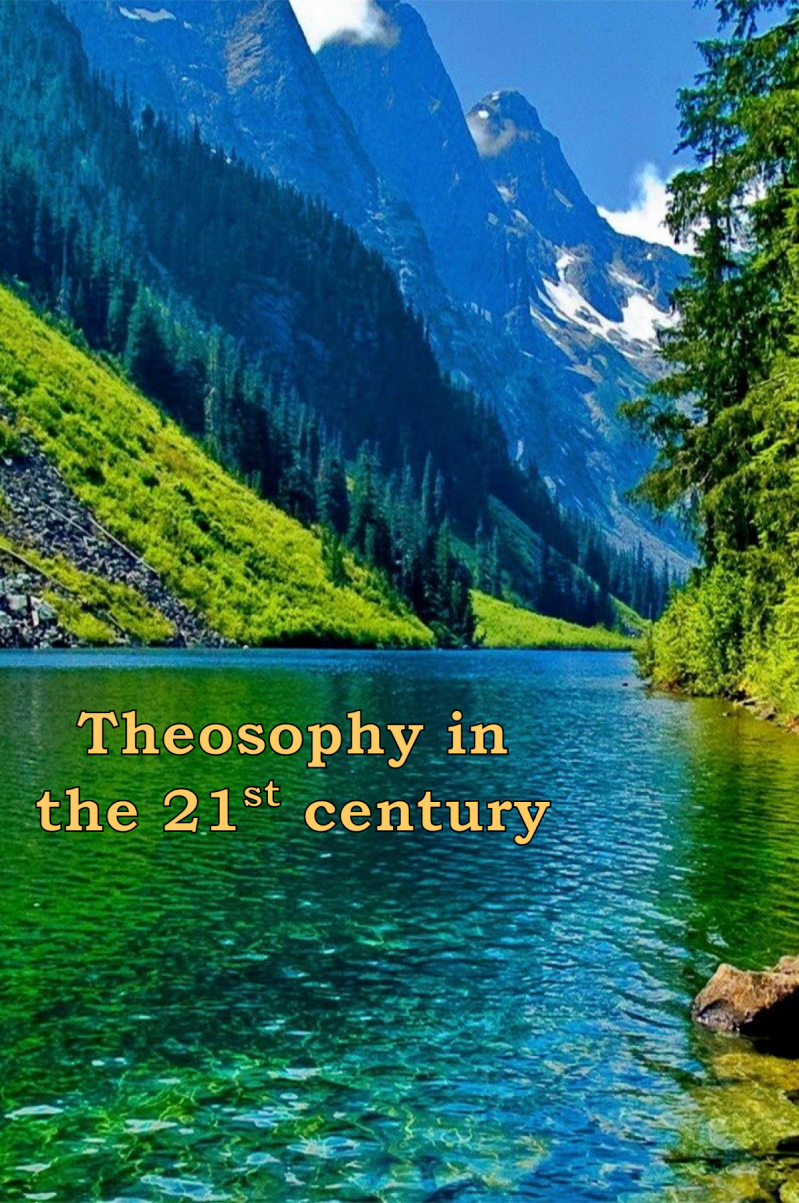




Theosophy in
the 21st century

3 The Unity of Life

Course created by
Carlos Pérez Menéndez
SOCIEDAD TEOSÓFICA ESPAÑOLA

Diversity in the Universe



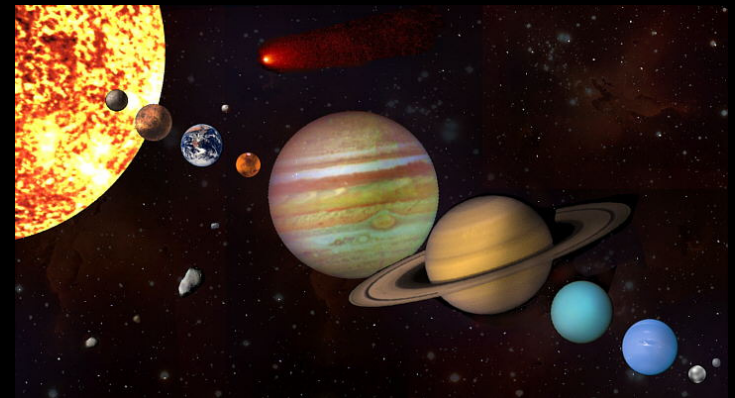
Innumerable forms
of life

Diversity

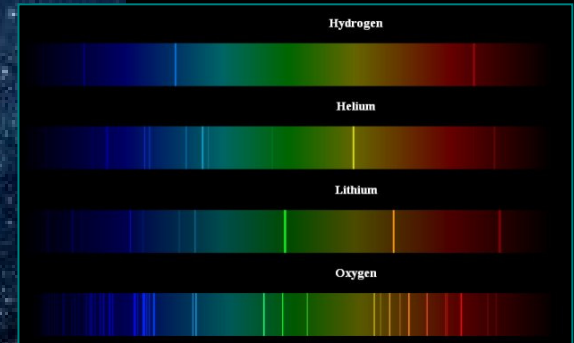


Cultures, ideas and
diverse feelings

In our Solar System
there is no other planet
like the Earth



The oneness of the Universe



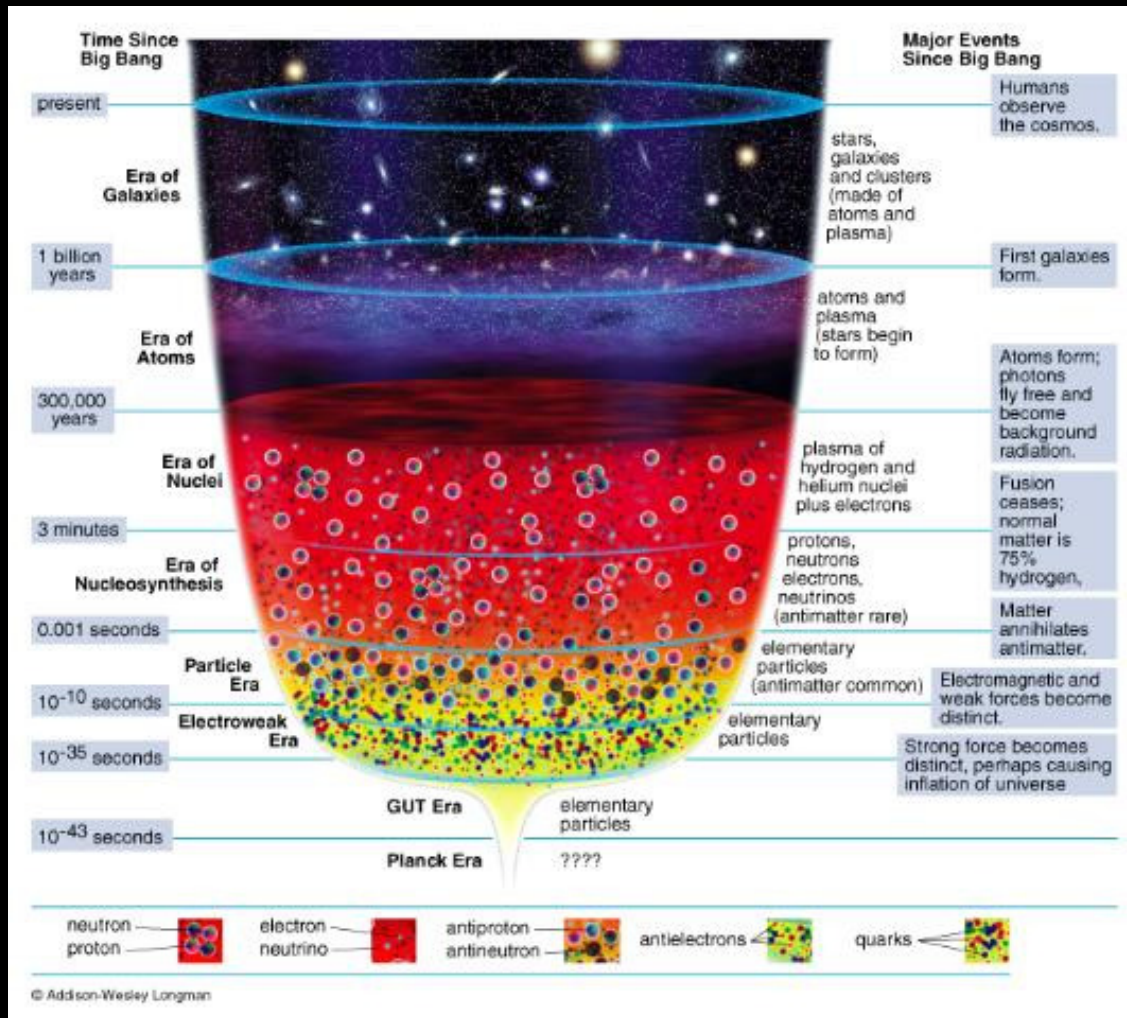
The same matter

The matter of the stars of distant galaxies is the same as that of our planet.

They emit light with the same spectrum as terrestrial and solar elements.

The same matter throughout the Universe.

The origin of the Universe according to Astronomy



The big-bang theory

- The Universe was formed from a singularity about 13.7 billion years ago.
- It is still expanding
- We do not know why it happened.
- The Universe has a common origin.



The variety in matter

The elements

The immense variety of matter is due to just over 100 elements.

From the H to the heavy elements.

Grupo	1	2																	
Período																			
1	1 H																		2 He
2	3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne	
3	11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar	
4	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr	
5	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe	
6	55 Cs	56 Ba	71 Lu	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn	
7	87 Fr	88 Ra	103 Lr	104 Rf	105 Db	106 Sa	107 Bh	108 Hs	109 Mt	110 Uun	111 Uuu	112 Uub	113 Uut	114 Uuq	115 Uup	116 Uuh	117 Uus	118 Uuo	
* Lantánidos			*	57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb		
** Actínidos			**	89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No		

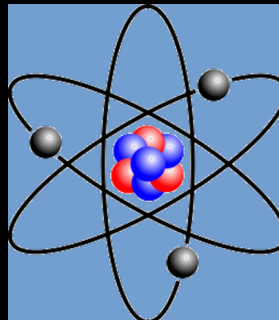
Periodic table of the elements

The atoms

The atoms of the elements are composed of a few elementary particles.

- Protons
- Neutrons
- Electrons

The elements differ only in the number of particles, not in their nature



The structure of electrons in a substance determines most of its properties

The oneness in biology: The DNA

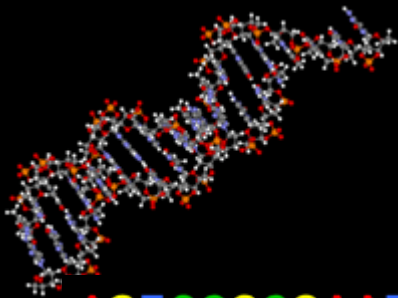
DNA is the macromolecule that contains the information necessary to build a living being.

Bases of DNA

DNA is composed of only **4 bases** or nucleotides:

- **A** Adenine - **T** Thymine
- **C** Cytosine - **G** Guanine

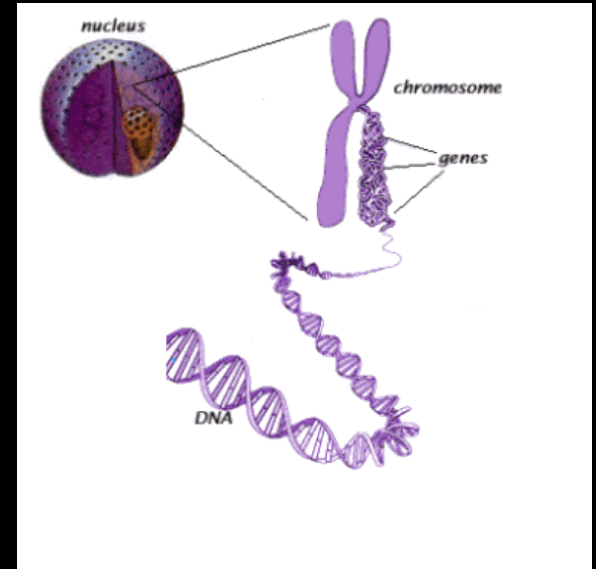
They form facing pairs in the helix: A-T, C-G



AGTCCGCGAATACAGGCTCGGT

DNA sequence

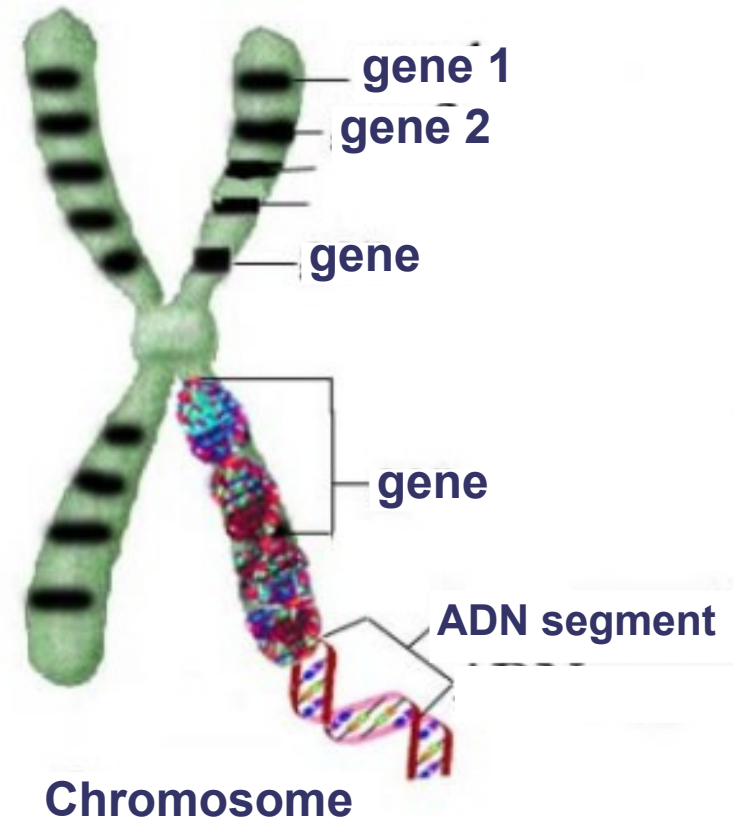
Only 0.5% of human DNA is different from one person to another



- Cells →
Chromosomes →
DNA →
Genes
- Human DNA:
 - stretched: 1.8 m long
 - 3.200 M of bases
 - grouped in 23 pairs of chromosomes

In the DNA are the genes

- **Genes** are parts of the DNA sequence that specify proteins
- A gene is defined on average by 25,000 base pairs
- It is estimated that humans have about 20,000 genes
- Only 2% of our DNA contains genes
- DNA parts that are not genes also play an important role in causing genes to express themselves or not (**epigenetics**)

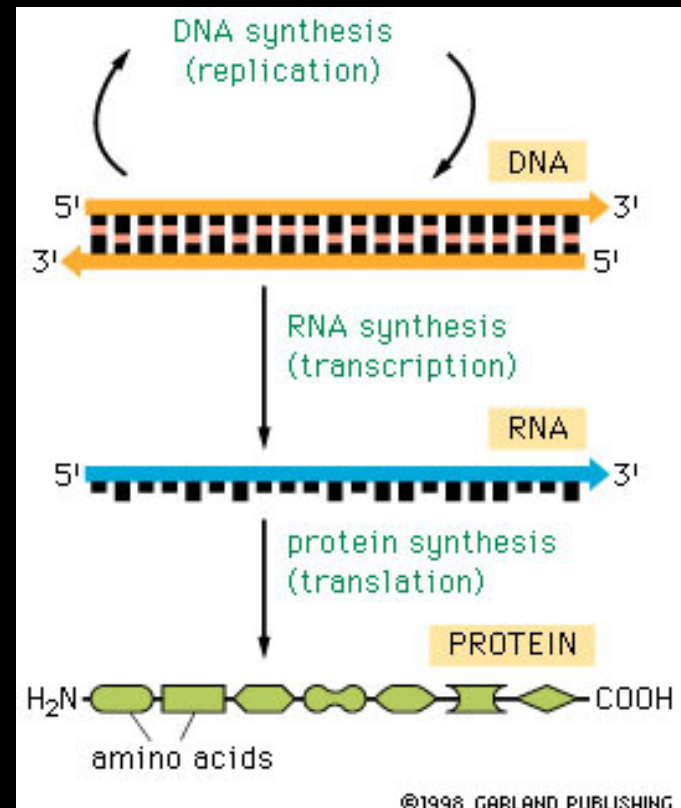
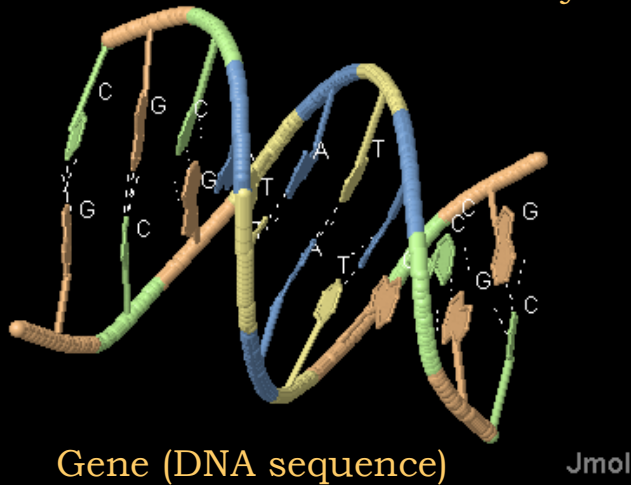


Source: designed by Carmen Eugenia Piña L.

The DNA system is very complex
and is still being investigated

From genes to proteins

Synthesis of proteins in **ribosomes** within cells



Organism of living beings



Protein

4 bases →
20 aminoacids →
hundreds of thousands of proteins

Summarizing

- Less than 100 chemical elements determine the variety of matter throughout the Universe.
- Only 3 classes of elementary particles determine all the elements
- A sequence of 4 classes of nucleotides determines the whole variety of living beings.

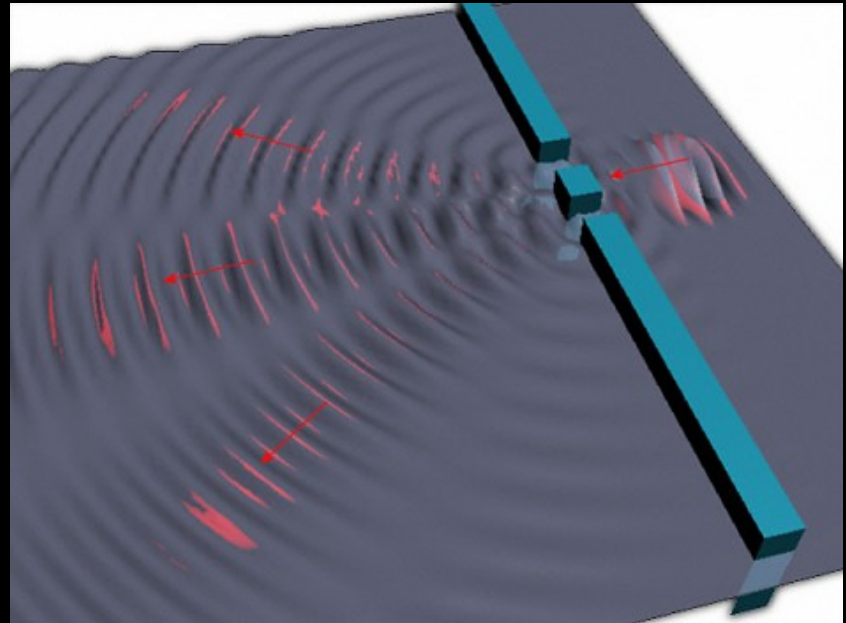


Behind the diversity of forms there is a unique architecture, common laws ...

But is there anything else?

The wave-particle duality

- Quantum mechanics shows us that the "particles" of matter are particle and wave at the same time
- This implies that **each particle is distributed throughout the space**
- This is **non-locality** and has great philosophical implications
- It match with descriptions made on the Vedas and other ancient writings about the nature of the Universe



Double slit experiment



Symbol of Yin and Yang, duality in nature

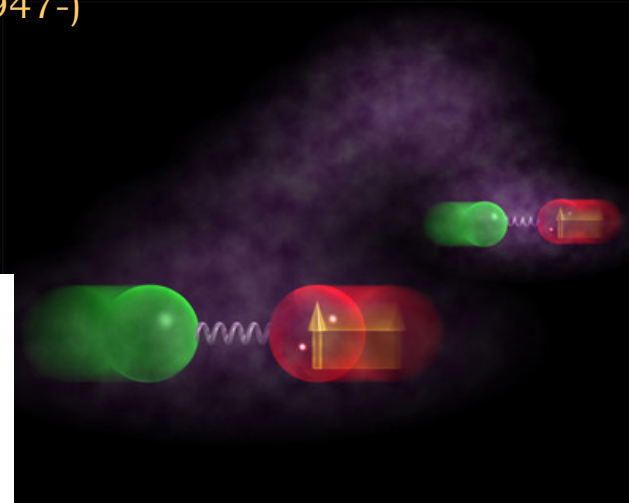
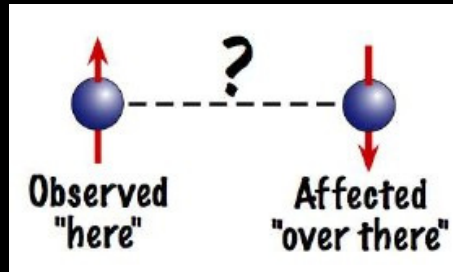
As demonstrated by John Bell, nonlocality is a necessity in quantum mechanics

Quantum entanglement

- Two particles can have their quantum states linked in such a way that they form a unique system even if they are in physically on **distant positions**
- If we affect one, we also affect the other. They are part of the same reality
- Confirms the concept of non-locality of physical phenomena
- Experimentally proved in 1982 by Alain Aspect



Alain Aspect
(1947-)



There is nothing else supreme beyond Me, O Dhananjaya. On Me, all that is here is strung like pearls upon a thread.

[Bhagavad Gita, 7]

The Unity

- The Universe is One, Life is One.
- There are 3 different models of what the Universe is:
- **Theism, Creationism.** The Universe was created by a supernatural God.
- **Pantheism.** The Universe is the sum of all its parts.
- **Emanations.** The Universe is a unit, forms and beings *emanate* from it although they remain united.

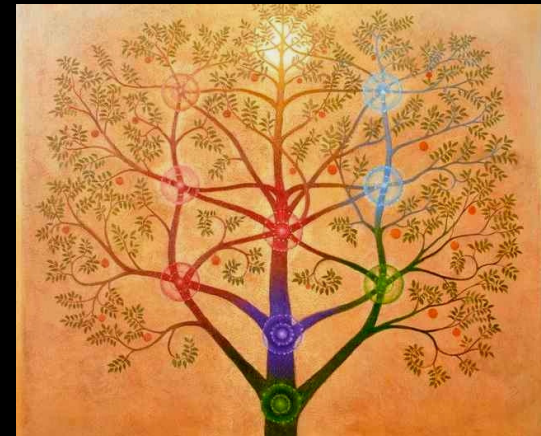
Creation



Pantheism



Emanations

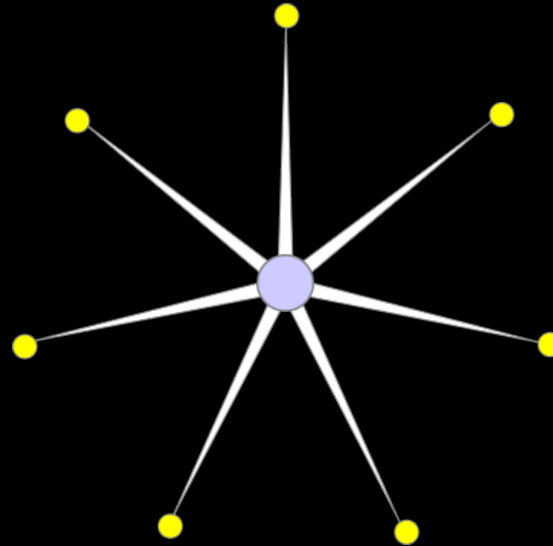


Emanations

■ Fundamental idea of the ageless wisdom, which is the basis of certain philosophies:

- Egypt, Osiris myth
- India: The Vedas
- Plato, Orpheus
- Neoplatonics

■ It maintains that the matter and beings of the manifested Universe are **emanations**, not creations, of the unmanifest Principle One.



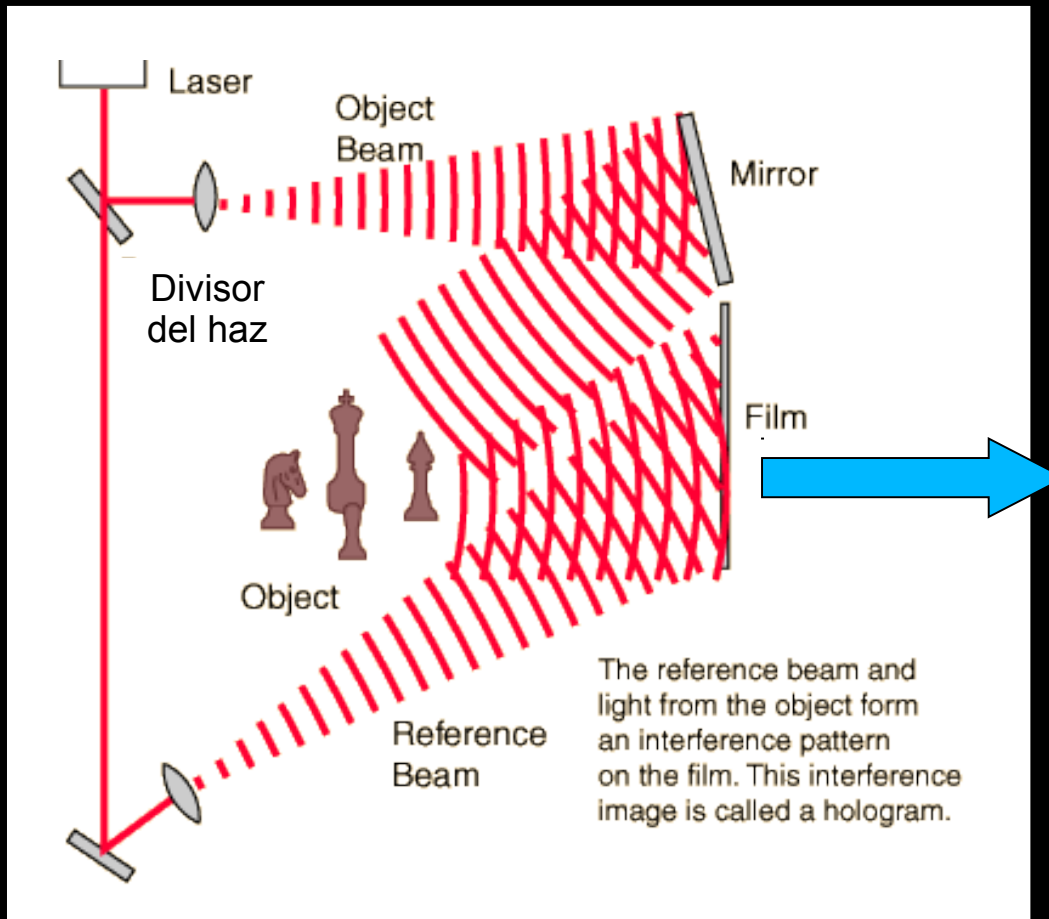
The sparks of fire

- The beings *emanate* of the One Life but *without leaving it*.
- The “fragments”, the **Monads** or *sparks* of the flame are *connected* together.
- Each fragment is unique but is a reflection of the nature of the Whole.
- Hermetic axiom: “**As above is below**”
- How is it possible?

Fire --> One Life
Sparks --> Monads

It is a paradox for reasoning

What is a hologram?



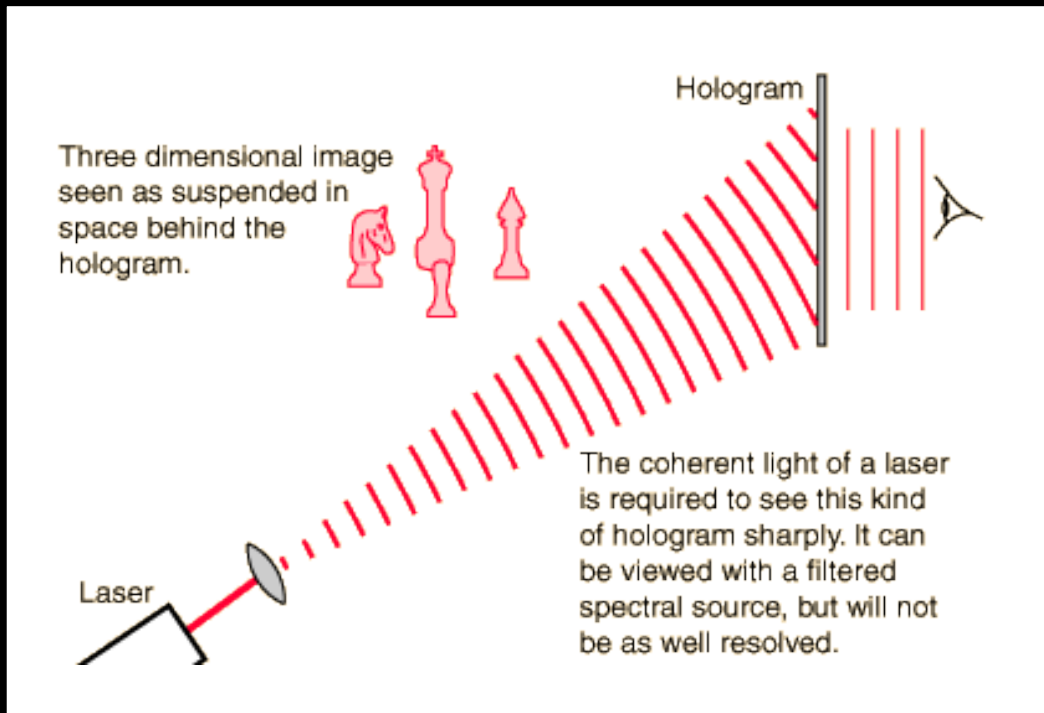
Transmission hologram (Georgia State University)

- Non-lenses and coherent (laser) photography of an object that captures both the intensity and phase of reflected waves
- It records 3D information
- Transmission hologram

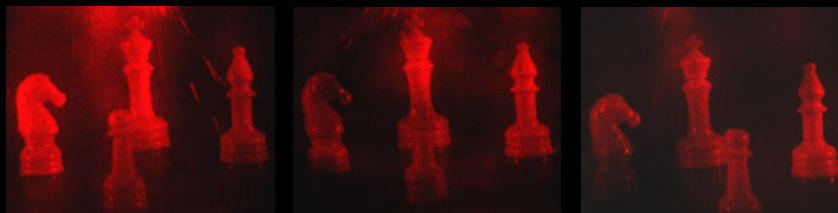


In the film the image of the object is not seen with the naked eye but interference patterns

Playing the hologram



Playing the hologram (Georgia State University)

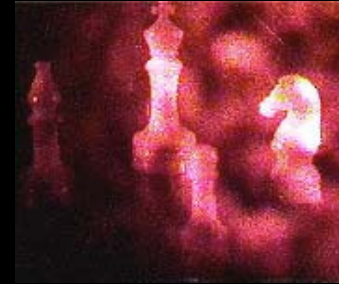
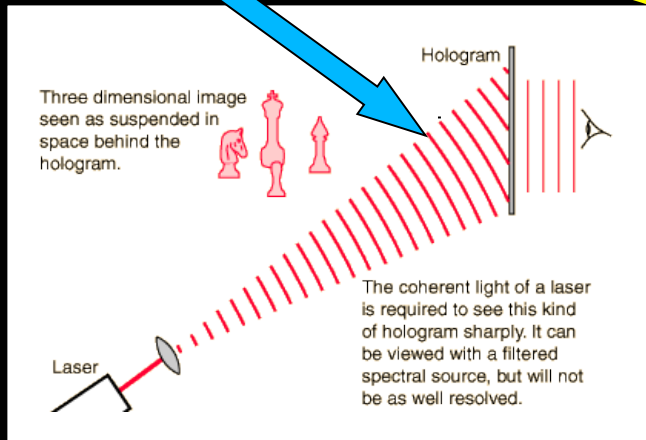


- A 3D image of the photographed object is projected through the laser light.
- If we move we see the image from another angle....

The observed image depends on the position of the observer

Hologram property

We cut a fragment



Projection of the full hologram



Projection of the fragment

When we project a fragment of the hologram, we see the whole object, but from a particular position

The whole is in every part

As above is below

Holographic model of the Universe

- Model of the Universe created by some scientists, using the hologram metaphor to describe the oneness of the Universe
- Created by David Bohm and Karl Pribram in the 50's
- The *explicate order* is an expression of the *implicate order*, as one of the possible projections of the hologram
- Controversial to most scientists but used and supported by a growing number of thinkers

Implicate
Order



Explicate
Order



David Bohm
(1917-1992)



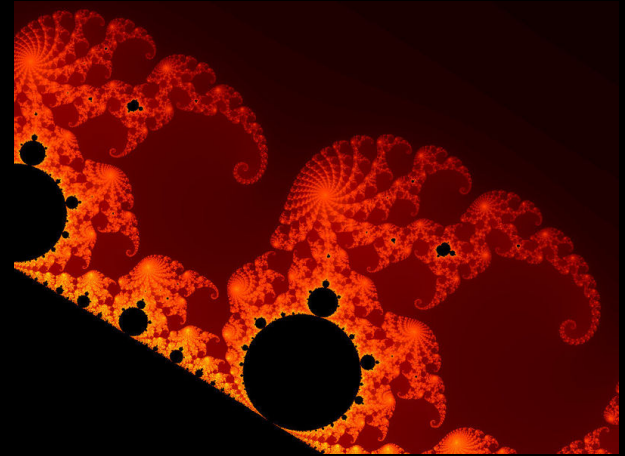
Karl Pribram
(1919-2015)

Fragmentarity is an illusion of the mind:
the true state of things is an indivisible
whole.

David Bohm

Fractals: the whole is in everything

- Figures with multiple or infinite similarity (self-similar forms)
- Each part is similar to the whole on different scales
- Fractals describe very well the forms of nature



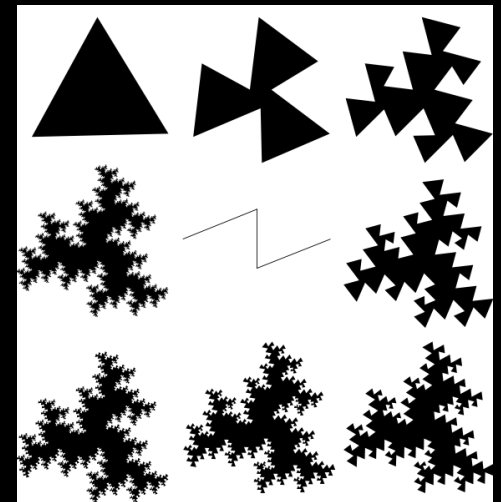
Mandelbrot sets



Fern



Romanesco broccoli

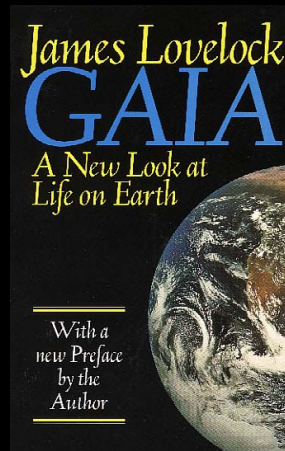


Koch triangles

Gaia theory

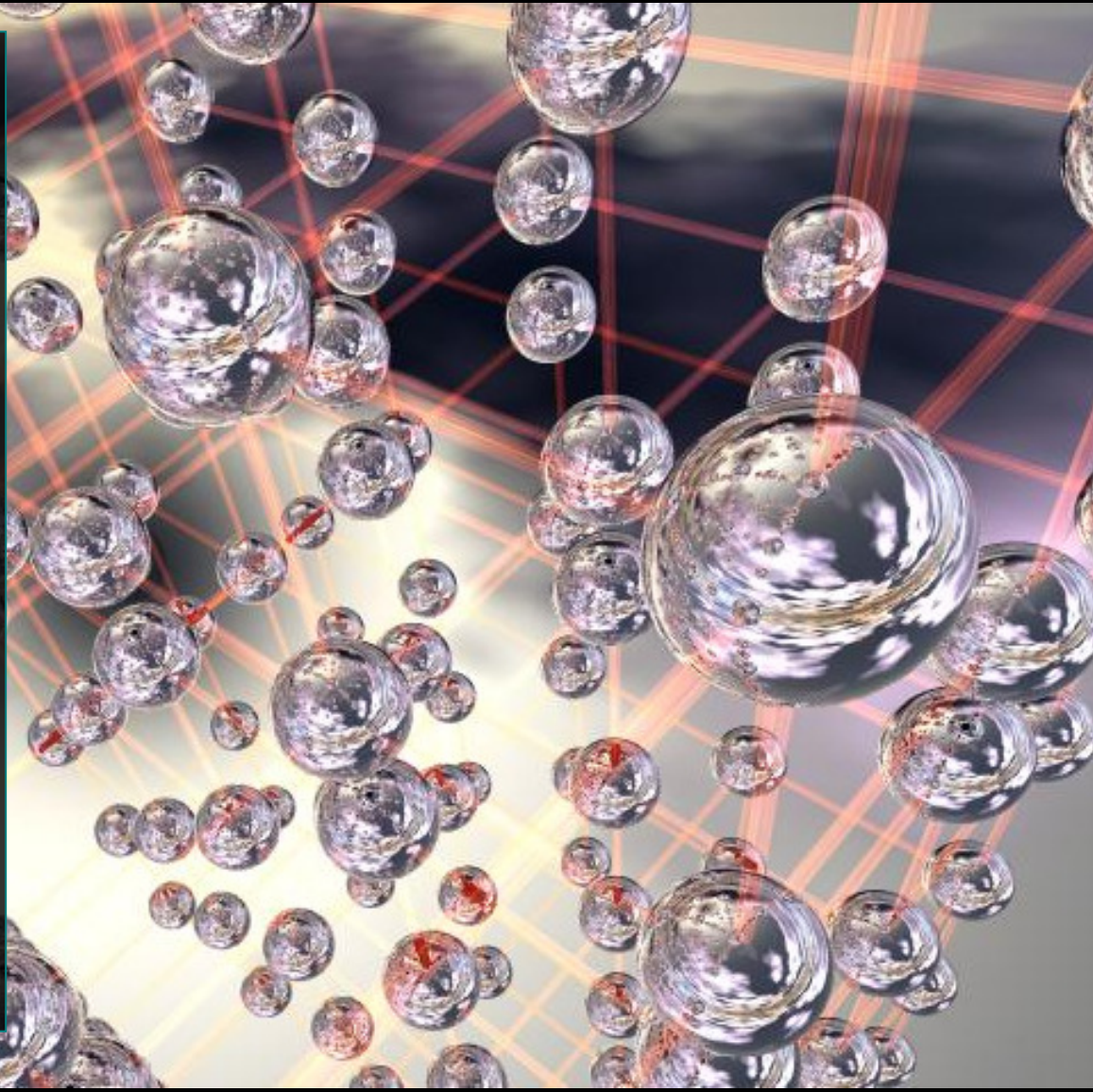
- All living beings and the inorganic environment of the Earth form a self-regulating and self-evolving organism called **Gaia**
- It was formulated as hypothesis by the chemist-biologist James Lovelock in 1974
- Is Gaia a *living being*?
- Gaia maintains the conditions of life on the planet.

What is a living being?



Indra's net

- Legend of the Puranas
Hindu cosmology (approx
1000 BC)
- Metaphor used to indicate
the nature of the Universe
where the whole is in each
part
- It is a net of silk strings
that expands to infinity in
all directions and contains
at each intersection a pearl
of great brilliance that
reflects upon itself each of
the pearls of the net, and so
on, as mirrors towards
infinity.



Synchronicity

- Concept defined by Carl G. Jung and Wolfgang Pauli although it has been present in many cultures and philosophies
- It is the temporal coincidence of events not related to each other causally whose **significant** content is identical or similar
- Our consciousness is also reflected in the whole as the waves in the water. A modification immediately affects the whole
- Synchronicity is a consequence of the Unity of Life



Carl G. Jung
(1875 - 1961)



Wolfgang Pauli
(1900 - 1958)



1st Proposition

I. An Omnipresent, Eternal, Boundless, and Immutable PRINCIPLE on which all speculation is impossible, since it transcends the power of human conception and could only be dwarfed by any human expression or similitude. It is beyond the range and reach of thought — in the words of Mandukya, "unthinkable and unspeakable."



**One Absolute
Be-ness
Sat
Parabrahman**

Unity of Life

The Essence of the existence
Causeless Cause

To think



Watch, think, investigate, inquire ...
Make the following questions or thoughts suggestions
But don't stay here, ask yourself and find out.