

Supplemental Notes:

Cosmic Codes: Hidden Messages from the Edge of Eternity

Volume 4: Metacodes

What are the shocking discoveries that reveal our “digital” universe? What is the most frequently read “library” in the world? What is the code of life?

In this provocative briefing package, Chuck Missler, an internationally recognized authority, looks at the metacodes present in the world around us, revealing the most important cosmic code in the universe: *Your own!*

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Cosmic Codes

Volume 4: Metacodes

Our Digital Universe

“The entire universe is a cryptogram *set by the Almighty.*”
Sir Isaac Newton

An Overview

- The Anthropic Design.
- The Elusiveness of Infinity.
- Quantum Mysteries.
- The Universe as a Hyper-Hologram?
- The Decay of “c”?
- The Fracture of Genesis 3.

The Four Forces

- Gravity
- Electromagnetic Force
- Strong Nuclear Force
- Weak Nuclear Force

Gravity

- Causes an apple to fall to the ground.
- Keeps our feet on the floor.
- Binds together our Solar System.
- Keeps the Earth and planets in their orbits.
- Prevents the stars from exploding.
- Guides the galaxies in their motions.

Electromagnetic Force

- Holds the atom together.
- Determines the structure of the orbits of the electrons.
- Governs the laws of chemistry.
- Forms include X-rays, radio waves, and light.
- Can overcome gravity on Earth.
- Can dominate other forces down to the size of the nucleus of an atom.

Strong Nuclear Force

- Binds together the protons and neutrons in the nucleus of the atom.
- Balance between the strong force and electromagnetic forces limit a nucleus to about 100 protons.
- Energy released substantially greater than electromagnetic (chemical) force.
- Thus, stars shine; essential for life.

Weak Nuclear Force

- Governs atomic instability and radioactivity.
- Disintegration of heavier nuclei.
- Can create heat, such as the decay of radioactive elements in the Earth’s core, or in a nuclear power plant.

Anthropic Principle

- Teleonomic (purposeful) Design.

“It seems as though somebody has fine-tuned nature’s number to make the Universe... The impression of design is overwhelming.”

Paul Davies

Gravitational Coupling

- Stronger:
 - All stars more massive than our sun by 1.4 times; they burn too rapidly and too inconstantly to maintain life-supporting conditions on surrounding planets.
- Weaker:
 - All stars would have less than .8 times the mass of the sun: no heavy elements.

Electromagnetic Coupling

- Weaker:
 - Molecules for life cease to exist.
- Stronger:
 - Molecules for life cease to exist.

Strong Force Coupling

- If slightly weaker, multi-proton nuclei would not hold

together: hydrogen would be the only element in the universe.

- If slightly stronger, nuclear particles would tend to bond together more frequently and more firmly: hydrogen would be rare in the universe, and the supply of various life-essential elements heavier than iron would be insufficient.

Weak Force Coupling

- Larger: No helium; no heavy elements.
- Weaker: All helium; over abundance of heavy elements.

Ratio of Electron/Proton Mass

- Larger: Molecules would not form; life would be impossible.
- Smaller: Molecules would not form; life would be impossible.

Atomic Physics Factors

Electromagnetic coupling constant; nuclear force coupling constant; weak nuclear force coupling constant; ratio of electron to proton mass; stability of the proton; fine structure constants; Be, C, and O nuclear energy levels.

Sun Factors

Mass; color; distance from the earth; age; distance from center of galaxy.

Surface Gravity

- Stronger: Atmosphere: too much ammonia, methane.
- Weaker: Atmosphere would lose too much water.

Thickness of Earth's Crust

- Thicker: Too much oxygen would be transferred from atmosphere to the crust.
- Thinner: Volcanic and tectonic activity would be too great.

Earth's Rotation Period

- Longer: Diurnal temperature differences would be too great.
- Shorter: Atmospheric wind velocities would be too great.

Axial Tilt

- Greater: Surface temperatures too great.
- Less: Surface temperature would be too great.

Albedo (Reflectivity)

- Greater: A runaway ice age would develop.
- Less: A runaway greenhouse effect would develop.

Earth's Magnetic Field

- Stronger: Electromagnetic storms would be too severe.
- Weaker: Inadequate protection from hard stellar radiation.

CO₂ and Water Vapor Levels

- Greater: A runaway greenhouse effect would develop.
- Less: The greenhouse effect would be insufficient.

Ozone Level

- Greater: Surface temperatures would be too low.
- Less: Surface temperature would be too high; too much UV radiation at the surface.

Thermodynamics

1st Law: Conservation of Matter, Energy "You can't win."

2nd Law: The Bondage of Decay "You can't even break even."

Conservation of Matter/Energy

- *And on the seventh day God ended His work...*
Genesis 2:2-3
- *The works were finished from the foundation of the world...*
Hebrews 4:3-4

- *All the things that are therein...you preserve them all.*
Nehemiah 9:6

The Bondage of Decay

- *The shall perish... grow old as a garment...*
Psalm 103:25-26
- *The earth will grow old like a garment...*
Isaiah 51:6
- *Heaven and earth will pass away...*
Matthew 24:35

Thermal Decay

- Heat always flows from hot bodies to cold bodies.
- If the universe was infinitely old, the temperature throughout the universe would be uniform.
- It isn't; therefore, it isn't infinitely old.
- The universe had a beginning.
- And it is destined for an ending.

Measurements of "c"

- 17th century: Johannes Kepler, Rene Descartes, et al, believed light was instantaneous ("c" was infinite).
- 1677: Olaf Roemer measured elapsed time between eclipses of Jupiter with its moons, yielding a *finite* speed of light.
- 1729: James Bradley confirmed Roemer's work.
- Over 300 years, measured 163 times by 16 different methods.

Setterfield-Norman Analysis

- 1677, Roemer, Io eclipse: 307,600 +/- 5400 km/sec
- 1875, Harvard, same method: 299,921 +/- 13 km/sec
- 1983, National Bureau of Standards, laser:
299,792.4586 +/- 0.00003 km/sec

Properties of Space

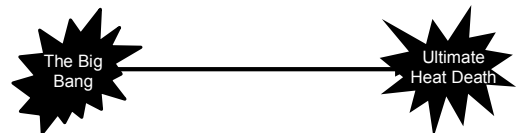
- Permittivity
- Permeability
- Zero-point energy
- Intrinsic impedance

If any of these properties change isotropically, then both atomic behavior and the velocity of light would vary throughout the universe.

Elusiveness of Infinity

- Boundaries of the macrocosm.
 - Singularity at the beginning.
 - Ultimate heat death at termination.
 - Astronomical Limits.
- Boundaries of the microcosm.
 - Limits to smallness: length, time, mass.
 - Non-locality.

Our Finite Boundaries



Our Digital Universe

- Mass, Length, Energy, Time, are made up of indivisible units: "quanta."
- *Beyond Perception...*

The Mysteries of Quanta

- 1906: J. J. Thomson, Nobel Prize for proving electrons were particles.
- 1937: His son was awarded the Nobel Prize for proving electrons were waves.
- There is compelling evidence that quanta only manifest as particles is when we are looking at them.

Niels Bohr

- "Anyone who isn't shocked by quantum physics has not understood it."
- Behavior of particles imply all are interconnected.

EPR Paradox

- Albert Einstein, Boris Podolsky, and Nathan Rosen, 1935, "*Can Quantum-Mechanical Description of Physical Reality Be Considered Complete?*"
 - Nothing can exceed the speed of light.
 - Niels Bohr is wrong.

Richard Feynman

"I think it is safe to say that no one understands quantum mechanics...In fact, it is often stated that of all the theories proposed in this century, the silliest is quantum theory. Some say that the only thing that quantum theory has going for it, in fact, is that it is unquestionably correct."

David Bohm

- A protégé of Einstein's and one of the world's most respected quantum physicists.
- Landmark work in plasma physics.
- Believed that at the subatomic level location *ceased to exist*.

The Bell Inequality

- 1964: John Stewart Bell, CERN, Geneva, formulated a mathematical approach to demonstrating non-locality.
- 1982: Alain Aspect, Jean Dalibard, and Gérard Roger at the Institute of Theoretical and Applied Optics, Paris, conducted a landmark experiment.

The Two-Particle Experiment

- Twin photons from heating cesium atoms with lasers, each traveled in opposite directions through 6.5 meters of pipe to special polarization analyzers.
- Filters switched in 10 nanoseconds, 30 nanoseconds less than the 13 meters of travel between them.
- Photons did demonstrate non-locality.

Hyperspaces

- Nachmonides, 12th century.

- Universe has 10 dimensions.
- Only 4 "are knowable."
- Particle Physics
 - 10 dimensions.
 - Only 4 are directly measurable.
 - 6 are "curled" in less than 10^{-33} cm.

Beyond Our Horizons

- Lorentz Transforms
- Fourier Transforms
- Holographic Models
 - The Word of God
 - The Holographic Universe?
 - The Mind of Man?

Communications Engineering

- The Bible as a Hologram
 - Fourier Transform Properties
 - Transcendent of Parallax

Source at Infinity

Every good gift and every perfect gift is from above, and cometh down from the Father of lights, with whom is no parallax [παραλλαγή], neither shadow of turning. *James 1:17*

Communications Engineering

- The Bible as a Hologram
 - Fourier Transform Properties
 - Transcendent of Parallax
- Spread-spectrum Design
 - Exploitation of entire bandwidth
 - Immunity to hostile jamming

Spread-Spectrum Design

For precept must be upon precept, precept upon precept; line upon line, line upon line; here a little, and there a little... *Isaiah 28:10*

Cosmos = Hyper-Hologram?

- David Bohm:
 - “implicate order”—a deeper level of reality.
 - “explicate order”— our level of existence.
- Supporters
 - Roger Penrose, Oxford.
 - Bernard d’Espagnat, University of Paris.
 - Brian Josephson, Cambridge.

The Results of Genesis 3

- Did Adam live in only 3 dimensions?
- The Bondage of Decay?
- The Decay of “c”?
- The Fracture of the 10 dimensions into the physical and spiritual worlds?

The Mathematics of Chaos

- Two divisions of mathematics.
 - Deterministic
 - Stochastic
- True Randomness does not exist.
 - The Theory of Chaos

The lot is cast into the lap; but the whole disposing thereof is of the Lord.

Prov 16:33

The Ultimate Adventure

- We discover that the universe itself is an object of finite *digital* design;
- That you and I have been placed here as part of that deliberate design;
- That our greatest opportunity is our response to this interval between the miracle of our origin and the mystery of our destiny...

* * *

DNA: The Code of Life

Wrist vs. Watch: Watch = simple open loop system.

Wrist:

- Complex closed loop servo system.
- Adapts to ambient conditions
- Fights off invaders.
- Self-repairing.

Bishop William Paley, 1818

- “The watch, with its gears, springs, and other mechanisms could never arise by the actions of random chance alone.”

Commentary on David Hume, 1779

- “Living systems only have the appearance of machines. Unless it can be proven that living systems are indeed machines at the molecular level, then Paley’s watchmaker argument is irrelevant.”

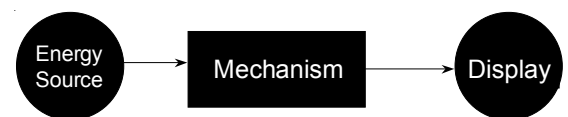
Modern Science

- Modern microbiology has revealed that even the simplest organisms are complex machines beyond our imagining.
- Science has refuted Hume and totally vindicated Paley.

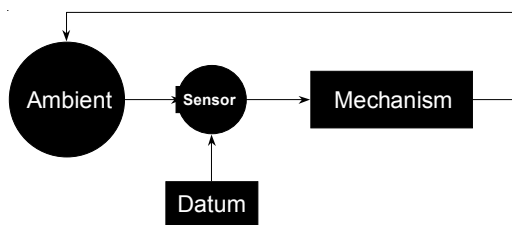
Sir Fred Hoyle, 1981

The speculation of *The Origin of the Species* turned out to be wrong. It is ironic that the scientific facts throw Darwin out, but leave Paley ...the ultimate winner.”

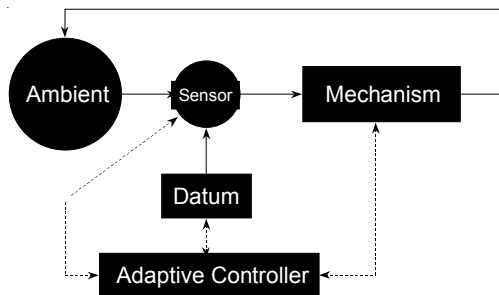
Open Loop System



Closed Loop Systems



Adaptive Systems



Evolutionary Fallacy

- Self-organization violates the Entropy laws.
- Complex system assemblies *require all subsystems to be functional* for system survival.
- Tornado + junkyard = Jet Fighter?

Hierarchy of Design

- Open Loop Systems
- Closed Loop Systems
- Adaptive Systems
- Self-modifying Systems
- Intelligent Machines

Intelligent Machines

- Self-modifying Systems
- Self-programming Systems
- Self-diagnostic Systems
- Self-repairing Systems
- Self-reproducing Systems

The Code of Life: DNA

- 1953: Watson and Crick, *Nature*
 - Deoxyribonucleic acid (DNA)
 - (Ribonucleic acid: RNA)
- 1955: Sanger, complete chemical structure of protein, insulin.

Francis Crick

“An honest man, armed with all the knowledge available to us now, could only state that in some sense, the origin of life appears at the moment to be almost a miracle, so many are the conditions which would have had to have been satisfied to get it going.”

Michael Denton, 1986

“Although the tiniest bacterial cells are incredibly small, each is in effect a veritable micro-miniaturized factory containing thousands of exquisitely designed pieces of intricate molecular machinery, made up of 100,000,000,000 atoms, far more complicated than any machine built by man and absolutely without parallel in the non-living world.”

The (“Simple?”) Cell

- Unparalleled complexity and adaptive design.
- Central memory bank.
- Assembly plants and processing units.
- Robot machines (protein molecules).
 - 3000 atoms each in 3-D configurations.
 - Hundreds of thousands of specific types.

A Model of the Simple Cell

- A model 1,000 million times larger:
 - Each atom the size of a tennis ball.
 - 10 million million atoms (10^{13}).
 - Over 10 miles in diameter.
 - 1/minute = 50 million years.

Automated Factories in the Cell

- Artificial languages and decoding systems.
- Memory banks for information storage.
- Elegant control systems regulating automated assembly of components.
- Prefabrication and modular construction.
- Error fail-safe and proofreading devices for quality control.

Technology Comparison

- Unequaled in any on earth.
- Capable of replicating its entire structure within a matter of a few hours.

The Role of Language

- Semantics
 - “One if by land; two if by sea.”
- Syntax
 - The Old North Church...
- Coordinated planning (design) or random accident (chance)?

Digital (Symbolic) Codes

- Digital Codes derive their meaning from arbitrary but consistent definitions (semantics).
- Digital codes are dependent upon their context (syntax).
- Digital codes evidence *design*.

Coding Structures

- Simplex Alphabets
- Error-Detecting Codes
- Error-Correcting Codes

- Adaptive Coding Schema
 - Syntax-modifying codes

The Codes of Life: DNA

- 3 billion rungs on the double-helix.
- *Digital, error-correcting, code!*
 - Exploits advanced language design.
- Same design for *all* life.
- Multifunction machines change specialization as required.

Amino Acids

- Of the hundreds known, only 20 are utilized by living systems in the construction of proteins.
- Most proteins are a linear “sentence” of 100 - 500 amino acids long.
- Some hydrophobic (insoluble) in water and some are hydrophilic (soluble).

DNA

- Adenine
- **Thymine**
- Guanine
- Cytosine

RNA

- Adenine
- **Uracil**
- Guanine
- Cytosine

UUU Phenylalanine	UCU Serine	UAU Tyrosine	UGU Cysteine
UUC	UCC	UAC	UGC
UUA	UCA	UAA Stop	UGA Stop
UUG	UCG	UAG	UGG Tryptophan
CUU Leucine	CCU Proline	CAU Histidine	CGU Arginine
CUC	CCC	CAC	CGC
CUA	CCA	CAA Glutamine	CGA
CUG	CCG	CAG	CGG
AUU Isoleucine	ACU Threonine	AAU Asparagine	AGU Serine
AUC	ACC	AAC	AGC
AUA	ACA	AAA Lysine	AGA Arginine
AUG Methionine/Start	ACG	AAG	AGG
GUU Valine	GCU Alanine	GAU Aspartic acid	GGU Glycine
GUC	GCC	GAC	GGC
GUA Valine/Start	GCA	GAA Glutamic acid	GGA
GUG	GCG	GAG	GGG

3 out of 4 Digital Code

- Sugar molecules (ribose or deoxyribose) bind the chemical alphabet;

- phosphate molecules bind the sugar molecules together to form the famous double helix.

Digital Information System

DNA (master blueprint)
 | transcription
 RNA (photocopy)
 | translation
 Proteins (functional machines)

Structural Organization

- Negatively charged groups associate with positively charged groups.
- hydrophobic side chains stack in the center; hydrophilic side chains arrange themselves on the surface in contact with water.
- Final stable 3-D shape (minimum energy conformation) dictated by the specific amino acid sequence.

Chemical Composition: Hemoglobin

• Glycine	36
• Alanine	68
• Serine	31
• Tyrosine	30
• Proline	25
• Valine	56
• Isoleucine	1
• Leucine	69
• Phenylalanine	28
• Threonine	14
• Tryptophan	4
• Cysteine	5
• Methionine	6
• Asparagine	47
• Glutamine	29
• Arginine	12
• Histidine	32
• Lysine	43
• Amide N*	38

*includes Aspartic & Glutamic acids

Specificity

- Formula for linear arrangements,

$$N=n!/(p! x q! x r! \dots)$$
- 10^{650} permutations possible.
- Only one of them is hemoglobin.
 – (change just one of them = Hemoglobin Opathy)

Inefficiency of Chance

- Only 10^{18} seconds in the history of the universe.
- Only 10^{66} atoms in the universe.
- Only 10^{80} particles in the universe.
- Probabilities $<10^{50}$ defines “absurd.”

The Human Brain

- 10^{10} nerve cells.
- Each with $10^4 - 10^5$ connecting fibers.
- Approaches 10^{15} connections.

10^{15} Equivalent

- A forest 1/2 the size of the USA = 1 million square miles.
- 10,000 trees/sq. mile
- 100,000 leaves/tree.

The Human Brain Network

- A highly organized network of uniquely adaptive communication channels.
- If only 1% of the connections were specifically organized pathways, it would still represent a greater number of connections than the entire communications network on the Planet Earth.

Memory Mapping

- Wilder Penfield: Memories have specific locations in the brain.
- Karl Pribram: Memories not localized.
- Paul Pietsch: 700 operations on salamanders confirm Pribram.
- John von Neumann: Capacity: 2.8×10^{20} bits (1000 bits/sec for 10 billion years).

Fourier Transforms

- Hermann von Helmholtz: ear processes by a frequency analyzer.
- Russell and Karen DeValois: visual cortex processes Fourier patterns.
- Holographic models only way to explain neurophysiological puzzles:
 - pattern recognition.
 - transference of learned skills.
 - phantom limbs, etc.

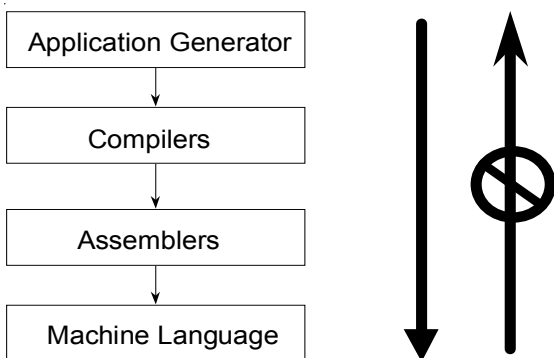
Further Conjectures

- Discerning internal vs. external realities?
- Imagination, inspiration, creativity go beyond storage, recall, and processing;
- Hyperdimensional transfer function to other dimensions beyond our consciousness?

Technology of Resurrection

- We are made of 17+ elements.
 - Same ones as the “Dust of the ground.”
 - Atoms themselves are fungible.
- *Jurassic Park* suggested that all that is needed is a sample of DNA to recreate a living creature.

Software Development Path



Physics of Software

- Software has no mass.
- Software is not constrained by time.
 - Time is a physical property and varies by mass, acceleration and gravity.
- The “real you” is also software, temporarily resident in hardware.

Your True Nature

- The real YOU is software, not hardware.
- The real you has no mass.
- The real you has no time dimension.
- You are eternal, whether you want to be or not.

The Ultimate “Code”

- There appears to be hidden codes throughout the Word of God...
- The “Ultimate Code” is *YOU!*
- Is *your name* written in the Book of Life?
- You won’t be able to tell by searching with computers; you simply need to respond to Him...

* * *

Bibliography

This briefing package was excerpted from the book *Cosmic Codes—Hidden Messages from the Edge of Eternity* by Chuck Missler, available through Koinonia House, 1-800-KHOUSE-1.

Also in the “Cosmic Codes” Briefing Package Series:

- Volume 1: The History of Cryptography
- Volume 2: Microcodes
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