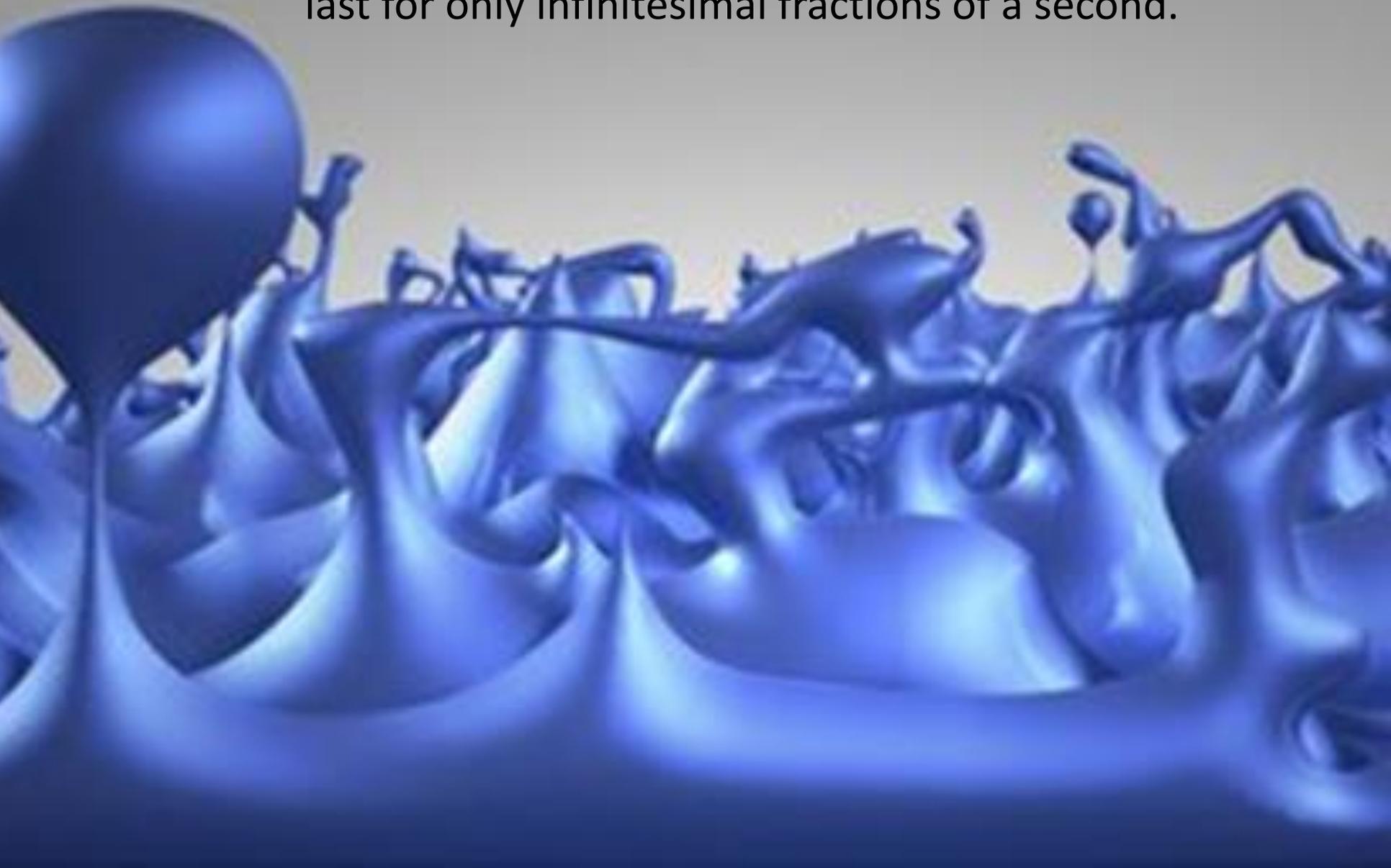
“Torsion” can be stored in an object and transferred from one object to another.

Torsion decays slowly over time. The storage time varies from tens of seconds to many months depending on various factors.

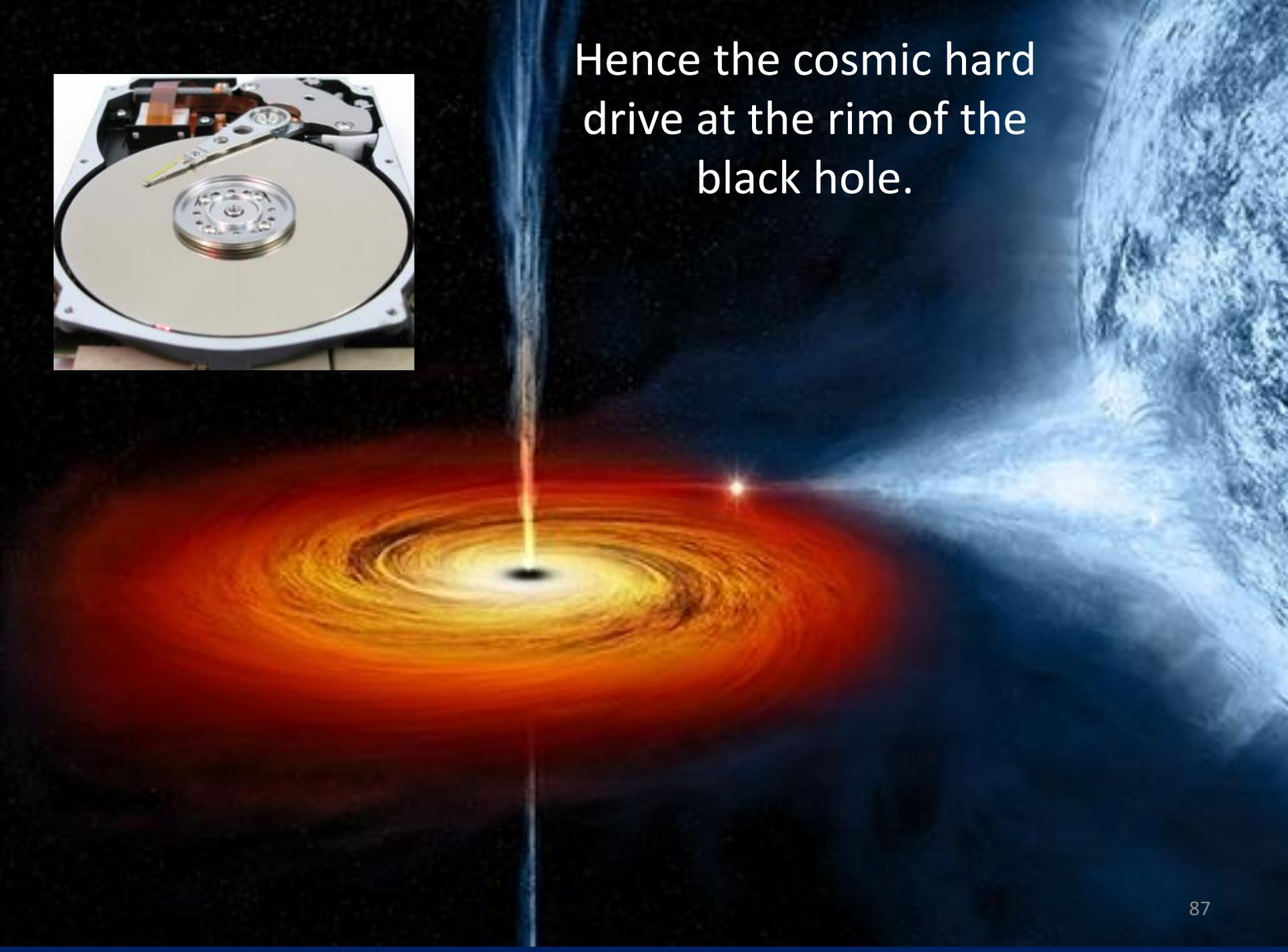
~ P.P. Gariaev

Russian Academy of Natural Sciences

The foamy structure of space-time, showing tiny bubbles quadrillions of times smaller than the nucleus of an atom that last for only infinitesimal fractions of a second.



Hence the cosmic hard drive at the rim of the black hole.

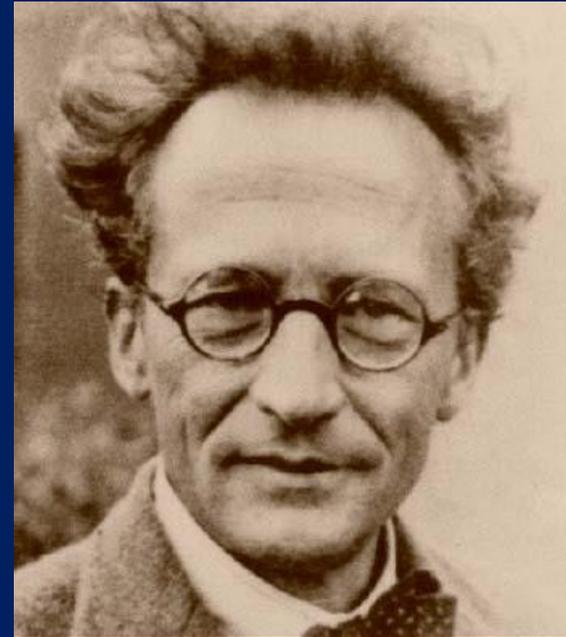


## Sheldrake's analogy between memory and your TV:

I can't study your TV and determine what programs you watched last night. They are not there, and they have not left a trace. The brain may be like a TV, i.e. a receiver that tunes into the memory channel but the show is not stored there.



**Niels Bohr**



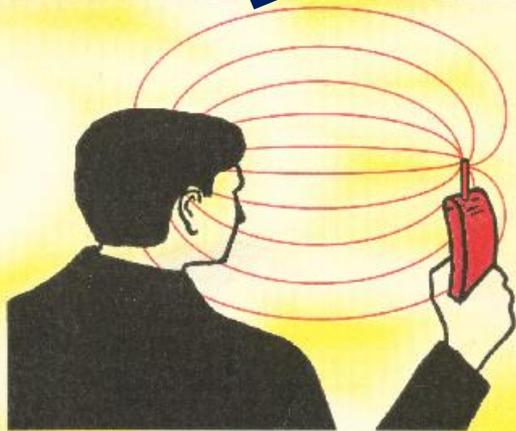
**Erwin Schrödinger**

Nobel prize winners in physics, Neils Bohr and Erwin Schrödinger, the founders of quantum physics, were convinced that quantum processes are at the interface between consciousness and matter.

# *Rupert Sheldrake: Morphic Resonance:*

- Morphogenetic fields give rise to all forms.
- Matter assumes form when it resonates with a field.
- The fields involved are not classical electromagnetic fields.
- Morphogenetic fields are derived from a body's own past actions and from the structures and actions of ancestors.
- Fields act across space and time.

Konstantin Meyl ~~fields~~  
~~Scalar waves~~

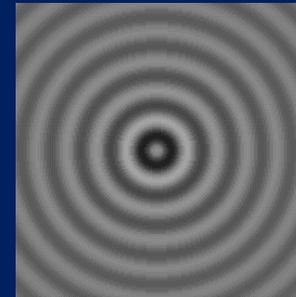
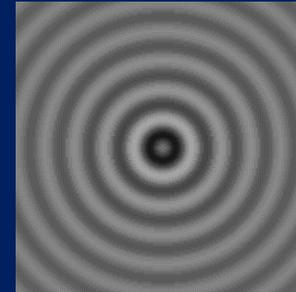


From an extended vortex and field theory  
to a technical, biological and historical use  
of longitudinal waves.

Edition belonging to the lecture and seminar  
„Electromagnetic Environmental Compatibility“



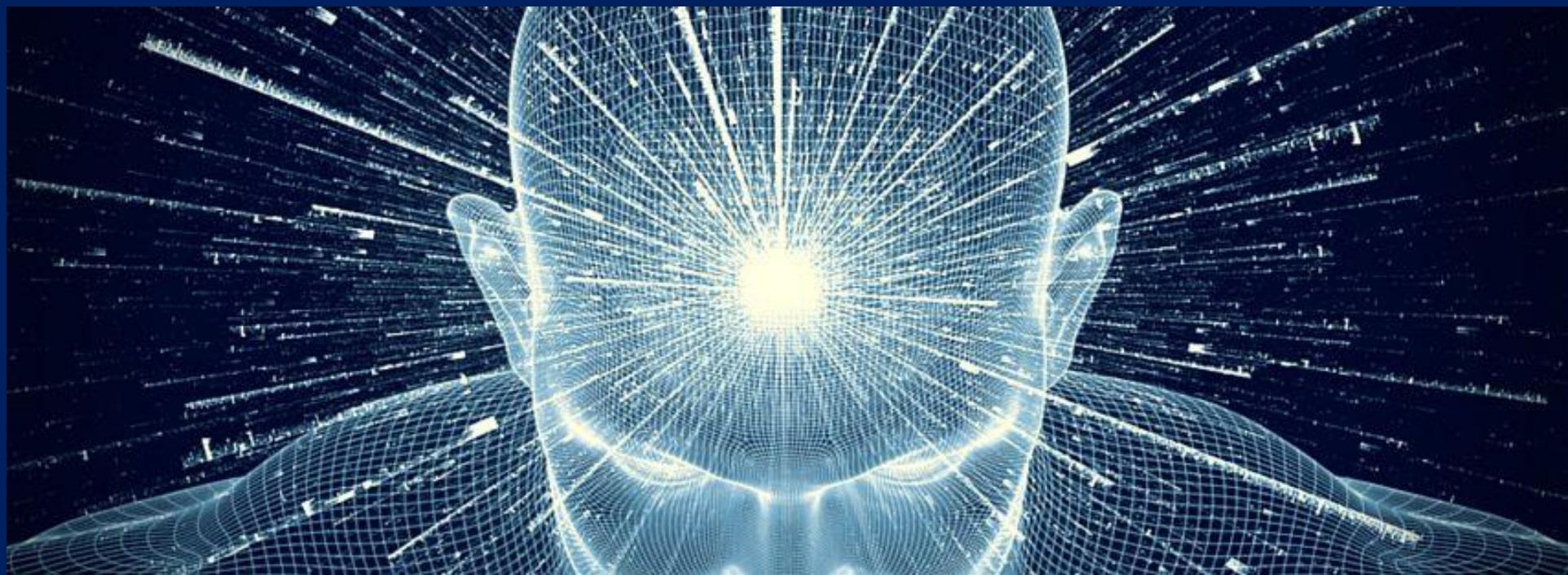
Konstantin Meyl



These are  
scalar or spin or  
torsion fields.

[www.k-meyl.de](http://www.k-meyl.de)  
[www.meyl.eu](http://www.meyl.eu)

# Memory in the fabric of space? Preposterous!



No, it is an ancient idea.

UPDATED SECOND EDITION

# Science and the Akashic Field

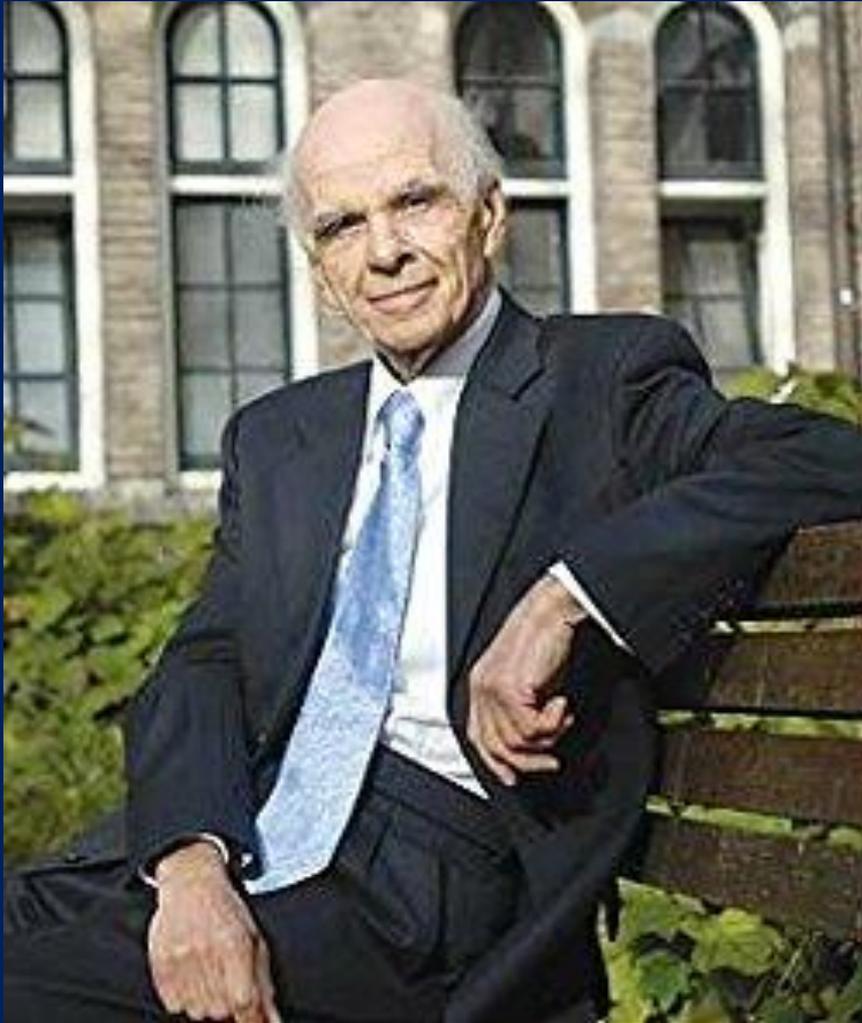
An Integral Theory of Everything

"The most brilliant, comprehensive, and intellectually satisfying integral theory of everything that I have ever read. . . . transcends the vision of Darwin, Newton, Einstein, the quantum pioneers, and many other scientific giants of history."

Deepak Chopra, M.D.

ERVIN LASZLO

Mystics, meditators and sages have long maintained that there exists an interconnecting cosmic field at the roots of reality that conserves and conveys information. Recent discoveries in vacuum physics show that this Akashic Field is real and has its equivalent in science's zero-point field that underlies space itself. This is a sea of fluctuating energies from which all things arise: atoms and galaxies, stars and planets, living beings, and even consciousness. This zero-point Akashic Field is the constant and enduring memory of the universe. It holds the record of all that has happened on Earth and in the cosmos and relates it to all that is yet to happen.



Ervin Laszlo, twice nominated for the Nobel Peace Prize, is editor of the international periodical *World Futures: The Journal of General Evolution and Chancellor-Designate* of the newly formed GlobalShift University. He is the founder and president of the international think tanks the Club of Budapest and the General Evolution Research Group and the author of 83 books translated into 21 languages. He lives in Italy.

The Akashic records are thought to be a compendium of all human events, thoughts, words, emotions and intent ever to have occurred in the past, present or future. They are believed to be encoded in a plane of existence known as the etheric plane.

Akasha (ākāśa आकाश) is the Sanskrit word for "aether" or "atmosphere".

We are like fish in water, unable to see  
the milieu that is responsible for our  
survival.

A possible relationship between  
the heart, mind, and space. And  
a possible basis for intuition,  
clairvoyance and the morphic  
field?

*Our research shows that the mind  
is constantly scanning several  
seconds into the future.*

*Measurable physiological changes  
arise in the heart  
before they arise in the brain.*

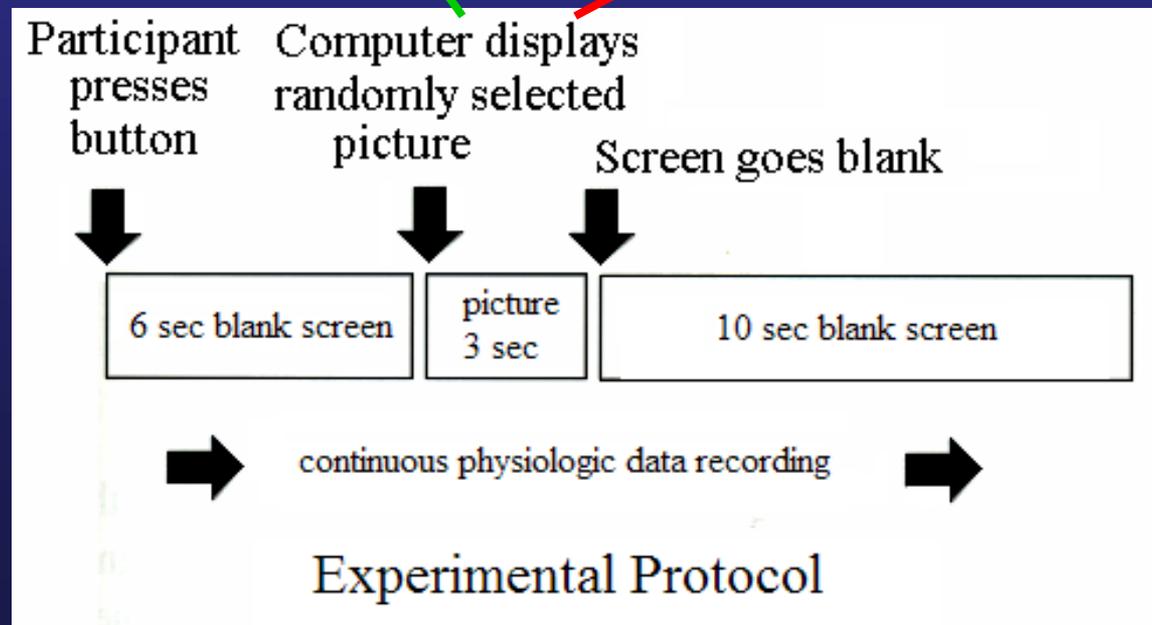
~Rolland McCraty

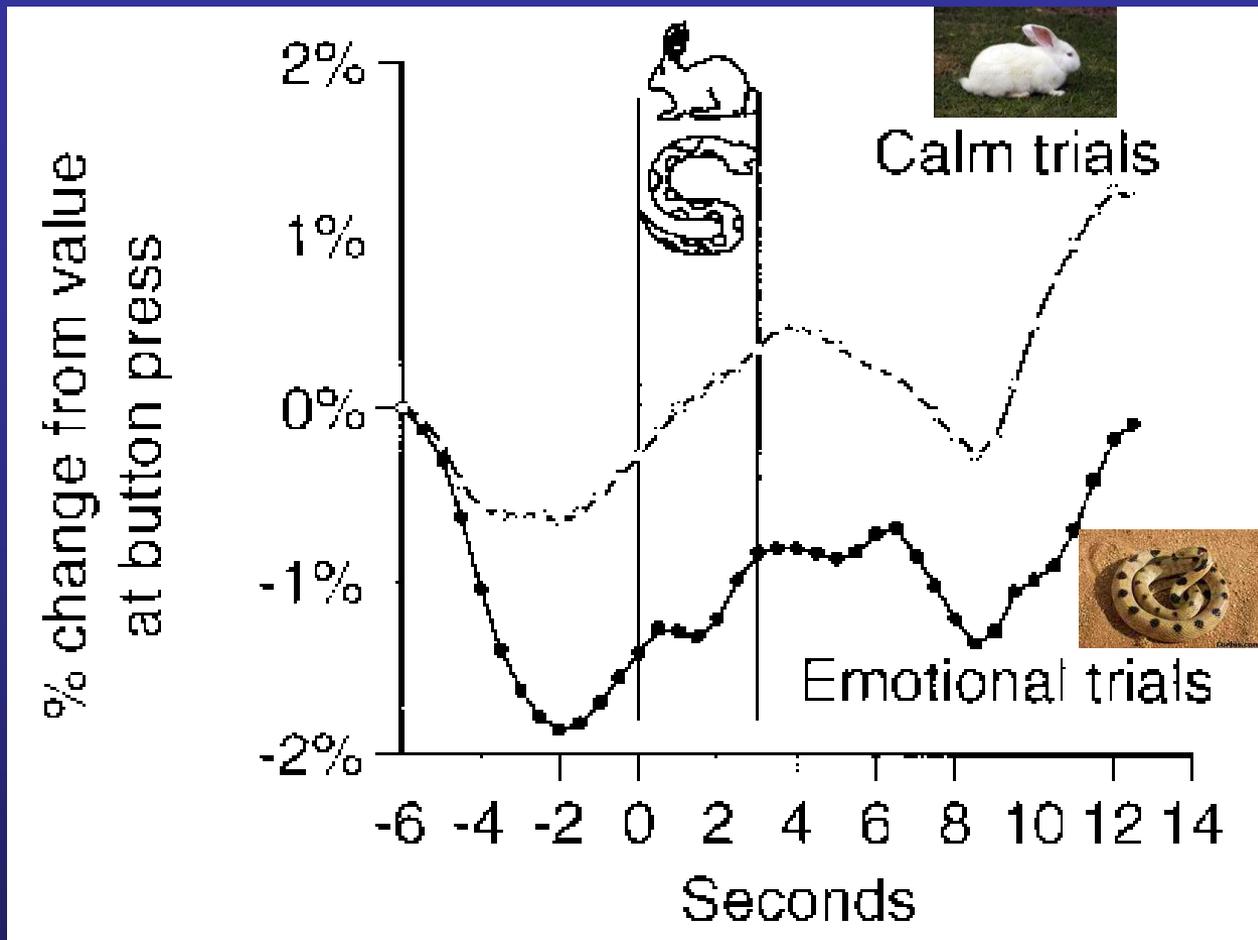
*Journal of Alternative and Complementary Medicine 2004:  
Volume 10 (1) and (2)*



peaceful scene

emotional scene





- A significantly greater heart rate deceleration occurred prior to future emotional stimuli compared to calm stimuli.
- The heart is involved in the processing and decoding of intuitive information.
- Females appear to be more more attuned to intuitive information from the heart than males.

*The heart's field may be linked  
to a more subtle energetic  
field that contains information  
on objects and events remote  
in space or ahead in time.*

~Rolland McCraty

Davis (2007) has demonstrated a pupillary response in the eye which occurs before mental processing begins, without stimulus recognition and without visual perception of the stimulus. As in the study of McCraty et al., the pupils constricted to positive images and responded with dilation to negative images, whether or not the images were visually available.

An experiment by scientists at the Australian National University, using helium atoms scattered by light, has blurred the distinction between past, present and future. In these studies, cause and effect were reversed. The future events actually caused past events. Professor Andrew Truscott summarized the studies: “A future event causes the photon to decide its past”.

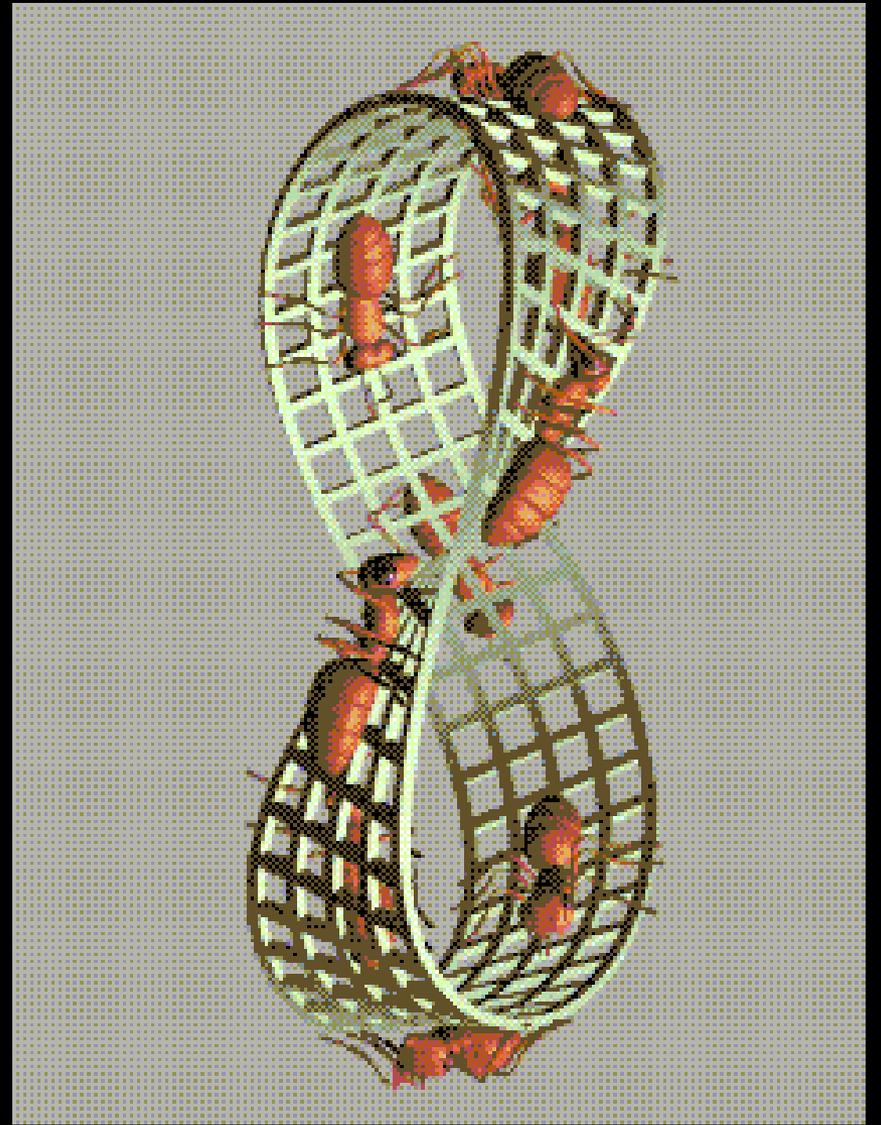
Albert Einstein said, “the distinction between past, present, and future is only a stubbornly persistent illusion”. So, why do we perceive a flow of time? Is the future “already there”, and is the past “still there”, even though we are only aware of a single moment of time?

# The helical heart as a source of scalar fields:

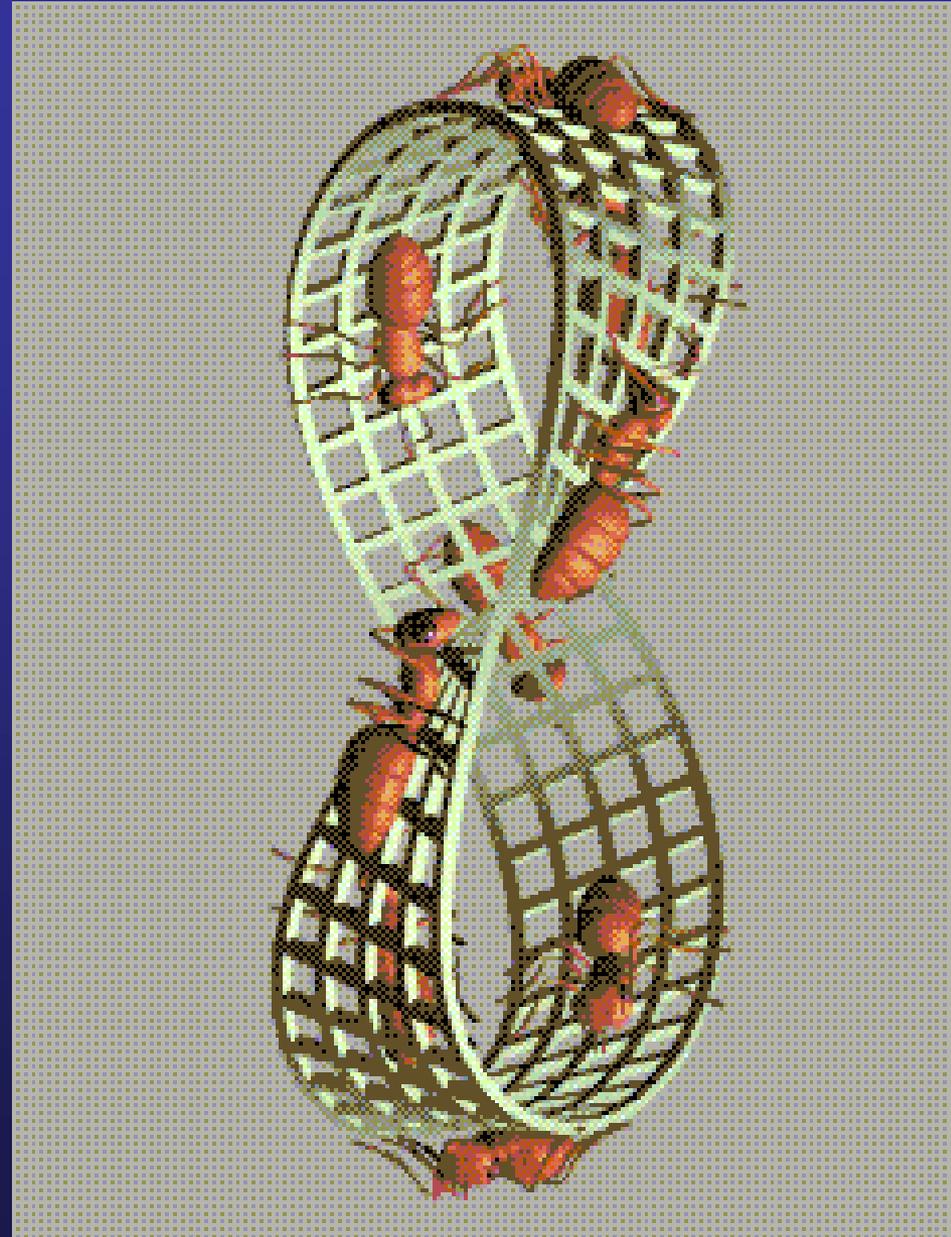


Watch Spanish cardiologist Dr. Francisco Torrent Guasp dissect a cow heart to reveal the helical structure of the ventricle: <https://www.youtube.com/watch?v=NHI4DUu1bEI>

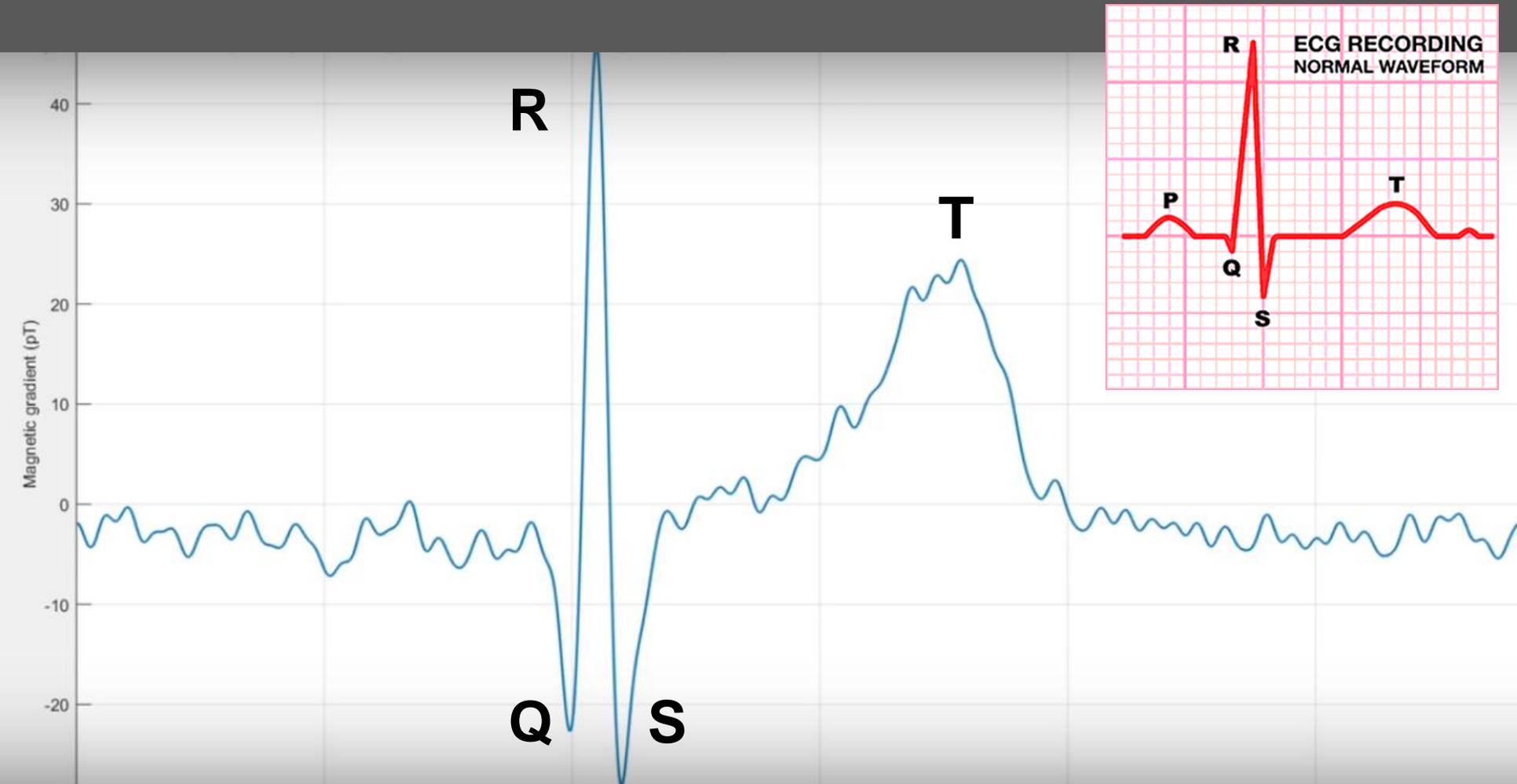


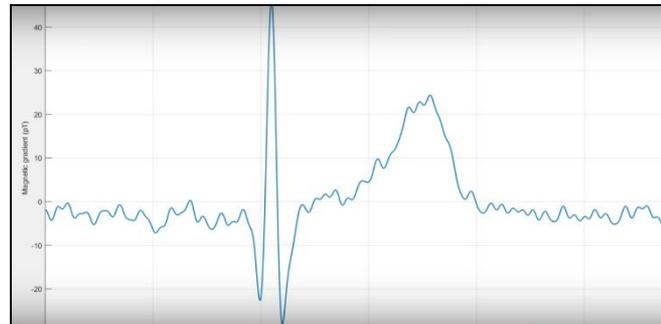
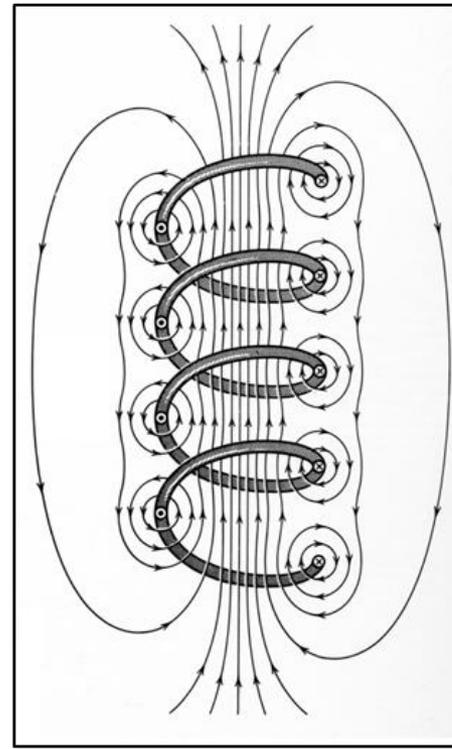
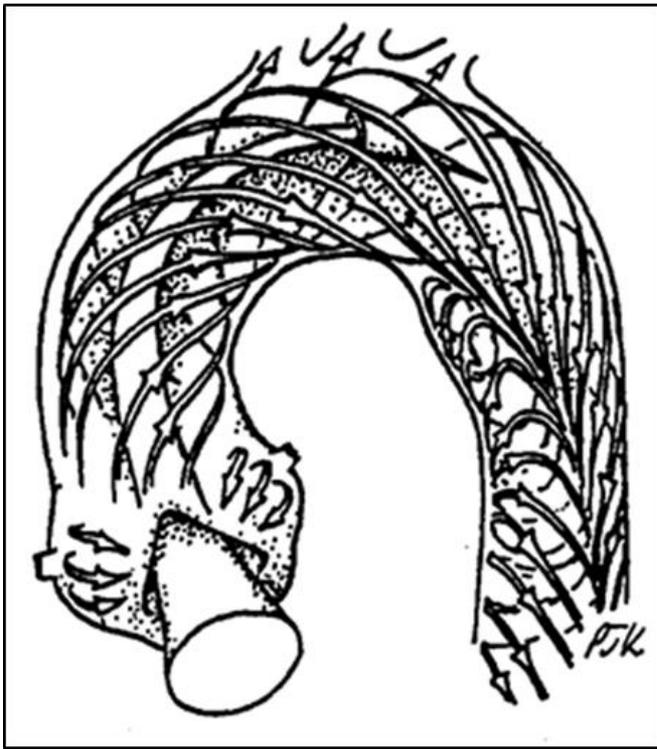


Twisting a rectangle (i.e. a paper-strip) for  $180^\circ$  (one or more times) and attaching the ends to one another seems to eliminate one dimension of three dimensional space. This relates to the curved space—time continuum revealed by Einstein.



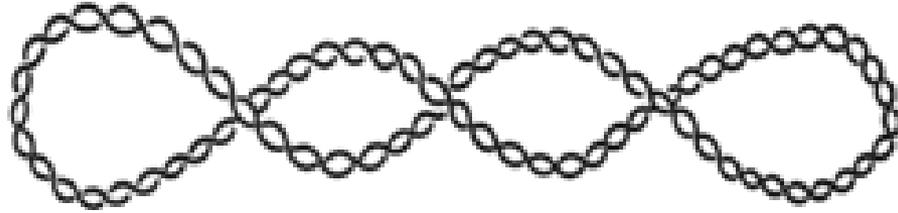
# The heart generates strong scalar fields:





The heart T-wave is a large scalar field

DNA is also a Möbius strip!



The DNA antenna in mitochondria is a supercoil. These Möbius supercoil DNA molecules are hypothetically able to radiate or absorb scalar fields. Most cells in the body contain thousands of these Möbius supercoils.

# Is spacetime fractal and quantum coherent in the golden mean?



Mae-Wan Ho  
ISIS

Institute for Science in Society  
London, UK

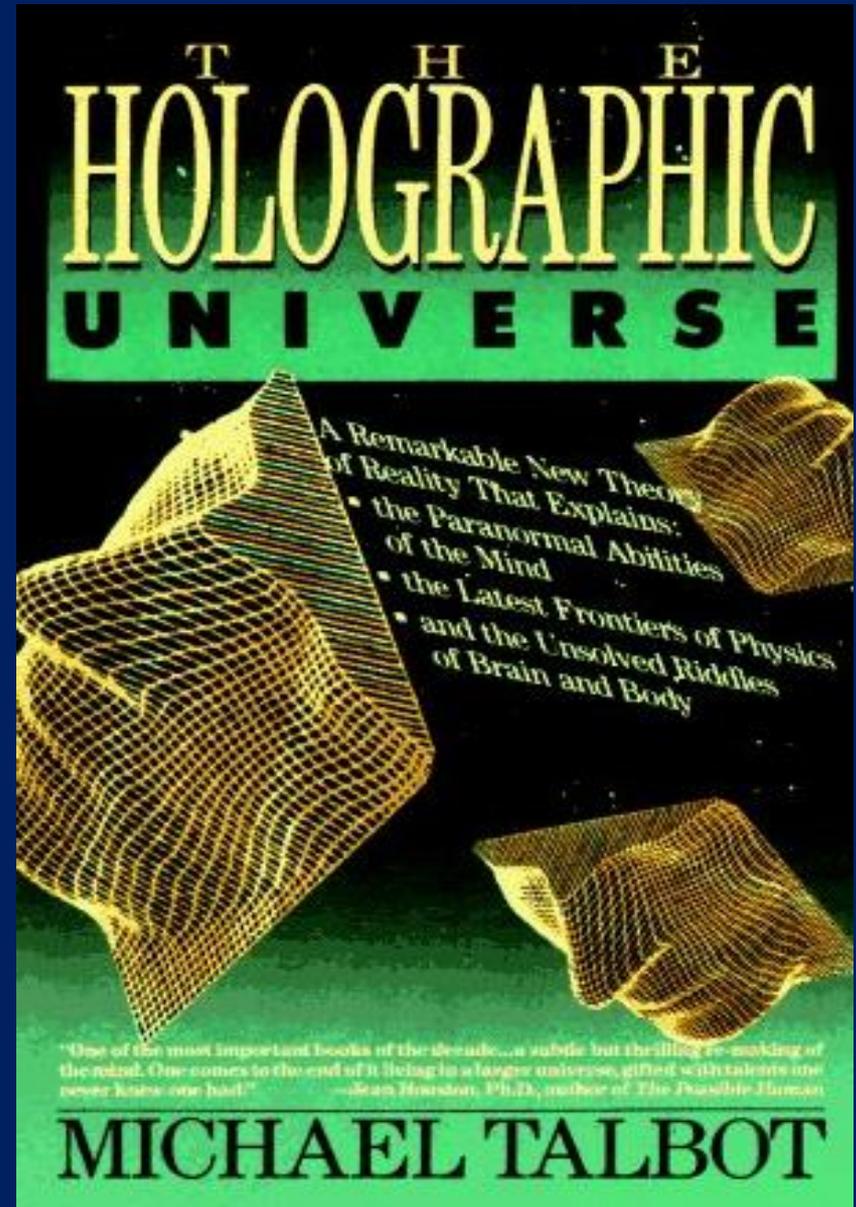
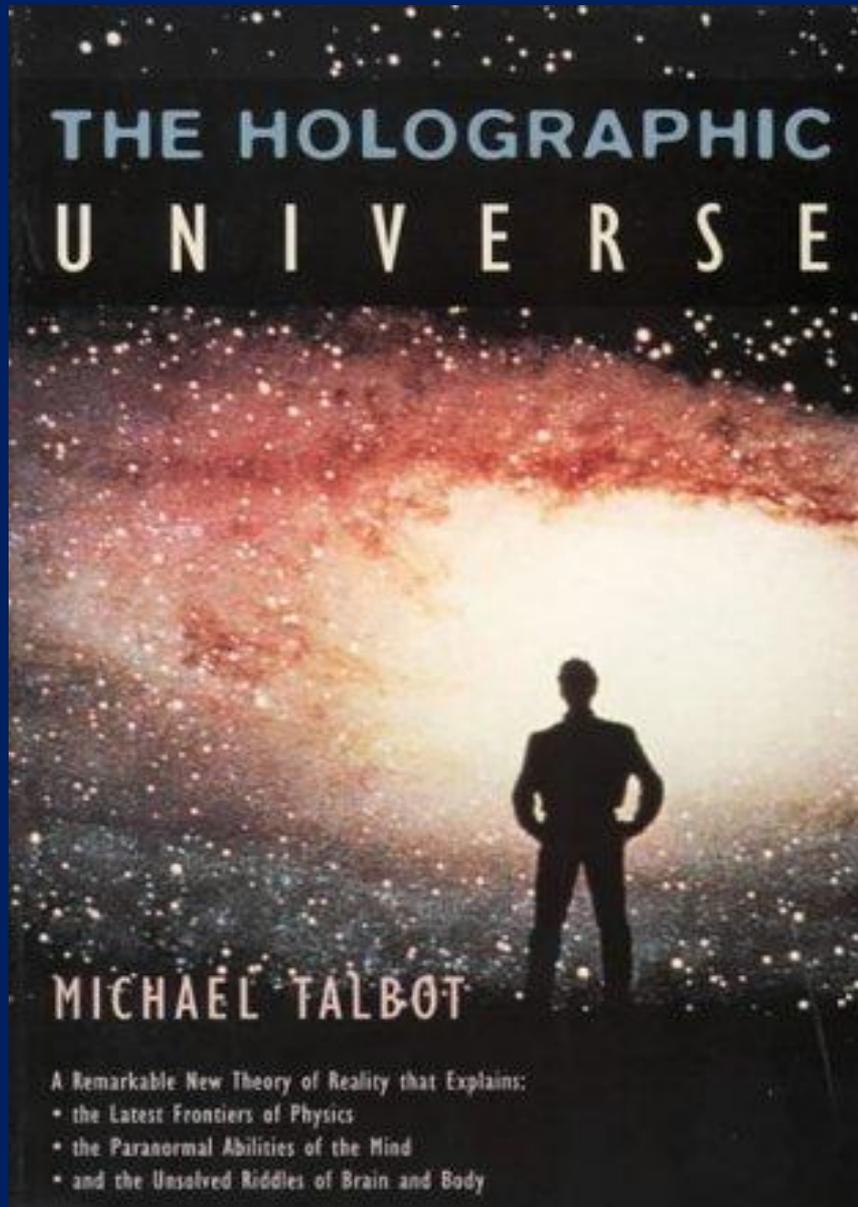


Mohamed S. El Naschie  
Department of Physics  
University of Alexandria  
Alexandria , Egypt



Giuseppe Vitiello  
University of Salerno  
Theoretical Physics

Vol 15, No 1-A (2015): The Global Journal of Science Frontier Research



The mathematics of space is the golden  
ratio or Phi:

$$a/b = (a + b)/a =$$

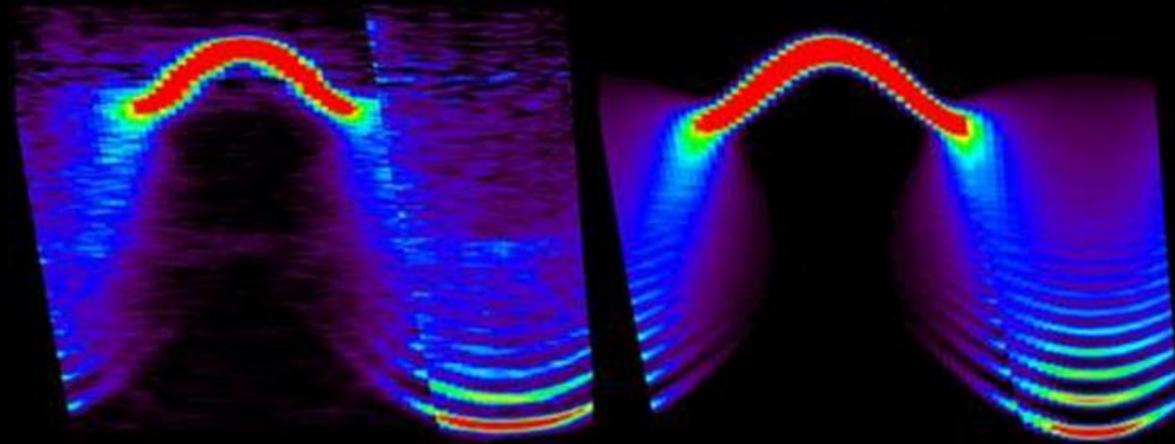
1.6180339887498948420 ...

This number has been discovered and rediscovered many times, which is why it has so many names — the Golden mean, the Golden section, divine proportion, etc. Historically, the number can be seen in the architecture of many ancient creations, like the Great Pyramids and the Parthenon.

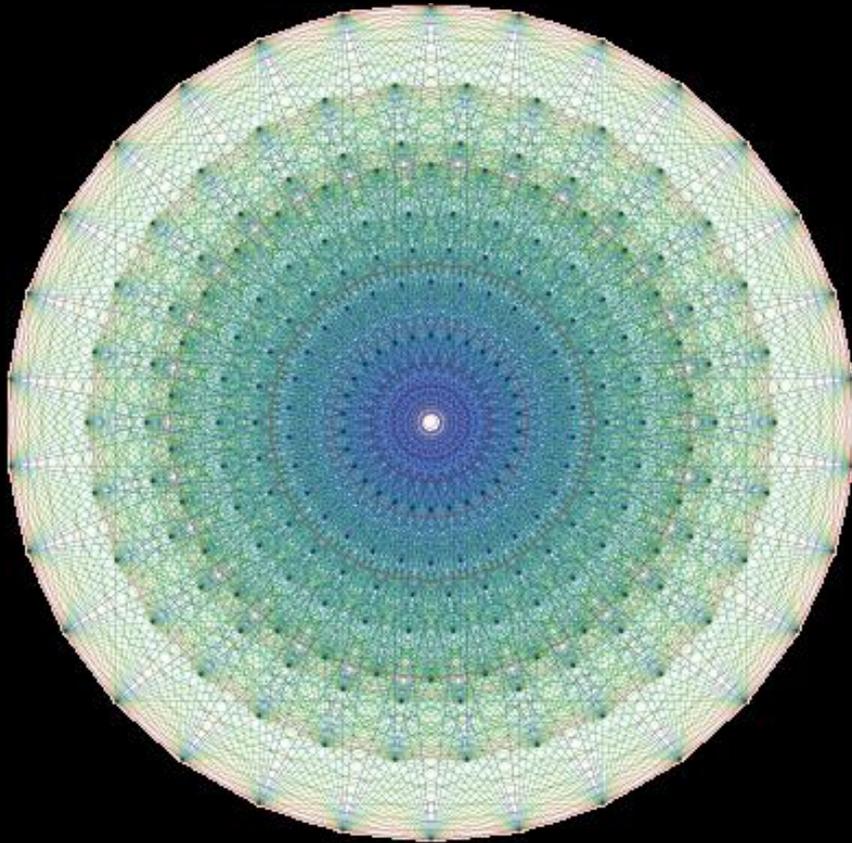
Phi turns up everywhere in nature - from chemical bonds in molecules to branching trees, skeletons of animals and the branching of their veins and nerves, spiral galaxies, and fundamental quantum physics - it is embedded in our brain waves, in music, electromagnetism, and in the heart of mathematics.

Biologists, artists, musicians, historians, architects, psychologists, and even mystics have pondered and debated the basis of its ubiquity and appeal. In fact, it is probably fair to say that the Golden Ratio has inspired thinkers of all disciplines like no other number in the history of mathematics.

On January 7, 2010, an international working group of leading physicists reported for the first time that solid matter has quantum properties defined by the golden ratio famous from art and architecture. The researchers were from the Helmholtz-Zentrum Berlin für Materialien und Energie (HZB), from Oxford and Bristol Universities, and from the Rutherford Appleton Laboratory, UK. The findings from the decade-long project were published in the journal *Science*. The challenging experiments were carried out by world leaders in the field.



To study these quantum effects the researchers focused on one atom thick chains of the magnetic material cobalt niobate, which act like a quantum-scale guitar string. Magnetism arises from the aligned spins of the magnetic atoms. The niobate “strings” were “plucked” with strong transverse magnetic fields.



The chain of atoms acts like a nanoscale guitar string. “Here the tension comes from the interaction between spins causing them to magnetically resonate. For these interactions we found a series (scale) of resonant notes: The first two notes show a perfect relationship with each other. Their frequencies (pitch) are in the ratio of 1.618..., which is the golden ratio famous from art and architecture.”

~Dr. Radu Coldea

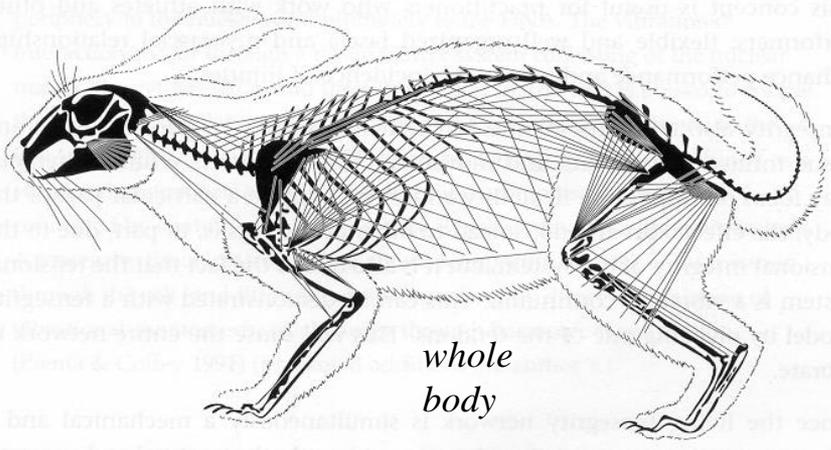
“It reflects a beautiful property of the quantum system — a hidden symmetry. Actually quite a special one called E8 by mathematicians, and this is its first observation in a material.”

# **Atomic, Ionic and Bohr Radii Linked via the Golden Ratio for Elements of Groups 1 - 8 including Lanthanides and Actinides**

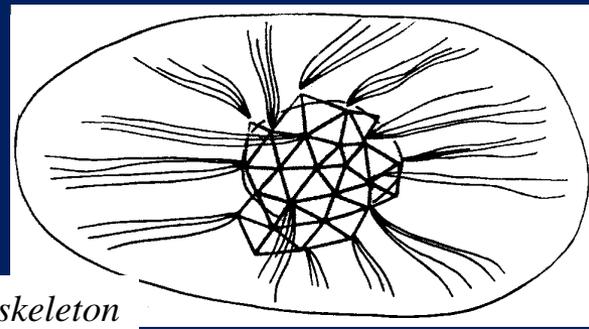
Raji Heyrovská<sup>1</sup> 

<sup>1</sup>Na Stahlavce 6, 16000 Praha 6, Czech Republic

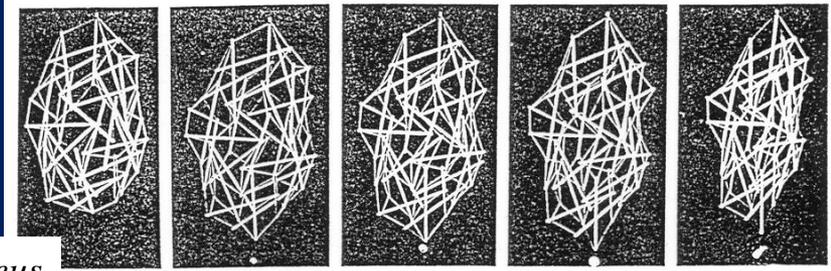
**Abstract:** In an earlier article, atomic radii of elements of Groups 1A - 8A were shown to be proportional to their Bohr radii obtained from the first ionization potentials and the constants of proportionality were shown to be simple functions of the Golden ratio. Here it is shown that the above finding holds also for elements of Groups 1B - 8B including Lanthanides and Actinides. All the relevant data are presented in Tables and the correlations are shown in graphs. Revised data for some of the elements of Groups 1A - 8A, have also been included.



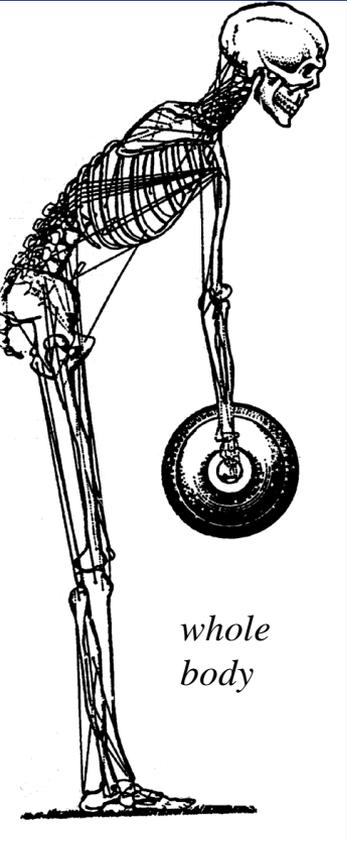
whole  
body



cytoskeleton

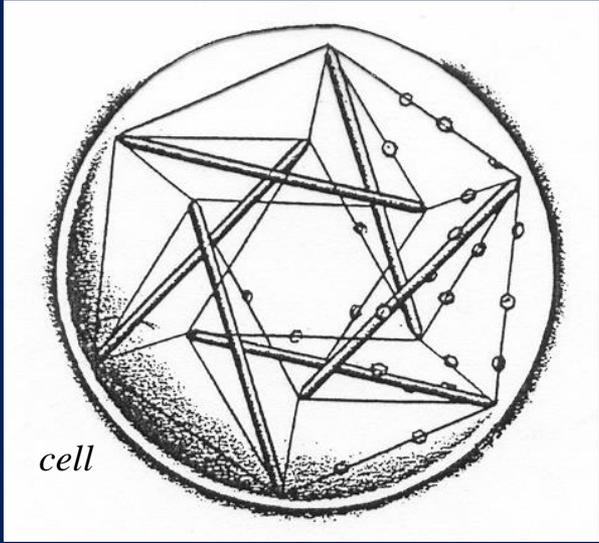


nucleus

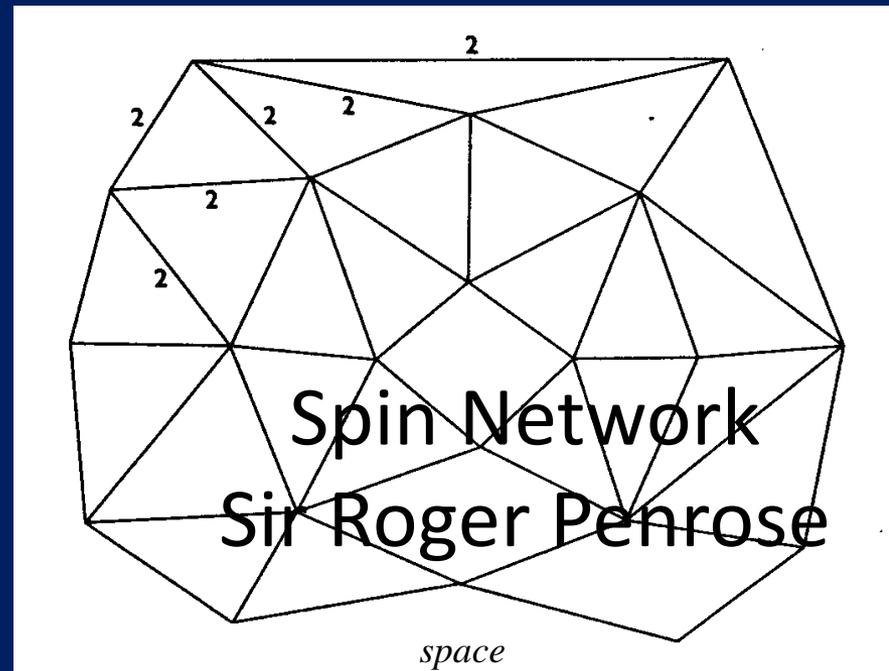


whole  
body

# Tensegrity

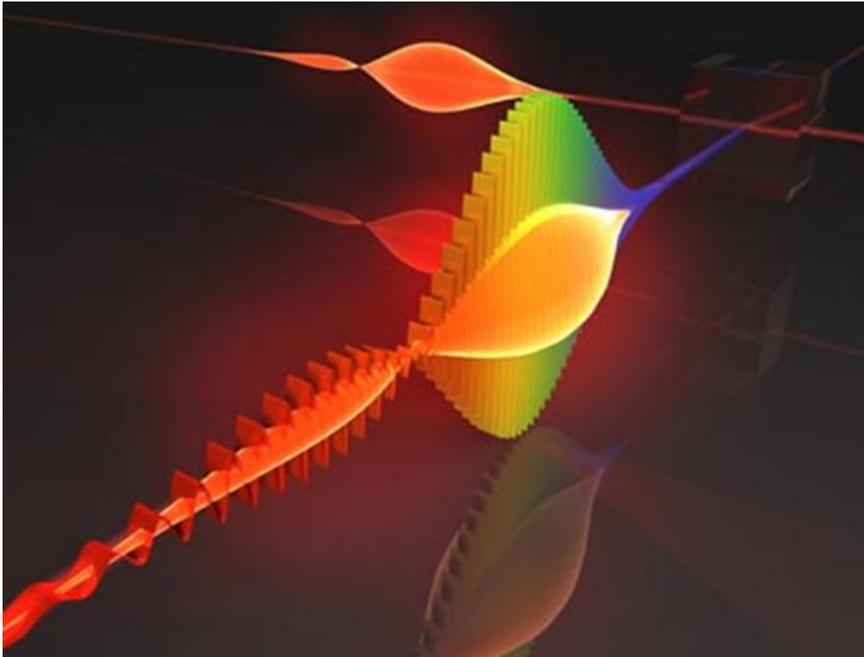


cell



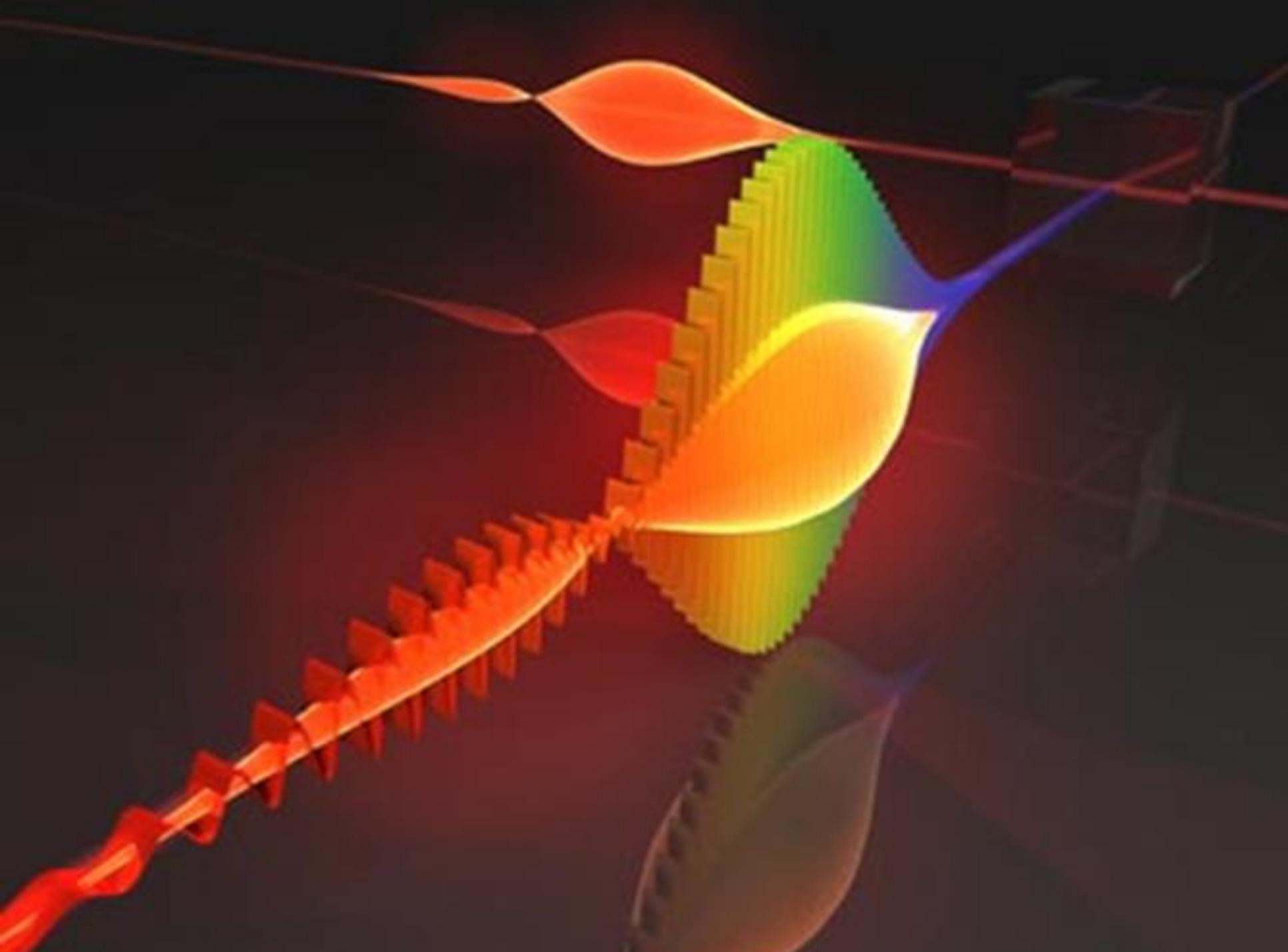
Spin Network  
Sir Roger Penrose

space

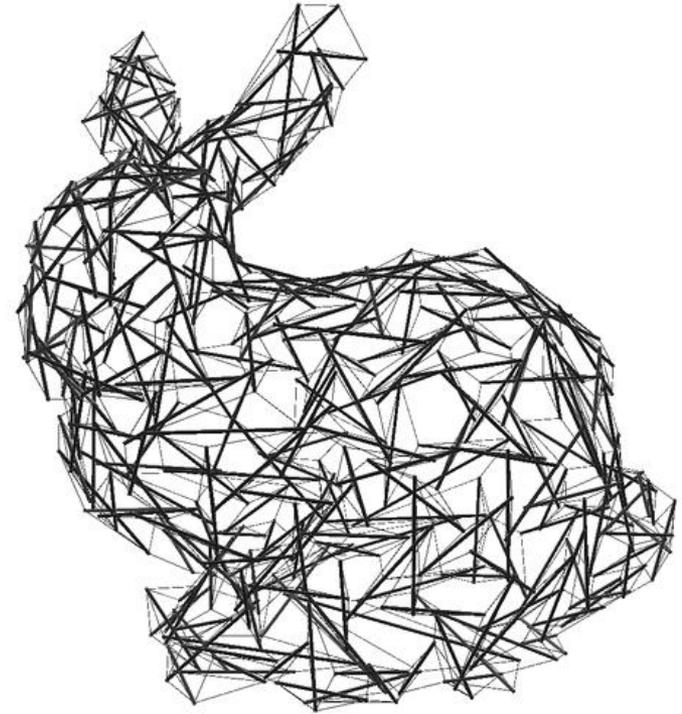
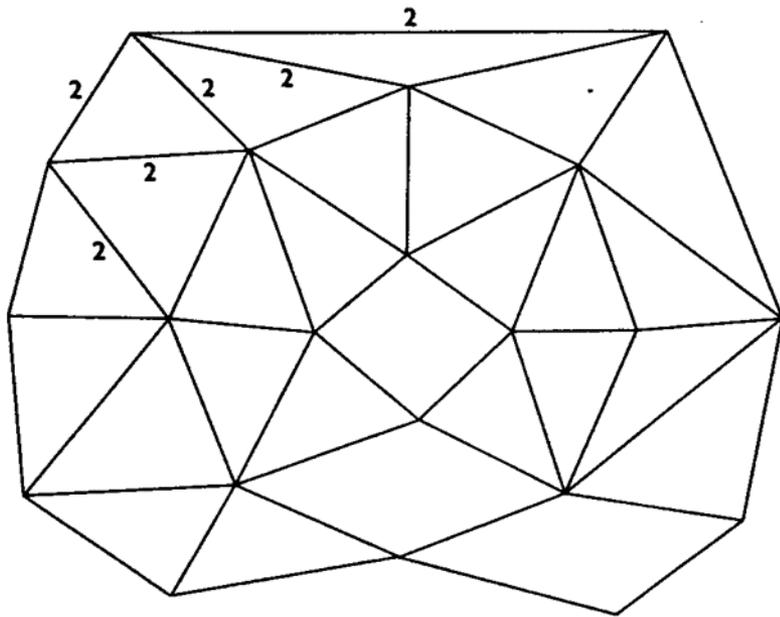


Marco Bellini, Constantina Polycarpou, Alessandro Zavatta, Istituto Nazionale di Ottica in Florence, Italy.

They have measured the shape of individual photons for the first time. Pulses of light can have almost any shape in space and time, depending on the amplitudes and phases of the pulse's frequency components. Data can be encoded in light pulses by modulating the amplitude or phase of the light. A single photon shape could represent, for example, any letter in the alphabet, or even a quantum combination (or superposition) of several letters. ~Phys. Rev. Lett. 109, 053602 – Published 3 August 2012.



# Morphology from the morphic field:



Spin Network  
Sir Roger Penrose

## Conclusions about the quantum information field:

- It is a plasma
- It is quantum coherent
- Phi describes its mathematics
- It is holographic
- It is fractal
- It is has tensegrity geometry
- It has a spiral grain

Fb/glen weimer



**Man is equally incapable of seeing the nothingness  
from which he emerges and the infinity in which he is engulfed.**

~ Blaise Pascal, 1623-1662

Thank You

