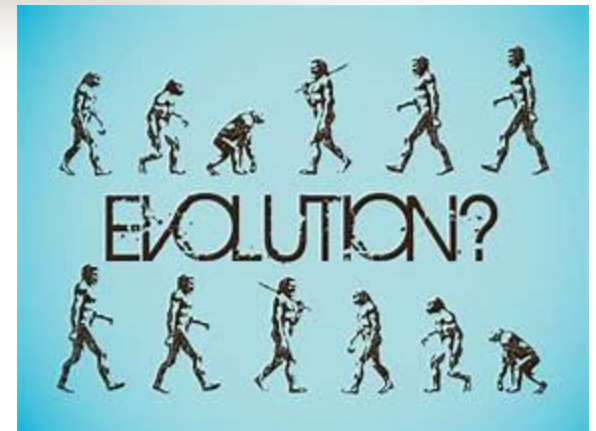
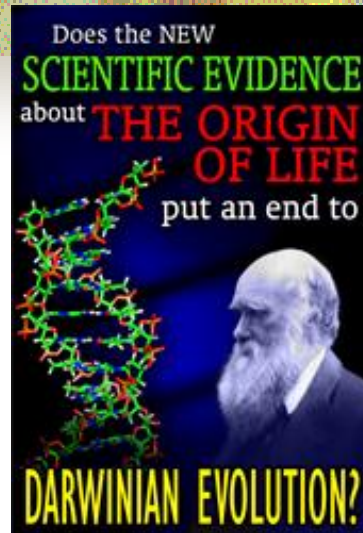
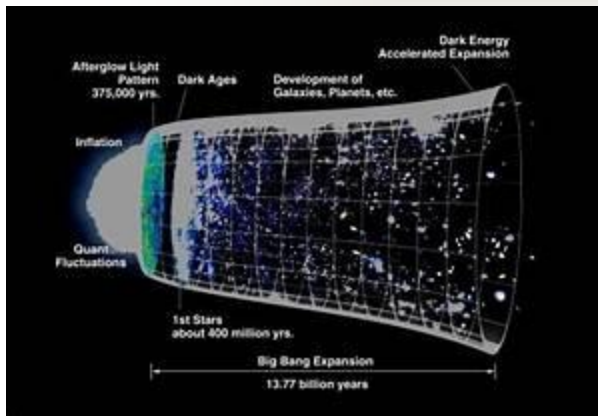


Evolution & Critical Thinking

Dr. Heinz Lycklama

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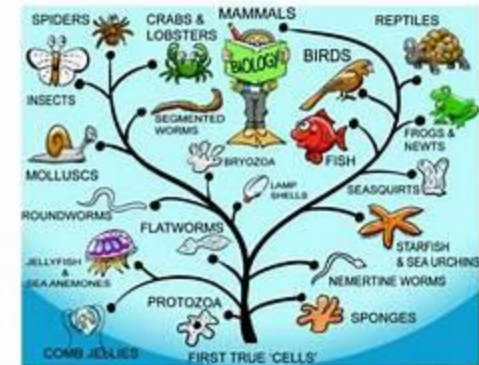


Evolution & Critical Thinking

1. What Is Science?
 - Science, History, Belief?
2. What is Evolution?
 - Micro vs. Macro
3. Chance, Necessity, or Design?
 - Known Laws of Nature
4. Origin of the Universe?
5. Origin of First Life
6. Origin of Complex Life [Darwinian Evolution]
7. Darwin's Doubts
8. Conclusions

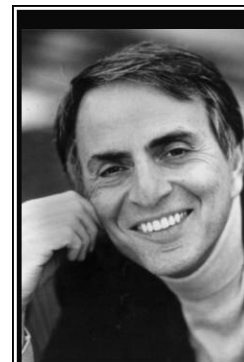
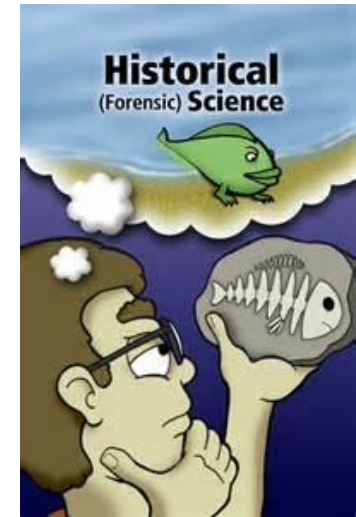
What is Science?

- A. Science**—an organized way of studying things and finding answers to questions.
- B. Critical thinking**—a process that uses certain skills to solve problems.



1. What Is Science?

- Science definitions
 - Modern changes
 - Operational science
 - Historical science
- Naturalism (Scientism)
- Materialism
- The pursuit of science
- Limitations of science
- Scientific proofs
- Science, History, or Belief?
- Critical Thinking



The Cosmos is all that is or ever was or ever will be. Our feeblest contemplations of the Cosmos stir us — there is a tingling in the spine, a catch in the voice, a faint sensation of a distant memory, as if we were falling from a great height. We know we are approaching the greatest of mysteries.

(Carl Sagan)

izquotes.com

Science Definitions

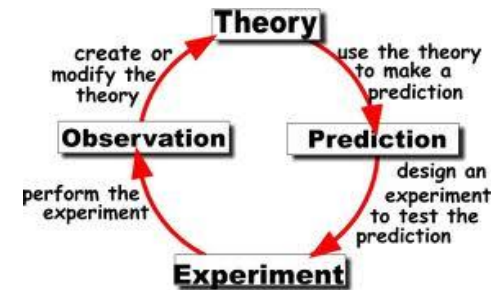
- **Science** – knowledge discovered by experimentation, observation and objective investigation

- Use of Scientific Method (Bacon)
- **Operational Science**



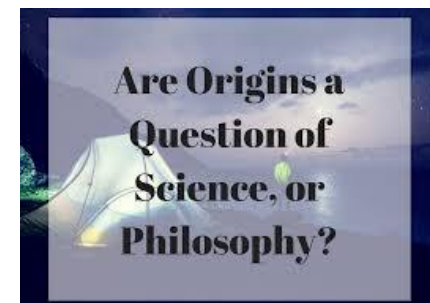
- UK Science Council definition (2009)

- “Science is the pursuit of knowledge and understanding of the natural and social world following a systematic methodology based on evidence.” [*pursuit, rather than established*]



- **Origins Science**

- Not testable, verifiable, falsifiable, or repeatable
- Forensic science based on interpretation of evidence

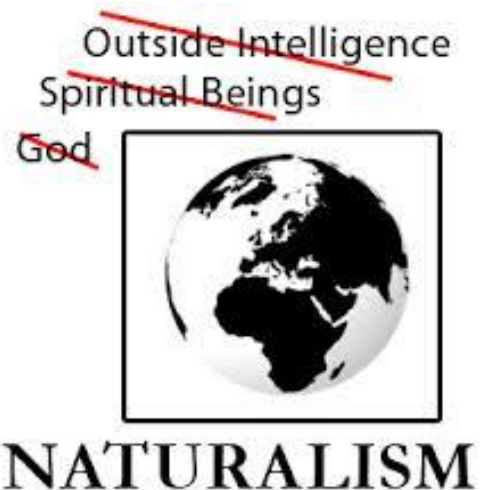


Naturalism (Scientism)

A belief denying that an event or object has a supernatural significance; specifically, the doctrine that scientific laws are adequate to account for all phenomena

“Even if all the data point to an intelligent designer, such an hypothesis is excluded from science because it is not naturalistic.”

Dr. Scott Todd, KS Univ. Immunologist



Pillars of Naturalism:

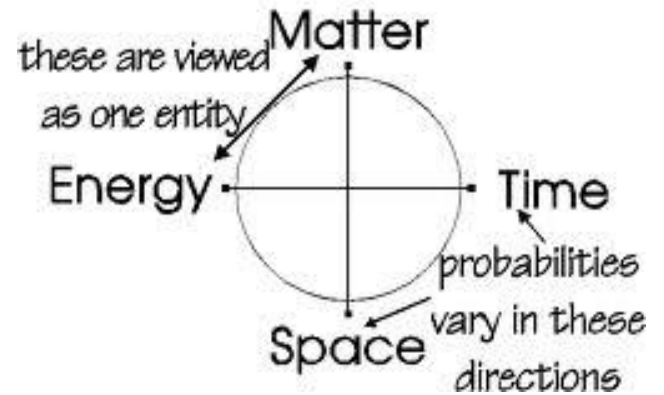


**Freud is dead, Marx is dead,
and Darwin isn't feeling very well.**

Materialism

A belief claiming that physical matter is the only or fundamental reality and that all organisms, processes, and phenomena can be explained as manifestations or interactions of matter

THE WORLD-VIEW OF QUANTUM MECHANICS



“We take the side of science *in spite* of the patent absurdity of some of its constructs, *in spite* of its failure to fulfill many of its extravagant promises of health and life, *in spite* of the tolerance of the scientific community for unsubstantiated just-so stories, because we have a prior commitment, a commitment to materialism.”

Richard Lewontin

The Pursuit of Science

- Science is the search for truth
- Fact, Law, Theory, Hypothesis, Model?
 - Fact – proven to be true
 - Law – no known exception
 - Theory – testable, falsifiable, verifiable, repeatable, based on empirical findings
 - Hypothesis – provisionally explains some fact
 - Model – simplified representation of reality
- Scientific method

The Scientific Method

- There are 6 steps:
 - Question or Problem
 - Hypothesis
 - Procedure and Materials
 - Test the Hypothesis or Experiment
 - Data and Results
 - Analysis and Conclusion

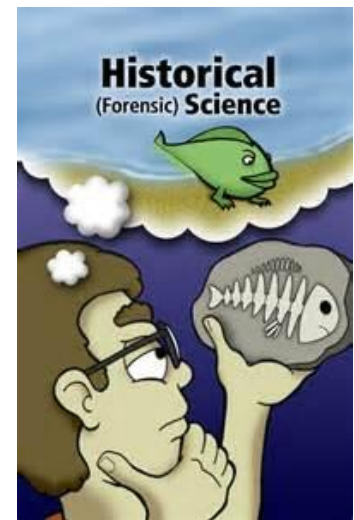
Limitations of Scientific Method

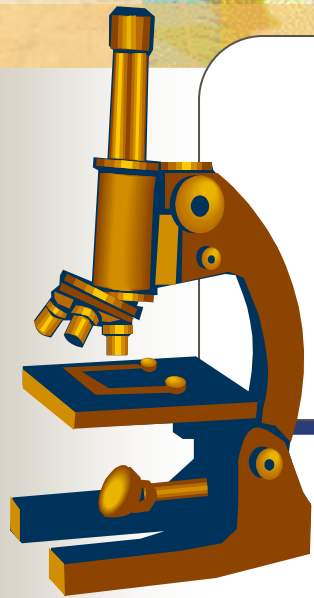
■ “Operational” Science

- Postulate theory -> make observations -> prove/falsify theory
- Using the Scientific Method

■ “Origins” Science

- Were you there at the beginning?
- Can't repeat the “experiment”
- “Forensic” science
- Model of science
- Which model best fits observed facts?





Present +
Repeatable +
Observable =
SCIENCE

Past +
Non-Repeatable +
Eyewitness Account =
HISTORY



Past +
Non-Repeatable +
No Eyewitnesses =
BELIEF



What is Critical Thinking?

Critical Thinking is the ability to:

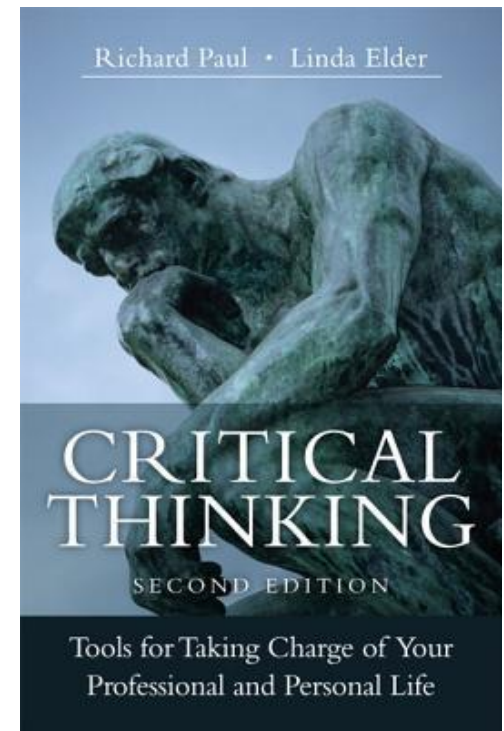
- **Develop a healthy skepticism toward any information presented as fact**
- **Apply reasoning and logic to new or unfamiliar ideas, opinions, and situations.**
- **See things in an open-minded way and examine an idea or concept from as many angles as possible.**
- **Look past one's own views of the world and better understand the opinions of others.**

Critical Thinking Skills

- “It is now generally conceded that the art of thinking critically is a major missing link in education today, and that effective communication and problem solving skills, as well as mastery of content, requires critical thinking.”

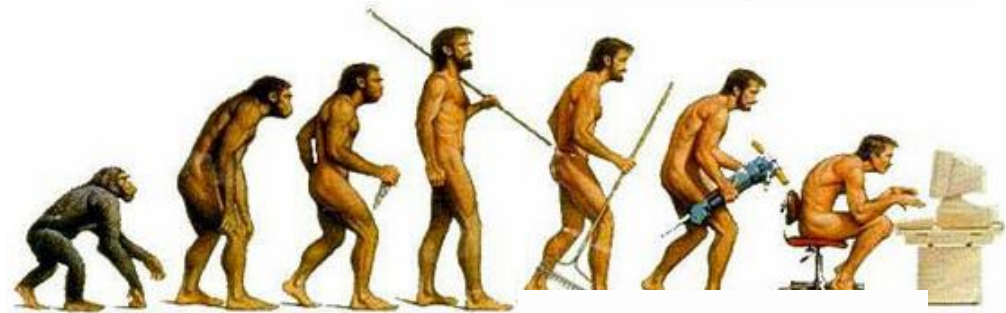
Richard Paul, Director, Center of Critical Thinking

- Three critical thinking questions
 - How do you know it is true?
 - Has it ever been observed?
 - Are you making any assumptions?



2. What Is Evolution?

- 3 Stages of Evolution
- The meaning of Evolution
- Evolutionary theory in a nutshell
 - Common ancestor
 - Random chance mutations
 - Natural selection
- Natural Selection
- 3 Impossible hurdles for Naturalism
 - Origin of the **universe**, origin of **first life**, origin of **complex life**



3 Stages of Evolution

1. Cosmic (Stellar) Evolution

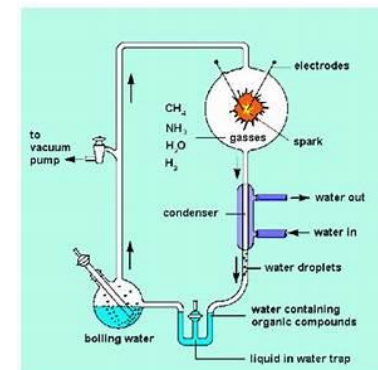
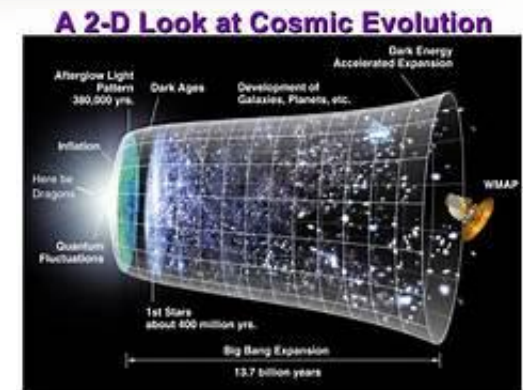
- Evolution of the universe, including galactic clusters, galaxies, stars, solar systems, planets, elements

2. Biochemical (Chemical) Evolution

- Evolution of first life from nonlife
- Abiogenesis

3. Biological (Organic) Evolution

- Evolution from common ancestor
- Molecule to man (Macro-Evolution)



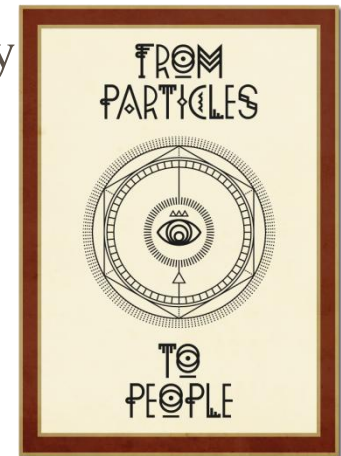
The Meaning of Evolution

1. Artificial Selection
 - Plant and animal breeding
2. Change
 - Evolution of a coastline (random)
 - Evolution of a car (designed)
3. Micro-Evolution [Adaptation]
 - Small variation within prescribed limits of complexity
 - e.g., finch beaks by mutation and natural selection
4. Macro-Evolution
 - Particles -> people
5. Molecular Evolution
 - Origin of life – assumes a mutating replicator

Only 1, 2 and 3
have been observed

4 never observed!

5 is impossible!



Evolutionary Theory in a Nutshell

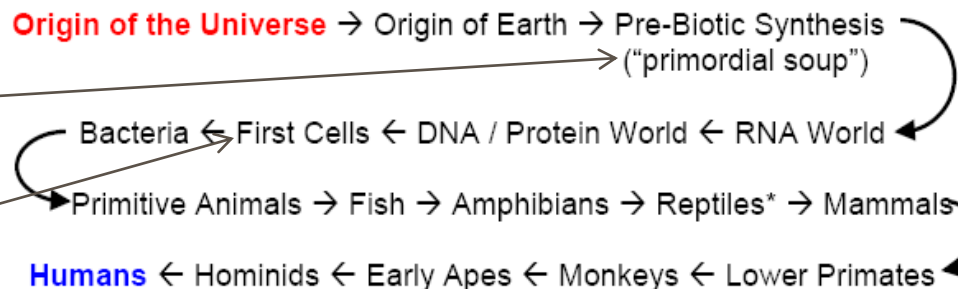
How Evolution Works:

1. Random chance mutations cause changes, or variation, in a population of organisms.
2. These different organisms then compete to survive and reproduce.
3. Those which are best able to survive and reproduce do so, and tend to leave the most offspring.
This is called "natural selection."
4. Over time, if some organisms survive and reproduce more than others, a species will "evolve."

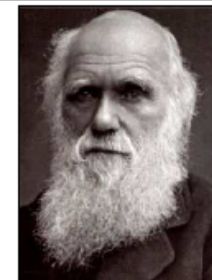
Evolution claims:

- All organisms are related through "common ancestry."
- All organisms arose through the process of mutation and natural selection.
- All organisms arose and persist because of the random chance processes of nature.

The story of evolution:



*Evolutionary theory says some reptiles also turned into birds.



The British naturalist, Charles Darwin, first proposed his theory of evolution in 1859 in *The Origin of Species*. (Picture from <http://www.eeb.lsa.umich.edu/images/darwin.jpg>)

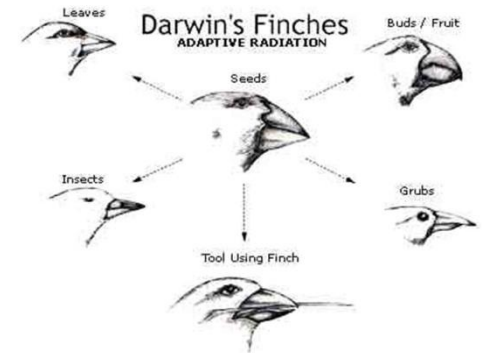
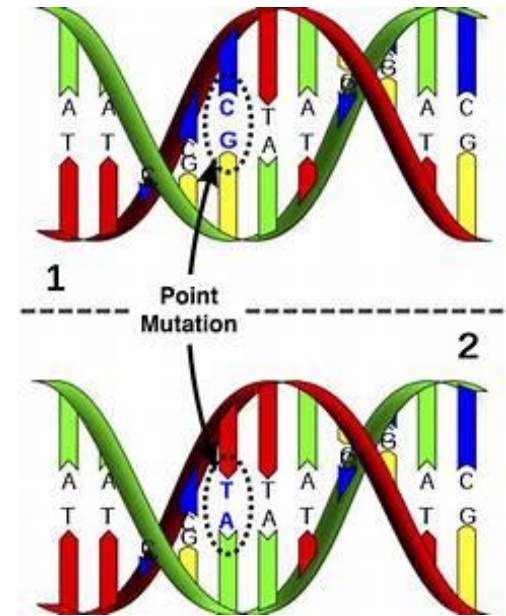
Evolution Mechanisms

■ Mutations

- Result of random copying errors/changes in genes (DNA)
- Supposedly source of new traits for Evolution
- Genetic information is lost/sorted
- Requires mostly beneficial mutations

■ Natural Selection

- Selection of genes/mutations for survival of the fittest
- An observable process that supposedly underlies the mechanism of unobserved particles -> people evolution
- Requires a directional change



Natural Selection

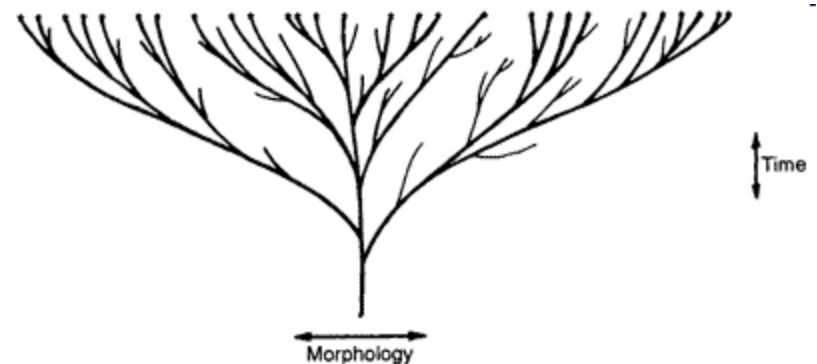
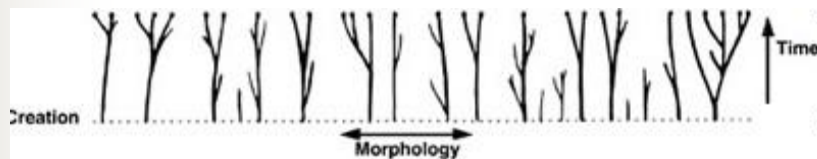
- Selecting information that already exists

■ Natural Selection Can

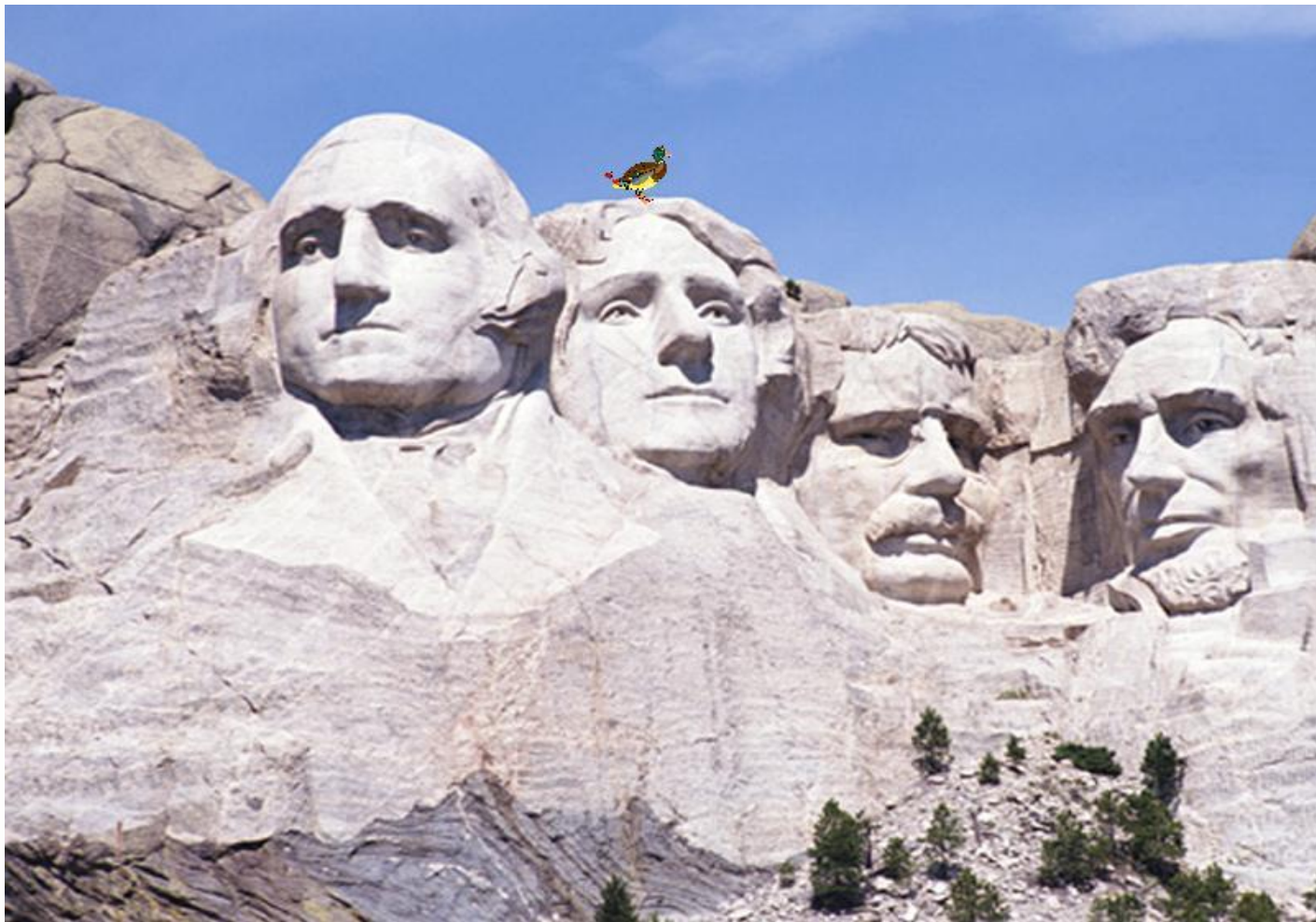
- Decrease genetic information
- Allow organisms to survive better in a given environment
- Act as a “selector”
- Support Creation’s “orchard” of life

■ Natural Selection Cannot

- Increase or generate new genetic information
- Allow organisms to evolve from molecules to man
- Act as an “originator”
- Support evolutionary “tree of life”




3. Chance, Necessity (Law) or Design?

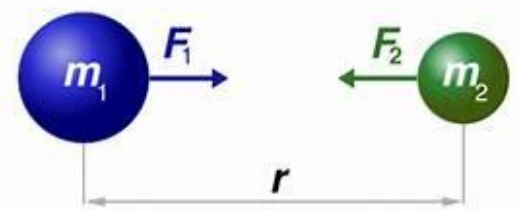


Laws of Nature

- Law of Cause and Effect
- Law of Biogenesis
- First Law of Thermodynamics
[law of conservation of energy]
- Second Law of Thermodynamics
[law of increasing entropy]
- Law of Gravity
- etc.

CAUSE

EFFECT

Law of Biogenesis
In nature, life comes only from life and that of its kind.



$$F_1 = F_2 = G \frac{m_1 \times m_2}{r^2}$$

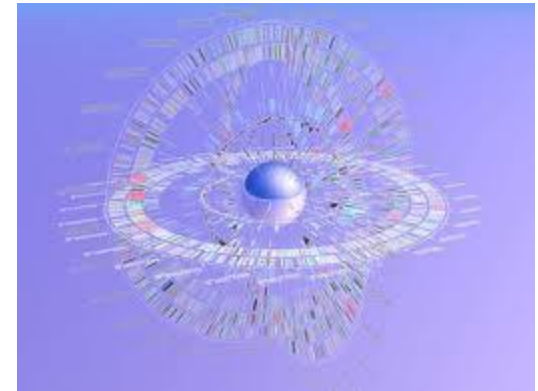
Chance, Necessity or Design?

Scratches on cave wall

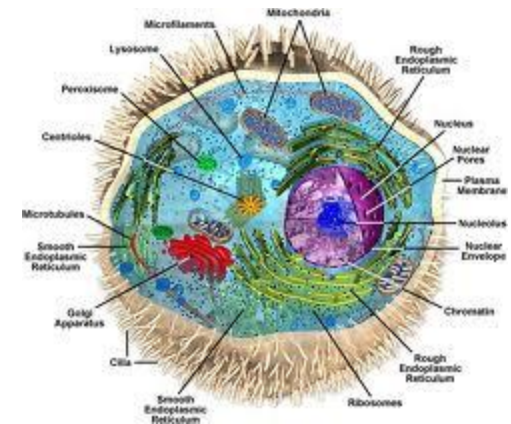


Human genome

3B
Base
Pairs

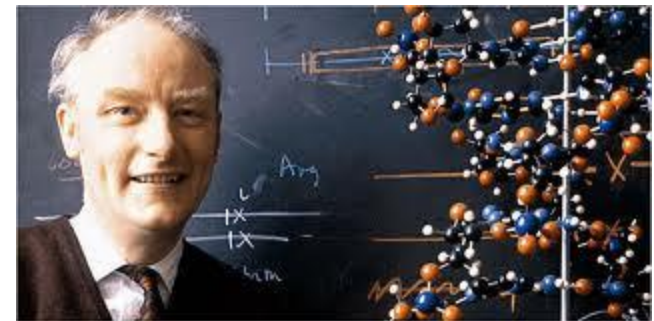


75T
Cells



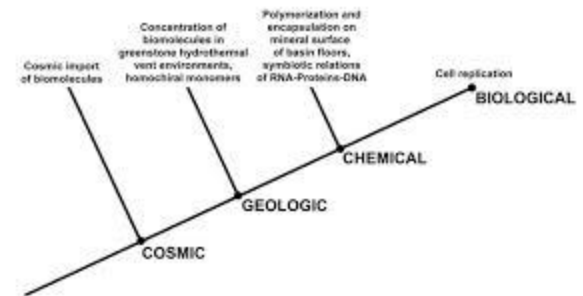
The Evolutionists' Response?

- “Even if all the data point to an intelligent designer, such a hypothesis is excluded from science because it is not naturalistic.”
 - **S.C. Todd**, Kansas State University Professor
- “Biology is the study of complicated things that have the appearance of having been designed for a purpose.”
 - **Richard Dawkins**, Oxford Univ. Atheist Biologist
- “Biologists must constantly keep in mind that what they see was not designed, but rather evolved.”
 - **Francis Crick**, Co-discoverer of DNA



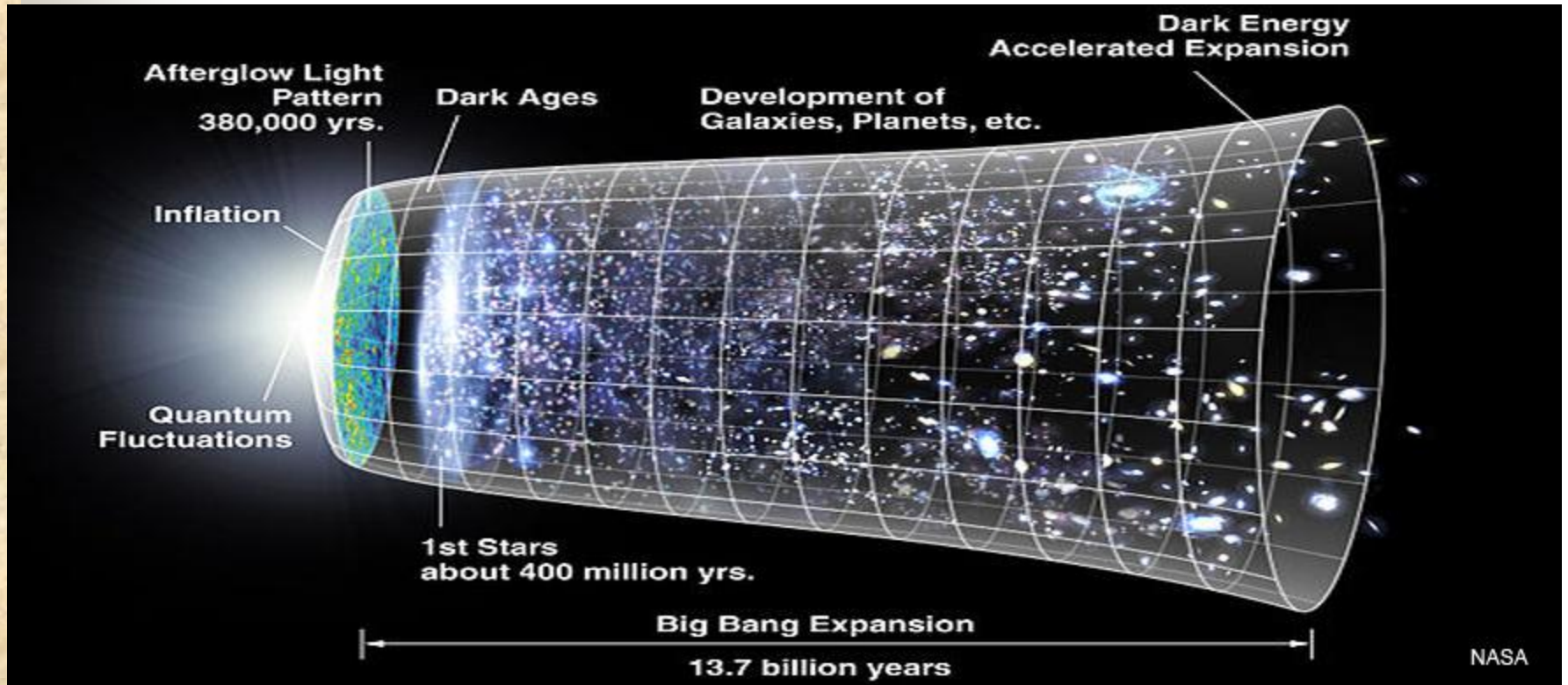
Three Impossible Hurdles For Naturalism

1. Origin of the universe
 - Elements, matter, energy, galaxies, stars, planets
2. Origin of first life
 - Non-life to life (abiogenesis)
3. Origin of complex life forms
 - Macro-Evolution



4. Origin of the Universe

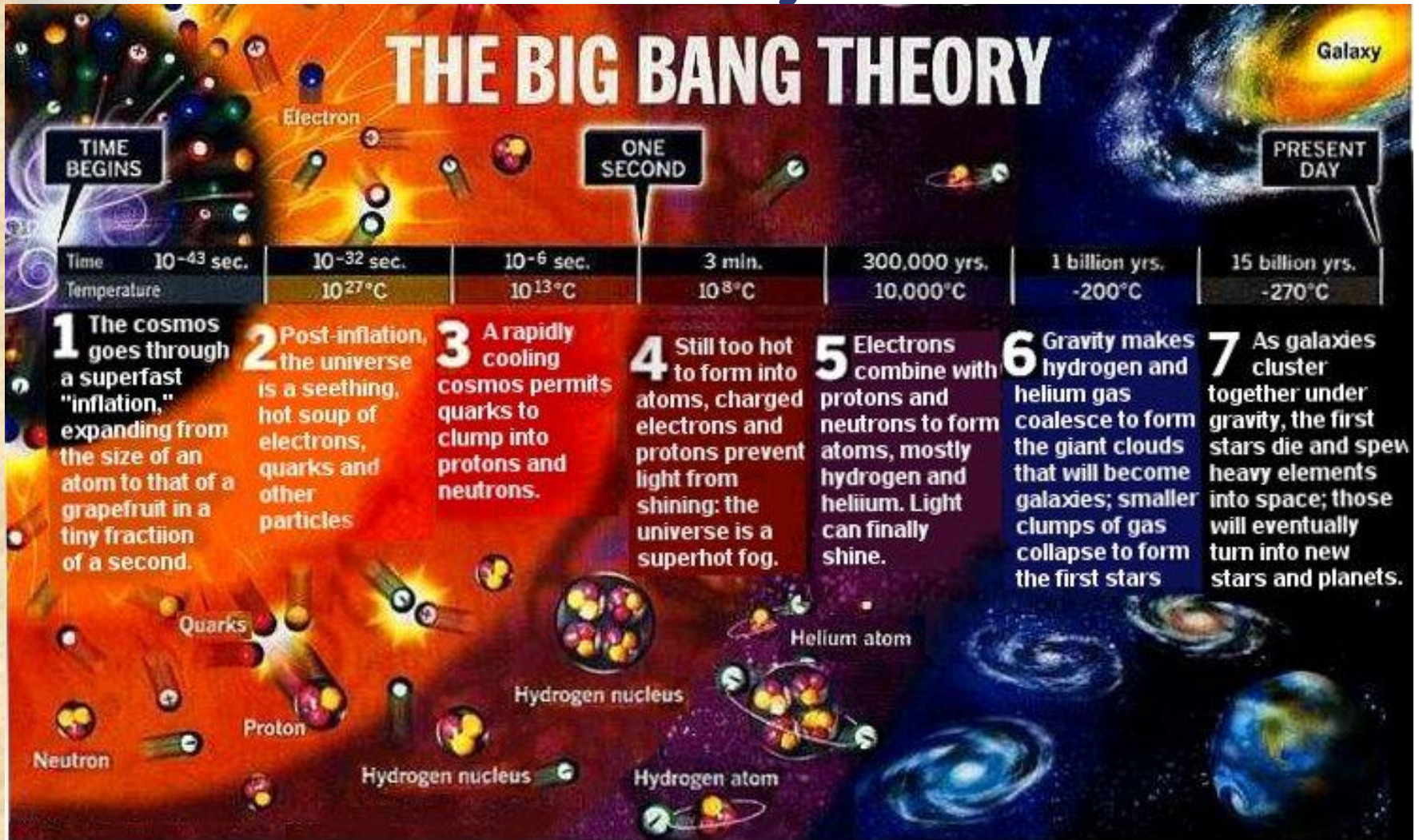
■ Big Bang Theory



BB Theory Timeline



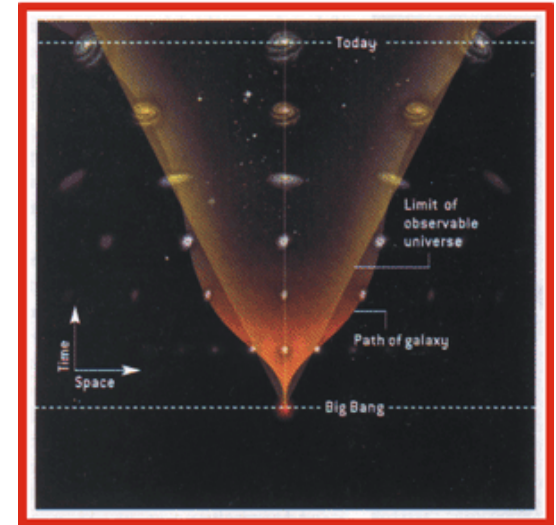
BB Theory Events



What Powered The BB?

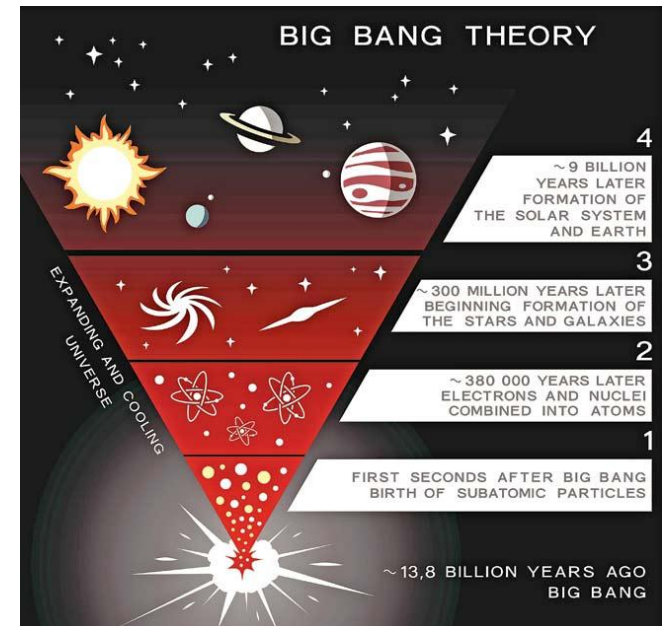
- Singularity?
 - Tiny, infinitely hot and dense point
 - Contained mass + energy + space
 - Exploded, rapidly expanded
 - Where did singularity come from?
- Everything from nothing?
 - What is nothing?
 - “Nothing” exploded
 - Nothing created everything
 - Something created itself
 - Out of nothing, comes nothing

Singularity Big Bang



BB Theory Event Timeline

- Universe expanded
- Energy from BB cooled down
- Some turned into matter:
 - H and He gases
- Gases collapsed to form stars and galaxies of stars
- Some of the stars created heavier elements in their core and exploded
- Elements distributed into space
- Heavier elements began to stick together to form earth and other planets



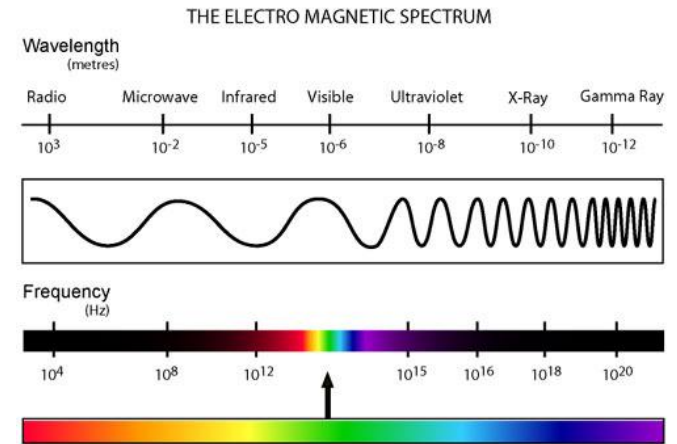
“Evidence” for/con the BB

■ “Evidence” for the BB

- Red shift of starlight
- Cosmic microwave background radiation (CMBR)
- Element abundances (H, He)

■ Evidence against BB

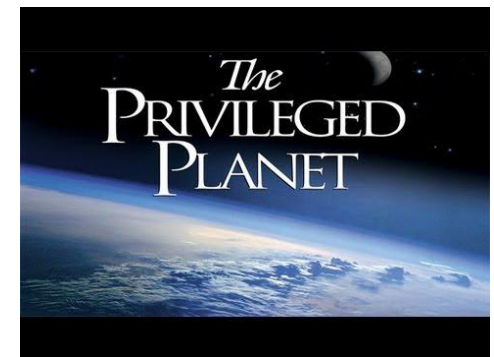
- Quantized red shifts
- Cosmological principle falsified
 - Milky Way galaxy close to center
 - Universe has an edge
- BB requires too many “fudge” factors



Towards us
(blue shift)

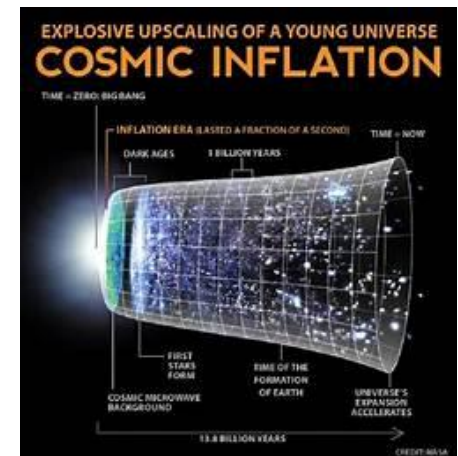


Away from us
(red shift)



Scientific Problems With BB

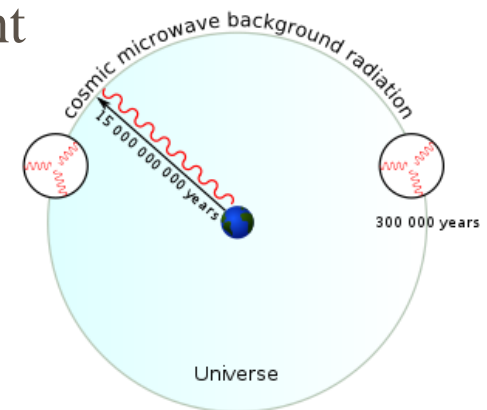
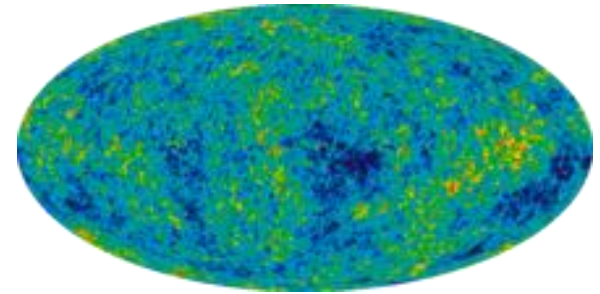
- Missing antimatter
- Missing monopoles
- The flatness problem
- Horizon problem
- “Cosmic Inflation” theory ad hoc
- Missing Population III stars
- Abundance of all elements $>$ Fe



In 1980, to explain the conditions observed in the universe, astrophysicist Alan Guth proposed the idea of **cosmic inflation**. The term "inflation" refers to a kind of repulsive gravity that pushes things apart rather than attracting them. Inflation caused an explosively rapid scaling up of space-time that occurred a tiny fraction of a second after the Big Bang. In another fraction of a second, inflation slowed to a more leisurely **expansion** that continues to this day and is accelerating.

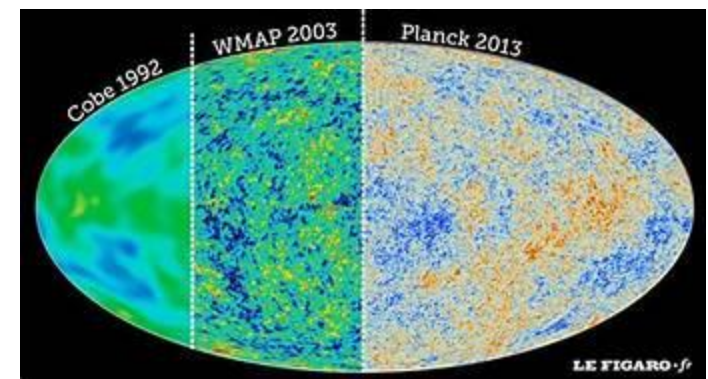
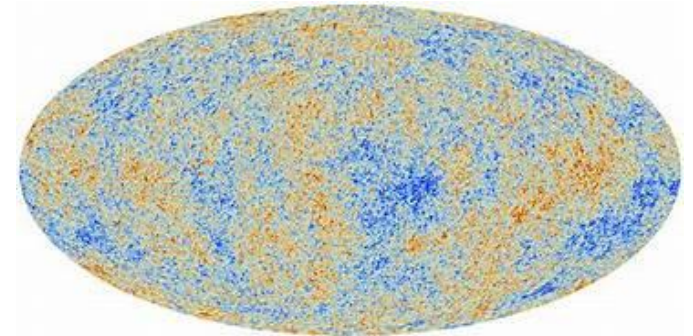
Cosmic Inflation

- A theory of exponential expansion of space in the early universe
- The inflationary epoch lasted from 10^{-36} seconds after the conjectured Big Bang singularity to sometime between 10^{-33} and 10^{-32} seconds after the singularity
 - 60 orders of magnitude $>$ speed of light
 - Based on two adjustable parameters
- Following the inflationary period, the universe continues to expand, but at a less rapid rate



Inflation Theory in Question

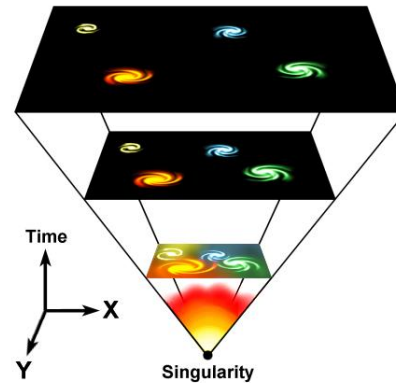
"[T]he theory of inflation predicts that today's universe should appear uniform at the largest scales in all directions" and that the "uniformity should also characterize the distribution of fluctuations at the largest scales within the CMB. But these anomalies, which Planck confirmed, such as the cold spot, suggest that this isn't the case. ... [T]his is very strange....And I think that if there really is anything to this, you have to question how that fits in with inflation....It's really puzzling."



Cambridge astrophysicist, and member of the Planck team, George Efstathiou

Universe From Nothing?

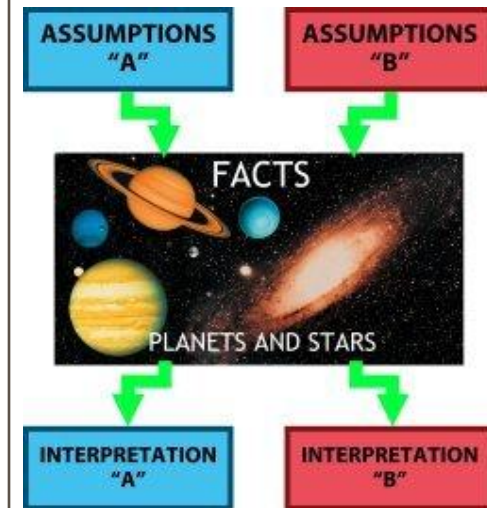
- Implies existence apart from universe
- Singularity
 - Infinite density
 - Modeling of origins
- Laws of nature
 - Universe has many histories
 - The universe will create itself
 - Quantum fluctuations
 - Law of gravity



"Because there is a law such as gravity, the universe can and will create itself from nothing."
—Hawking

Something From Nothing?

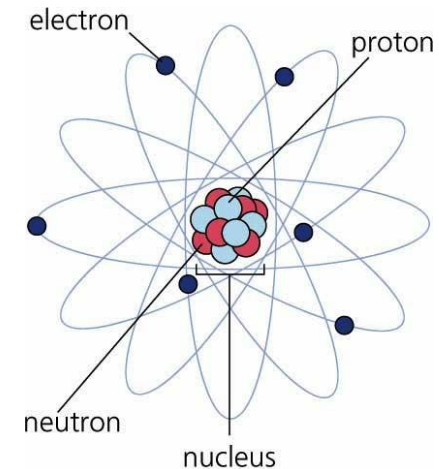
"What is a big deal - the biggest deal of all - is how you get something out of nothing. Don't let the cosmologists try to kid you on this one. They have not got a clue either - despite the fact that they are doing a pretty good job of convincing themselves and others that this is really not a problem. "In the beginning," they will say, "there was nothing - no time, space, matter, or energy. Then there was a quantum fluctuation from which" Whoa! Stop right there. You see what I mean? First there is nothing, then there is something. And the cosmologists try to bridge the two with a quantum flutter, a tremor of uncertainty that sparks it all off. Then they are away and before you know it, they have pulled a hundred billion galaxies out of their quantum hats"



David Darling, "On creating something from nothing?", New Scientist, 151 (2047), (1996), p 49.

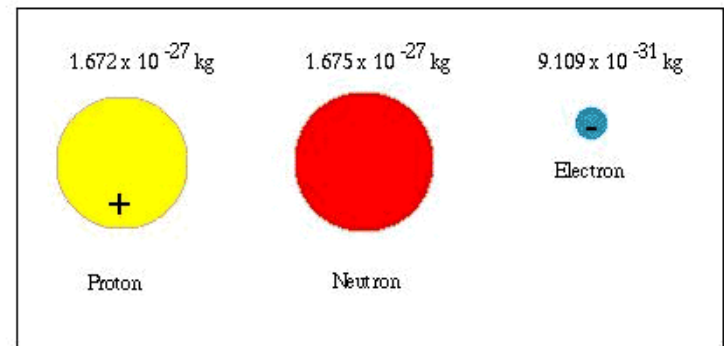
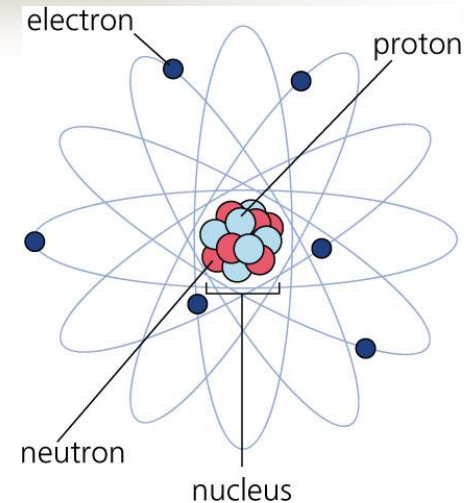
The Anthropic Principle

- The Anthropic Principle states that the universe appears to be carefully designed for the well-being of mankind
- Some evidence found in nature:
 - Mass of proton
 - Gravitational force
 - Strength of electrical charges
- How is total Solar Eclipse possible?
- More than 100 precise universal constants
- Role of gaseous planets: Saturn and Jupiter



Mass of Proton

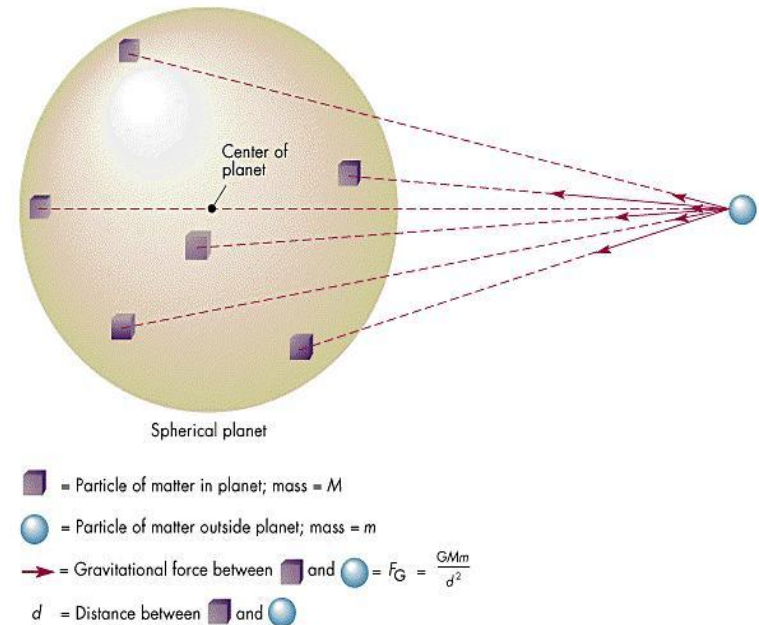
- Mass of proton is chosen for stability
- Mass of free neutron is slightly heavier than that of a proton, and it decays to a proton, electron, and an antineutrino with a half life of 12 minutes. Free neutrons cannot persist in nature.
- If the mass of a proton were increased by just 0.2 %, it would decay into a neutron, a positron and a neutrino. This decay does not occur - if it did, hydrogen could not exist. Hydrogen is the dominant element of the universe. Without it, the universe could not exist



Evidence of a precise design!

Gravitation Force

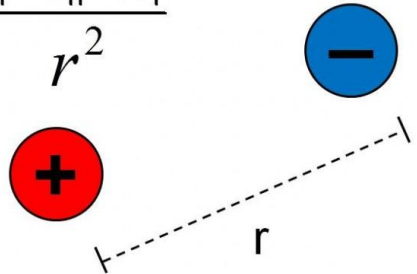
- Gravitation force is inversely proportional to the square of the separation distance between the two masses. This fundamental force holds the universe together, controlling the orbits of all members of our planetary system.
- Why is the number not 1.99 or 2.01? Any value other than 2 would lead to an eventual catastrophic decay of orbits and of the entire universe



Evidence of an essential design!

Strength of Electrical Charges

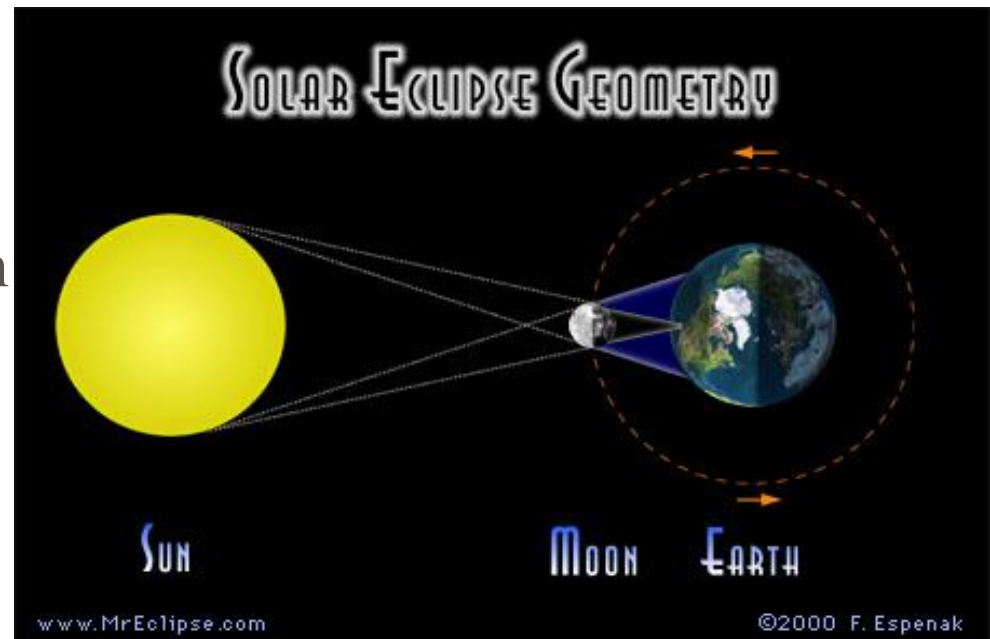
- The strength of electrical charges, i.e. the Coulomb force varies as the inverse square of the distance between the charges. Since the electrical force is much stronger than the gravitational force, it has been measured to an accuracy of 16 decimal places to be 2.0000000000000000

Coulomb's Law	
$F_e = k \frac{ q_1 q_2 }{r^2}$	

This reflects purposeful planning!

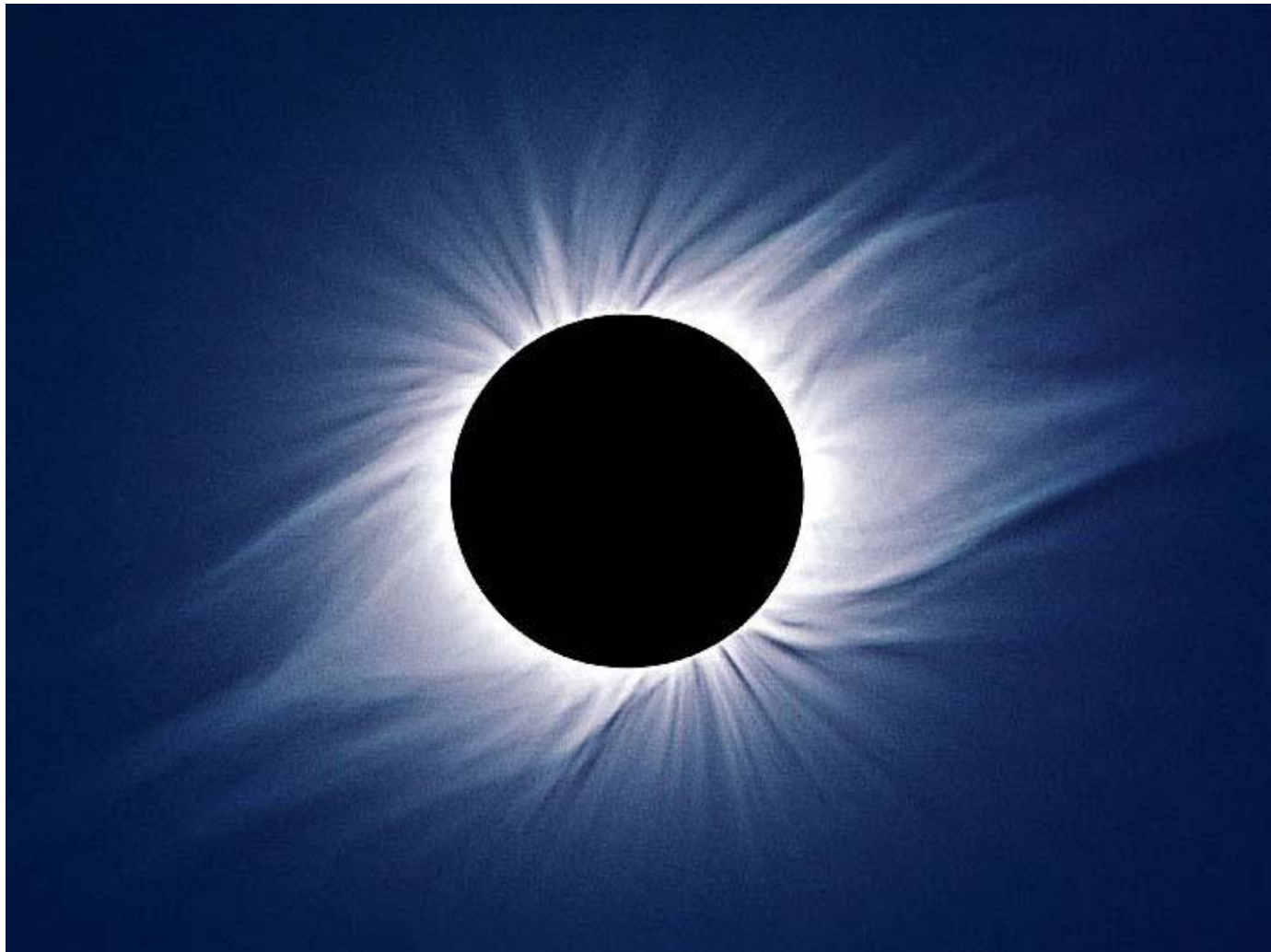
Total Solar Eclipse

- Sun completely obscured by moon
- Visible from narrow track on surface of earth
- Total eclipse possible because:
 - Sun's distance from earth is ~400 times moon's distance
 - Sun's diameter is ~400 times moon's diameter



- Total eclipse by design?

Total Solar Eclipse



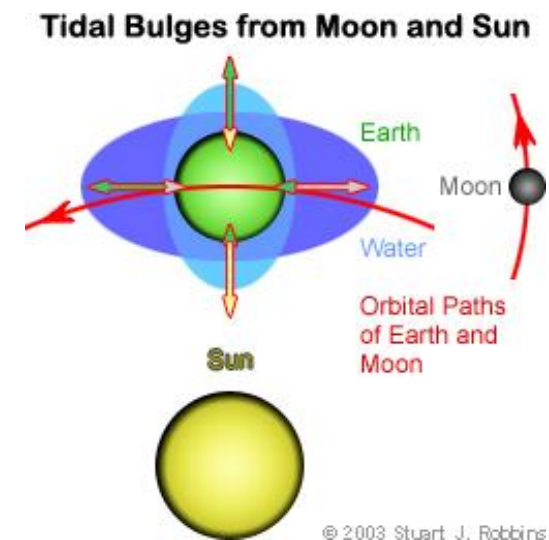
Universal Fine-Tuned Parameters

- For the universe, 35+ parameters:
 - Numerical constants in equations for gravity, electromagnetism, strong and weak nuclear forces
 - Ratio of proton to electron mass
- For our galaxy, solar system, earth, 66+ parameters:
 - Distance from the sun
 - Size, temperature, & type of sun
 - Size, axial tilt, rotation speed, moon, & composition of earth
 - Stability of Saturn and Jupiter

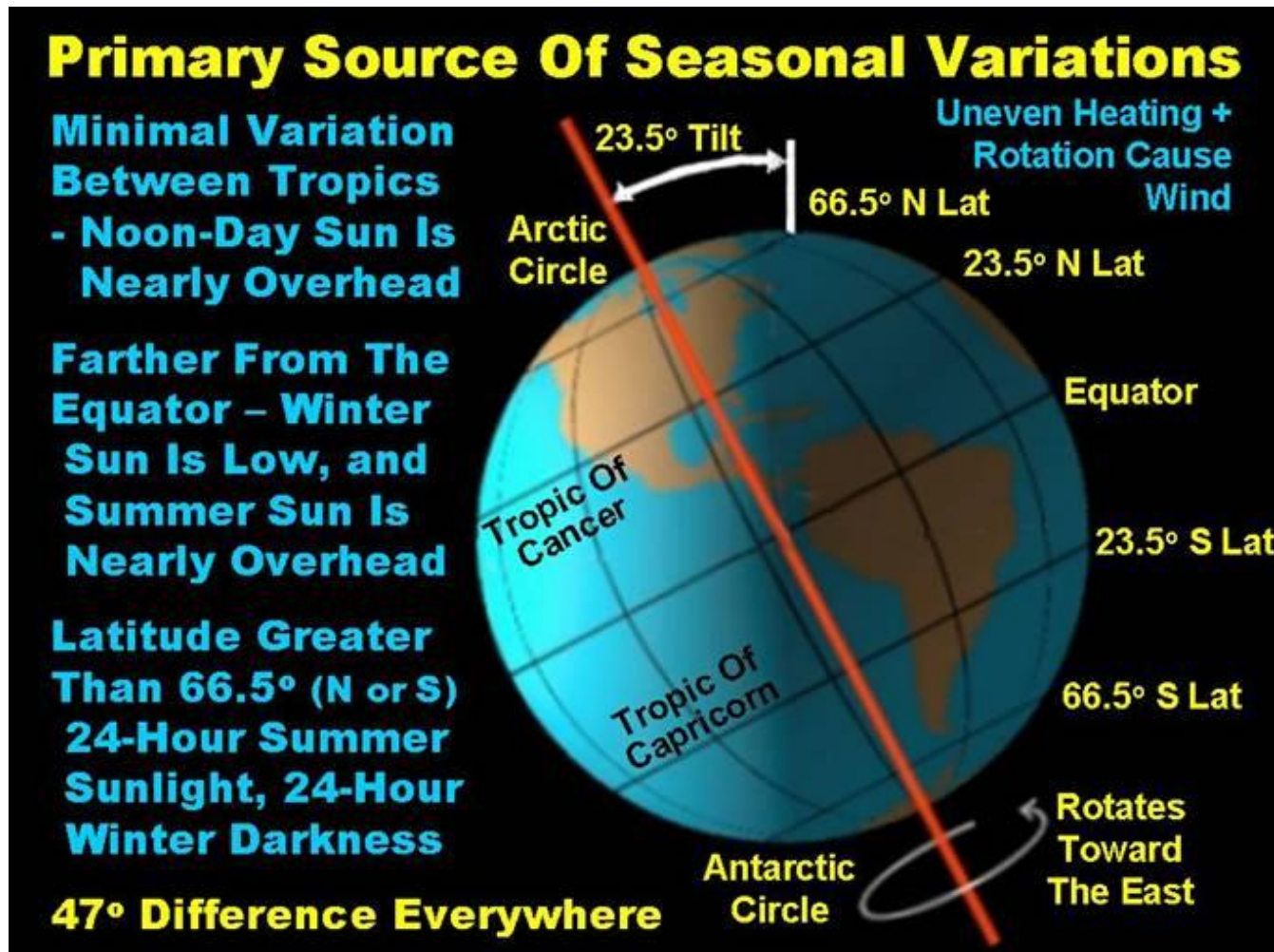


Some Unique Earth Attributes

- Only planet known to have plate tectonics
- Strong magnetic field to deflect harmful radiation
- Tilted at 23.4 degrees for optimal seasons
- 70% of earth covered with water
 - Water is essential for all known life
 - Right distance from sun to be liquid
 - Atmospheric pressure just right
- Contains diverse living organisms
- Protective layer of ozone
- Moon at right distance to induce tides



Earth's Axial Tilt



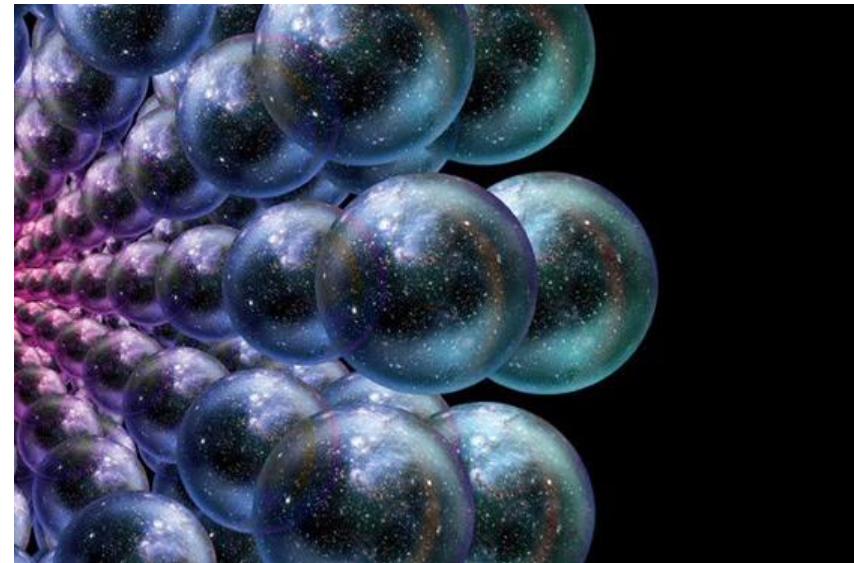
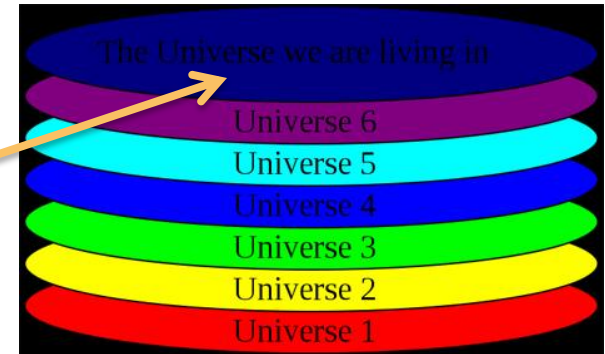
More Critical Earth Constants

- 122 very narrowly defined constants identified
 - Oxygen level in earth's atmosphere ~21%
 - Earth's position in solar system, galaxy, universe
 - Earth's magnetic field
 - Thickness of Earth's crust controls release of oxygen
 - Earth's size, rotation, tilt
 - Rotation rate of Earth controls temperature differences
 - Tilt of earth at 23.4 degrees is just right
- Probability of 1 chance in 10^{138} (ZERO/NIL)



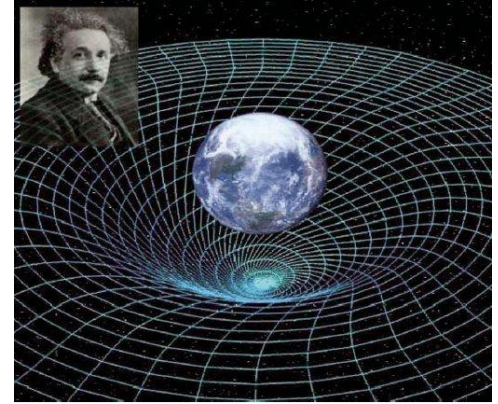
The Multiverse

- Fine tuning probability
 - 10^{500} universes possible
 - No need for Anthropic Principle
- Only our universe is observable/measurable
 - Exists by chance/luck?
 - Fine tuned for life
- Pseudoscience
 - Speculation
 - Not verifiable/falsifiable



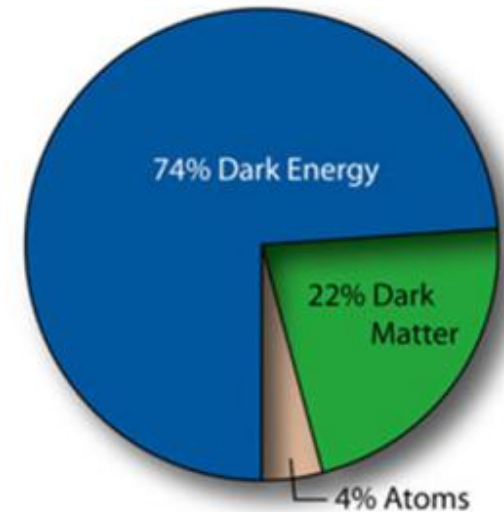
Unprovable Fudge Factors

- General theory of relativity
 - Einstein's cosmological constant
 - Introduced to keep universe static and stable
 - Einstein's "biggest blunder of my life"
 - Later found to be necessary (0 – 99.7% certain)
- Dr. Richard Lieu (Astrophysicist) quotes:
 - "Cosmology is not even astrophysics: all the principal assumptions in this field are unverified (or unverifiable) in the laboratory ... because the universe offers no control experiment, i.e. with no independent checks, it is bound to be highly ambiguous and degenerate."
 - Cosmologists have become "comfortable with inventing unknowns to explain the unknown"



Using Unknowns to Explain Unknowns

1. Redshift of light from galaxies, explained by **expansion of space**
2. CMBR, explained as **the afterglow** of the Big Bang
3. Perceived motion of stars and gases in the disks of spiral galaxies, explained by **dark matter**
4. Dim distant supernovae (accelerating universe), explained by **dark energy**
5. Flatness and isotropy, explained by **inflation**



Dr. Richard Lieu (Astrophysicist)

Cosmology & Philosophy



“I describe the history of the development of the standard big bang cosmology and how it is understood in terms of its philosophical underpinnings. The Cosmological Principle is explained as the major and essential assumption upon which it all depends. Due to this it has been required to invent unknown stuff, expansion of space, Dark Energy, Dark Matter, CMB radiation as afterglow of Big Bang, and Inflation. None of these are experimental observed in the lab.”

Dr. John Hartnett, Australian Creation Cosmologist



“That barrier to knowledge, some argue, is cosmology’s Achilles’ heel. ‘Cosmology may look like a science, but it isn’t a science,’ says James Gunn of Princeton University, co-founder of the Sloan survey. ‘A basic tenet of science is that you can do repeatable experiments, and you can’t do that in cosmology.’”

Dr. James Gunn, Princeton University, Astrophysicist



Challenge to the BB Theory

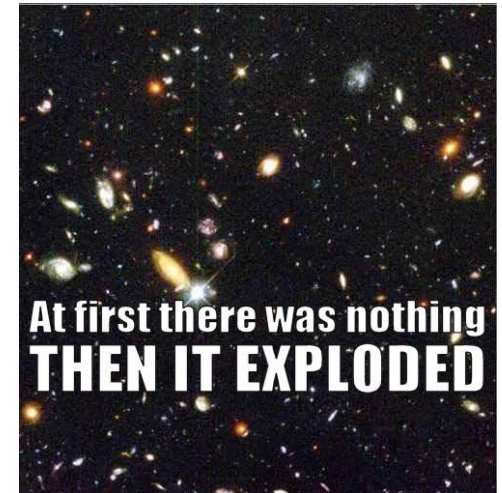
‘The big bang today relies on a growing number of hypothetical entities, things that we have never observed—inflation, dark matter and dark energy are the most prominent examples. Without them, there would be a fatal contradiction between the observations made by astronomers and the predictions of the big bang theory.’

‘In no other field of physics would this continual recourse to new hypothetical objects be accepted as a way of bridging the gap between theory and observation. It would, at the least, *raise serious questions about the validity of the underlying theory.*’

Open Letter by leading scientists, 2004

In Conclusion – Origin of Universe

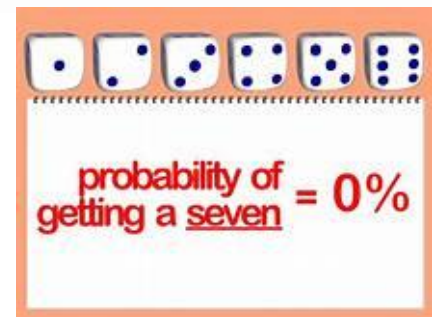
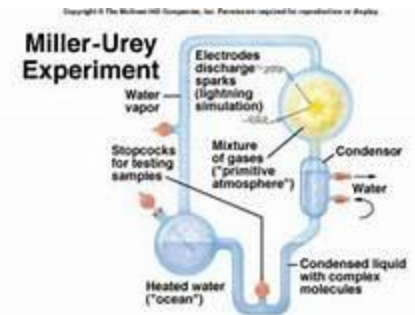
- Big Bang “fudge” factors explained by Inflation?
 - Antimatter, Horizon, Flatness, Monopole problems
 - Dark matter, dark energy, red shift quanta
- Cosmic Inflation is unobserved
 - ‘Smoking gun’ is model dependent
- Universe from nothing – NO
- Fine tuning is real
- Multiverse is speculation
- Cosmology depends on unverifiable assumptions



5. Origin of First Life

- a. Law of Biogenesis has never been falsified
 - Louis Pasteur experiment in 1864
- b. Producing components of life
 - Miller experiment failed
 - Production in various environments impossible
- c. Mathematical probability of creating life by means of random chance processes is impossible – 1 in 10**40,000
 - Probability of < 1 in 10^{50} is impossible
- d. Information is the key to life
 - Information requires an intelligent mind

Law of Biogenesis
In nature, life comes only from life and that of its kind.



5a. Law of Biogenesis

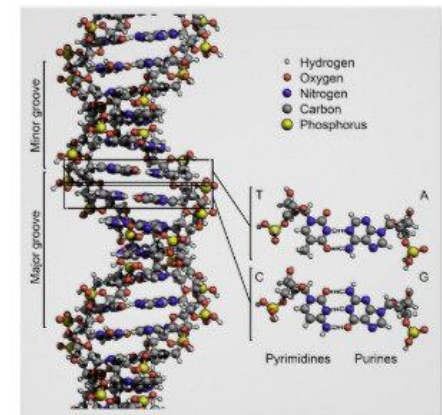
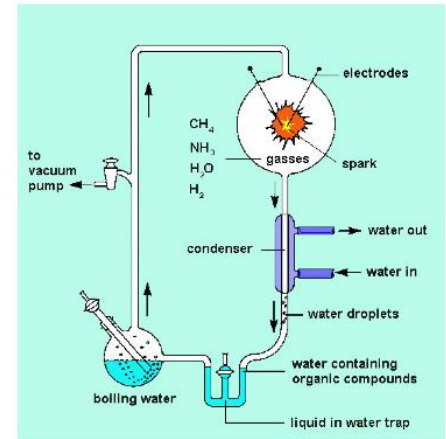
1. Spontaneous generation of life from non-life
 - Greek philosophy of 2500 years ago
2. **Abiogenesis** experiments
 - **Redi** in 1668, **Spallanzani** in 1750
 - **Virchow** in 1858, **Pasteur** in 1864
 - Spontaneous generation (**Abiogenesis**) has never been observed or shown to be possible
3. Hypotheses proposed over last century
 - Primordial soup, ocean, panspermia, etc.
 - Miller's experiment
4. Mathematical probability of cell by chance
 - 1 in $10^{40,000}$
 - Impossible!

Law of Biogenesis

In nature, life comes only from life and that of its kind.

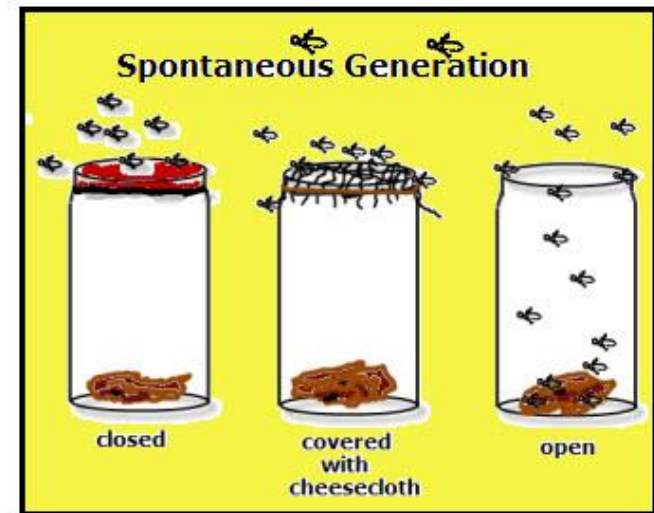
Important Milestones

- 1859 – Darwin: The Origin of Species
- 1864 – Pasteur: Abiogenesis Impossible
- 1953 – Miller's experiment
- 1953 – Discovery of DNA Double Helix
- 1980's – Intelligent Design movement
- 1990's – Dr. Gitt, Information Theory
- 2009 – Altenberg 16 meeting in Austria



Spontaneous Generation

- Based on natural philosophy
- Life continuously created by chance events
- Life comes from non-life (Abiogenesis)
- Promoted by Greek philosophers
- Held sway for 2000+ years
- Put to rest by Pasteur's experiment in 1864
- Law of Biogenesis established



Redi's Experiment – 1668

Redi's Experiment on Spontaneous Generation

OBSERVATIONS: Flies land on meat that is left uncovered. Later, maggots appear on the meat.

HYPOTHESIS: Flies produce maggots.

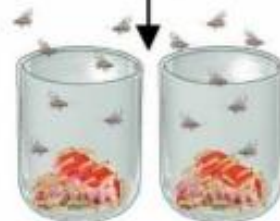
PROCEDURE

Controlled Variables:
jars, type of meat,
location, temperature,
time

Manipulated Variables:
gauze covering that
keeps flies away from
meat

Responding Variable:
whether maggots
appear

Uncovered jars



Maggots appear

Covered jars



Several
days pass



No maggots appear

CONCLUSION: Maggots form only when flies come in contact with meat. Spontaneous generation of maggots did not occur.

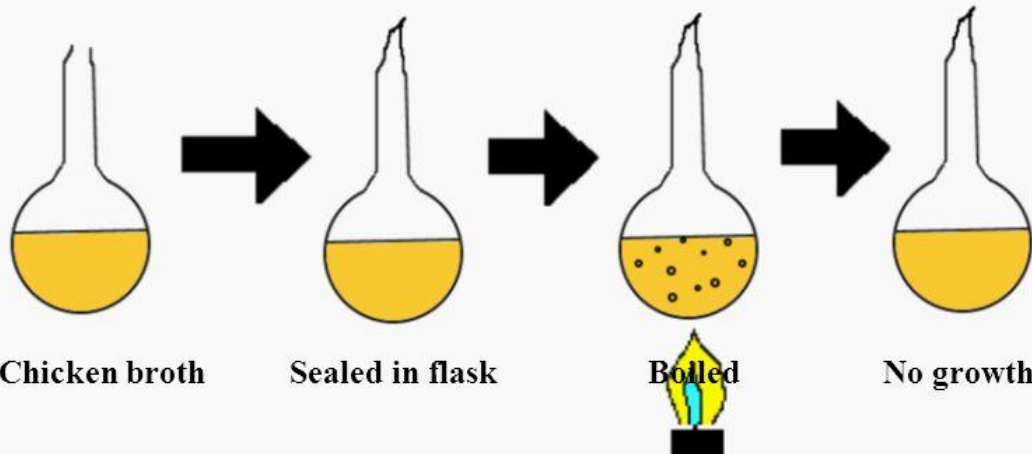


Spallanzani Experiment

Disproving Spontaneous Generation: Lazzaro Spallanzani ~1750



Microbes develop spontaneously in chicken broth?

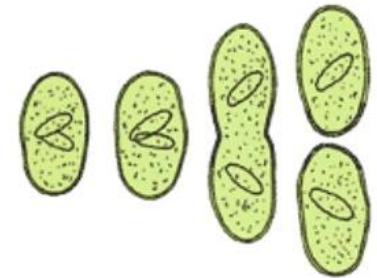


Virchow - 1858

- German physician
 - First to witness cell division
 - Developed standard method of autopsy
- Theory of Biogenesis
 - All cells arise from pre-existing cells by cell division
- Debunked Theory of spontaneous generation

Development of Cell Theory

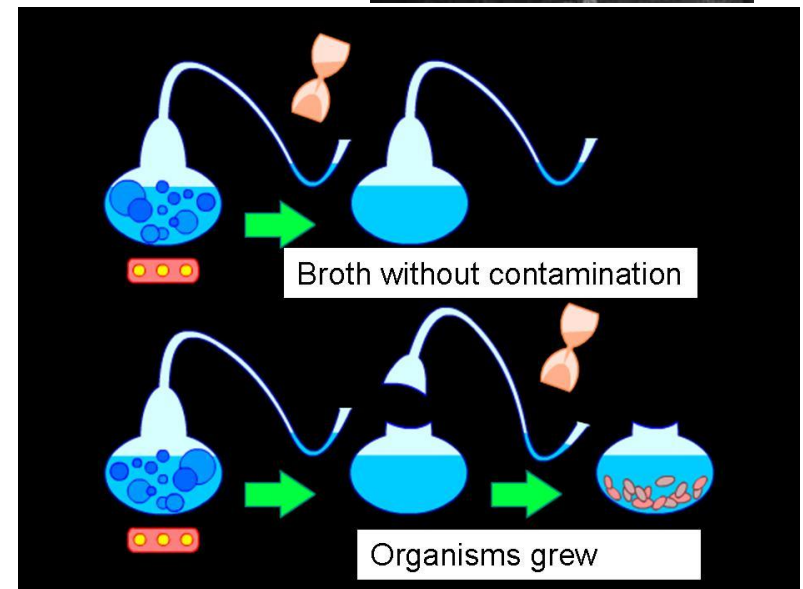
Rudolf Virchow



All cells come from preexisting cells.

Pasteur's Experiment - 1864

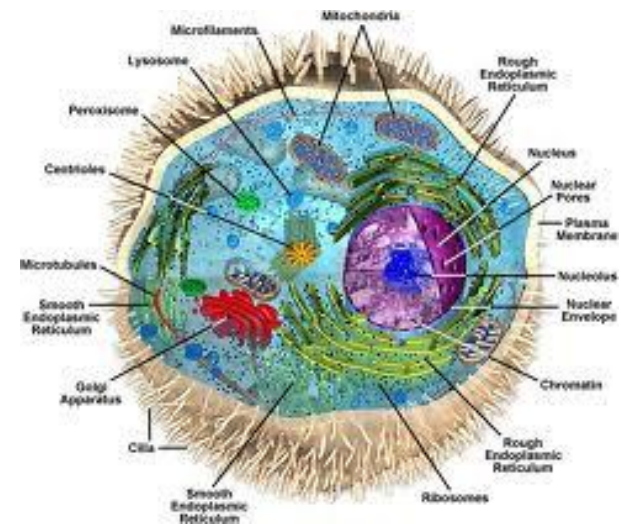
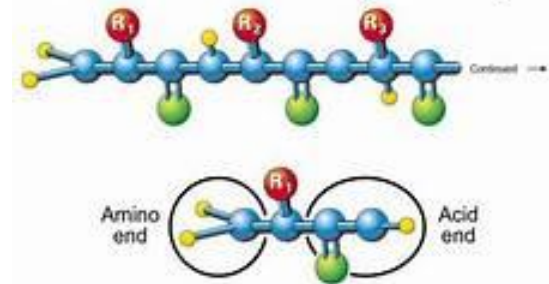
- French scientist Louis Pasteur
- Designed flask with curved neck
 - Allowed air in but kept dust and particles out
 - Put broth in flask
 - Kept free of micro-organisms
- Spontaneous generation refuted
- Law of Biogenesis



5b. Components of Life

1. Proteins – chain of amino acids
2. DNA (DeoxyriboNucleic Acid)
 - Double helix
 - Master genetic code
 - Information for cell activities
3. RNA (RiboNucleic Acid)
 - Single strand
 - Protein building instructions
4. Catalysts for transcription
5. Replication
6. Cell membrane
7. “Chicken and egg” problem

Amino Acid Chain (Protein)



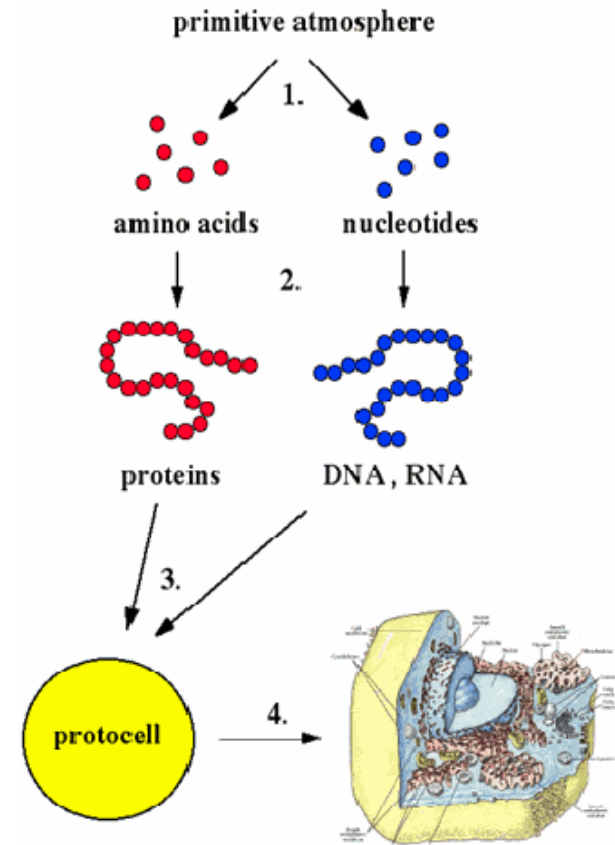
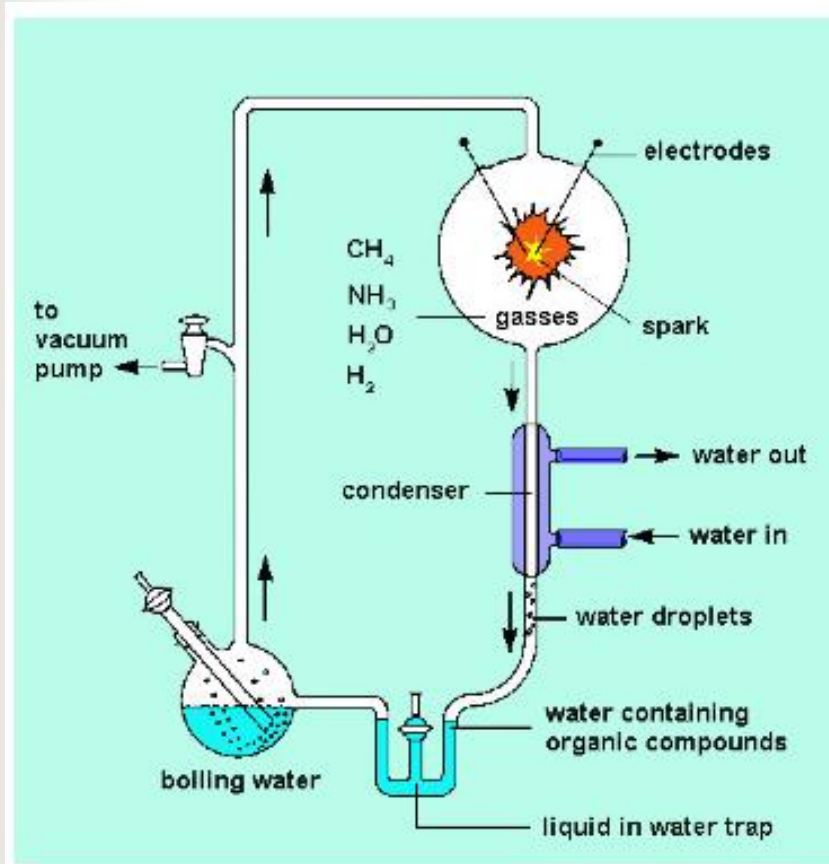
Flaws in Early Theories

- 1924, **Oparin** – life evolved in a primordial soup via ‘coacervates’
 - Purely physical attraction
 - No real cell
 - Special conditions required
 - Very unstable
- 1928, **Haldane** – hot dilute soup
 - Heat helps break down large molecules



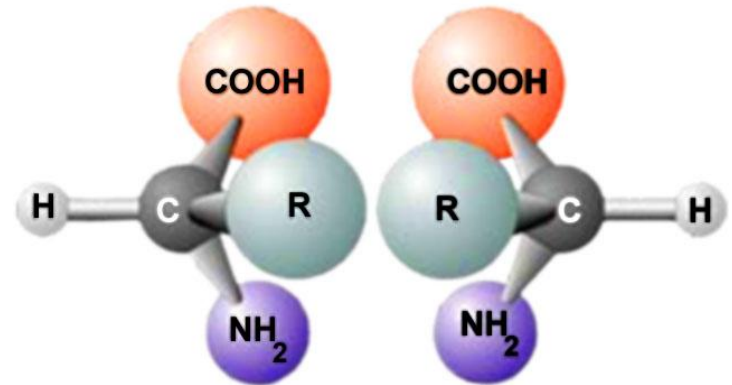
1953 – Miller's Experiment

- Sparking gases to produce amino acids



Miller Experiment Problems

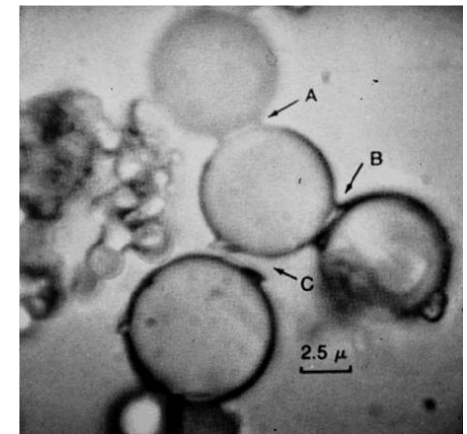
- Oxygen in atmosphere prevents formation of amino acids
- No oxygen in atmosphere - ultraviolet rays destroy amino acids
- Water decomposes molecules (hydrolysis)
- Produces mixture of LH and RH amino acids
- Low concentration of products produced
- More contaminants than useful products
- Experiment is designed



More Flaws in Recent Theories

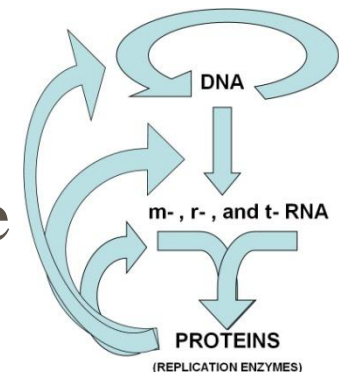
■ 1965, **Fox** – Proteinoid microspheres

- Can't reproduce like cells
- Pure amino acids
- Requires unrealistic geology conditions



■ 1967, **Woese** – Self-reproducing RNA

- RNA & components very unstable
- Improbable in primordial soup



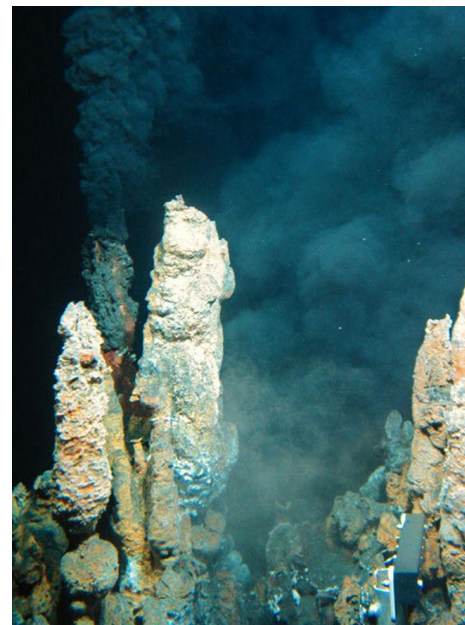


Yet More Flaws in Recent Theories

- 1974, **Cairns-Smith**: Self-reproducing clays
 - Attempt to preserve materialism
 - No evidence that clay defect patterns can reproduce or act so specifically
- 1988, **Wachterhauser**: Surface catalysis on pyrites
 - No evidence that amino acids can form
 - More than a handful cannot join together

Locations For Origins of Life?

- Primordial soup
- Bottom of the sea
- Hydrothermal vents
- Active volcano springs
- Life on clay
- Deep space or Mars
- Panspermia
- Directed panspermia





The Origin of Life

“Research on the origin of life seems to be unique in that the conclusion has already been authoritatively accepted What remains to be done is to find the scenarios which describe the detailed mechanisms and processes by which this happened. One must conclude that, contrary to the established and current wisdom, a scenario describing the genesis of life on earth by chance and natural causes which can be accepted on the basis of fact and not faith has not yet been written.”

Yockey, H. P., A calculation of the probability of spontaneous biogenesis by information theory, *Journal of Theoretical Biology* 67:377-398, 1977.



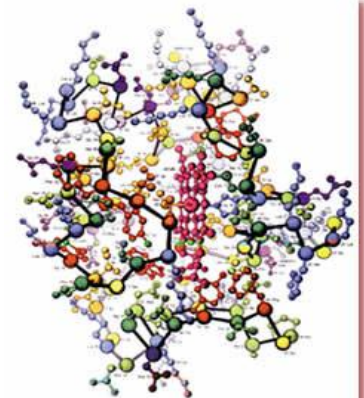
A Self-Replicating Organism?

“Prebiotic soup is easy to obtain. We must next explain how a prebiotic soup of organic molecules, including amino acids and the organic constituents of nucleotides evolved into a self-replicating organism. While some suggestive evidence has been obtained, I must admit that attempts to reconstruct this evolutionary process are extremely tentative.”

[Dr. Leslie Orgel (evolutionist biochemist at the Salk Institute, California), “Darwinism at the very beginning of life,” *New Scientist*, 15 April 1982, p. 150]

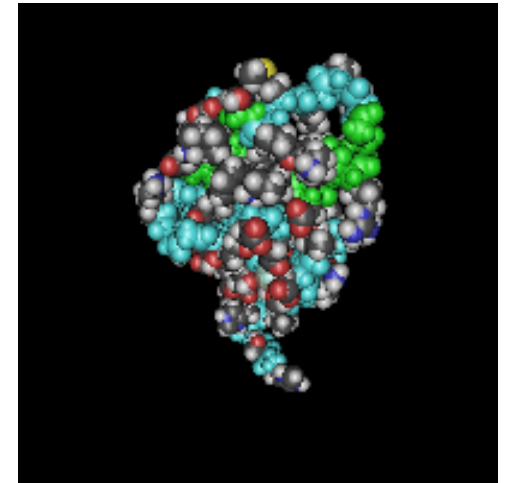
5c. Life From Non-Life By Chance?

- What is the probability that an explosion in a junk yard would “create” a car?
- What is the probability of creating a Boeing airplane (5M non-flying parts) from such an explosion?
- What is the probability that 200 monkeys pawing away at a typewriter could “write” a Shakespearean play?
- What is the probability of a protein coming into being by chance?



Proteins and Amino Acids

- Amino acids
 - A few thousand types
 - Right- and left-handed
- Proteins - the building blocks of life
 - Large organic molecule
 - Contain 100's to a few 1000 amino acids
 - Specified long sequences of amino acids
 - Contain 20 different left-handed amino acids
- Crucial protein fact
 - Absence, addition, or replacement of a single amino acid in the sequence of the structure of a protein causes protein to be useless





Probability of Forming one Protein

- Take 200 parts and line them up in a specific order
 - 200! ways of aligning these parts = 10^{375}
 - Try a new alignment 1 billion times a second
 - Assuming 20 billion years of time, we have $20 * 10^{18}$ seconds
 - The probability of finding the right alignment is practically zero, i.e. 1 in 10^{356}
 - Only 10^{80} atoms in the whole universe
 - Anything less than **1 in 10^{50}** is regarded as **zero probability**
- Living organisms contain many more than 200 parts
- Human being contains 75+ trillion cells

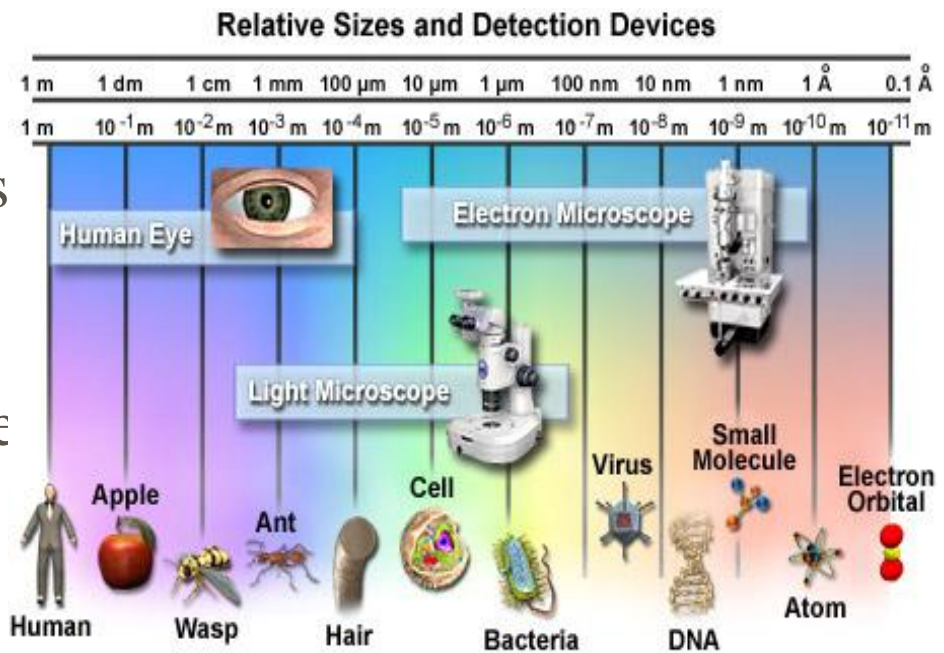
How Simple Can Life Be?

- Cell structure unknown by Darwin
- Smallest bacteria

- 482 genes
- 600 types of proteins
- **580,000 DNA base pairs** (letters)
- Probability of chance formation is zero!

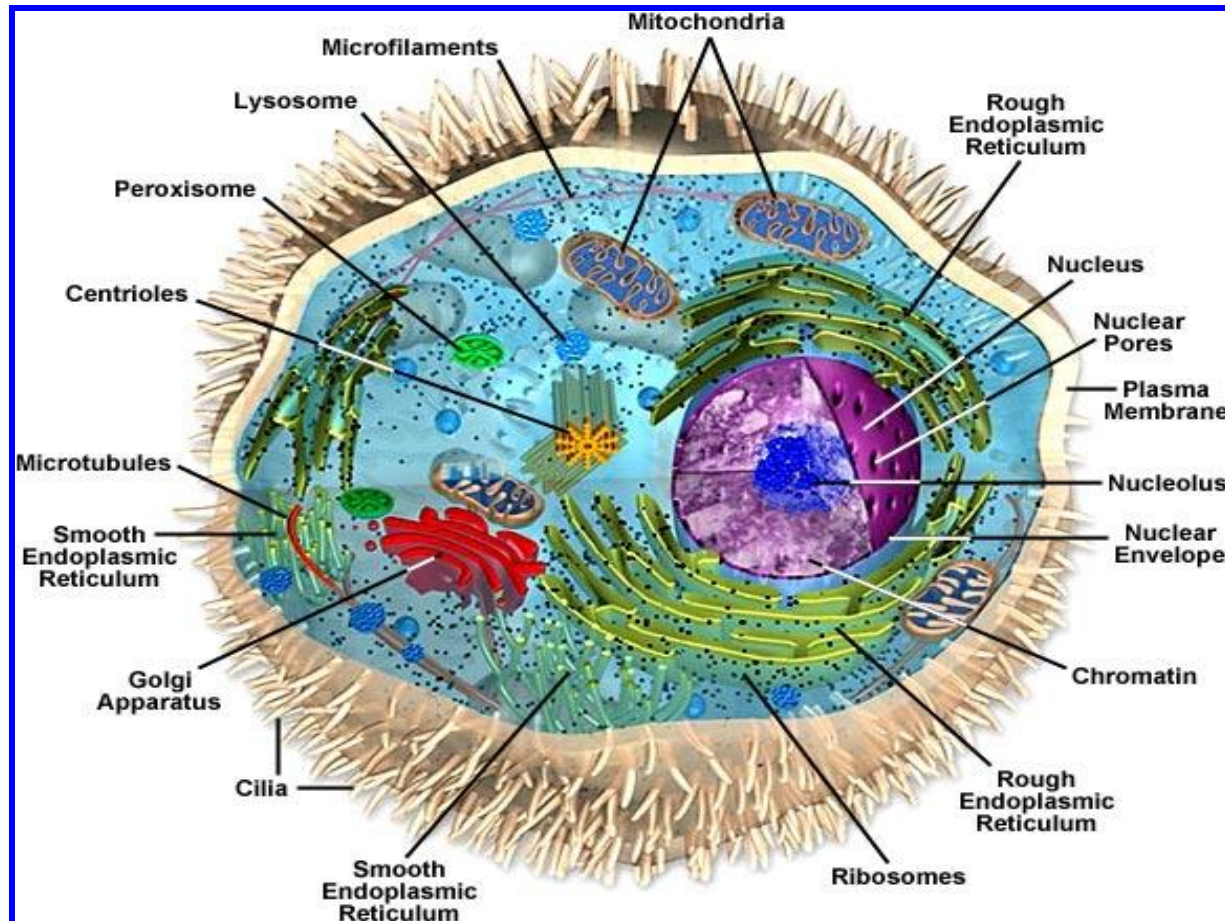
- Human genome

- 25,000 genes
- 100,000+ types of proteins
- **3,000,000,000 DNA base pairs**



Complexity of the Cell

- Average human body contains 75+ trillion cells



Mathematical Probability

- Chances of getting all heads in a row when flipping a coin?

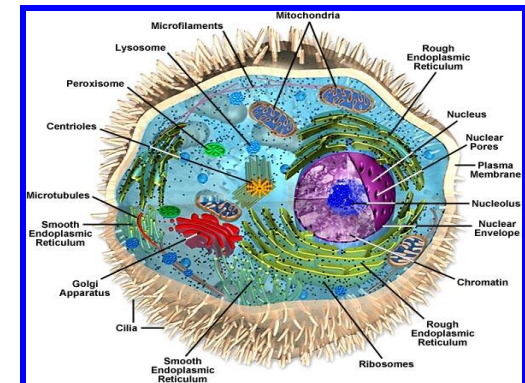
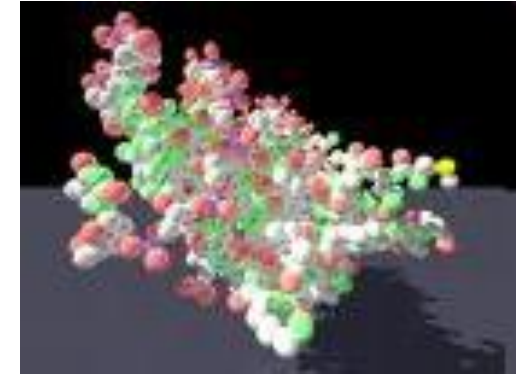


- | | |
|-----------------------|--|
| ■ 1 head | ■ 1 in 2 ($\frac{1}{2}$) |
| ■ 2 heads in a row | ■ 1 in 4 ($\frac{1}{2} * \frac{1}{2}$) |
| ■ 3 heads in a row | ■ 1 in 8 ($\frac{1}{2} * \frac{1}{2} * \frac{1}{2}$) |
| ■ 10 heads in a row | ■ 1 in 2^{10} (1024) or 10^3 |
| ■ 100 heads in a row | ■ 1 in 2^{100} or 10^{30} |
| ■ 1000 heads in a row | ■ 1 in 2^{1000} or 10^{300} |

Law of Probability: < 1 in 10^{50} is mathematically impossible

Probability & Life

- A single protein: 1 in 10^{240}
 - 400 amino acids
- A single cell: 1 in $10^{40,000}$
 - Spontaneous formation of life
- Atoms in the universe: 10^{80}
- Law of Probability: 1 in 10^{50}
 - < 1 in 10^{50} is mathematically impossible





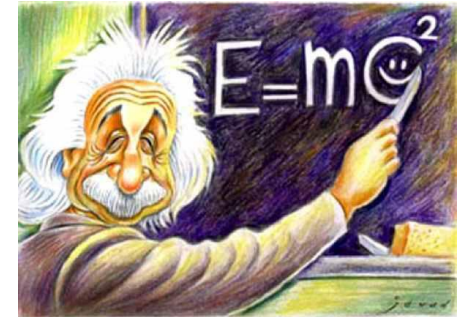
Spontaneous Formation of Life?

“The likelihood of the spontaneous formation of life from inanimate matter is one to a number with 40,000 noughts after it. It is big enough to bury Darwin and the whole theory of evolution. There was no primeval soup, neither on this planet nor on any other, and if the beginnings of life were not random, they must therefore have been the product of purposeful intelligence.”

Wickramasinghe, professor of applied mathematics and astronomy, UK

5d. Life Requires Information

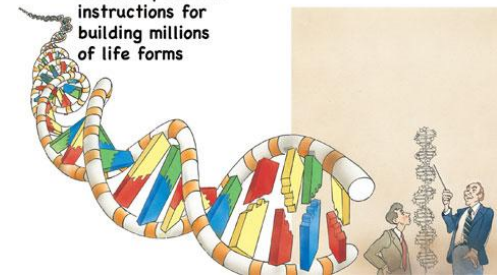
- Evolution presupposition
 - The universe consists of only two *material* entities – mass and energy
- A 3rd *non-material* entity: information
- Life consists of:
 - Mass + energy (*material*) + information (*non-material*)
 - Information is encoded in the DNA of all plant and animal cells
- Information has four parts:
 - Code, meaning, action, purpose



Book 3

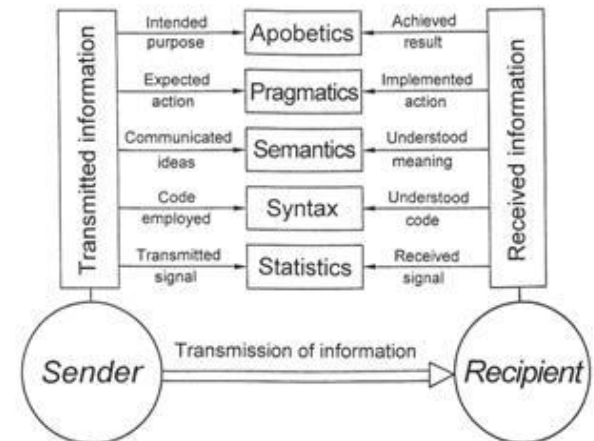
DNA –
The Cell's
Library of
Information

How the four-letter language of DNA spells out instructions for building millions of life forms



Information Definitions

- Information attributes:
 - Code (syntax): alphabet, DNA (ATCG)
 - Meaning (semantics): words, codons
 - Expected Action (pragmatics)
 - Intended Purpose (apobetics): design, result
- All structural attributes are non-material
- Information is an encoded, symbolically represented message conveying expected action and intended purpose.



The Nature of Information

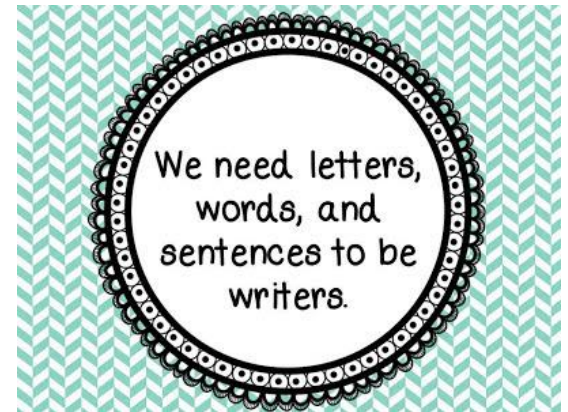


A 0065	B 0066	C 0067	D 0068	E 0069	F 0070	G 0071
H 0072	I 0073	J 0074	K 0075	L 0076	M 0077	N 0078
O 0079	P 0080	Q 0081	R 0082	S 0083	T 0084	U 0085
V 0086	W 0087	X 0088	Y 0089	Z 0090		



Information in Writing

- Information requires:
 - Code: letters, numbers, etc.
 - Meaning: words
 - Action: sentence with verb
 - Purpose: result, design
- Complex but unspecified
neojct oheeh otvp ct mo muj
- Specified Complexity
the cow jumped over the moon



Information in Computers



Example of Pseudocode to determine odd-even number

BEGIN

Number = Input Number

Result = Number % 2

IF Result = 0

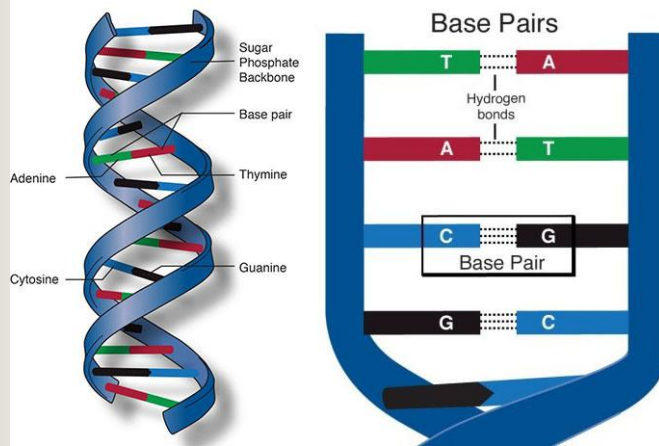
 THEN Print "The number is even number"

ELSE

 THEN Print "The number is odd number"



Information in Living Systems



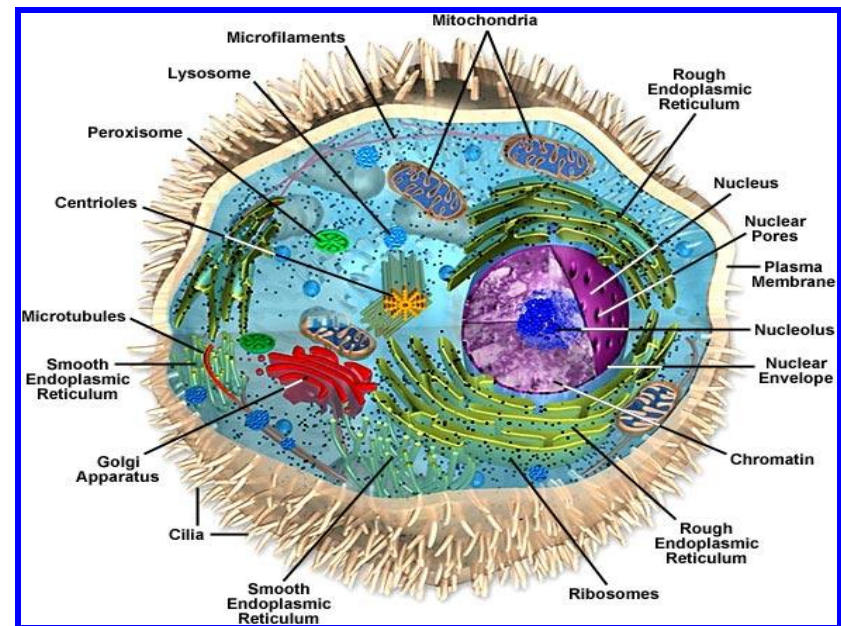
DNA the molecule of life

Trillions of cells

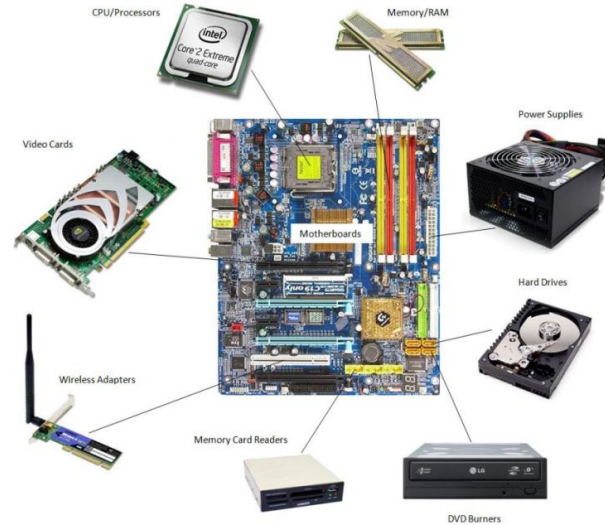
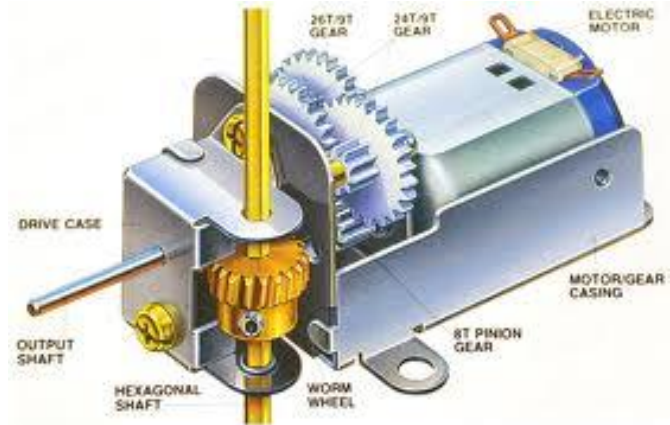
Each cell:

- 46 human chromosomes
- 2 meters of DNA
- 3 billion DNA subunits (the bases: A, T, C, G)
- Approximately 30,000 genes code for proteins that perform most life functions

The diagram shows a cell containing chromosomes. A detailed view of a DNA double helix highlights a 'gene' section. Below the gene, a 'protein' structure is shown, illustrating the flow of genetic information from DNA to protein.

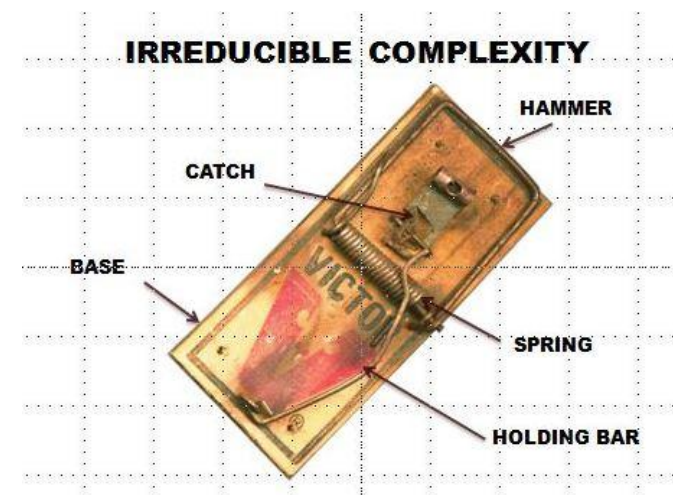
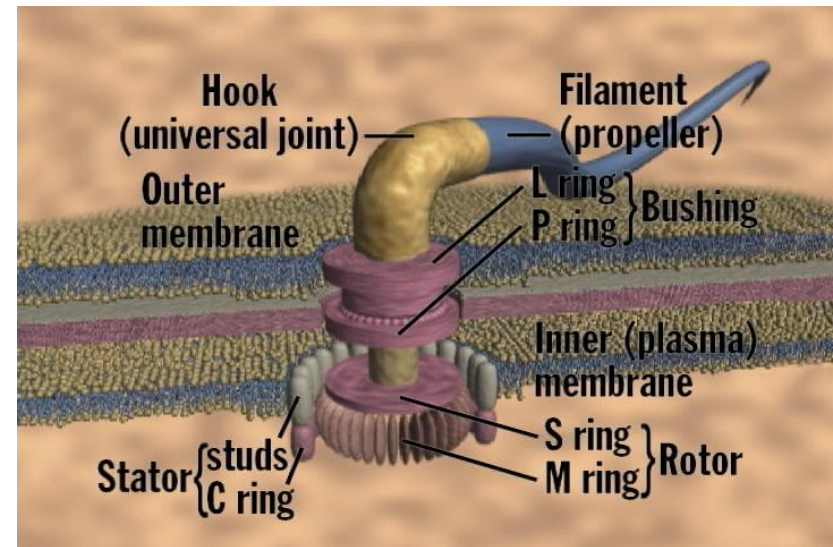


The Nature of Machines

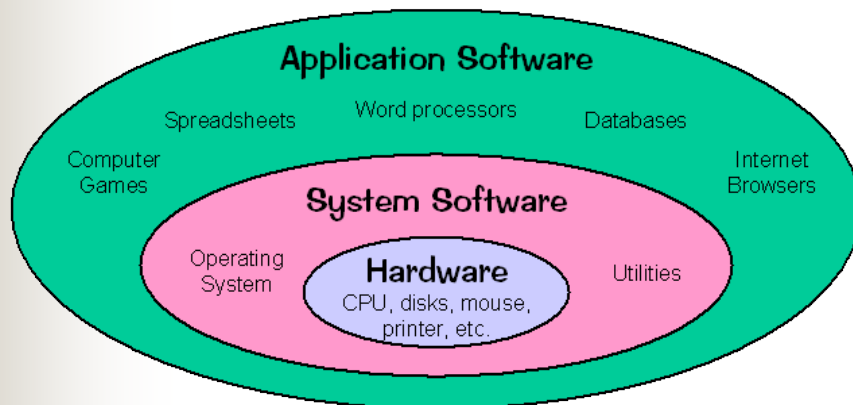
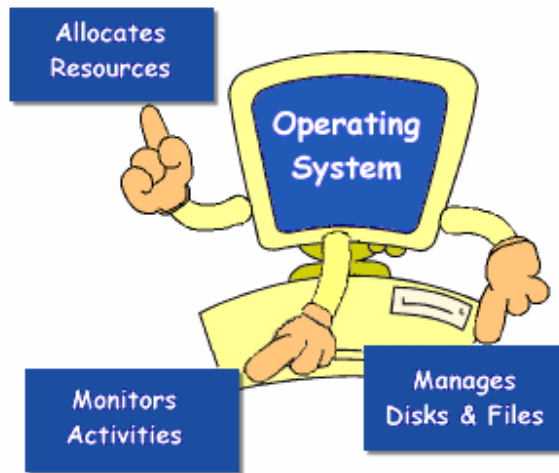


Molecular Machines, e.g. Motors

- Behe showed that the cell, Darwin's Black Box, is filled with **Irreducibly Complex** (**all parts functional**) molecular machines that could not be built by natural selection
- Over 100 molecular motors are now known to exist inside the cell with very specific analogies to human designed motors

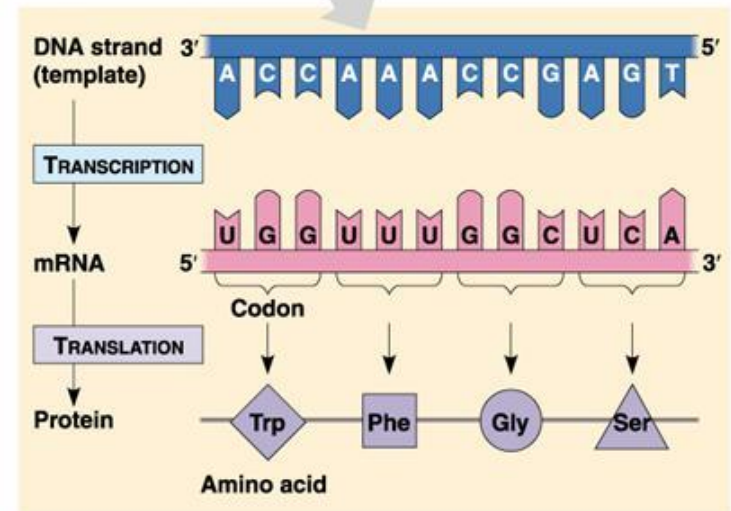
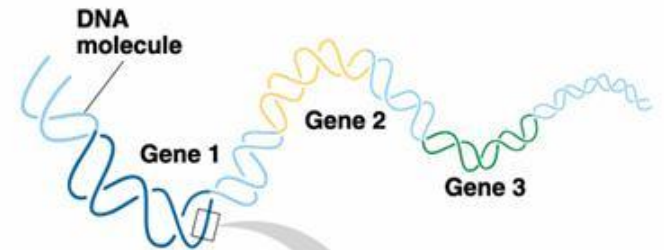
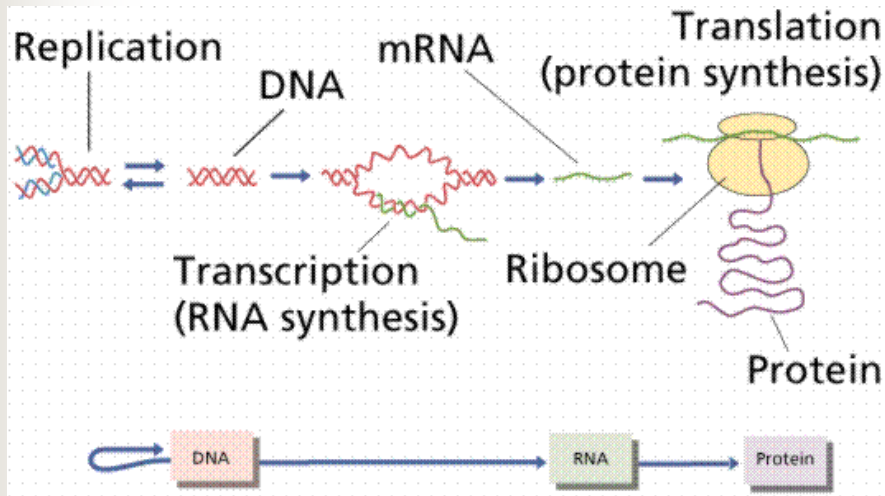


The Nature of Programs



```
1  /**
2   * @version 1.30 2000-03-27
3   * @author Cay Horstmann
4   */
5
6  import java.util.*;
7
8  public class CalendarTest
9  {
10     { public static void main(String[] args)
11     {
12         // construct d as current date
13         GregorianCalendar d = new GregorianCalendar();
14
15         int today = d.get(Calendar.DAY_OF_MONTH);
16         int month = d.get(Calendar.MONTH);
17
18         // set d to start date of the month
19         d.set(Calendar.DAY_OF_MONTH, 1);
20
21         int weekday = d.get(Calendar.DAY_OF_WEEK);
22
23         // print heading
24         System.out.println("Sun Mon Tue Wed Thu Fri Sat");
25
26         // indent first line of calendar
27         for (int i = Calendar.SUNDAY; i < weekday; i++)
28             System.out.print("  ");
29
30         do
31         {
32             // print day
33             int day = d.get(Calendar.DAY_OF_MONTH);
34             if (day < 10) System.out.print(" ");
35             System.out.print(day);
36
37             // mark current day with *
38             if (day == today)
39                 System.out.print("* ");
40             else
41                 System.out.print(" ");
42
43             // start a new line after every Saturday
44             if (weekday == Calendar.SATURDAY)
45                 System.out.println();
46
47             // advance d to the next day
48             d.add(Calendar.DAY_OF_MONTH, 1);
49             weekday = d.get(Calendar.DAY_OF_WEEK);
50         }
51         while (d.get(Calendar.MONTH) == month);
52         // the loop exits when d is day 1 of the next month
53
54         // print final end of line if necessary
55         if (weekday != Calendar.SUNDAY)
56             System.out.println();
57     }
58 }
```

Programs in the Cell



©1999 Addison Wesley Longman, Inc.

“Human DNA is like a computer program but far, far more advanced than any software we’ve ever created.”

Bill Gates, Microsoft



Presuppositions and Information

- Evolution presupposition
 - The universe consists of only two *material* fundamental entities – mass and energy
- A third presupposition
 - *Non-material* entity: information
- Information is encoded within the DNA/RNA of all plant and animal cells
- Life = material + (nonmaterial) information
- Information has the following four components:
 - Code, meaning, action, purpose

Life: Information, Complexity, Design

- Information in living systems

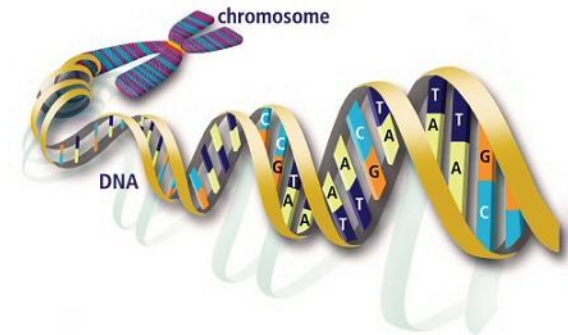
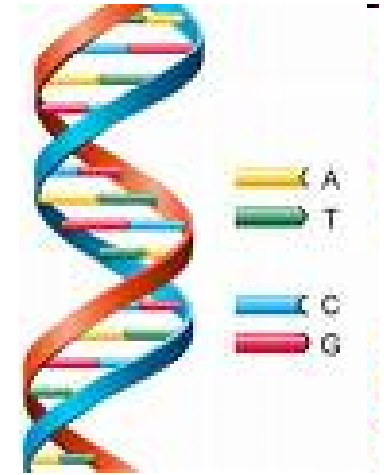
- DNA: base pairs (AT, CG),
codons, 20 left-handed amino acids



- Biological systems exhibit Specified Complexity and use Irreducibly Complex (all parts) subsystems
- Naturalistic mechanisms or undirected causes do not suffice to explain origin of Complexity
- Intelligent Design constitutes the best explanation for the origin of Specified Complexity and Irreducible Complexity in biological systems

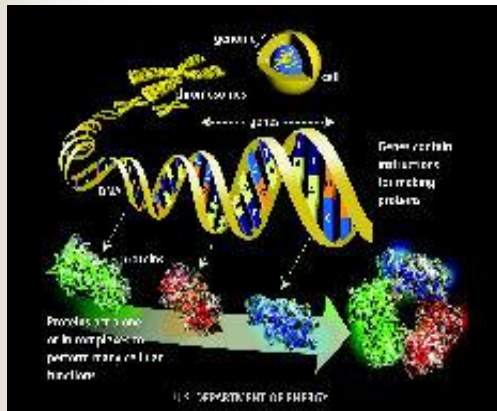
More on Information in Life

- Code: 4 letters – adenine (A), cytosine (C), guanine (G), thymine (T)
 - Words (codons) composed of 3 letters
- Meaning: each 3-letter word represents 1 of the 20 [left-handed] amino acids necessary for protein formation
 - Sequence of codons in the DNA represents sequence of amino acids in a protein
- Action: proteins needed for construction, function, maintenance, reproduction of the organism and its cellular components
- Purpose: reproduction of life



Evidence for Design in Life

- **Biology**: the presence of complex and functionally integrated machines has cast doubt on Darwinian mechanisms of self-assembly
- **Molecular biology**: the presence of information encoded along the DNA molecule has suggested the activity of a prior designing intelligence



Harvard biologist **Richard Lewontin** urges scientists to embrace a "materialism [that] is absolute" and to stick with "material explanations, no matter how counter intuitive."



Living Matter and Information

“It’s a shame that there are precious few hard facts when it comes to the origin of life. We have a rough idea when it began on Earth, and some interesting theories about where, but the how part has everybody stumped.

Nobody knows how a mixture of lifeless chemicals spontaneously organized themselves into the first living cell.”

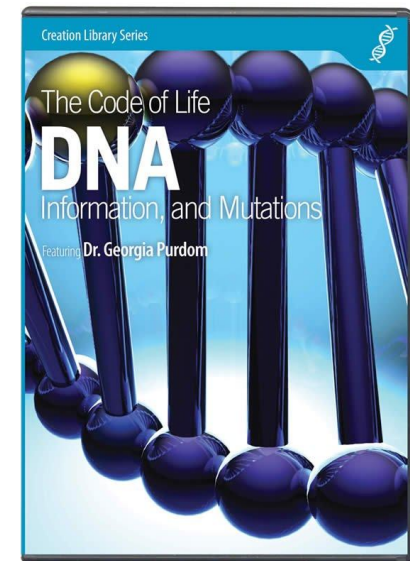
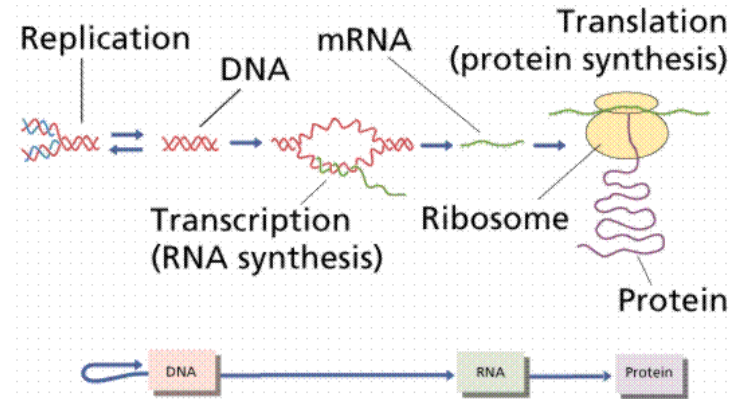
- **Paul Davies**, *Australian astrobiologist* [Evolutionist]

“There is no known law of nature, no known process and no known sequence of events which can cause information to originate by itself in matter.”

- **Werner Gitt**, *German information scientist* [Creationist]

Life Requires Information

- Life = mass + energy (*material*) + information (*non-material*)
- Life requires:
 - Information stored in DNA
 - Machines (storage + programming)
 - Programs, e.g. replication
 - Complexity: Irreducible (all parts) & Specified (meaning)
 - Design requires an Intelligent Mind
- Life from non-life? NOT by chance!
 - Information IS the basis for life
 - Information requires an Intelligent Mind





Origin of First Life by Random Chance Processes Impossible

- Law of Biogenesis established
 - Pasteur's experiment in 1864
- Life did not start in a “primordial soup”
 - Miller's experiment failed
- Mathematical probability of forming first living cell by natural random chance processes (1 in $10^{40,000}$) is impossible
- Life requires information
 - Source of information?

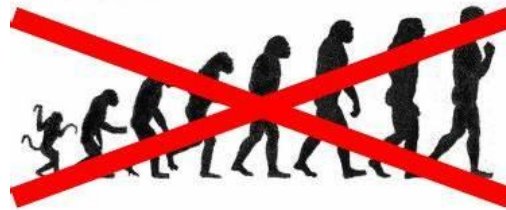
6. Origin of Complex Life

- Darwinian Evolution requires
 - Cell replication
 - Mutations and natural selection
 - Random chance processes
 - No plan, no purpose, no design
 - Source of information



- Evolution's four fatal flaws

- Macro-evolution is not observed
- No transitional fossils
- No human evolution
- Evolution against the 2nd law of thermodynamics

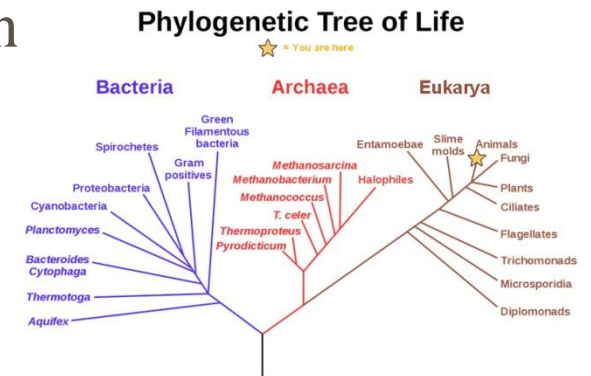
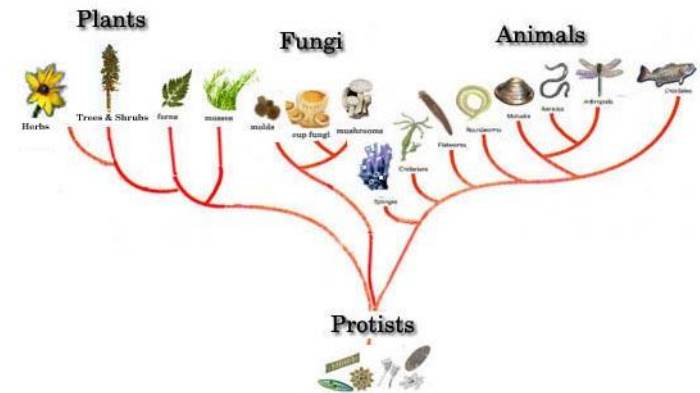


Second Law of Thermodynamics -

Entropy

6a. Macro-Evolution NOT Observed

- What is Macro-Evolution?
 - Molecules-to-man
 - Common descent
 - Emergence of new “advanced” features via mutations and natural selection
 - Simple to complex living organism with increase of genetic information
- “Goo-to-you” Evolution requires an increase in genetic information
- Macro-Evolution has not been, and is not being, observed



Micro-Evolution IS Observed

■ What is Micro-Evolution?

- Genetic variation, e.g (dis)appearance of existing/potential genetic traits through recombination of existing genetic code
- Adaptive variations arising from existing genetic potential already in population's existing pool



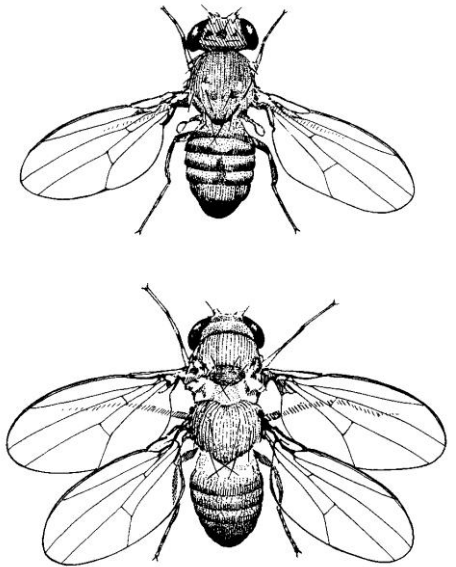
■ Examples of Micro-Evolution:

- Darwin's finches
 - Industrial melanism in peppered moths
 - Insects developing resistance to pesticides
- All observed change involves sorting and loss of genetic information



Dobzhansky's Fruit Flies

- Fruit flies experiment in the lab
 - Radiation-induced mutation of fruit flies
 - Involves deliberate action, not natural
- Results
 - Fruit flies with extra wings, no wings, huge wings, tiny wings
 - Changes detrimental to survival
 - No advantages over other fruit flies
 - Still fruit flies!
- No progressive beneficial changes from simple to complex
- No increase in quantity/quality of genetic information





Quote by Lewin (Evolutionist)

“The central question of the Chicago conference was whether the mechanisms underlying microevolution can be extrapolated to explain the phenomena of macroevolution. At the risk of doing violence to the positions of some of the people at the meeting, the answer can be given as a clear No.”

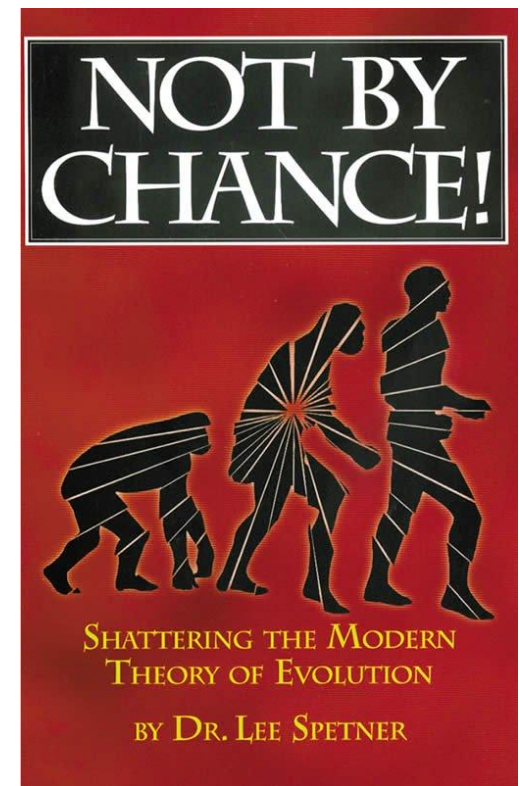
Reported by Roger Lewin, “Evolutionary theory under fire,” *Science*, vol. 210 (4472), 21 November 1980, p. 883]

Mutations & Information

- “Not By Chance”, Dr. Lee Spetner

“But in all the reading I’ve done in the life-sciences literature, I’ve **never found a mutation that added information** ... All point mutations that have been studied on the molecular level turn out to reduce the genetic information and not to increase it.”

- Random (chance) mutation and natural selection are opposites!





Quote from Spetner

“ ... if adaptive mutations are stimulated by the environment, they contradict the basic dogma of Neo-Darwinism. ... that mutations are random, and the kind of mutations that occur are independent of the environment. If mutations are ... non-random (and/or) the environment can stimulate adaptive mutations, the paradigm of Darwinian evolution, which has dominated the biological sciences for close to 150 years, must be replaced.”

6b. NO Transitional Fossils

- “Inverted” fossil orders
- The “Cambrian Explosion”
- “Living fossils”, e.g. coelacanth fish
- Polystrate fossils
- Lack of empirical evidence for transitions
 - The archaeopteryx was a bird, not a transitional fossil between reptile and bird
 - Whale “evolution” debunked
 - Horse “evolution” debunked
- No credible ape-to-human fossil identified



Cambrian Explosion

- Cambrian layer contains fossils of most Phyla known to man
- Only soft-bodied organisms (e.g. worms) found in pre-Cambrian strata
- Number of species fossilized in higher layers decreases in each higher layer

THE GEOLOGIC COLUMN			Typical fossils
Eras	Periods	Millions of Years Ago	
CENOZOIC	QUATERNARY	2	
	TERTIARY	65	
MESOZOIC	CRETACEOUS	130	
	JURASSIC	180	
	TRIASSIC	225	
PALAEOZOIC	PERMIAN	275	
	CARBONIFEROUS	345	
	DEVONIAN	405	
	SILURIAN	435	
	ORDOVICIAN	480	
	CAMBRIAN	600	
	PRE-CAMBRIAN		



Fully Formed

“It is considered likely that all the animal phyla became distinct before or during the Cambrian, for they all appear fully formed, without intermediates connecting one phylum to another.”

Futuyma, Douglas J. 1986. *Evolutionary biology*. 2d ed. Sunderland, MA: Sinauer Associates, Inc. p. 325.



Quote from Simpson [Evolutionist]

"...Every paleontologist knows that most new species, genera, and families, and that nearly all categories above the level of family appear in the record suddenly and are not led up to by known, gradual, completely continuous transitional sequences."

[George Gaylord Simpson (evolutionist), *The Major Features of Evolution*, New York, Columbia University Press, 1953 p. 360.]

“Living Fossils”

- Coelacanth fish
 - “Extinct” about “70 million years” ago
 - Live fish found in 1938
- “25-million-year-old” termite fossils in amber
 - Darwin predicted that fossils would show changes in fossil record over the years
 - Identical to termites living today



The “325 million year old” lobe-fin coelacanth is still very much alive.



Polystrate Fossils

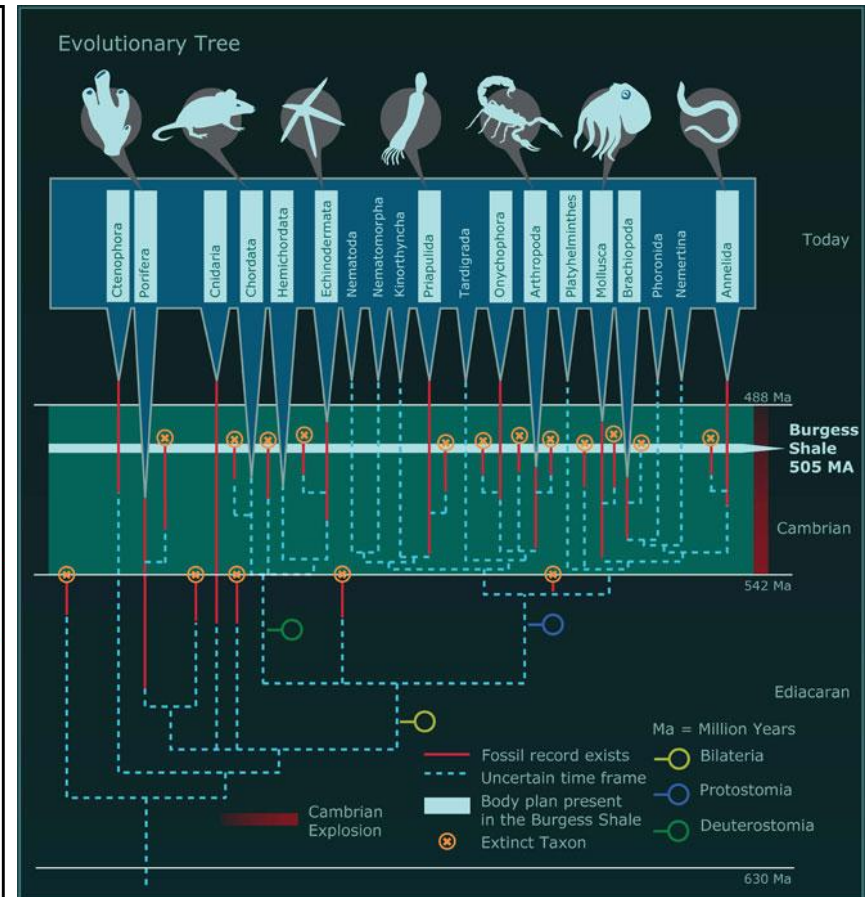
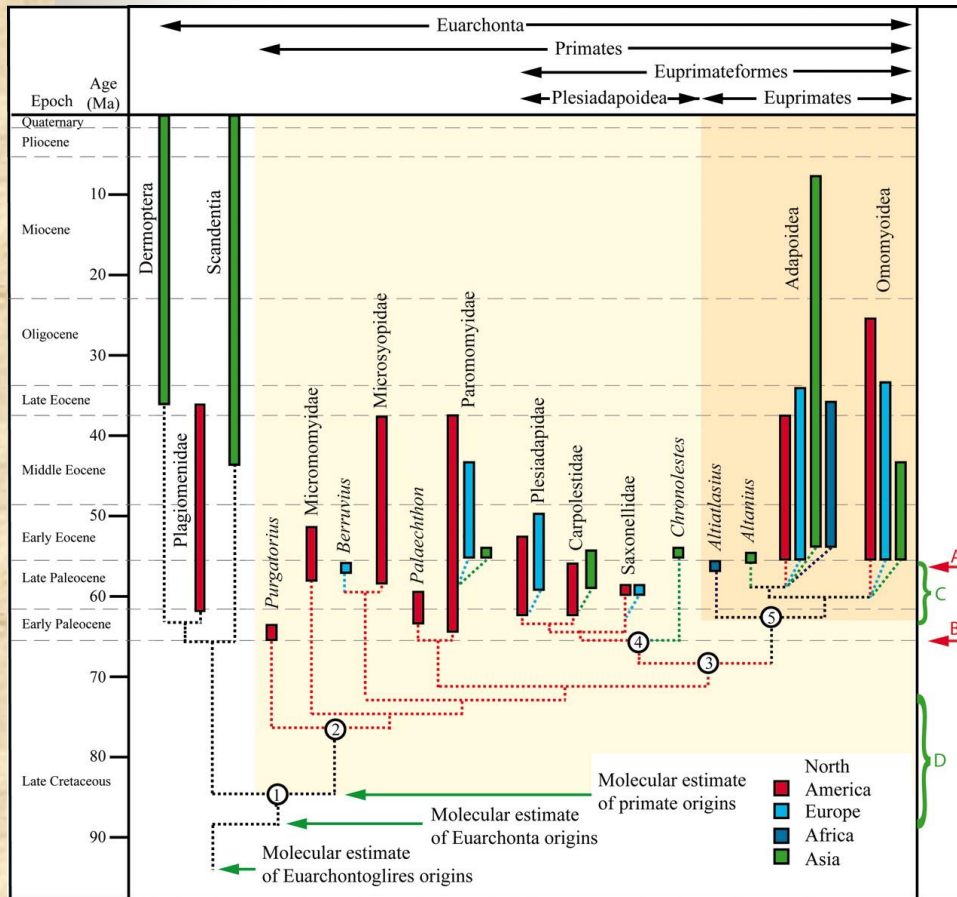


Polystrate fossils run through several strata (rock/sediment layers)



Trees sinking in an upright position in Spirit Lake following Mount St. Helen's eruption

Fossil Evidence?



Dotted lines – probable range of group of animals; Solid lines – fossil evidence



Quote From West [Evolutionist]

“Contrary to what most scientists write, the fossil record does not support the Darwinian theory of evolution because it is this theory (there are several) which we use to interpret the fossil record. By doing so, we are guilty of circular reasoning if we then say the fossil record supports this theory.”

[Ronald R. West (evolutionist), “Paleontology and Uniformitarianism.” *Compass*, Vol. 45 (May 1968), p. 216.]



Evolution: The Fossils Still Say No!

“In the preceding chapters, we have cited example after example of failure to find transitional forms where evolutionary theory predicts such forms should have been found. ... The examples cited in this book are in no way exceptions, but serve to illustrate what is characteristic of the fossil record.”

[Duane T. Gish (Creationist), *Evolution: The Fossils Still Say NO!*, page 333.]



The Fossil Record

- **Darwin** admitted in 1859:
 - “Why then is not every geological formation and every stratum full of such intermediate links? Geology assuredly does not reveal any such finely graduated organic chain.”
- **Paul Moody** wrote in a standard textbook:
 - “So far as we can judge from the geologic record, large changes seem usually to have arisen suddenly. ... fossil forms, intermediate between large subdivisions of classification, such as orders and classes, are seldom [*read never*] found.”



The Fossil Record

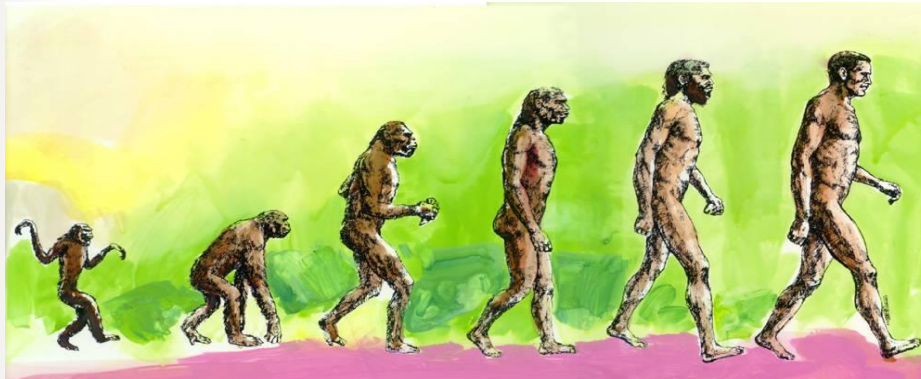
“I fully agree with your comments on the lack of direct illustration of evolutionary transitions in my book. If I knew of any, fossil or living, I would certainly have included them. . .I will lay it on the line, There is not one such fossil for which one might make a watertight argument.”

-- Dr. Colin Patterson, senior paleontologist
at the British Museum of Natural History

150 years after Darwin, and still no credible transition form!

6c No Human Evolution

- Neanderthal (1856) – accepted as homo sapiens
- Java Man (1891) – artificial construct
- Piltdown Man (1908) – proven to be a hoax
- Nebraska Man (1922) – an extinct pig
- Ramapithecus (1930) – an orangutan
- Lucy (1974) – make-believe creature



NO credible
“ape-like ->
human”
fossil found!

Lucy

- Discovered in 1974 by Donald Johanson
 - 40% complete skeleton
 - Dated at 3.5 million years old
- Evidence:
 - Arm/leg ratio of 83.9 %
 - Hip/pelvis – walked upright
 - Knee joint – walked upright
- Observations:
 - Fingers long and curved (for climbing)
 - Shoulder blade like gorilla
 - Brain size of chimpanzee



Lucy - Reconstructed

- Checking the facts, we find:
 - Leg bone broken in two places and one end was crushed -> this invalidates the ratio
 - Hip/pelvis was incomplete, and thus reshaped to make it look as if it walked upright
 - Knee joint was found over one mile away and 200 feet deeper in strata from rest of bones



This is a reconstruction of the famous fossil known "Lucy", one of our oldest known ancestors. It is based on a limited and almost complete skeleton found in the Hadar region of Ethiopia by Dr. Donald Johanson. The last fossil dated to only 3.3 million years ago and is classified as being possibly and possibly a well be the basis of an upcoming MU Museum exhibition on Primate Evolution.



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- Fossil remains of two different creatures fitted to form a make-believe creature

Reconstruction of Lucy



40%
Skeleton

From the PBS Nova Series “In Search of Human Origins”, Episode One 1994 (Dr. Owen Lovejoy)

- Lucy’s pelvis is very wrong – looks very ape-like
- “Fixing” Lucy with a power saw!



St. Louis
Museum



Lord Zuckerman Chimes In

- “For example, no scientist could logically dispute the proposition that man, without having been involved in any act of divine creation, evolved from some ape-like creature in a very short space of time – speaking in geological terms – without leaving any fossil traces of the steps of the transformation.”

Zuckerman, Solly. 1971. *Beyond the ivory tower.* The frontiers of public and private science. New York: Taplinger Publishing Company. p. 64.



Ape-Like To Man?

- In a Science Digest article written by **Lyall Watson**, he states that:
 - “The fossils that decorate our family tree are so scarce that there are still more scientists than specimens. The remarkable fact is that all the physical evidence we have for human evolution can still be placed, with room to spare, inside a single coffin.”
- **David Pilbeam** and **Steven Gould** (two evolutionists) report that:
 - “Unfortunately, the fossil record of pongids (*apes*) is nonexistent, making a glaring deficiency in the whole story.”

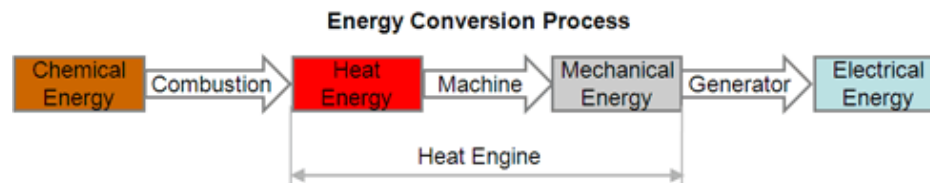
6d. Evolution & 2nd Law of Thermodynamics

- The Second Law of Thermodynamics
 - Increasing entropy (unavailable energy)
 - Order -> disorder (systems left to themselves)
- Evolution requires
 - Disorder -> order
 - Simple -> complex
- What do we observe in nature?
 - Order -> disorder (deterioration)
 - Less available energy over time
 - Increased randomness over time



More on the 2nd Law and Entropy

- Classical thermodynamics/entropy
 - Energy can never be 100% converted to work
 - Entropy is the amount of unavailable energy
 - First discovered in study of energy & heat engines (that convert heat into work)



- Statistical entropy
 - Energy to construct & maintain complex systems
 - All organized systems tend to become more random and disorderly
- Informational entropy
 - Applies to transmission and storage of information
- No known exceptions to 2nd Law

Quote by Isaac Asimov

“Another way of stating the second law then is: ‘The universe is constantly getting more disorderly!’ Viewed that way, we can see the second law all about us. We have to work hard to straighten a room, but left to itself it becomes a mess again very quickly and very easily. Even if we never enter it, it becomes dusty and musty. How difficult to maintain houses, and machinery, and our bodies in perfect working order: how easy to let them deteriorate. In fact, all we have to do is nothing, and everything deteriorates, collapses, breaks down, wears out, all by itself—and that is what the second law is all about.”



[Isaac Asimov, *Smithsonian Institute Journal*, June 1970, p. 6]

Application of 2nd Law of Thermodynamics: Cosmic, Chemical & Biological Evolution





Open vs. Closed Systems

- Evolutionists argue
 - 2nd Law only applies to a closed system
 - Living systems are exceptions because they represent open systems
 - Solar energy is added to the earth
- But 2nd Law applies to the whole universe
 - Entropy is increasing
 - Things become less organized, less complex, more random in the universe
 - Raw solar energy increases entropy, e.g. heat



Quote by Dr. John Ross

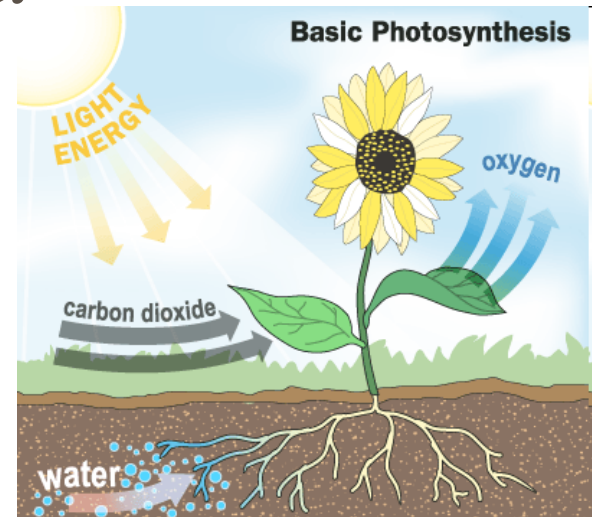
“...there are no known violations of the second law of thermodynamics. Ordinarily the second law is stated for isolated systems, but the second law applies equally well to open systems ... there is somehow associated with the field of far-from equilibrium phenomena the notion that the second law of thermodynamics fails for such systems. It is important to make sure that this error does not perpetuate itself.”

[Dr. John Ross, Harvard scientist (evolutionist), *Chemical and Engineering News*, vol. 58, July 7, 1980, p. 40]

Add “Open” + “Energy”

- Apparent increase in organized complexity in living matter requires 1) an open system and 2) an available energy supply. Also requires:
 - 3) A “program” (information) to direct growth in organized complexity
 - 4) A mechanism for storing and converting the incoming energy
- Examples:

- Plant photosynthesis, sun’s energy -> proteins
- Seed -> plant
- Animal metabolism, energy -> compose diet





Living Systems & 2nd Law

- Living systems have a “program”
 - Living organism’s DNA contains the code (DNA, information) to direct process of building organism
 - Process continues throughout life of organism faster than natural processes (via 2nd Law) can break it down
- Living systems have “storage/conversion”
 - Built-in mechanism to convert and store incoming energy
 - Photosynthesis converts sun’s energy into usable/storable forms, e. g. proteins
 - Animals use metabolism to convert and use stored, usable, energy from organisms in their diets



Order vs. Organized Complexity

- Order from disorder occurs in non-living systems
- “Organized’ systems are to be carefully distinguished from ordered’ systems. Neither kind of system is ‘random,’ but whereas ordered systems are generated according to simple algorithms and therefore lack complexity, organized systems must be assembled element by element according to an external ‘wiring diagram’ with a high information content ... Organization, then, is functional complexity and carries information. It is non-random by design or by selection, rather than by the a priori necessity of crystallographic ‘order.’”

[Jeffrey S. Wicken, *The Generation of Complexity in Evolution: A Thermodynamic and Information-Theoretical Discussion*, Journal of Theoretical Biology, Vol. 77 (April 1979), p. 349]

Order vs. Organized Complexity

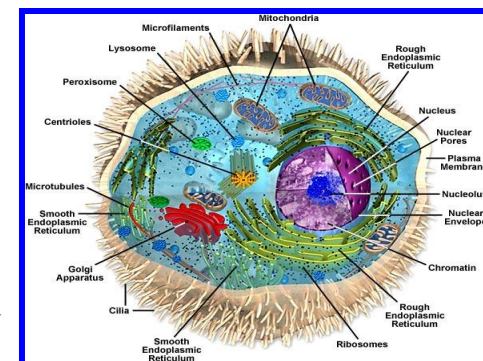
- Examples of order in nature:
 - Snowflake, crystal, stalactite, lightning, etc.
 - No intelligent “program” required



- Organized complexity
 - All living things, even single-celled organism
 - Each functioning according to its instructions



- Spontaneous generation disproved
 - Redi (1688), Spallanzani (1780)
 - Pasteur (1860), Virchow (1858)
 - Life from non-life NEVER observed





Challenge Posed by the 2nd Law

“The thermodynamicist immediately clarifies the latter question by pointing out that the Second Law classically refers to isolated systems which exchange neither energy nor matter with the environment; biological systems are open, and exchange both energy and matter. The explanation, however, is not completely satisfying, because it still leaves open the problem of how or why the ordering process has arisen (an apparent lowering of the entropy), and a number of scientists have wrestled with this issue. Bertalanffy (1968) called the relation between irreversible thermodynamics and information theory one of the most fundamental unsolved problems in biology.”

[C. J. Smith (evolutionist), Biosystems 1:259 (1975)]



Darwinian Evolution Fatally Flawed

- Macro Evolution not observed
 - Micro Evolution shows adaptation
- No evidence in fossil record
 - No gradual transitions
- No Human Evolution
 - Lucy a make-believe creature
- Evolution against 2nd Law of Thermodynamics

7. Darwin's Doubts

- Origin Of Species, Edition 6, 1872
 - Chap. 6 – Difficulties of the Theory
 - Chap. 10 – On The Imperfections of the Geological Record
- Fossil record doesn't support his theory
- Cannot explain the Cambrian explosion
- Cannot explain the intricate design of the human eye
- Cannot explain complex organs
- No primordial soup - origin of first life

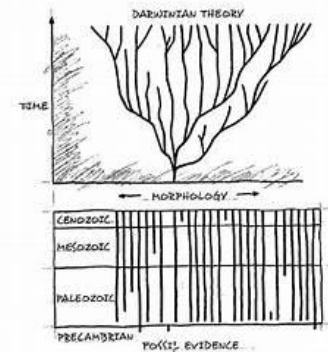
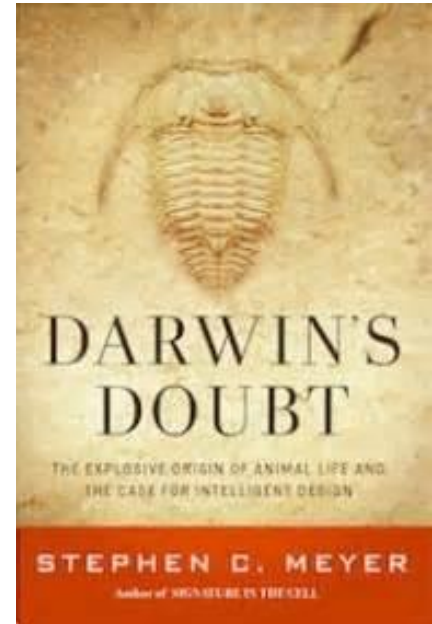
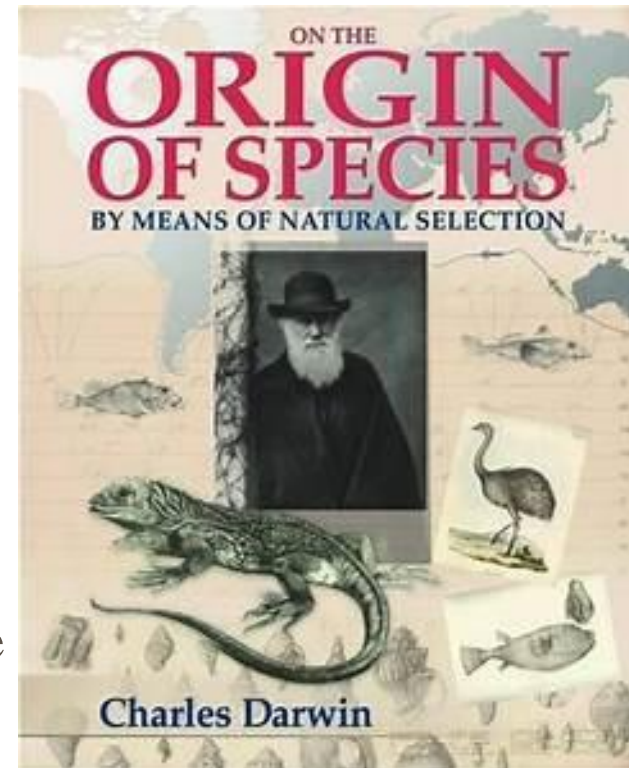


FIGURE 2.7 The origin of animals. Darwinian theory (top) predicts gradual evolutionary change in contrast to the fossil evidence (bottom), which shows the abrupt appearance of the major animal groups.

Chapter 6: Difficulties of the Theory

Difficulties on the theory of descent with Modification – Transitions - Absence or rarity of transitional varieties - Transitions in habits of life - Diversified habits in the same species - Species with habits widely different from those of their allies – Organs of extreme perfection – Means of transition - Cases of difficulty - Natura non facit saltum - Organs of small importance – Organs not in all cases absolutely perfect – The law of Unity of Type and of the Conditions of Existence embraced by the theory of Natural Selection.



The Origin of Species, Charles Darwin

Darwin on Fossils

- *On the absence or rarity of transitional varieties*
- Why, if species have descended from other species by insensibly fine gradations, do we not everywhere see innumerable transitional forms.
- Why is not all nature in confusion instead of the species being, as we see them, well defined?
- By this theory innumerable transitional forms must have existed, why do we not find them embedded in countless numbers in the crust of the earth?

The Origin of Species, p. 122

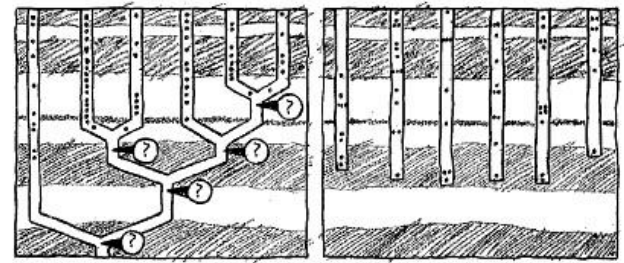


FIGURE 1.8
The vertical lines in these diagrams represent known animal phyla. The dots within the vertical lines represent animals from those phyla that have been found fossilized in different strata. The diagram on the left shows the animal tree of life as expected based upon Darwinian theory. The diagram on the right shows a simplified representation of the actual pattern of the Precambrian–Cambrian fossil record. Notice that fossils representing the internal branches and nodes, but not the terminal branches, are missing.



Cambrian Explosion

“Charles Darwin knew that there was a significant event in the history of life that his theory did not explain. In what is known today as the “Cambrian explosion,” 530 million years ago many animals suddenly appeared in the fossil record without apparent ancestors in earlier layers of rock. In *Darwin’s Doubt*, *Stephen C. Meyer* tells the story of the mystery surrounding this explosion of animal life—a mystery that has intensified, not only because the expected ancestors of these animals have not been found, but also because scientists have learned more about what it takes to construct an animal.”

Book by Stephen Meyer

Plant Evolution?

“The rapid development as far as we can judge of all the higher plants within recent geological times is an abominable mystery”

Charles Darwin, 1879

“Although this abominable mystery is often cited today, and sometimes declared solved, few realize that the mystery is deeper today, then for Darwin.”

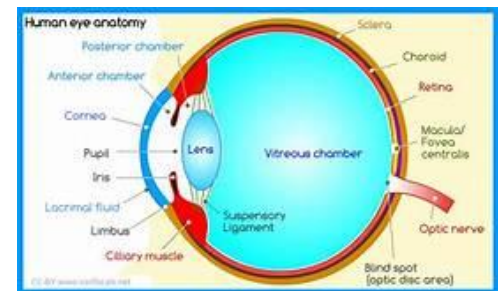
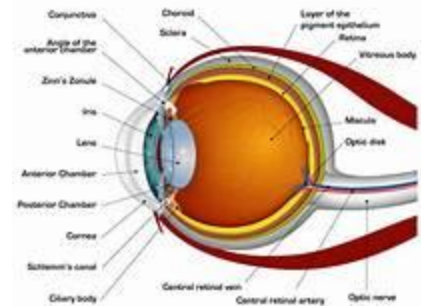
*Kew, leading authority in
plant evolution, 2017*



Darwin on Human Eye

“To suppose that the eye, with all its inimitable contrivances for adjusting the focus to different distances, for admitting different amounts of light, and for the correction of spherical and chromatic aberration, could have been formed by natural selection, seems, I freely confess, absurd in the highest possible degree.”

Origin of Species, p. 133

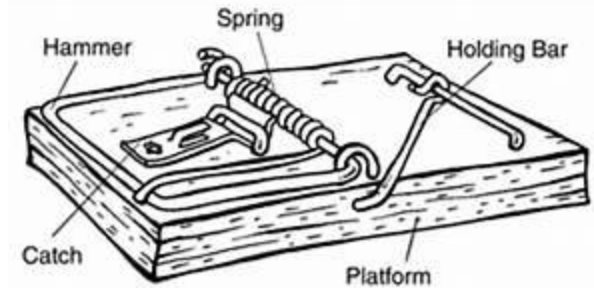


Darwin on Complex Organs

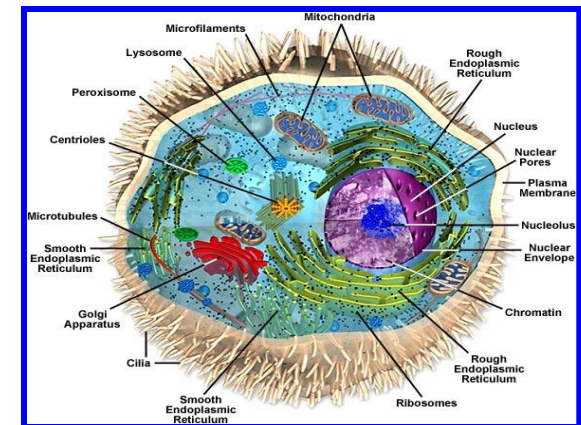
“If it could be demonstrated that any complex organ existed, which could not possibly have been formed by numerous, successive, slight modifications, **my theory would absolutely break down.** But I can find no such case.”

Origin of Species, p. 136

Irreducible Complexity



Specified Complexity



Darwin's "Warm Little Pond"

" But if (and Oh! What a big if!) we could conceive in some warm little pond, with all sorts of ammonia and phosphoric salts, light, heat, electricity etc., present, that a protein compound was chemically formed, ready to undergo still more complex changes. . . . "

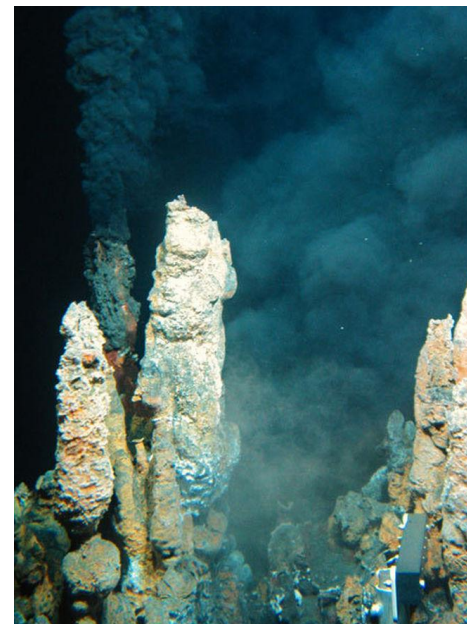


Charles Darwin, in a letter to Joseph Hooker (1871)



Locations For Origins of Life?

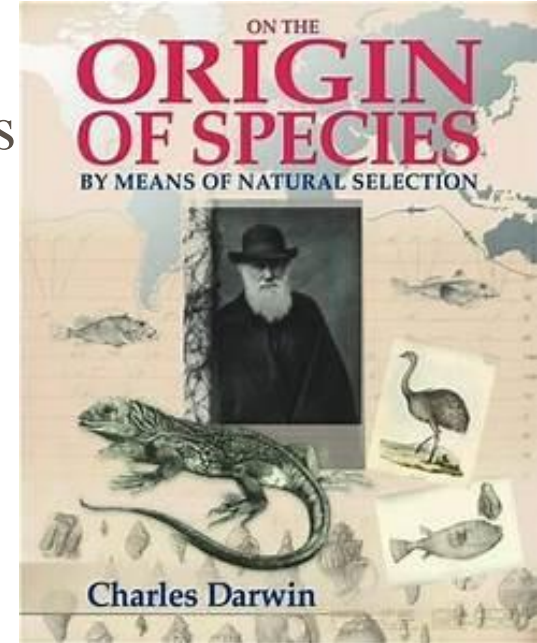
- Primordial soup
- Bottom of the sea
- Hydrothermal vents
- Active volcano springs
- Life on clay
- Deep space or Mars
- Panspermia
- Directed panspermia



Why Origin of Species is Not Read

- Darwin was a very bad writer. It takes a lot of effort to make sense of what he says
- Once you do figure out what he is trying to say, and put it in plain English, it isn't as compelling as evolutionists would like you to believe. In fact, it smacks of foolishness, e.g.

“I don't want to admit that there are any organs which could not have evolved step-by-step; but there sure are a lot of them that are hard to explain! Rest assured, I will explain them all, someday.”



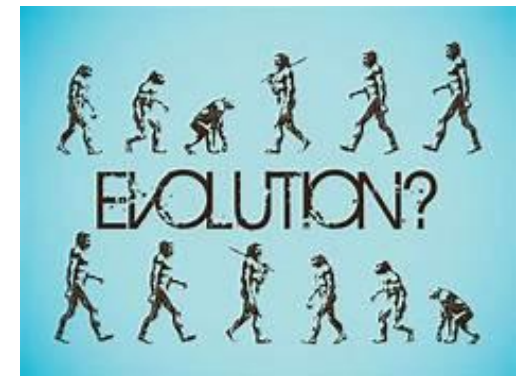
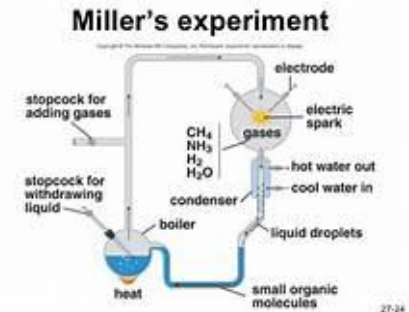
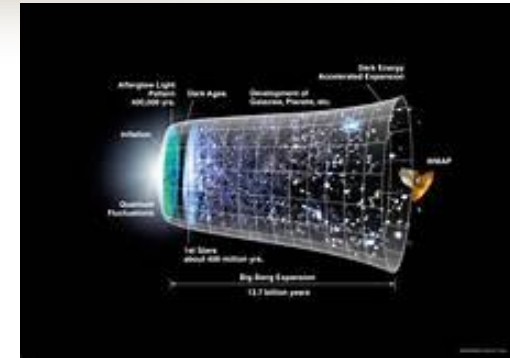


Darwin's Doubts Are Still Doubts

- Fossil record doesn't support Evolution
 - No gradual transitions in fossil record
- Cambrian explosion is a mystery
- Plant evolution has no explanation
- Intricate design and evolution of the eye cannot be explained
- Cannot explain complex organs
- No “warm little pond” identified

8. Conclusions

- Origin of universe still in question
 - Big Bang theory built on assumptions
 - Assumptions built on unknown assumptions
- First life did not, cannot and will not happen by random chance processes
 - Information is required for life
- Complex life by random chance processes is impossible
 - Disagrees with known science
- Darwin's doubts remain doubts
 - Fossils, primordial soup, human eye, etc.
- Evolution is not supported by science



Critiquing Evolution with Science Using Critical Thinking Skills

Origin of Universe

1. Missing antimatter
2. Missing monopoles
3. Horizon problem
4. Cosmic inflation



Origin of First Life

1. Law of biogenesis
2. Miller's experiment
3. Mathematical probability
4. Life requires information



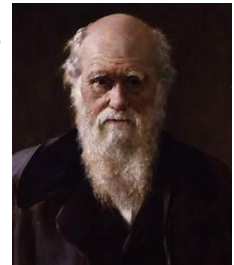
Origin of Complex Life

1. Micro vs. Macro Evolution
2. No transitional fossils
3. No human evolution
4. 2nd law of thermodynamics



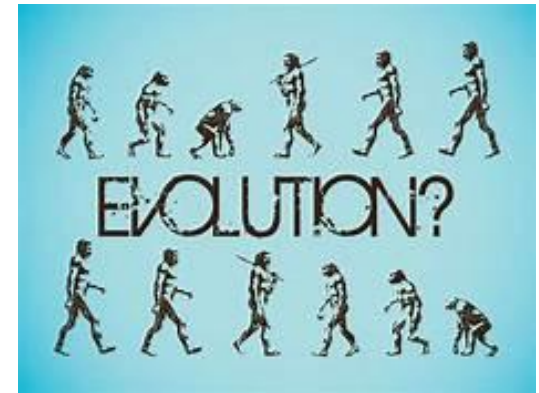
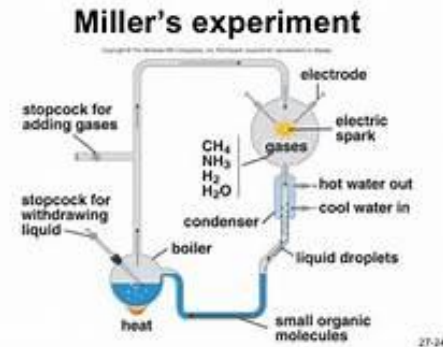
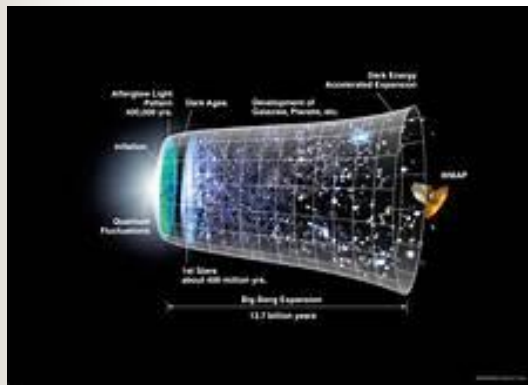
Darwin's Doubts

1. No transitional fossils
2. Cambrian explosion
3. Complex organs, eye
4. Warm little pond



HeinzLycklama.com/messages/romeo/EvolutionCriticalThinking.ppt

Thank you for your attention!



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Reference Books

- The Origin of Species, 6th Edition 1872, Charles Darwin
- Darwin's Doubt, Dr. Stephen Meyer
- Darwin on Trial, Dr. Philip Johnson
- Darwin's Black Box, Michael Behe
- Design Inference, William Dembski
- Without Excuse, Dr. Werner Gitt
- Evolution's Achilles Heels, CMI
- Not By Chance!, Dr. Lee Spetner



More Reference Books

- Programming of Life Prerequisites, Don Johnson
- Programming of Life, Don Johnson
- Probability's Nature and Nature's Probability, Don Johnson
- The Greatest Show on Earth, Richard Dawkins
- The Greatest Hoax on Earth, Jonathan Sarfati
- Icons of Evolution, Jonathan Wells
- Zombie Science, Jonathan Wells



Lycklama Powerpoint Lectures

<http://www.heinzlycklama.com/message/lectures/>

- Information: The Basis For Life
- Evolution's Four Fatal Flaws
- Has Science Now Buried God?
- Science and the New Atheists
- Origins Pseudoscience
- Our Privileged Planet
- Refuting Evolution

Life Cannot Originate From Non-Life by Random Chance

- Spontaneous generation (chemical evolution) has never been observed or shown to be possible
 - Redi in 1688, Spallanzani in 1780
 - Pasteur in 1860, Virchow in 1858
- Law of Biogenesis has never been falsified
- Non-complex life form is impossible
 - Mycoplasma, simplest self-reproducing organism, has 482 genes with 580,000 'letters' (base pairs)
 - Requires parasitizing a more complex organism
 - Parasitism resulted from loss of genetic information

