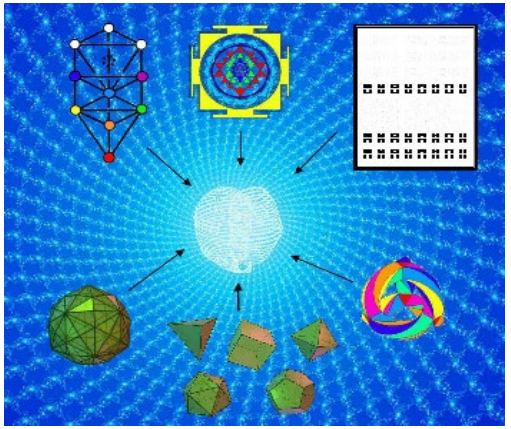
Is Mysticism Where Science, Art, and Religion Meet?



The Case for a 26 Real Dimensional Universe

Octonions, E8, and the Monster Group

Ron Cowen (1941-2019) & Bart Stuck

Two Approaches

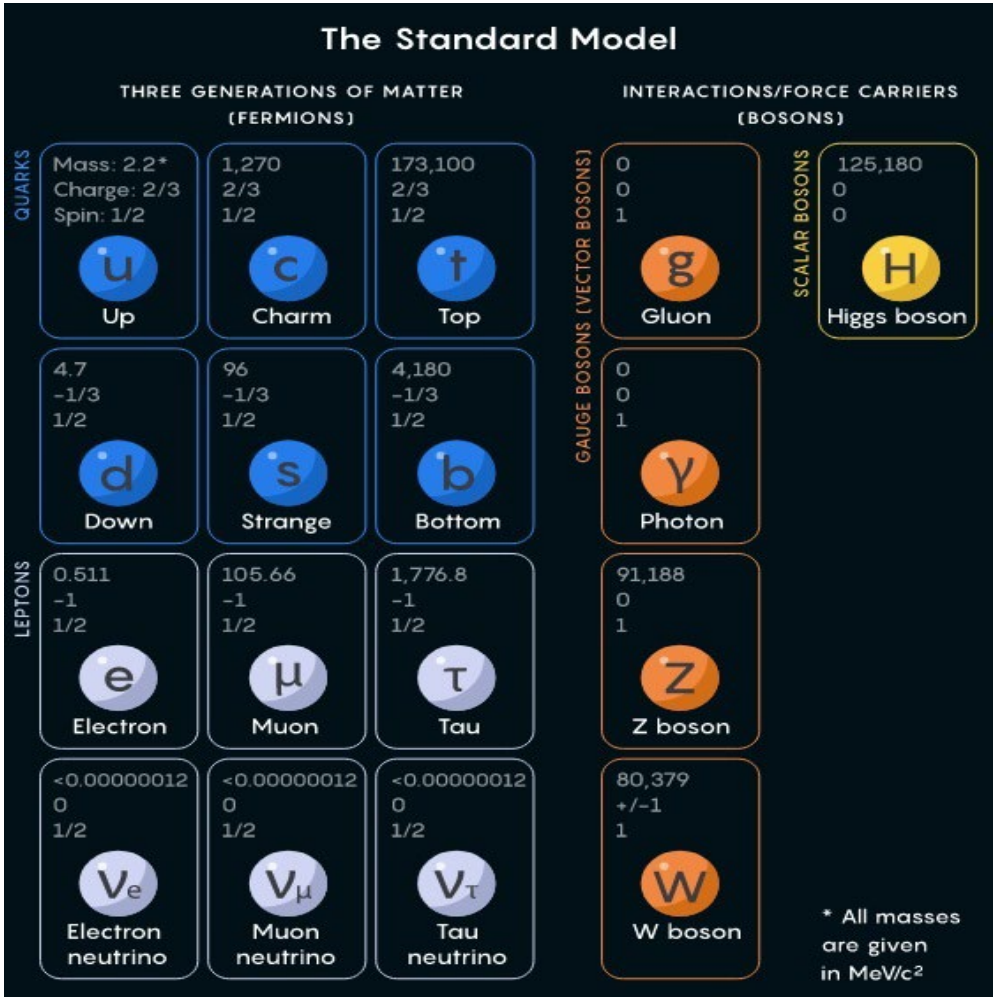
In philosophy, systems theory, science, and art, **emergence** occurs when an entity is observed to have properties its parts do not have on their own, properties or behaviors which emerge only when the parts interact in a wider whole.

- the central limit theorem of probability (bell shaped curve emerges with increasing numbers)
- the phenomenon of life as studied in biology is an emergent property of chemistry
- many psychological phenomena are known to emerge from underlying neurobiological processes.

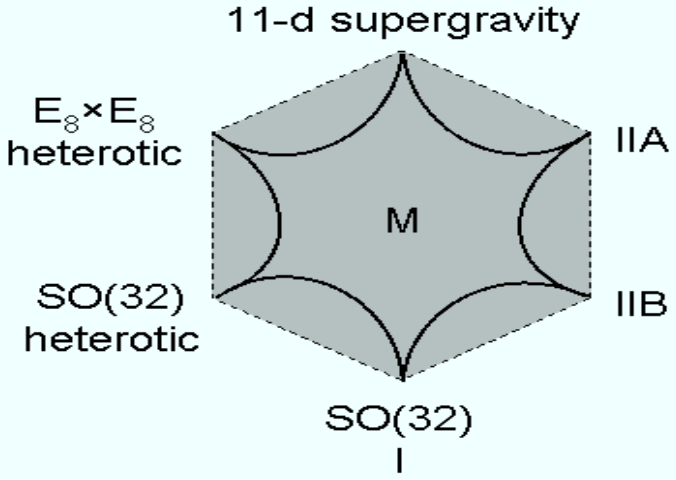
Fundamental building blocks make up emergent theories:

- atoms which are made up of components (electrons and nuclei),
- nuclei are made up of protons and neutrons,
- protons and neutrons are made up of quarks,
- quarks are made up of subquarks that have ten heterotic (closed) strings

The Standard Model for Matter (Leptons, Quarks) and Forces (Bosons)



String Theory and Physics



496 types of particles transmit the forces between superstrings

$E_8 \times E_8'$ heterotic superstring

248 particles transmit E_8-symmetric forces between superstrings of ordinary matter

248 particles transmit E_8'-symmetric forces between superstrings of 'shadow matter'

Supergravity theory and the five superstring theories are various limits of M-theory

Observations
Subquarks: Leadbeater and Besant, 1894-1912

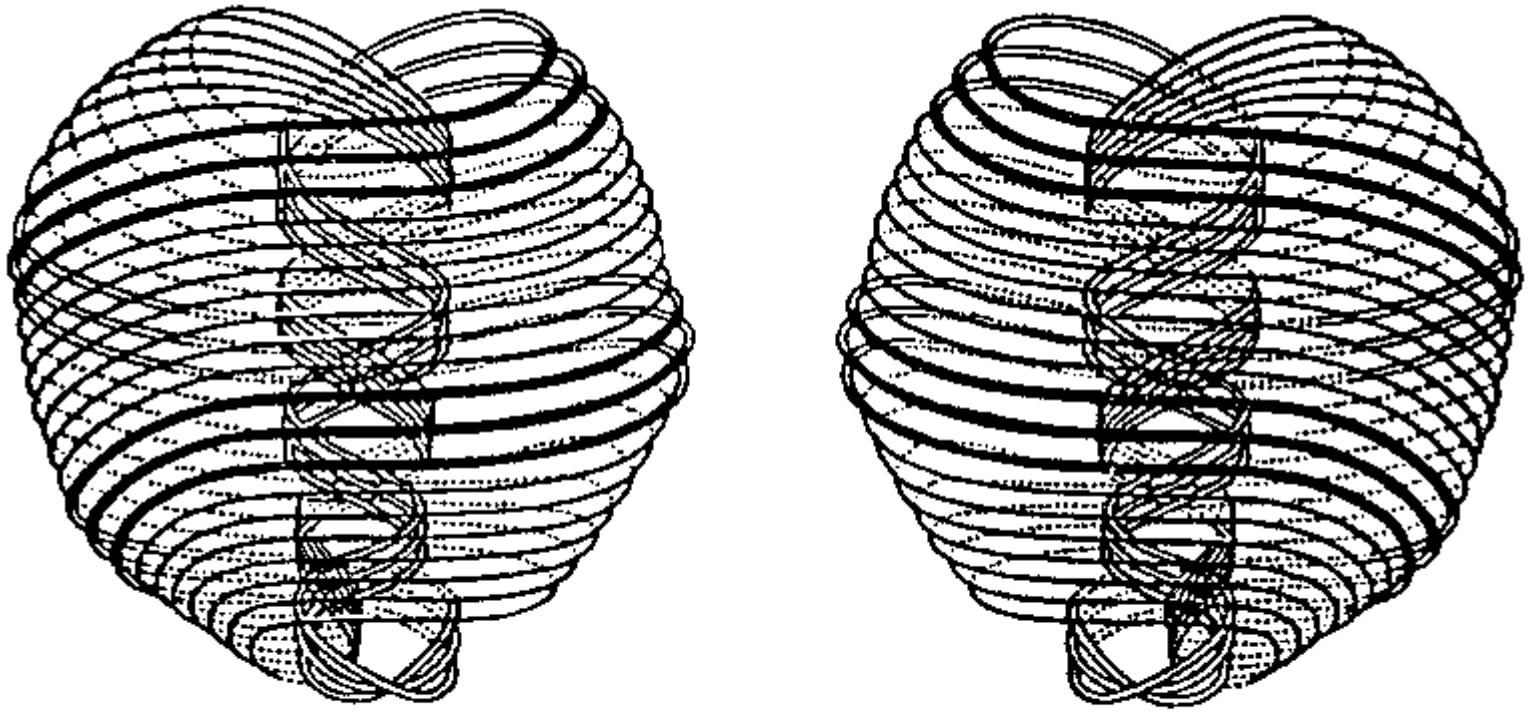


Figure 1.5 : The fundamental constituent of matter (UPA) revealed by micro-psi

Subquarks (Universal Physical Atom or UPA) consist of ten closed (heterotic) string

Observations: Ronald Cowen 1990-2019

- Duplicated all observations of Leadbeater and Besant for matter subquarks with ten heterotic strings, corrected some errors perhaps due to draftsman misunderstandings
- Observed dark matter subquarks with five heterotic strings, which were never observed by Leadbeater and Besant
- Observed active forms of dark matter (close to thermally active matter) that was energized by gravitational resonance
- Observed quiescent dark matter in the far reaches of space: tubes hundreds of kilometers long made up of dark matter
- Observed three chakras made of dark matter: third eye, heart, and base of spine, which collectively make a soul; this joins the body at birth and leaves at death

Ron Cowen Observations: David Bohm, Bell's Theorem, Superdeterminism

Ron Cowen only observed deterministic phenomena in the microcosm, nothing probabilistic; his observations matched those postulated by David Bohm of an explicate and implicate (hidden variables)

In quantum mechanics, superdeterminism is a loophole in Bell's theorem. By postulating that all systems being measured are correlated with the choices of which measurements to make on them, the assumptions of the theorem are no longer fulfilled. A hidden variables theory which is superdeterministic, hence, can fulfill Bell's notion of local causality and still violate the inequalities derived from Bell's theorem. This makes it possible to construct a local hidden-variable theory that reproduces the predictions of quantum mechanics, for which a few example theories have been proposed. The term superdeterminism is misleading. Superdeterministic models are deterministic in the usual sense. But in addition to being deterministic, they also postulate correlations between the state that is measured and the measurement setting. Source: Wikipedia

Ron Cowen Observations: Quantum Mechanics

Ron Cowen only observed deterministic phenomena in the microcosm, nothing probabilistic

On the other hand, quantum mechanics deals with a wave function that has a real and imaginary part as a function of space-time

Quantum mechanics has proven to be a highly successful theory, resulting in advances in solid state physics (e.g., semiconductors and photonics) that underpin the Internet and modern computer communications

Since matter and dark matter appear to be a single symplectic space, this suggests the real and imaginary parts of the wave function exist in the real and imaginary subspaces of matter and dark matter

Enlightenment permits the soul to couple to the wave function to achieve non duality and certitude (the wave function contains all knowledge)

Observations
Subquarks: Babbitt, 1878

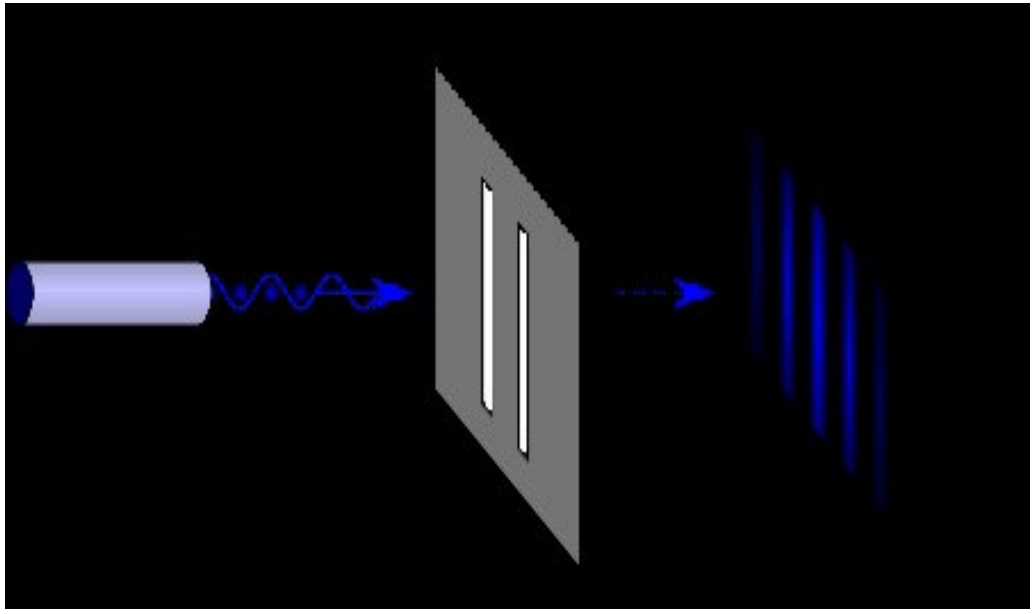
Figure 1.6 : The 'atom' according to Edwin Babbitt

Mysticism in Science
Electron Double Slit Experiment

Single slit—electron passes through as a particle

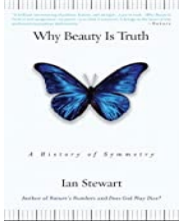
Double slit—electron passes through both as a wave

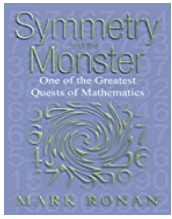
https://www.youtube.com/watch?v=Q1YqgPAtzho



What Really Happens
In the Double Slit Experiment

- Ronald Cowen (1941-2019) Buddhist, clairvoyant in microcosm
- An electron is a torus (this has been unknown until now)
- The torus is covered with information blocks (both algorithms and data)
- The information regularly scans in compactified dimensions via tachyons that travel at faster than the speed of light
- When the electron detects a single slit, it behaves as a particle
- When the eletron detects a double slit, it behaves as a wave
- All of this follows a Lagrangian path of least action





Symmetry and Group Theory
Exceptions Arise in Symmetry

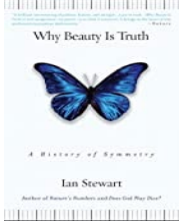
The mathematical study of symmetry is group theory

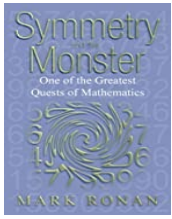
The study of symmetry has led to a classification of simple groups

- 18 regular infinite families of symmetry groups
- 26 sporadic or exceptional groups
- The most bizarre of these exceptional groups is the Monster Group in 196,883 dimensions with 808,017,424,794,512,875,886,459,904,961,710,757,005,754,368,000,000,000 $\approx 8 \times 10^{53}$ elements

Group theory has found incredible linkages to physics and physical laws: what does the Monster link to?

YouTube: Group theory, abstraction and the Monster group https://www.youtube.com/watch?v=mH0oCDa74tE&t=19s





Symmetry and Group Theory
Exceptions Arise in Symmetry

The initial work of Killing, Lie and Cartan showed there were three families (unitary, orthogonal, symplectic) but there were five exceptional Lie groups/Lie algebras, all connected to octonions, with E8 having 248 elements and being close to the 230+ particles in the Standard Model, all as resonances of the octonions

Ron Cowen observed the universe was made up of eight subspaces of three real dimensions, so each of these subspaces is linked to one of the eight octonion elements, and the resonances create the three real spatial dimensions of each subspace

The Monster Group involves resonances around the resonances of each three real dimensional subspace: as vibrational energy rise, the entity with this extra vibrational energy moves into a Monster Group subspace different from that of the actual subspace,, and with enough energy can be invisible or can move through walls in the original three dimensional subspace

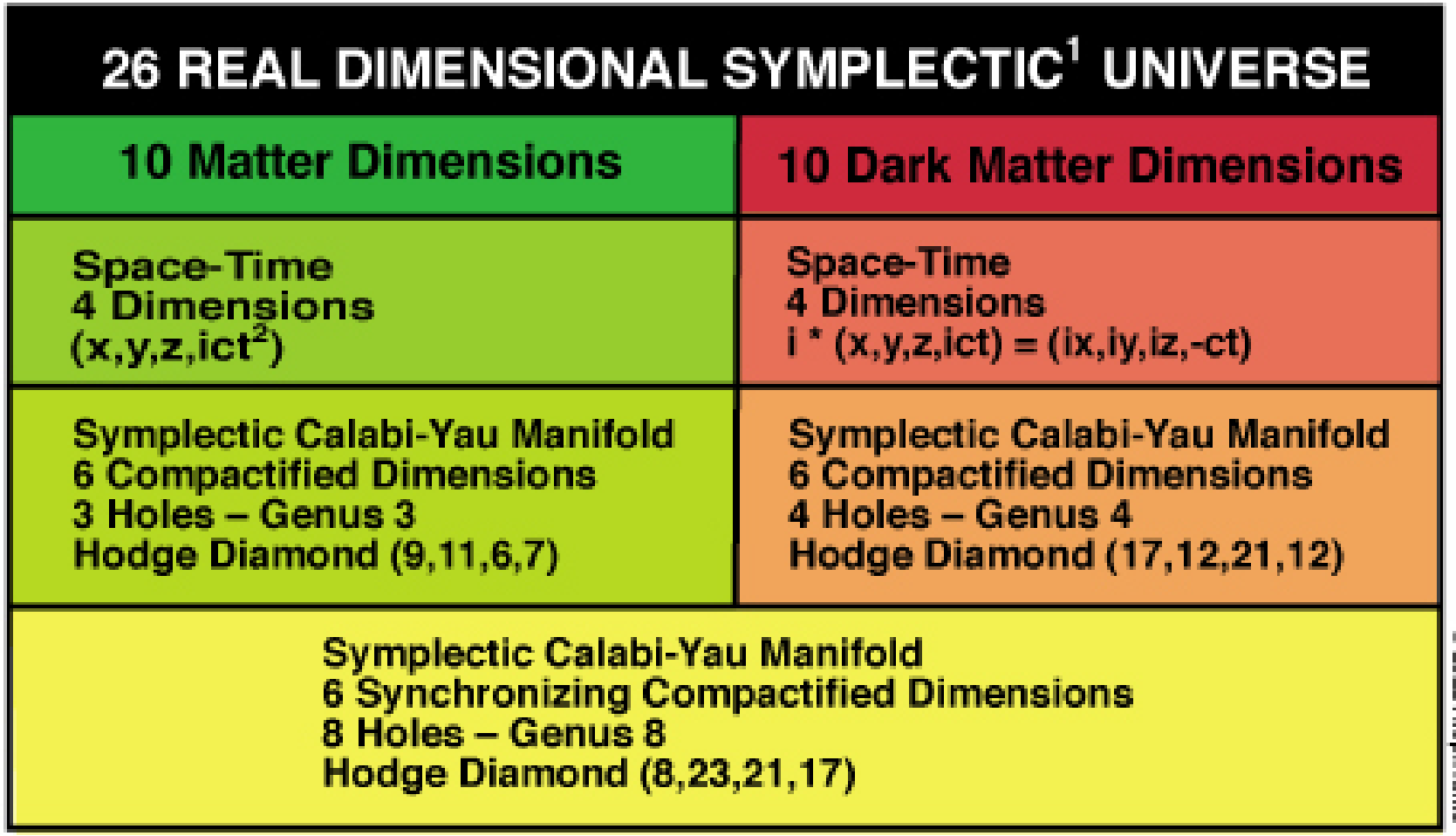
Why More Than 3 Dimensions?

Science after five hundred years of observations has concluded that 5% of the universe consists of matter/energy, while the remainder is unknown, but consists of dark matter (27%) and dark energy (68%)

If we ask where the extra matter/energy lies, just divided the 3 dimensions by 5% to get 60 dimensions: the other matter/energy is vibrating in other dimensions

Ron Cowen concluded it was 26 dimensions, two for time, and 24 spatial dimensions separated into eight subspaces of three dimensions each

26 Real Dimensional Universe



[1] Symplectic = real and imaginary pairs.
[2] ict = √(-1) * speed of light * time.

26 Real Dimensional Space

26 real dimensions, paired into sympletic space of 13 complex dimensions

Matter three spatial dimensions paired with three dark matter spatial dimensions multiplied by square root of (-1)=i

Each six dimensional Calabi Yau manifold consists of three real spatial dimensions and three spatial dimensions multiplied by square root of (-1)=i

Time is multiplied by ic (c is speed of light) for matter, so metric is sqrt(x ^2 +y^2 +z^2 +(ict)^2) and for dark matter metric is negative of this: sqrt((ix)^2+(iy)^2+(iz)^2+(i*ict)^2)) so time dimension for matter and dark matter are swapped

^

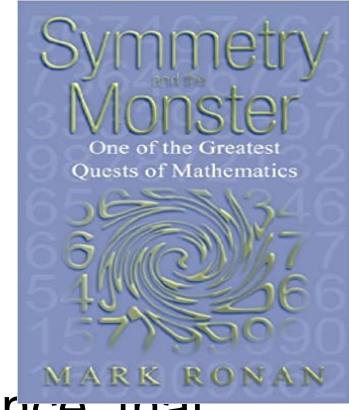
26 Real Dimensional Space

Twenty four real spatial dimensions together form eight three spatial dimension subspaces

Since matter and dark matter subspaces are in fact four dimensional, three spatial and one time, it may be that the other six three spatial dimensional subspaces each have their own time dimension, but these other six time dimensions are not observed in the matter subspace, so there may be eight four dimensional subspaces, each with three spatial dimensions and one time dimension

E8 the exceptional Lie group is the underlying symmetry group for matter space time, so there may be an eight fold E8 product symmetry underlying all

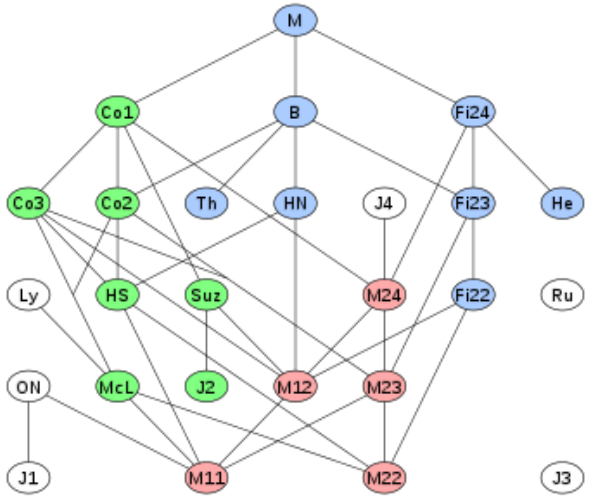
Monster Group Decomposition



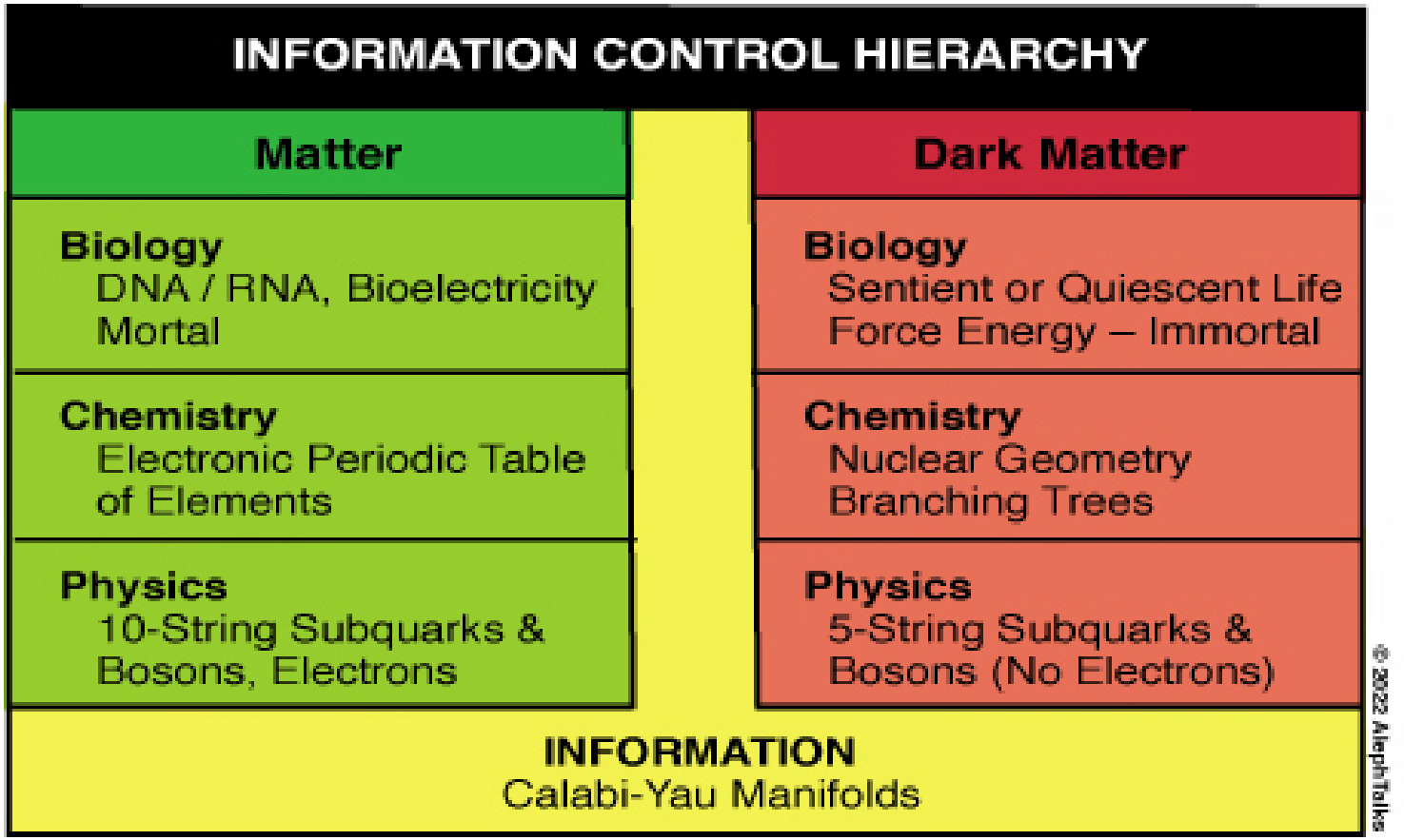
"I have a sneaking hope, a hope unsupported by any facts or any evidence, that sometime in the twenty-first century physicists will stumble upon the Monster group,built in some unsuspected way into the structure of the universe." Freeman Dyson

Underlying symmetry may be reflected in decomposition of Monster Group in 196,883 dimensions

Wolfram hypergraphs may provide underlying causal structure



Information Resides in Space Compartments Controls Fields and Particles



Buddhism Perspective

We are caught up in the now: the past is recedi
the future lies ahead

Garchen Rinpoche, a Buddhist monk, argues that there is duality and nonduality

Duality is what we experience: our mind/the right temporal lobe of our brain (God spot) resonates with our soul (Jaynes: Bicameral Mind)

Nonduality extends our consciousness from four to ten dimensions and we lose duality or self: enlightenment

Lagrange Principle of Least Action: Dynamical Equations

- **Newtonian mechanics** follows the path of least action that satisfies the rate of change of momentum equals the net forces

- **Fluid mechanics** follows the path of least action that satisfies the Euler equations or Navier Stokes equations et alas appropriate

- **Electromagnetism** follows the path of least action such that the potentials, fields, current densities and charge density satisfy Grassmann/Maxwell equations

- **Etheric electromagnetism** follows the path of least action such that the potentials, fields, current densities and charge density satisfies etheric (space is the ether) equations of electromagnetism (perturbation analysis using ether density adds strong, weak force, and gravity to these equations)

- **String theory** follows the path of least action such that the equations satify vibrations of heterotic neutrino strings, interacting with information (that is constantly doing a scan and response), in quantized space, with information controlling all forces

Emmy Noether: Symmetry and Conservation Law

Noether's theorem or **Noether's first theorem** states that every differentiable symmetry of the action of a physical system has a corresponding conservation law.

- The theorem was proven by mathematician Emmy Noether in 1915 and published in 1918, after a special case was proven in 1909.

- The action of a physical system is the integral over timeof a Lagrangian function, from which the system's behavior can be determined by the principle of least action This theorem only applies to continuous and smooth symmetries over physical space.

Ten Equations of Nonrelativistic Rigid Body Dynamics: E Cartan 1924

Newton: Rigid body mechanics
Three equations for forces acting on center of mass
Three equations for angular momentum around center of mass
Cartan xtension from three dimensions to four space-time dimensions
Four equations for forces acting on center of mass
conservation of linear momentum and energy
Six equations for angular momentum around center of mass
conservation of space-time angular momentum

The Ether: A Road Not Taken

- Light was postulated to be particles called corpuscles by Isaac Newton in **Opticks**, because waves to not travel in straight lines (longitudinal wave)

- Light obeyed diffraction, interference and polarization so Huygens-Young-Fresnel wave theory was adopted (transverse wave)

- Albert Einstein postulated light in photoelectric effect was made of particles called photons that would hop in quantized space compartment from space compartment to space compartment

- The quantized space compartments form the ether that carries light

- If the equations of electrodynamics and fluid mechanics for a perfect incompressible fluid are combined, electromagnetism, strong and weak force, and gravity (spatial density) all arise from these equations (perturbation analysis)

The Ether: A Road Not Taken
Etheric Gravitoelectrodynamics

- With no ether, exterior calculus derives Maxwell's equations
- With ether, get coupling of space/gravity and electromagnetism
- Second order perturbation of etheric electromagnetism equations
- Classical limit of quantum mechanics
- Gravity is reflected in changes of ether density
- Electrons are particles
- Magnetic monopoles are particles (yet to be discovered)
- Photons link with electrons to create electromagnetic fields
- Photons in excited states
  - Gluons (strong force)--like charges attract, not repel
  - Electroweak (neutrons fission into proton, electron and neutrino)

Foundational Equations

- **Fermions**
  - Dirac equation/quaternions: relativistically cc
  - Schroedinger equation in classical limit
  - Subquarks and neutrinos follow this
- **Bosons**
  - Grassmann/Maxwell equations
  - Gauge->Potential->Field->Current->Source
  - Higgs plus Ether plus tachyons in compactified dimensions
- **Space Quantum Foam**: ruliad/network graph

Calabi Yau Manifolds and String Theory: Wikiped

- Calabi–Yau manifolds are important in superstring [illegible] Essentially, Calabi–Yau manifolds are shapes that satisfy the requirement of space for the six "unseen" spatial dimensions of string theory, which may be smaller than our currently observable lengths as they have not yet been detected.
- In the most conventional superstring models, ten conjectural dimensions in string theory are supposed to come as four of which we are aware, carrying some kind of fibration with fiber dimension six. Compactification on Calabi–Yau n-folds are important because they leave some of the original supersymmetry unbroken.

Calabi Yau Manifolds and String Theory: Wikipedi

- Connected with each hole in the Calabi–Yau space is a group of low-energy string vibrational patterns. Since string theory states that our familiar elementary particles correspond to low-energy string vibrations, the presence of multiple holes causes the string patterns to fall into multiple groups, or families. Although the following statement has been simplified, it conveys the logic of the argument: if the Calabi–Yau has three holes, then three families of vibrational patterns and thus three families of particles will be observed experimentally.
- Logically, since strings vibrate through all the dimensions, the shape of the curled-up ones will affect their vibrations and thus the properties of the elementary particles observed. For example, Andrew Strominger and Edward Witten have shown that the masses of particles depend on the manner of the intersection of the various holes in a Calabi–Yau. In other words, the positions of the holes relative to one another and to the substance of the Calabi–Yau space was found by Strominger and Witten to affect the masses of particles in a certain way. This is true of all particle properties.

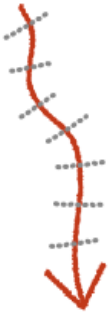
Stephen Wolfram and Information: A New Science

structural
(antiquity)

e.g. geometrical elements

explicit time
not considered

static facts deduced
by reasoning

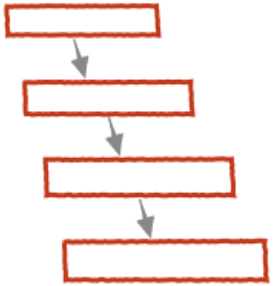


mathematical
(1600s)

e.g. differential equations

time as mathematical
coordinate

find behavior at any
time from formula

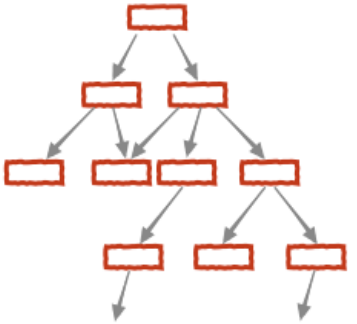


computational
(1980s)

e.g. cellular automata

time as progress
of computation

determine future only
by running program



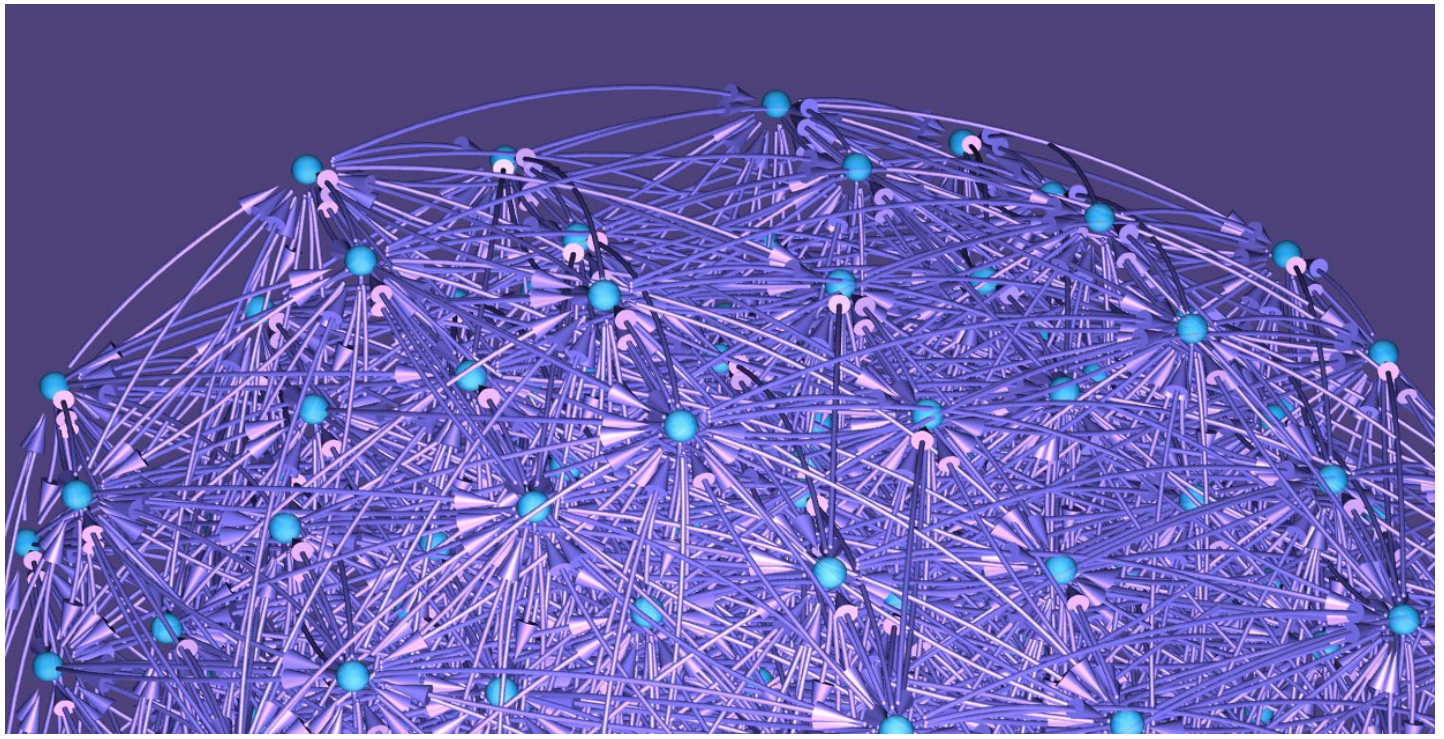
multicomputational
(2020s)

e.g. multiway systems

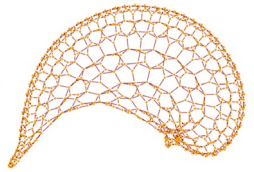
many computational
threads of time

need model of observer
to determine state

Stephen Wolfram and Information: The Ruliad



the entangled limit of everything that is computationally possible: the result of following all possible computational rules in all possible ways.



Stephen Wolfram Graphs and Networks
Ronald Cowen Observations of Space Compartments

Stephen Wolfram models space as a graph or network (cf Lorentz manifold in upper right)

Ronald Cowen observed space compartments as a graph or network covered with information

At the Big Bounce, the compressed space compartments expanded rapidly to fill space with a quantum foam of space compartments

Graph models need to incorporate eight subspaces each of three dimensions and two causal times

Dark Matter Symbiosis with Matter

- Both dark matter and matter achieve sentience
- All living matter has some dark matter
- Dark matter links to matter via chakras in humans
- The chakras together form a human soul
- The human soul resonates with the brain to create the mind
- The mind is not real but is only a resonance
- Through meditation a human can achieve enlightenment
- Enlightenment extends consciousness to all ten dimensions
- Enlightenment resonates with the universe wave function

Dark Matter Symbiosis with Matter

- Quiescent dark matter drifts through space
- At some point dark matter lands on a planet or star
- Dark matter couples with thermally active matter
- On some planets such as Earth only bacteria/prokaryotes
- Dark matter resonates with two prokaryotes at a time
- Many failures due to using gravity as a tool
- Eventually after eons prokaryotes become eukaryotes