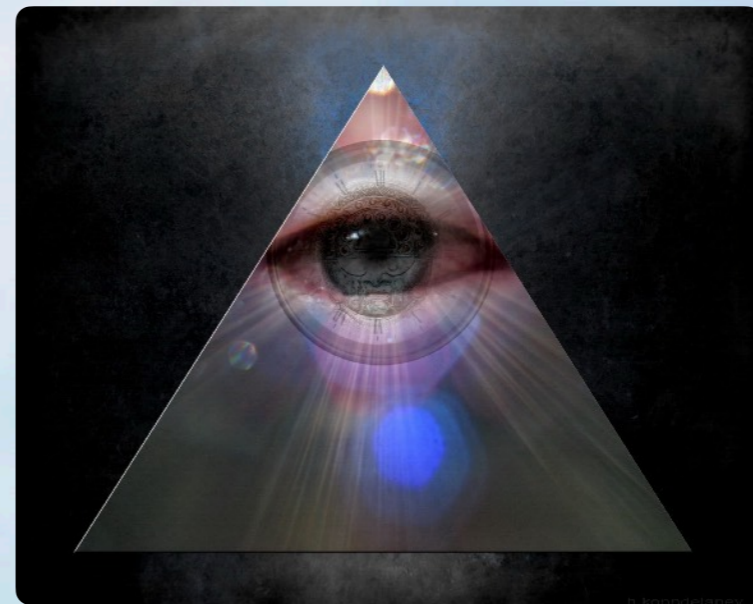


Evidence against Materialism

and for a Cosmic Mind (God) and Intelligent Design in Nature



GÜNTER BECHLY, Ph.D. (paleontologist):

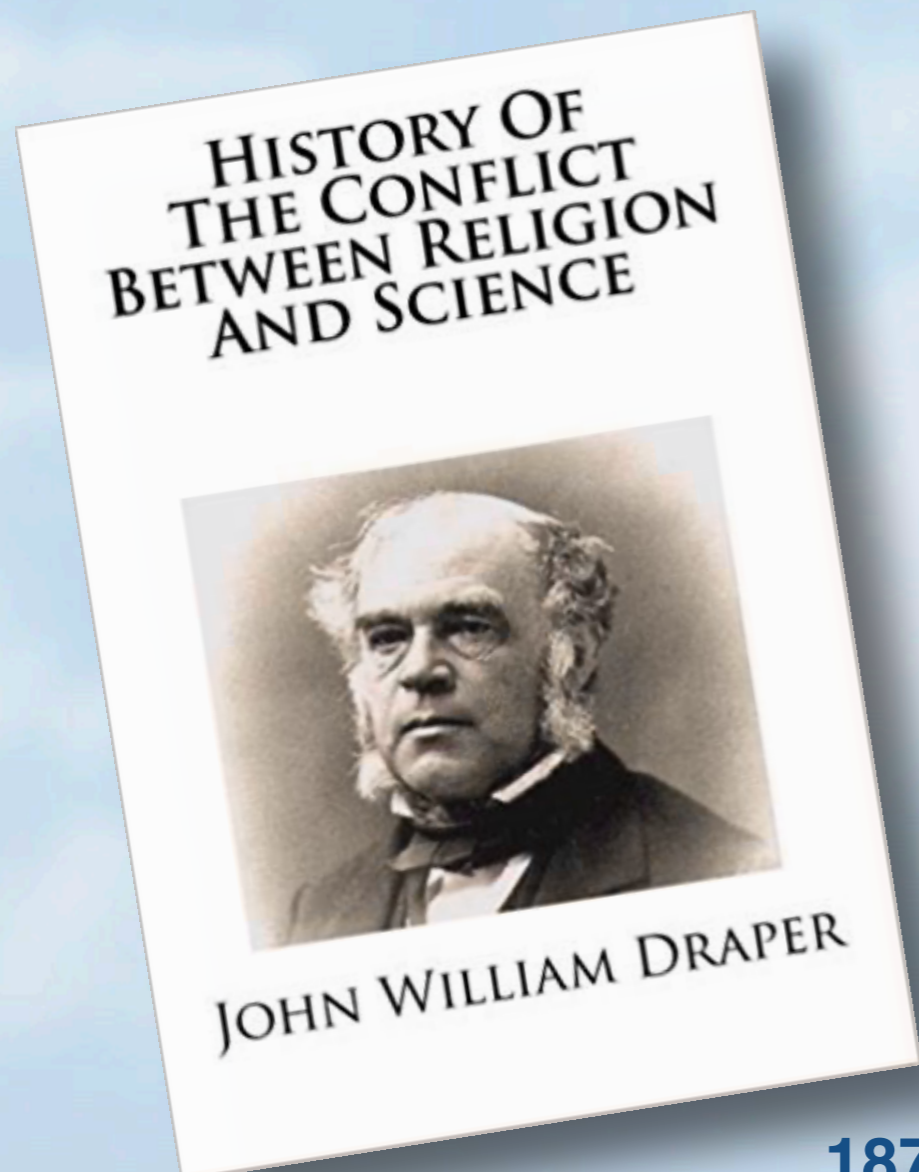
Former Curator for Amber and Fossil Insects at the *State Museum of Natural History* in Stuttgart

Senior Fellow with *Discovery Institute's Center for Science & Culture* in Seattle, USA

Senior Scientist at the *Biologic Institute* in Redmond, USA

Chairman of the *Center for BioComplexity and Teleology in Nature* in Austria

The Conflict between Science and Religion is Nothing but a 19th Century Myth



1874

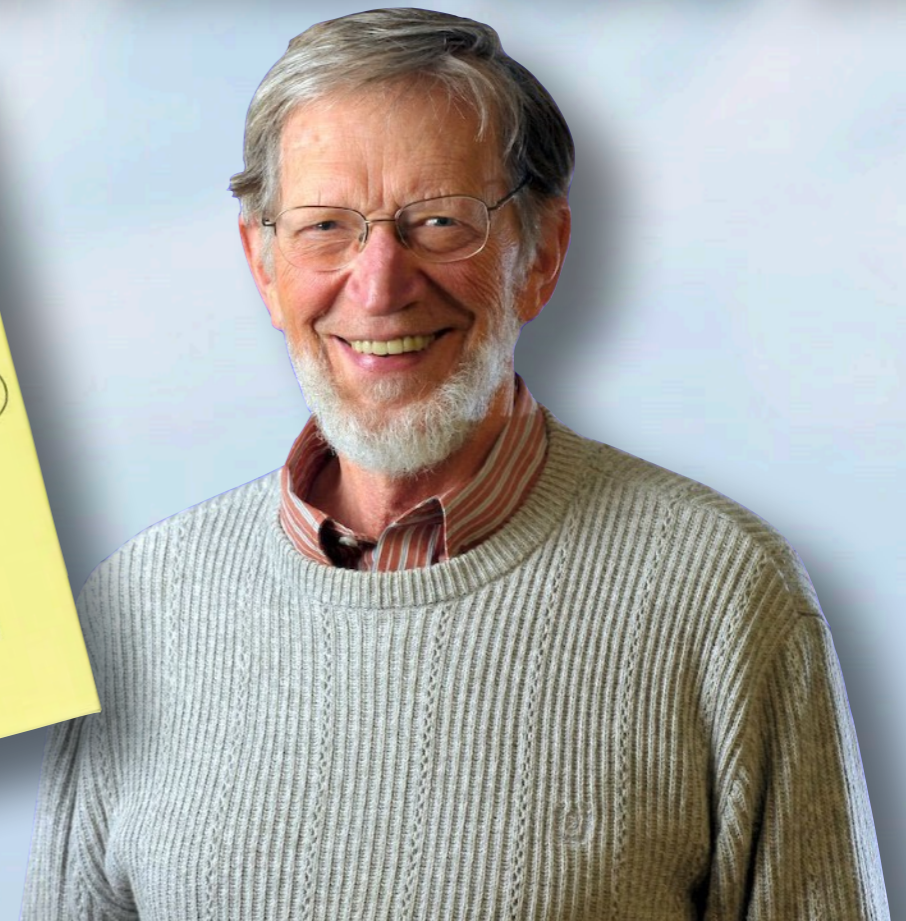
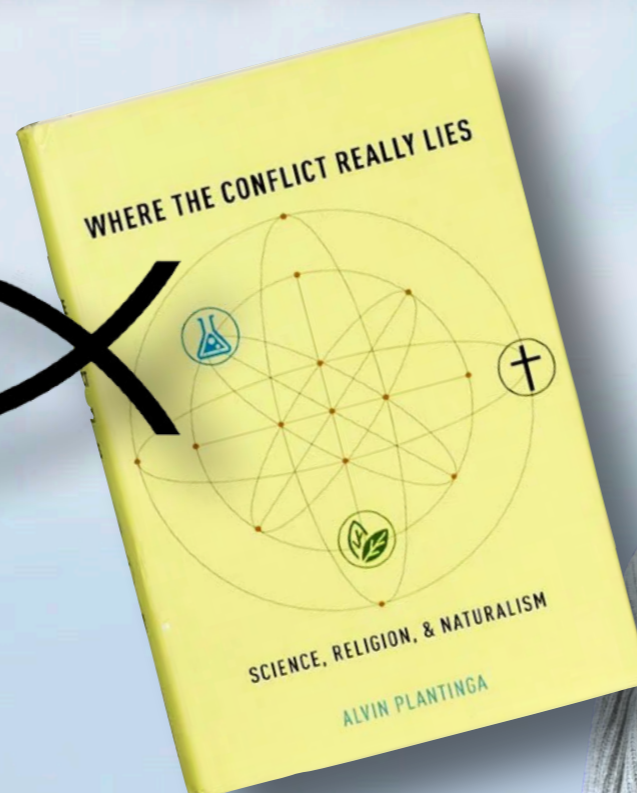


Religion is not like
Flat-Eartherism

No Conflict between Science and Theism

American analytic philosopher Alvin Plantinga (2011) “Where the Conflict Really Lies”:

*“There is superficial conflict but deep **concord** between science and religion, in particular theistic religion, and superficial concord but deep **conflict** between science and naturalism”*

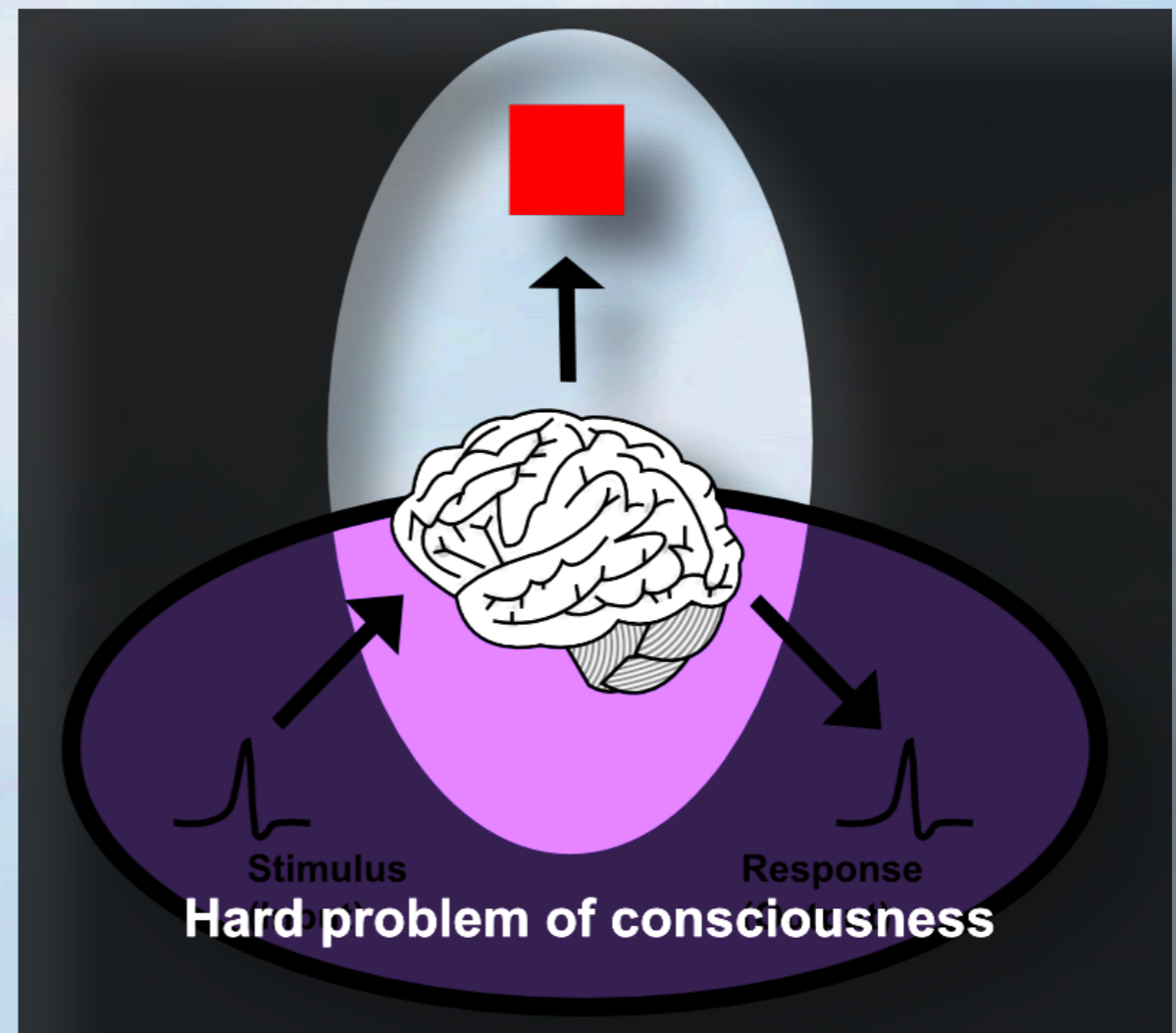


The Hard Problem of Consciousness

Phenomenal consciousness or subjective experience (qualia) can in principle not be reduced to or explained with the mere interaction of unconscious elementary particles.



David Chalmers



Introspective Argument

Premise 1: We cannot doubt that consciousness (mind) exists (Descartes: “*I think, therefore I am*”).

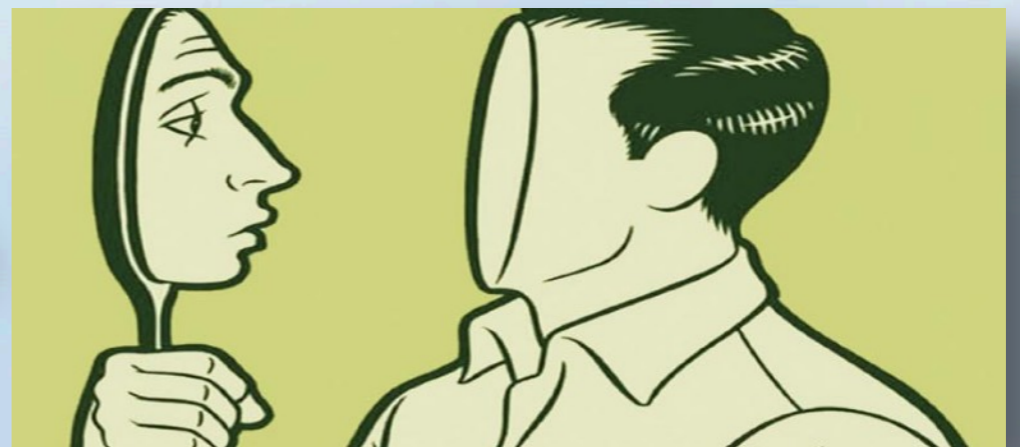
Premise 2: Consciousness has properties (Qualia) that cannot be explained by matter in action (Hard Problem).

Premise 3: Matter-Mind-Dualism is false (Interaction Problem).

Conclusion 1: Mind is all there is.

Premise 4: Solipsism is false.

Conclusion 2: Everything exists in a universal mind.





The Argument from Reason

Problem of Rationality (Transcendental Argument):

A putative **reasonable** belief in the **truth** of materialism is self-contradictory and thus incoherent, because if materialism would be true then there would exist ...:

- no **reason** (because the laws of logic and arguments are immaterial und thus could not influence merely material brain states)
- no **beliefs** (because propositional beliefs are immaterial)
- and no **truth** (because truth is only a property of propositions and not of material brain states)
- and thus there would be no reason to trust our brains: why should merely material blind causal chains result in **reasonable** or even **true** beliefs, rather than just survival?

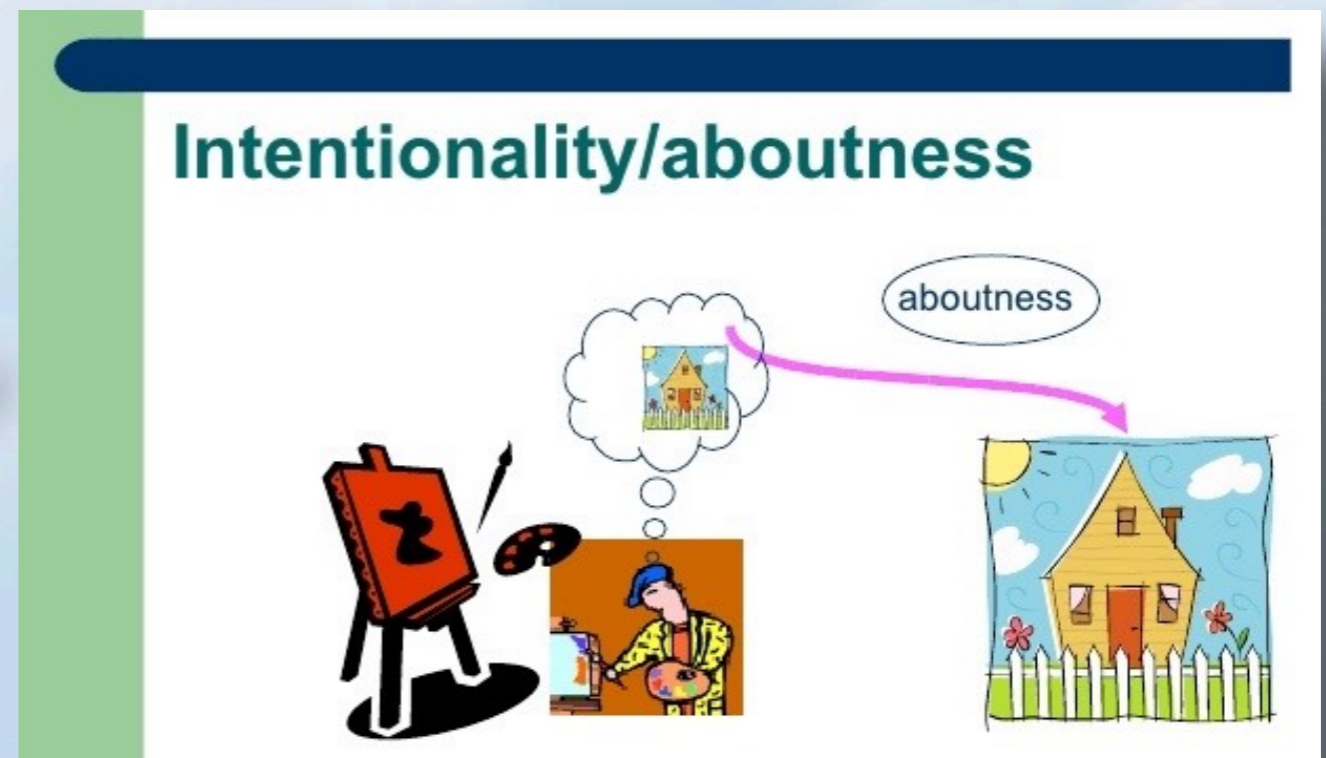
The Problem of Intentionality

Premise 1: Our thoughts have the queer property of *intentionality* or aboutness; they are *about* something else (e.g., I think *about* a house).

Premise 2: Matter is just what it is, but is never *about* any other chunk of matter. This also holds for our material brain.

Conclusion: Therefore, materialism is false!

Actually, there is no viable naturalistic explanation for intentionality. Therefore, naturalism is false!

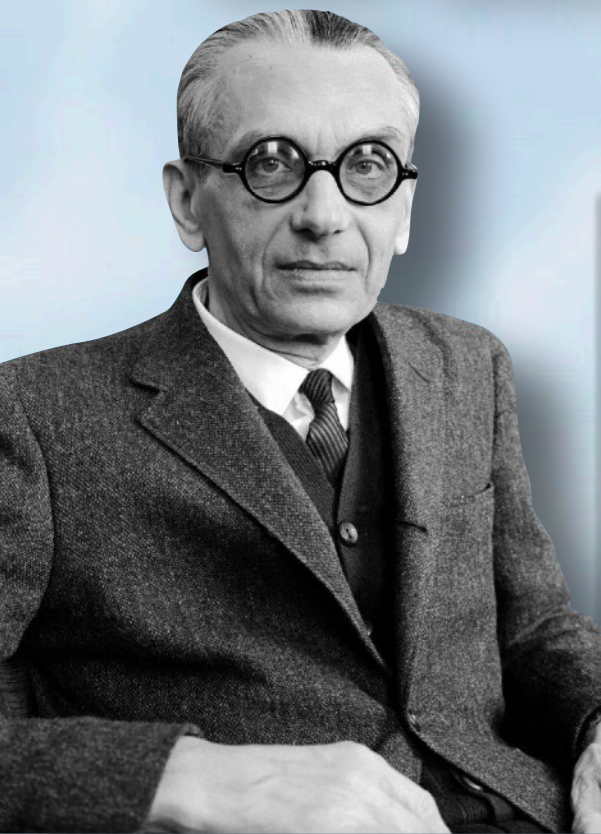


A Gödelian Argument for Supernaturalism

Premise 1: No sufficiently complex system can be internally consistent, complete, and self-explaining.

Premise 2: Nature is a sufficiently complex system.

Conclusion: Therefore, nature requires an explanation beyond itself, which is by definition supernatural and non-material.

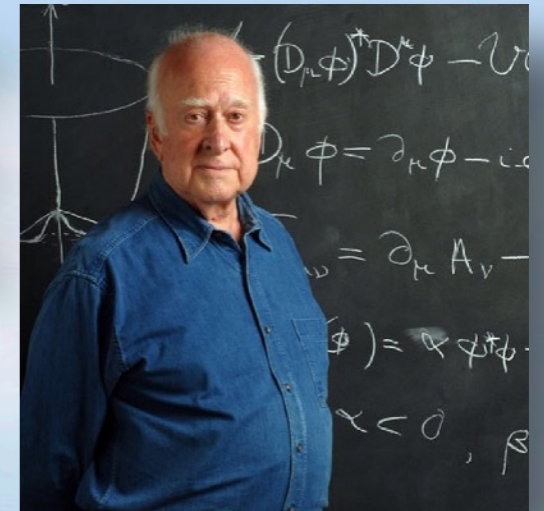


This statement
cannot be
proved true



The Uncanny Effectiveness of Math

Why can a scientist like Peter Higgs sit down at his desk and predict a particle in 1964, which is only found fifty years later with billion dollar effort at CERN in 2012?



- Eugene Wigner (1960) *“The Unreasonable Effectiveness of Mathematics in the Natural Sciences”*: „... the enormous usefulness of mathematics in the natural sciences is something bordering on the mysterious and that there is no rational explanation for it.”
- Galileo Galilei *“The book of nature is written in the language of mathematics”*
- Stephen Hawking *“What is it that breathes fire into the equations and makes a universe for them to describe?”*
- John Archibald Wheeler *“Why these particular equations and not others?”*

The Uncanny Effectiveness of Math

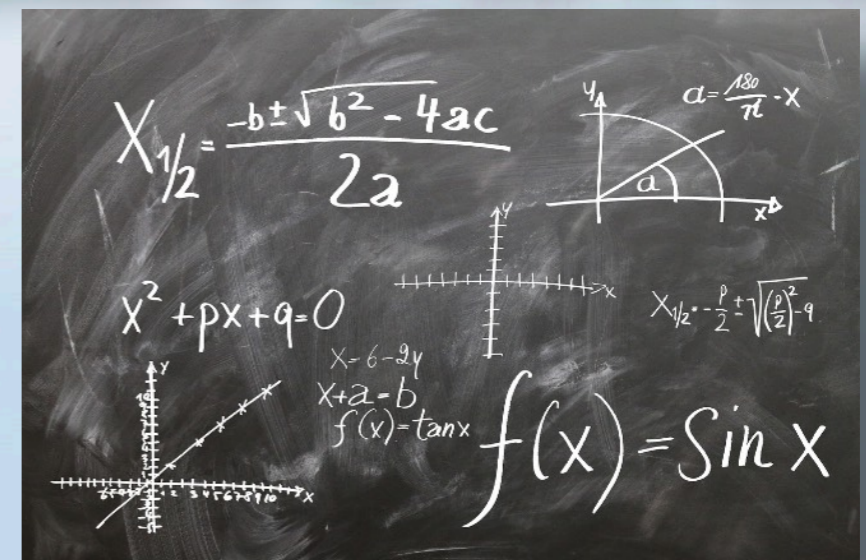
Premise 1: If mathematics exists just in our heads, then its effectiveness is just a lucky coincidence.

Premise 2: If mathematics exists in a platonic realm of ideas, it could not affect the world and its effectiveness is just a lucky coincidence. (Except: Tegmark's mathematical monism)

Premise 3: Only if mathematics exists as ideas in a universal mind, who created and sustains the world according to mathematical regularities, its effectiveness is not just a lucky coincidence.

Premise 4: The effectiveness of math cannot be just a lucky coincidence.

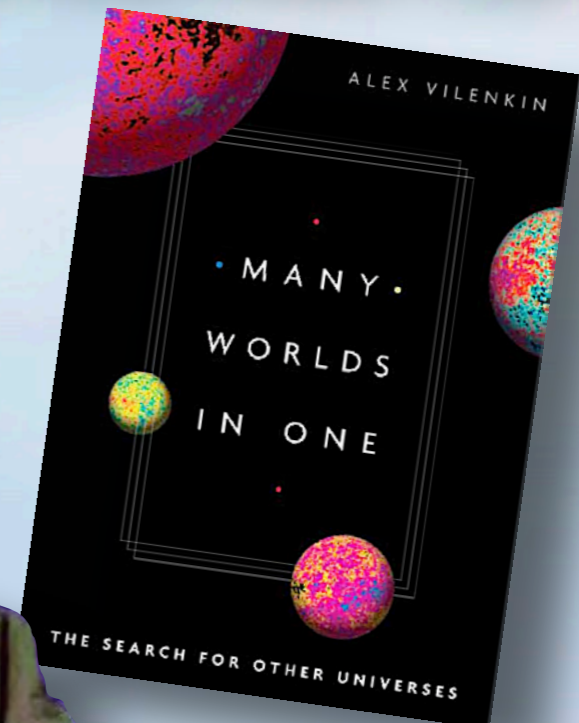
Conclusion: Therefore, a universal mind must exist



Laws from a Lawgiver

Alexander Vilenkin (2006: final page) “Many Worlds in One”:

“It follows that the laws should be „there“ even prior to the universe itself. ... In the absence of space, time, and matter, what tablets could they be written upon? The laws are expressed in the form of mathematical equations. If the medium of mathematics is the mind, does this mean that mind should predate the universe?”



Where do the Laws of Nature come from?

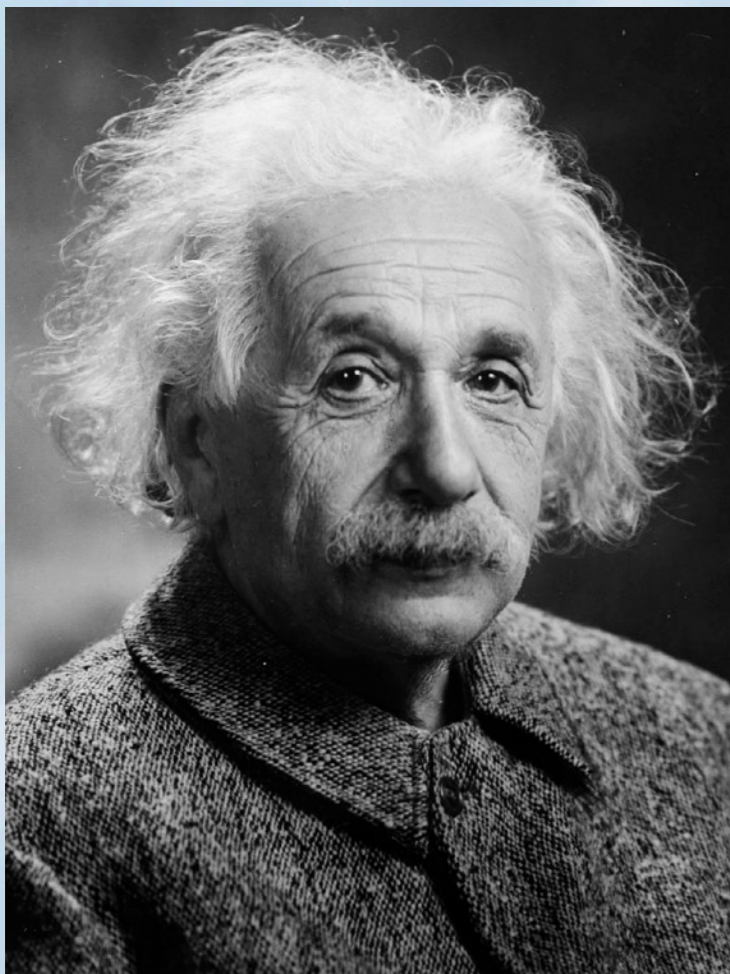
... and what explains the causal connection between these abstract mathematical laws and the material physical world?



Where do the Laws of Nature come from?

Albert Einstein (1936):

*“The eternal mystery of the world is its comprehensibility ...
The fact that it is comprehensible is a miracle.”*



$$D = \frac{1}{c} \frac{1}{l} \frac{dl}{dt} = \frac{1}{c} \frac{1}{P} \frac{dP}{dt}$$

$$D^2 = \frac{1}{P^2} \frac{P_0 - P}{P} \sim \frac{1}{P^2} \quad (1a)$$

$$D^2 = \frac{K_0}{3} \frac{P_0 - P}{P} \sim \frac{1}{3} K_0 \quad (2a)$$

$$D^2 \sim 10^{-53}$$

$$e \sim 10^{-26}$$

$$P \sim 10^8 \text{ g/cm}^3$$

$$\tau \sim 10^{10} (10^{11}) \text{ s}$$

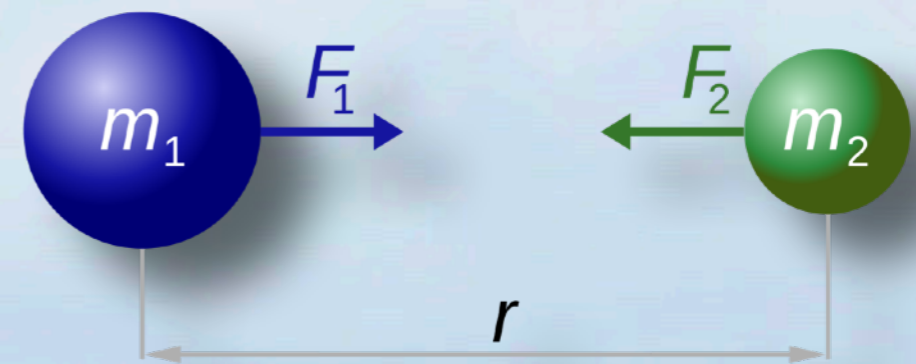
Where do the Laws of Nature come from?

Premise 1: Laws of Nature cannot be the ultimate explanation of the cosmos, because they cannot explain themselves.

Conclusion 1: Therefore, the Laws of Nature require an explanation for their existence beyond nature and its laws.

Conclusion 2: The best explanation is an intelligent designer as “law giver”, who created the cosmos according to mathematical principles.

The assumption of an orderly creation by God as law giver is indeed the historical reason, why natural science was invented in the West.

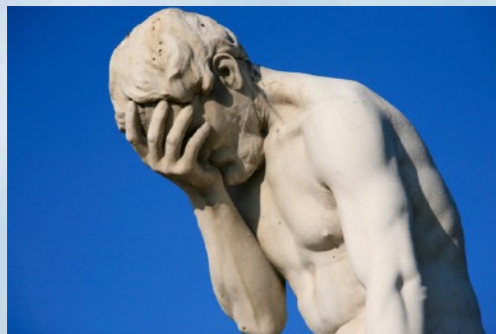


$$F_1 = F_2 = G \frac{m_1 \times m_2}{r^2}$$

Leibniz' Fundamental Question

Why is there anything rather than nothing?
(Ex nihilo nihil fit = from nothing nothing comes)

Materialism cannot explain the existence of our contingent world and therefore materialists often resort to absurd and self-contradictory claims:



"Nothing is unstable"
(Victor Stenger, Lawrence Krauss)



Stephen Hawking (2010):
"Because there is a law such as gravity, the universe can and will create itself from nothing"

Leibniz' Fundamental Question

Premise 1: Either the world exists without explanation, or all possible worlds exist, or there necessarily exists a principle of limitation.

Premise 2: The options of no explanation and of modal realism are both absurd (PSR).

Premise 3: The principle of limitation can either be platonic axiarchism or a personal mind endowed with free will.

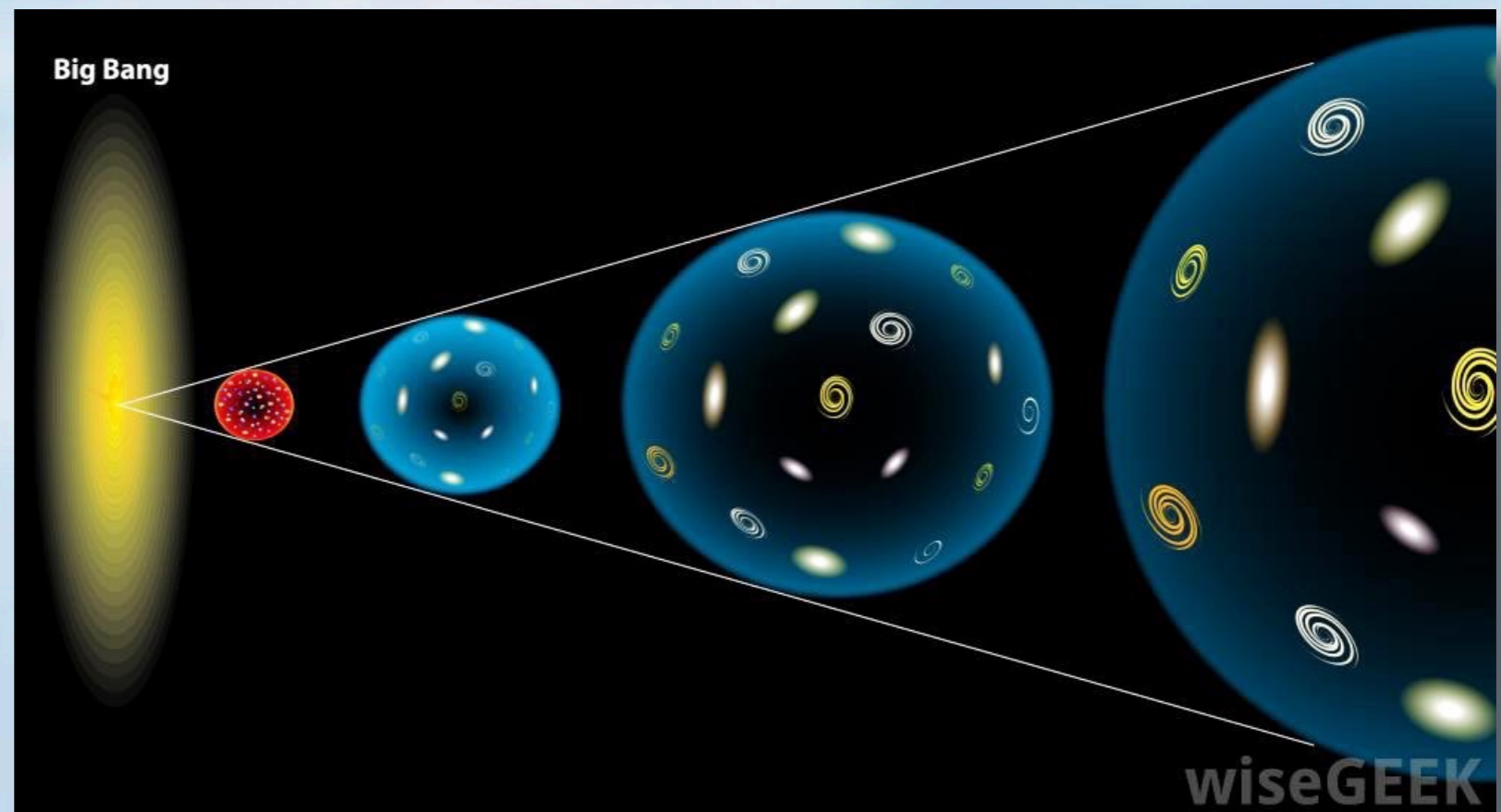
Premise 4: Platonic axiarchism is unintelligible.

Conclusion: Therefore the explanation of the world must be a necessarily existing mind.



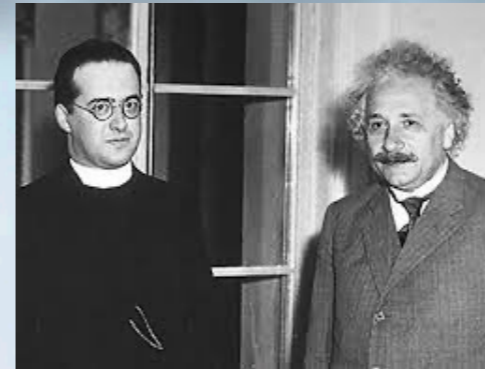
The Universe had a Beginning

Modern cosmology proves a cosmic beginning, and thus refutes materialism, because a contingent and temporally finite nature (space, time, matter, and energy) cannot explain itself, so that its explanation necessarily has to be supernatural (timeless, spaceless, and immaterial).



The Universe had a Beginning

Big Bang and expansion (1927 by Georges Lemaître, based on Einstein's equations)



Redshift of galaxies (1929 by Edwin Hubble)



Insulting nickname "*Big Bang*" (1949 by Fred Hoyle)



Cosmic Background Radiation (1964 by Arno Penzias & Robert Woodrow Wilson)



The Universe had a Beginning

Borde-Guth-Vilenkin Theorem:

“Any universe that has, on average, been expanding throughout its history cannot be infinite in the past but must have a past spacetime boundary”



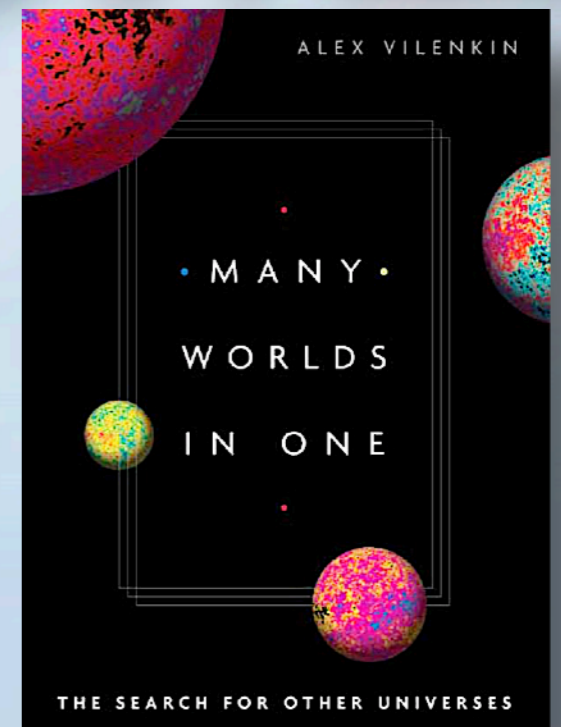
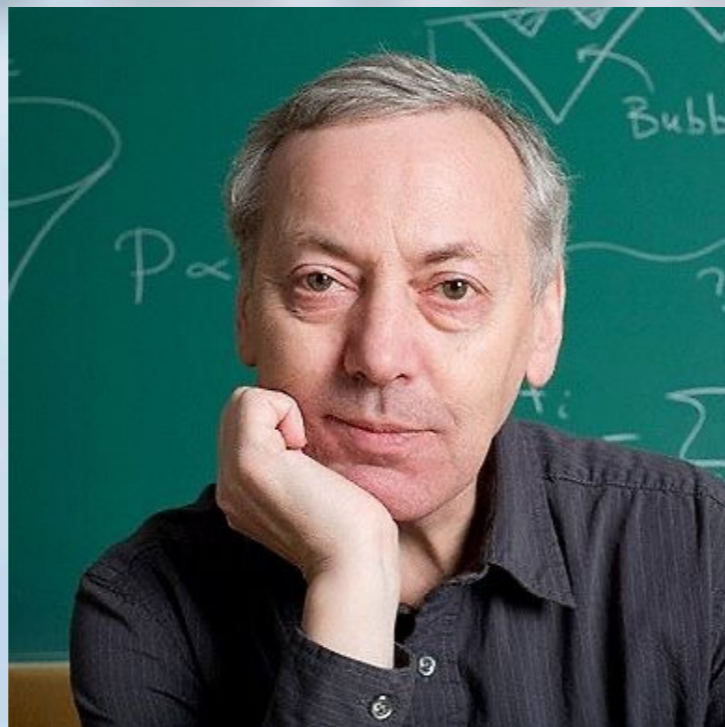
This even applies to a potential inflationary multiverse.

Vilenkin (2017) said that no viable cosmological model can escape the conclusion of this theorem.

The Universe had a Beginning

Alexander Vilenkin (2006: page 176) “Many Worlds in One”:

“It is said that an argument is what convinces reasonable men and a proof is what it takes to convince even an unreasonable man. With the proof now in place, cosmologists can no longer hide behind the possibility of a past-eternal universe. There is no escape: they have to face the problem of a cosmic beginning.”



Argument for a First Cause

KALAM Cosmological Argument:

Premise 1: Everything that has a temporal beginning (is contingent, does not exist necessarily) requires a cause.

Premise 2: The universe has a beginning (it is not past infinite) and is contingent.

Conclusion 1: Therefore, the universe has a cause.

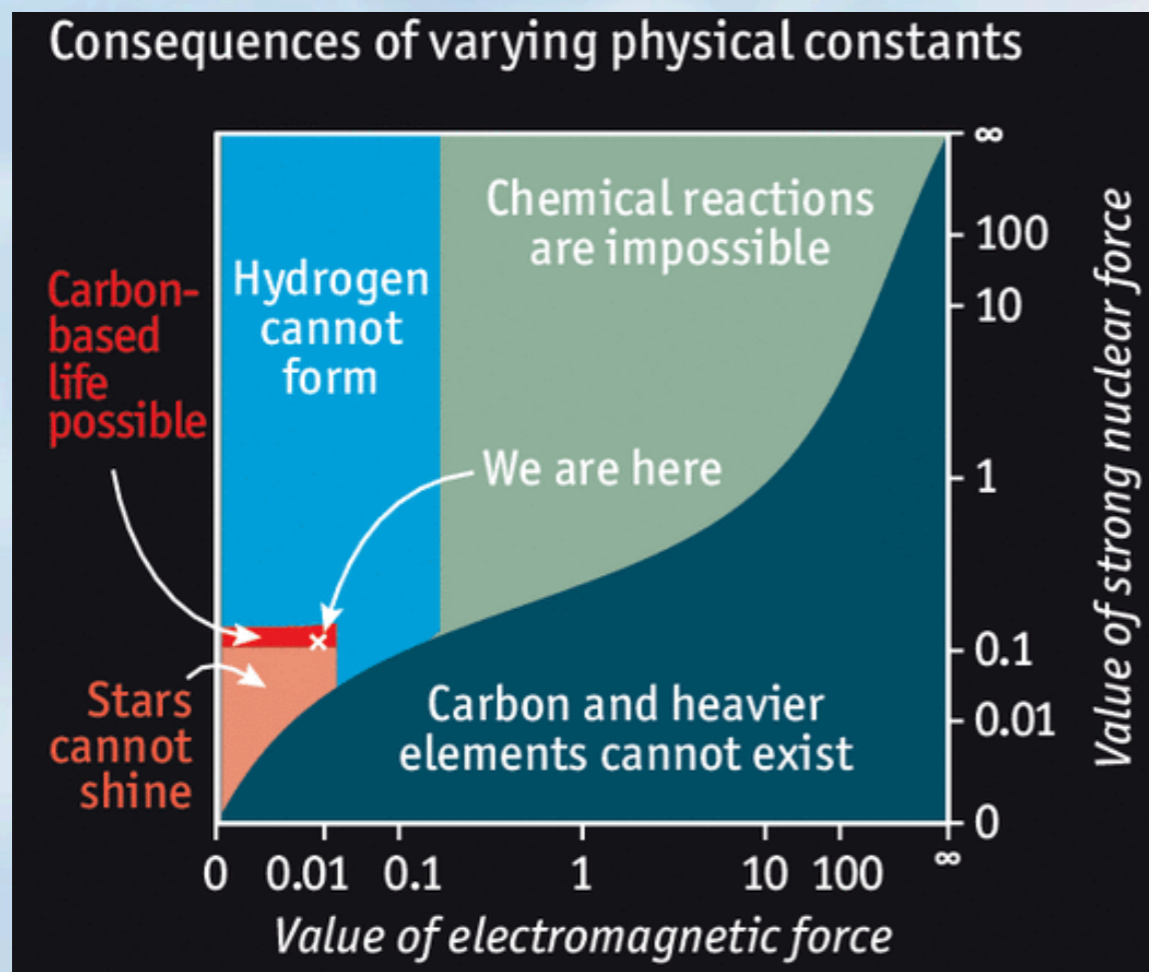
Conclusion 2: This cause must be spaceless, timeless, immaterial, powerful enough to bring the universe into being, and personal with free will, because otherwise a timeless cause could not have a temporal effect.



The Fine-Tuning of the Universe

Just 3 examples of 50 numbers:

- **Cosmological Constant: 1 to 10^{120}**
- **Gravitational Constant: 1 to 10^{60}**
- **Entropy: 1 to 10.000.000.000¹²³**



These fine-tuned constants are arbitrary. Their values are not defined by the laws of physics. There is no known reason that they had to be this way.

The Trouble with Puddle Thinking

A puddle says „*Hey look how neatly the shape of this hole exactly fits my body, it must have been especially made for me*“

The explicit claim is: The universe is not fine-tuned for life, but life is fine-tuned to the universe.

The implicit claim is: Life could be fine-tuned to any universe.

However, the puddle analogy fails miserably because of a fundamental difference:

**Any hole fits the bill,
thus it is not a rare match
(there is no fine-tuning)!**



Luke Barnes



The Fine-Tuning of the Universe

Quantum physicist David Deutsch (2006):

“If we nudge one of these constants just a few percent in one direction, stars burn out within a million years of their formation, and there is no time for evolution. If we nudge it a few percent in the other direction, then no elements heavier than helium form. No carbon, no life. Not even any chemistry. No complexity at all.”



The Fine-Tuning of the Universe

An infinite multiverse is the only atheistic and naturalist explanation for this fine-tuning of nature. But this is ...:

- **extremely unparsimonious**
- **an unobservable multiverse is as metaphysical as the God hypothesis**
- **scientifically refuted by the “measure problem”**
- **empirically refuted through our regular and orderly observations (“freak observer problem”, Boltzmann brains)**
- **refuted by fine-tune-ability (John Leslie)**
- **Multiverse generator needs fine-tuning itself**



The Fine-Tuning of the Universe

Premise 1: The fine-tuning is either due to chance, necessity (laws), or design.

Premise 2: The fine-tuning is neither physically necessary nor plausibly due to chance (universal probability bound).

Conclusion: Design is the best explanation for the fine-tuning. The designer of the universe must be beyond space and time, thus an immaterial cosmic mind.



The Fine-Tuning of the Universe

Premise 1: The fine-tuning of the universe is extremely specific and extremely unlikely.

Premise 2: The only possible explanations are an infinite multiverse or design (brute fact would not be an explanation).

Premise 3: An infinite multiverse is incompatible with the universe we observe (too big, too old, too regular).

Conclusion 1: Therefore, design is the best explanation.

Premise 4: The designer could not be within the universe (e.g., aliens).

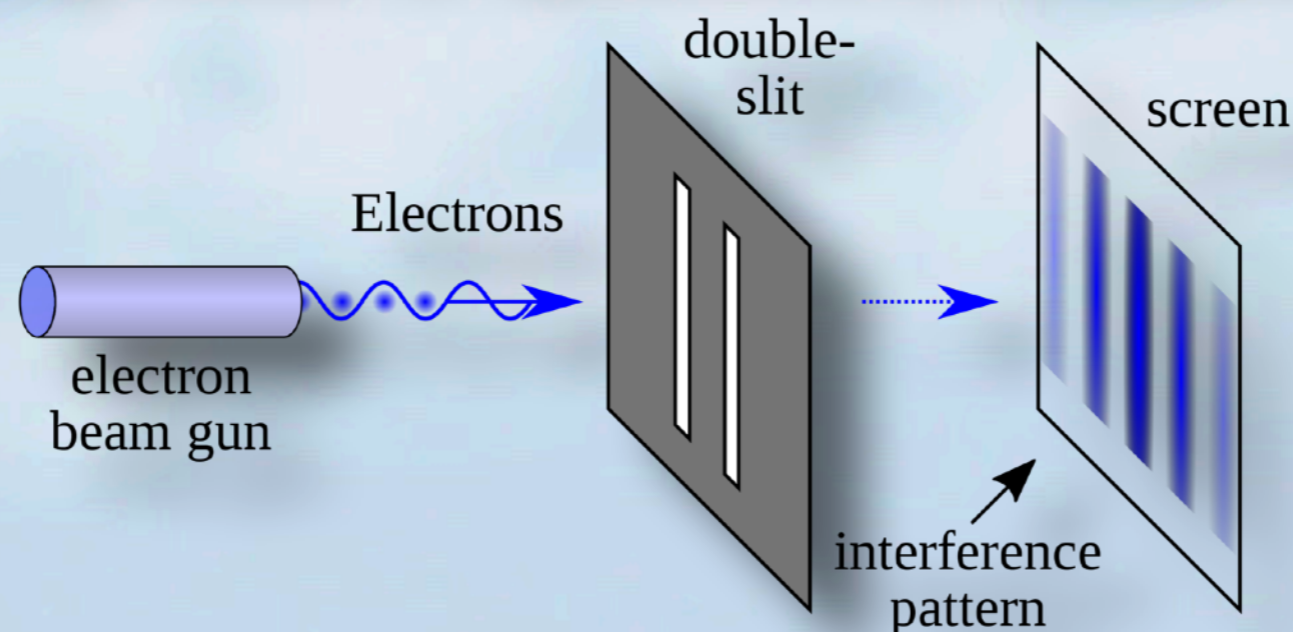
Conclusion 2: The designer of the universe must transcend the universe (God or the Matrix or both).

Quantum Mechanics vs Realism

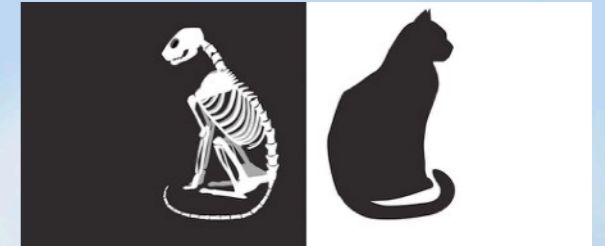
Einstein was wrong!

**The weird results from quantum mechanics
indeed refute ...**

- **a deterministic clockwork universe**
- **an observer-independent reality that has distinct properties if we observe it or not (naive realism)**
- **self-existing matter or spacetime (materialism)**



Quantum Mechanics vs Realism



- observer effect (double-slit experiment, quantum zeno)
- local hidden variables / local realism (refuted by violation of Bell's inequality, Aspect, spooky action at a distance)
- non-local hidden variables / non-local realism (refuted by violation of Leggett's inequality, Zeilinger / Gröblacher, before-before experiment)
- realism (refuted by non-local delayed choice quantum eraser creating a back-history)
- naive realism (refuted by proof of Kochen-Specker theorem, contextuality)
- quantum-classical border (refuted by violation of Leggett-Garg inequality and entangled macro-objects)

Quantum Mechanics vs Realism


DISCOVER VIDEO NEWSLETTERS PODCAST

BIG THINK

Objective reality may not exist, European researchers say

A new experiment shows that two observers can experience divergent realities (if they go subatomic).

KEVIN DICKINSON 11 April, 2019



sciencealert

Trending

agsandrew/Shutterstock.com

Reality Doesn't Exist Until We Measure It, Quantum Experiment Confirms

FIONA MACDONALD 1 JUN 2015

Australian scientists have recreated a famous experiment and confirmed quantum physics's bizarre predictions about the nature of reality, by proving that reality doesn't actually exist until we measure it - at least, not on the very small scale.

IOP Publishing f t y v

physicsworld

quantum optics

QUANTUM OPTICS | RESEARCH UPDATE

Quantum physics says goodbye to reality

20 Apr 2007

Some physicists are uncomfortable with the idea that all individual quantum events are innately random. This is why many have proposed more complete theories, which suggest that events are at least partially governed by extra "hidden variables". Now physicists from Austria claim to have performed an experiment that rules out a broad class of hidden-variables theories that focus on realism – giving the uneasy consequence that reality does not exist when we are not observing it (*Nature* 446 871).

MIT Technology Review

Future of Work

A quantum experiment suggests there's no such thing as objective reality

Physicists have long suspected that quantum mechanics allows two observers to experience different, conflicting realities. Now they've performed the first experiment that proves it.

by Emerging Technology from the arXiv

Mar 12, 2019

Argument from the Wave Function

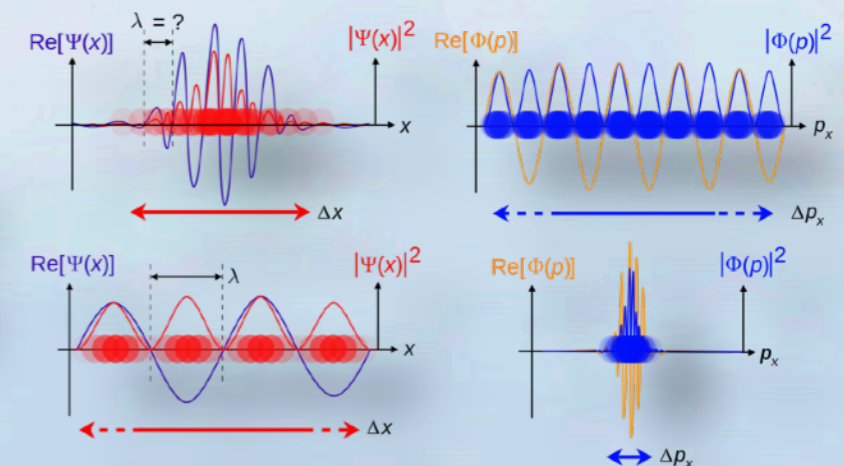
Premise 1: There is a wave function of the whole universe.

Premise 2: The wave function of quantum mechanics is real, but is not spatio-temporal but of mathematical nature (Dorato 2015).

Premise 3: Mathematical objects are abstract concepts that require a conscious mind as substrate.

Conclusion:

There is a universal mind beyond space and time, in which the wave function of the universe “lives”.

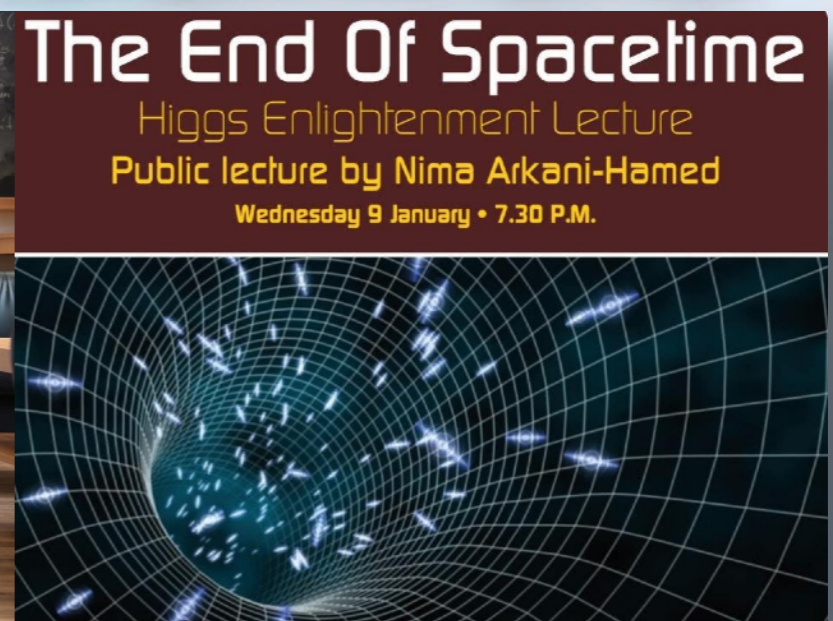
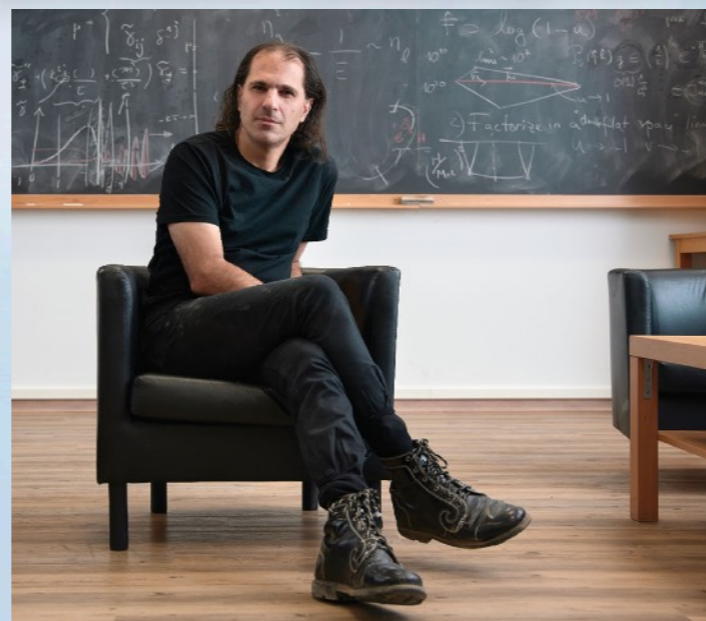


Spacetime is Emergent

Different lines of evidence all converge to the recognition that spacetime emerges from entangled quantum information:

- holographic principle (AdS/CFT correspondence)
- ER/EPR correspondence
- (A)dS/MERA correspondence
- UWF (entanglement and non-locality are universal)
- Before-Before Experiment (reality is non-spatiotemporal)
- quantum gravity

Leading theoretical physicist
Prof. Nima Arkani-Hamed
(Princeton Univ.)



Spacetime is Emergent



Max Tegmark (MIT)



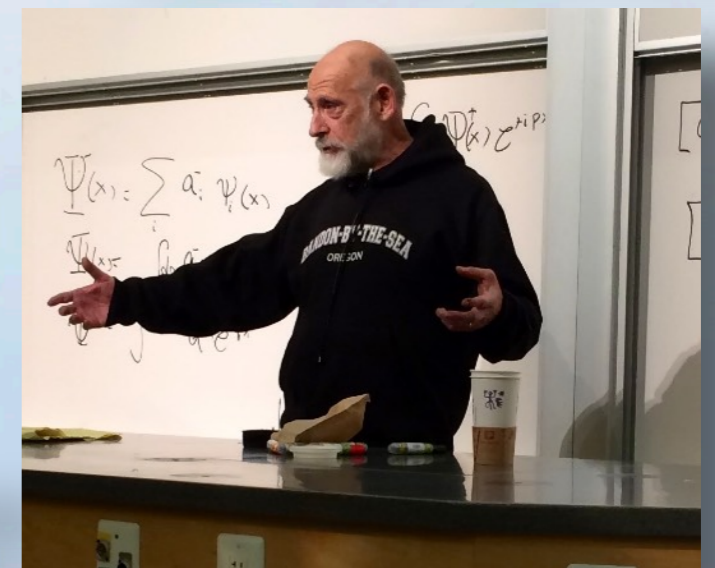
**Brian Greene
(Columbia Univ.)**



Sean Carroll (CalTech)



**Erik Verlinde
(Univ. Amsterdam)**



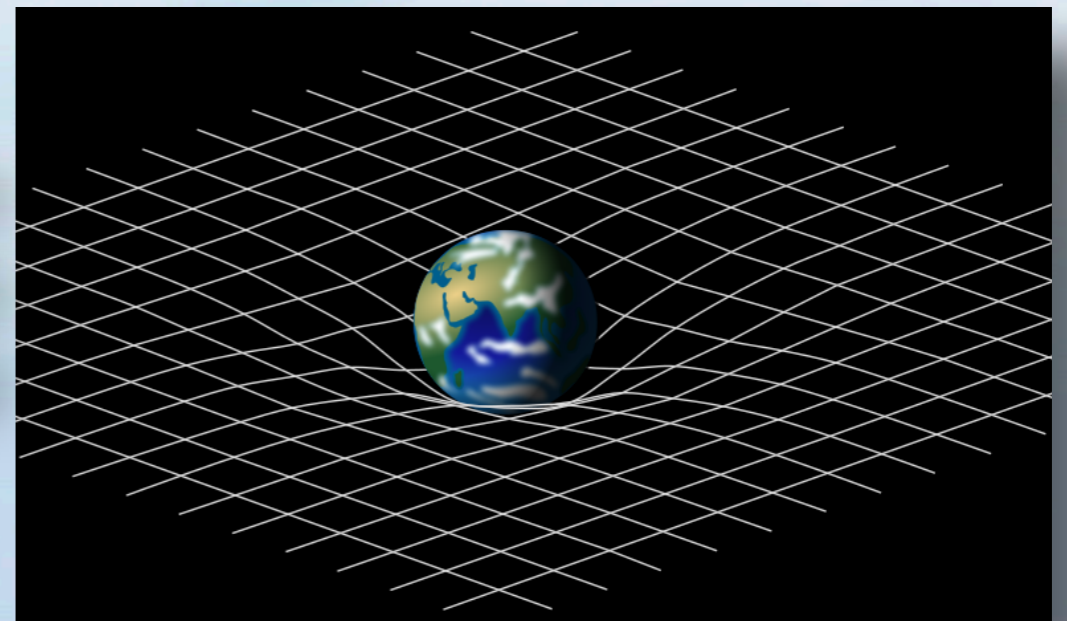
**Leonard Susskind
(Stanford Univ.)**

Argument from Emergent Spacetime

Premise 1: Space and time (and thus also matter and energy) are not fundamental but emergent from entangled quantum information.

Premise 2: Mathematical objects (such as quantum information) are abstract concepts that require a conscious mind as substrate.

Conclusion:
Spacetime emerges from a universal mind beyond space and time, which therefore must be uncreated and eternal.



Argument from Integrated Information

Premise 1: Spacetime emerges from entangled quantum information.

Premise 2: Entanglement of information is equivalent to integration of information.

Premise 3: Integration of information = consciousness (Tononi's *Integrated Information Theory*).

Conclusion 1: Spacetime emerges from consciousness.

Premise 3: There is a universal wave function, which implies the entanglement of all matter and information into a single integrated information state.

Conclusion 2: Physical reality emerges from a single universal consciousness.

Giulio Tononi



Argument from Simulation Theory

Many features of the universe suggest a simulation (digital physics) such as:

- creation from nothing at start (Big Bang)
- pixelation (quantization, Planck limits)
- maximum speed of light
- non-realism (reality is rendered on the fly when you look)
- non-locality („equidistance“ of CPU to all screen pixels)
- tunnel effect (Philip Rosdale „Second Life“)
- error correction code (MIT James Gates)

Nick Bostrom

Simulation in a computer would lead to infinite regress. Thus, the more parsimonious view is a simulation in an infinite non-spatiotemporal universal mind.



Argument from Intelligent Design

Premise 1: Certain features of the biological realm cannot be sufficiently explained by chance and necessity, but require the introduction of specified information from outside the system (= intelligent design).

Premise 2: All naturalistic designers (like space aliens) would imply an infinite regress.

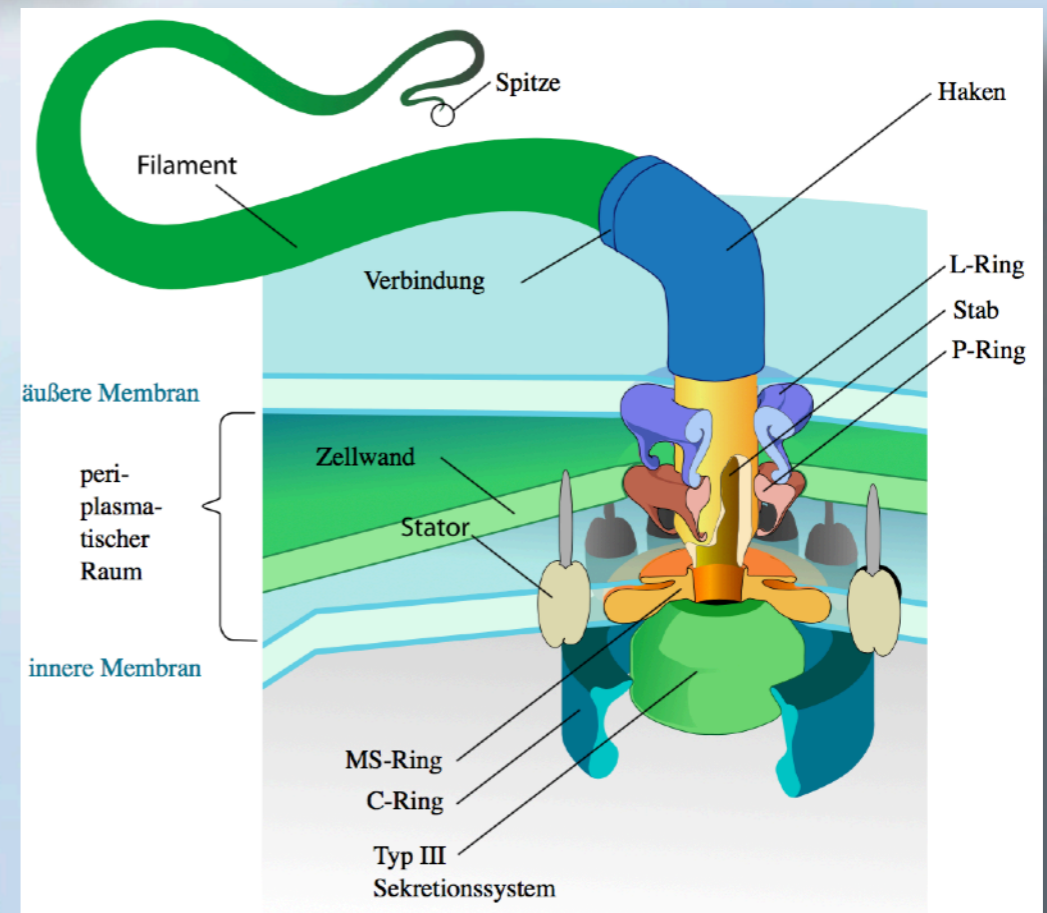
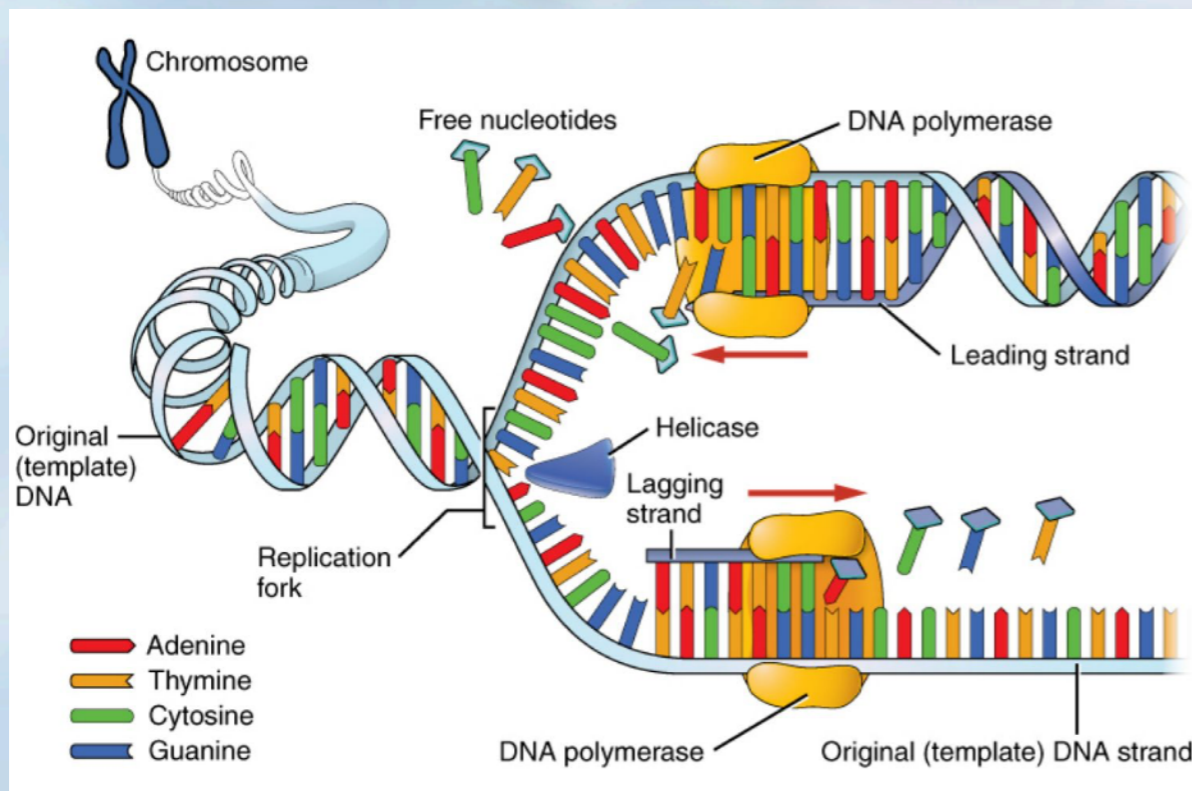
Conclusion: The best explanation is an uncreated supernatural designer.



DISCLAIMER: This is NOT an argument FOR intelligent design, but an argument FROM intelligent design.

Design-Arguments in Biology

- Origin of life (first replicator and causal circularity)
- Origin of the genetic code (information problem)
- Origin of new proteins (“needle in a haystack” problem)
- Origin of irreducible and specified complexity
- Discontinuities in the fossil record
- The waiting-time problem



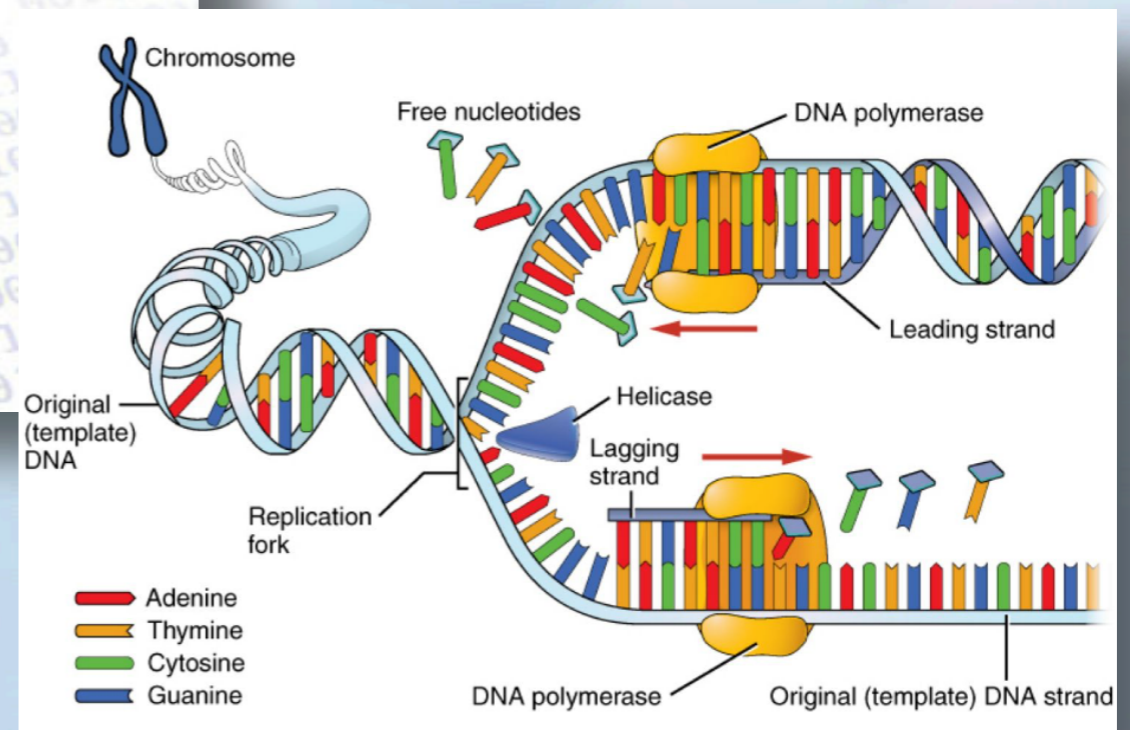
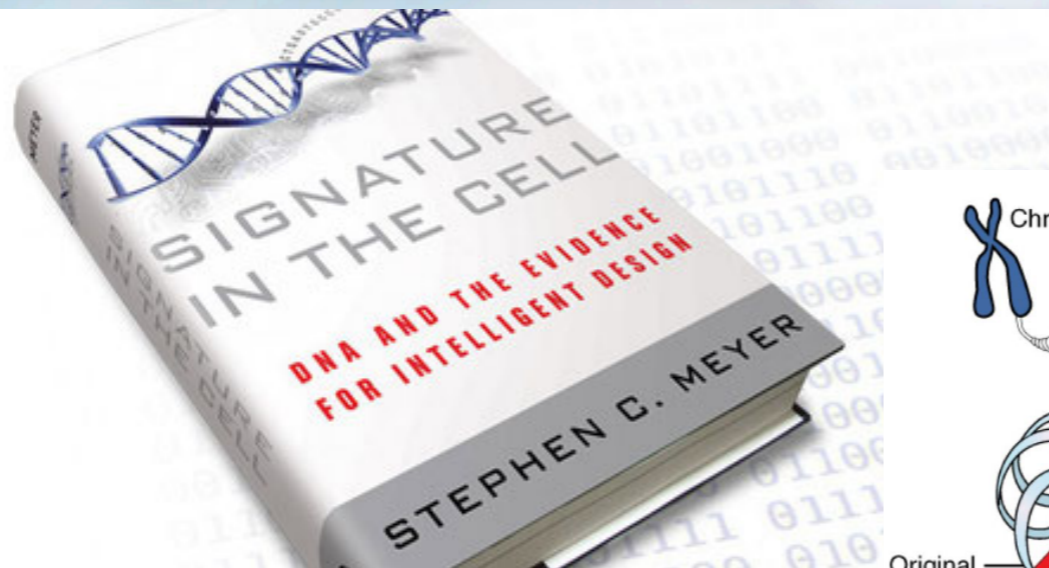


Origin of Life

Evolution presupposes a perfect system of self-replication and genetic code translation that cannot itself be explained with evolution. To solve this chicken-egg problem some biologists (e.g., Eugene Koonin) already consider an infinite ensemble of parallel universes.



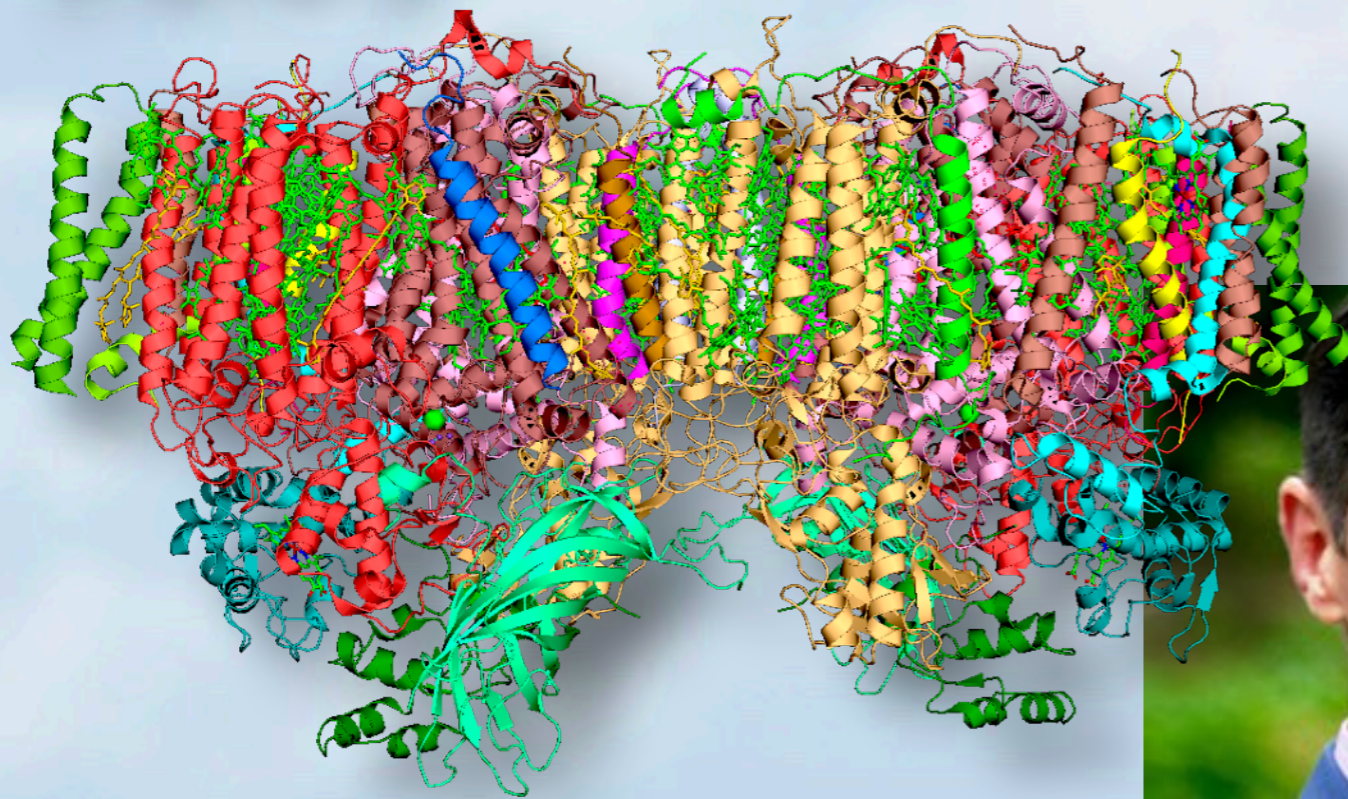
Dr. Stephen C. Meyer



Origin of New Protein-Folds



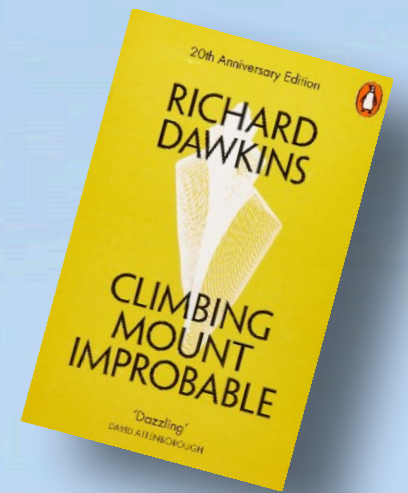
The origin of new functional proteins is a needle in a haystack problem that cannot be solved with Neo-Darwinism, because the search space of possible aminoacid sequences is much too big compared to the isolated islands of functional folds (1 in 10^{77}).



Prof. Douglas Axe

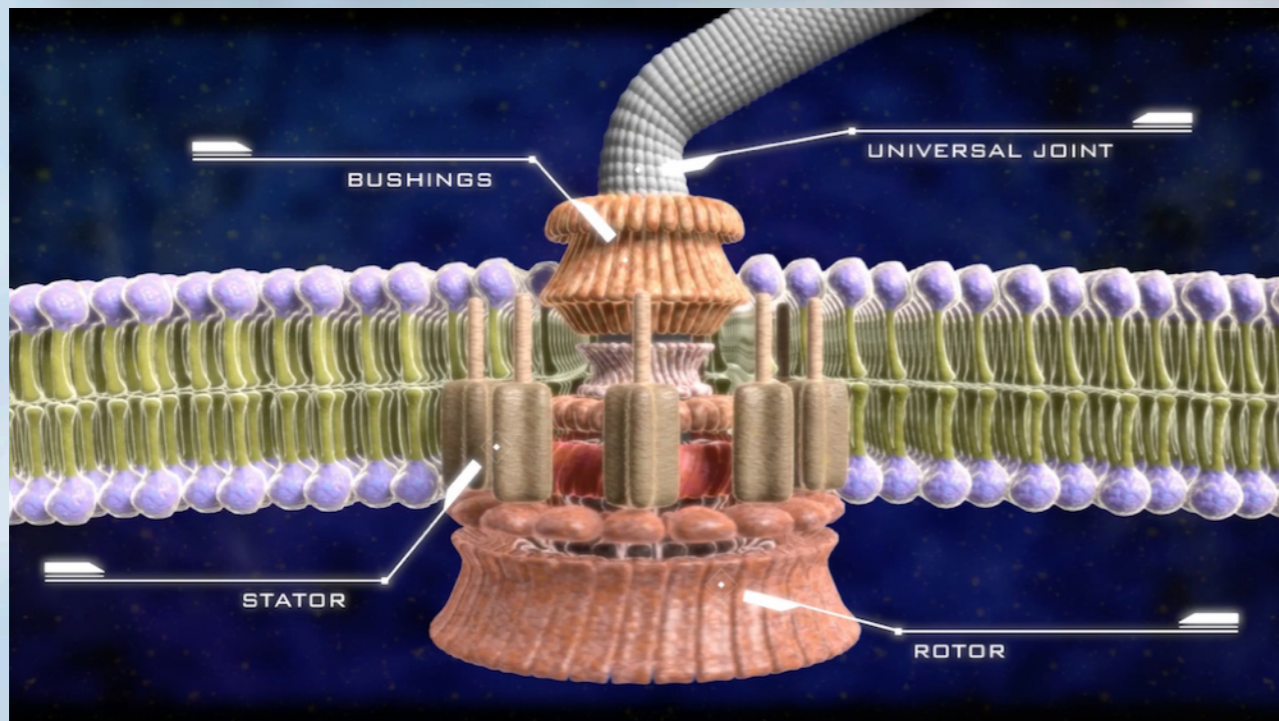


Irreducible Complexity



“Mountain Improbable” cannot be climbed with numerous small steps.

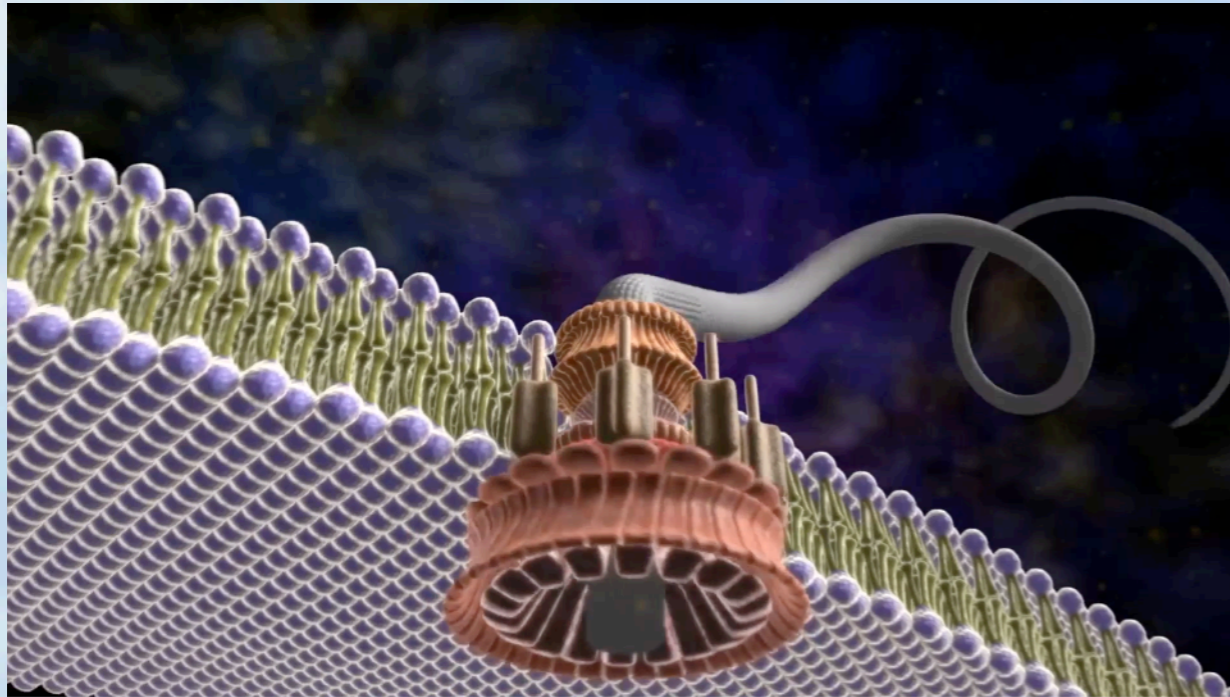
Charles Darwin (1859) *“If it could be demonstrated that any complex organ existed, which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down.”*



Prof. Michael Behe

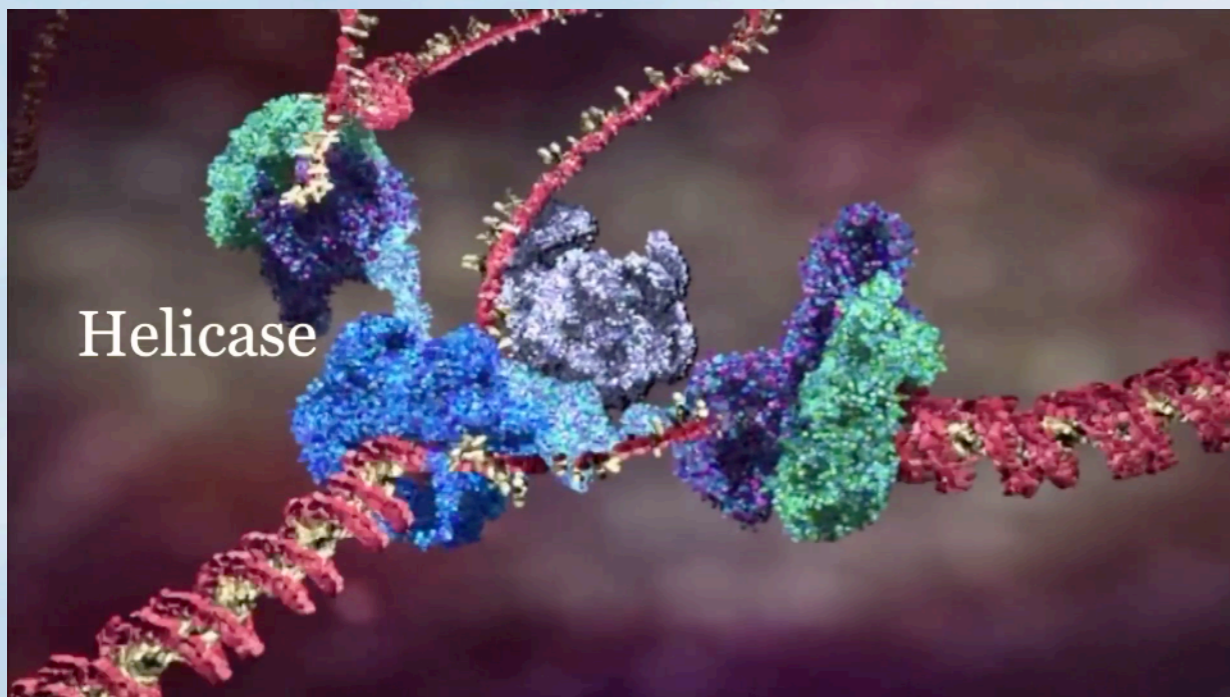


Molecular Machines in the Cell



Bacterial Flagellum:

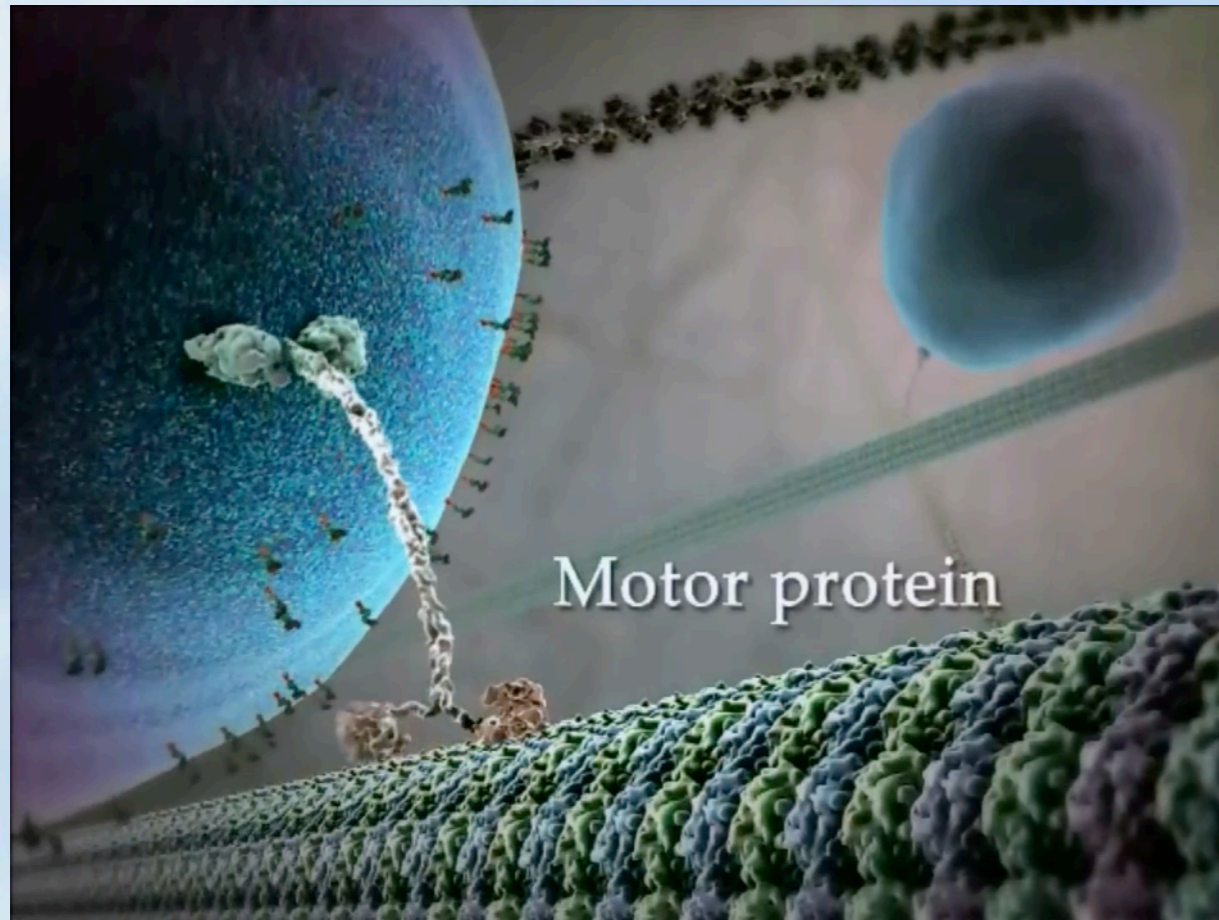
- electro motor with rotor, shaft, bushing, propeller
- 40 different proteins
- 100.000 RPM
- 1/4 turn to reverse direction of rotation



Helicase DNA-Replication:

- a double-sided copy machine

Molecular Machines in the Cell



Kinesin Motor-Protein:

- a walking transport robot

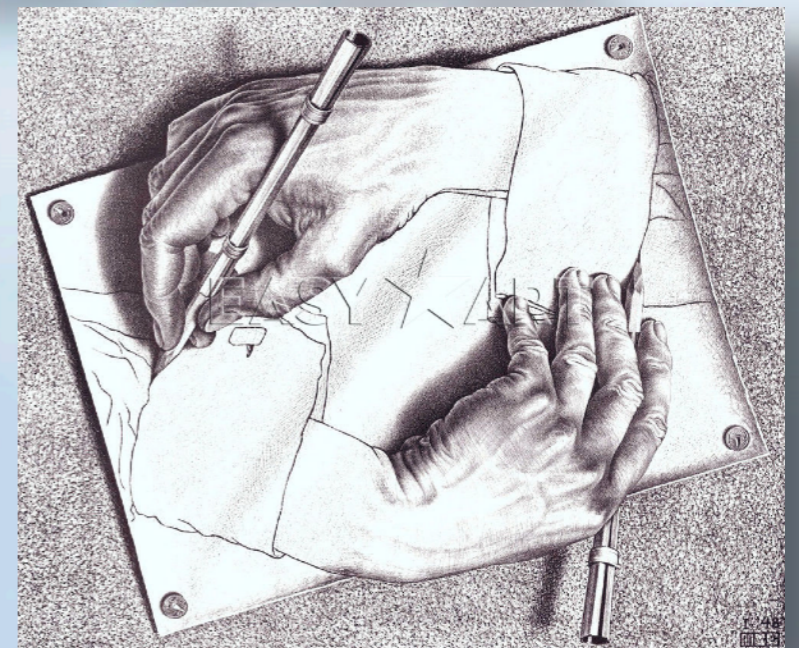
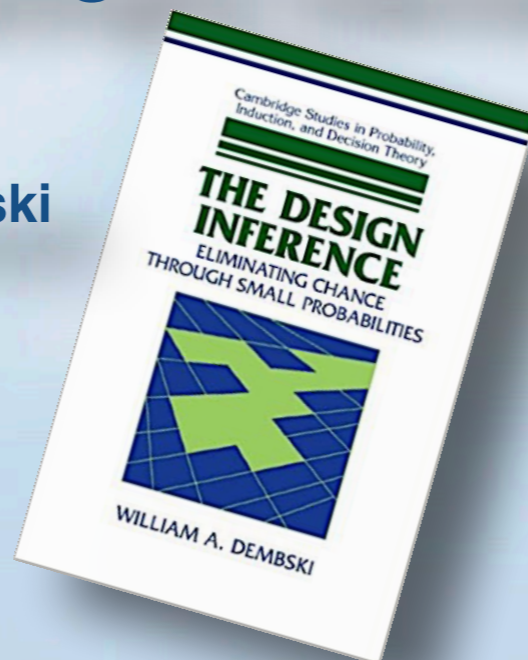
Complex Specified Information CSI

Complex specified information is only produced by intelligent agents! In our universe max. 500 Bit can be produced by unguided naturalistic processes.

No software programs itself or can be improved with random accidental changes of the code. No meaningful book can be transformed into another one by randomly changing letters and only selecting meaningful intermediate manuscripts.



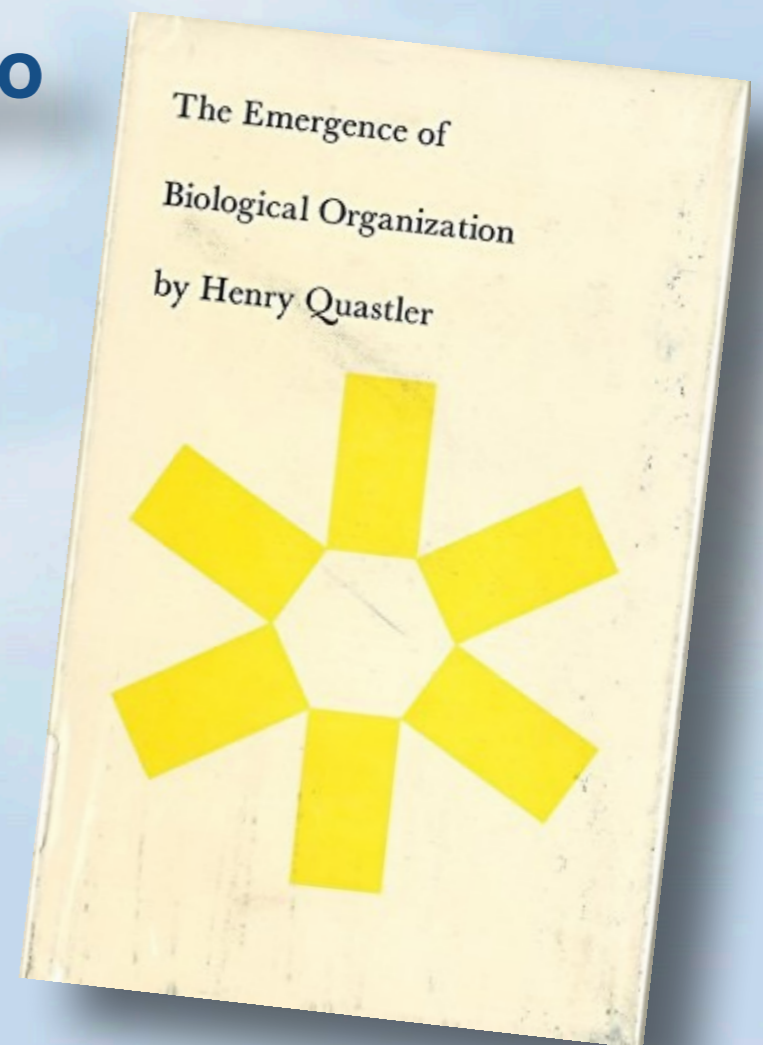
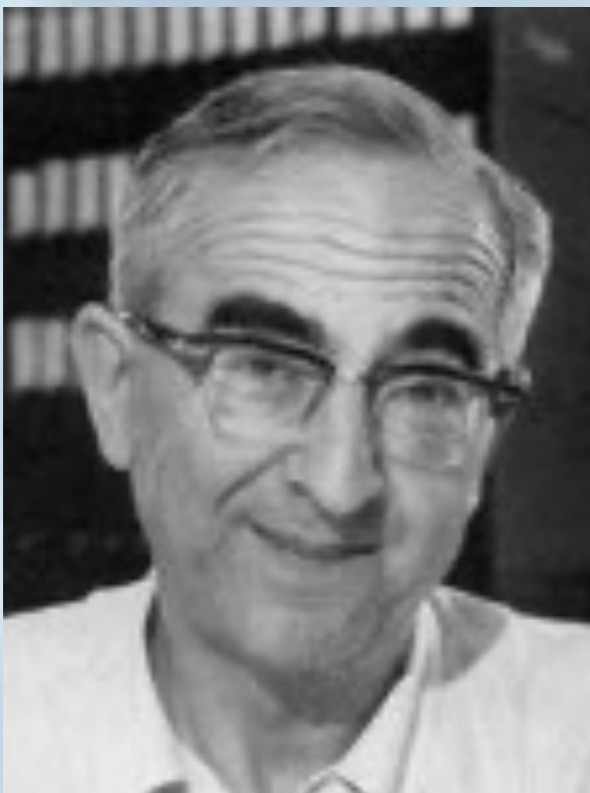
Dr. William Dembski



Information Science

“Information habitually arises from conscious activity”
(The Emergence of Biological Organization,
Yale Univ. Press, 1964: page 16)

**Austrian scientist Dr. Henry Quastler, who
pioneered information theory in biology.**



Causal Circularity

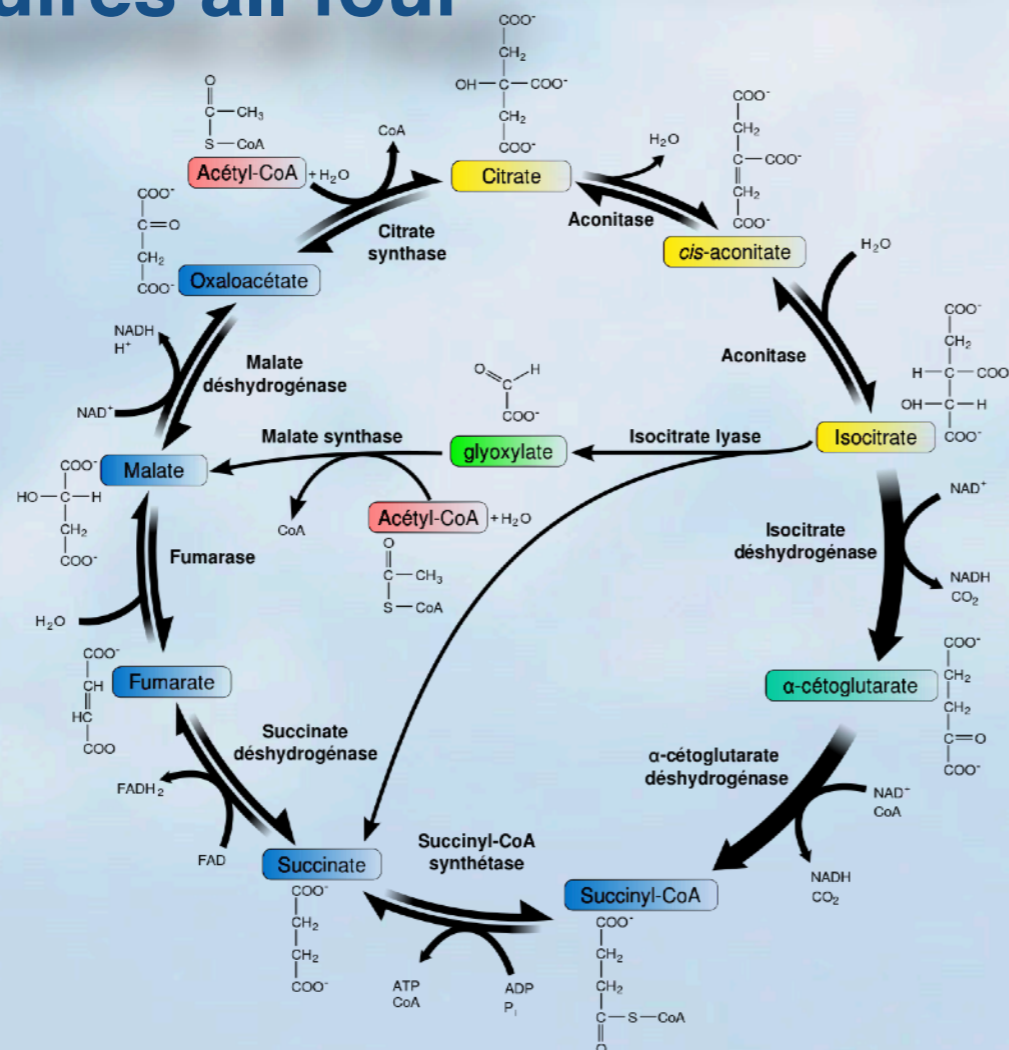
To make Adenine you need:

ATP: to make one ATP requires six ATP

NAD+: requires NAD+ and ATP

THF: requires ATP, NAD+ and THF

CoA: requires all four



Münchhausen bootstrapping

Dr. Ann Gauger



Discontinuities in the Fossil Record

- Abrupt origins (“explosions”)
- Top-down pattern
- Ghost lineages
- Stasis and “Living Fossils”
- No gradual species transitions

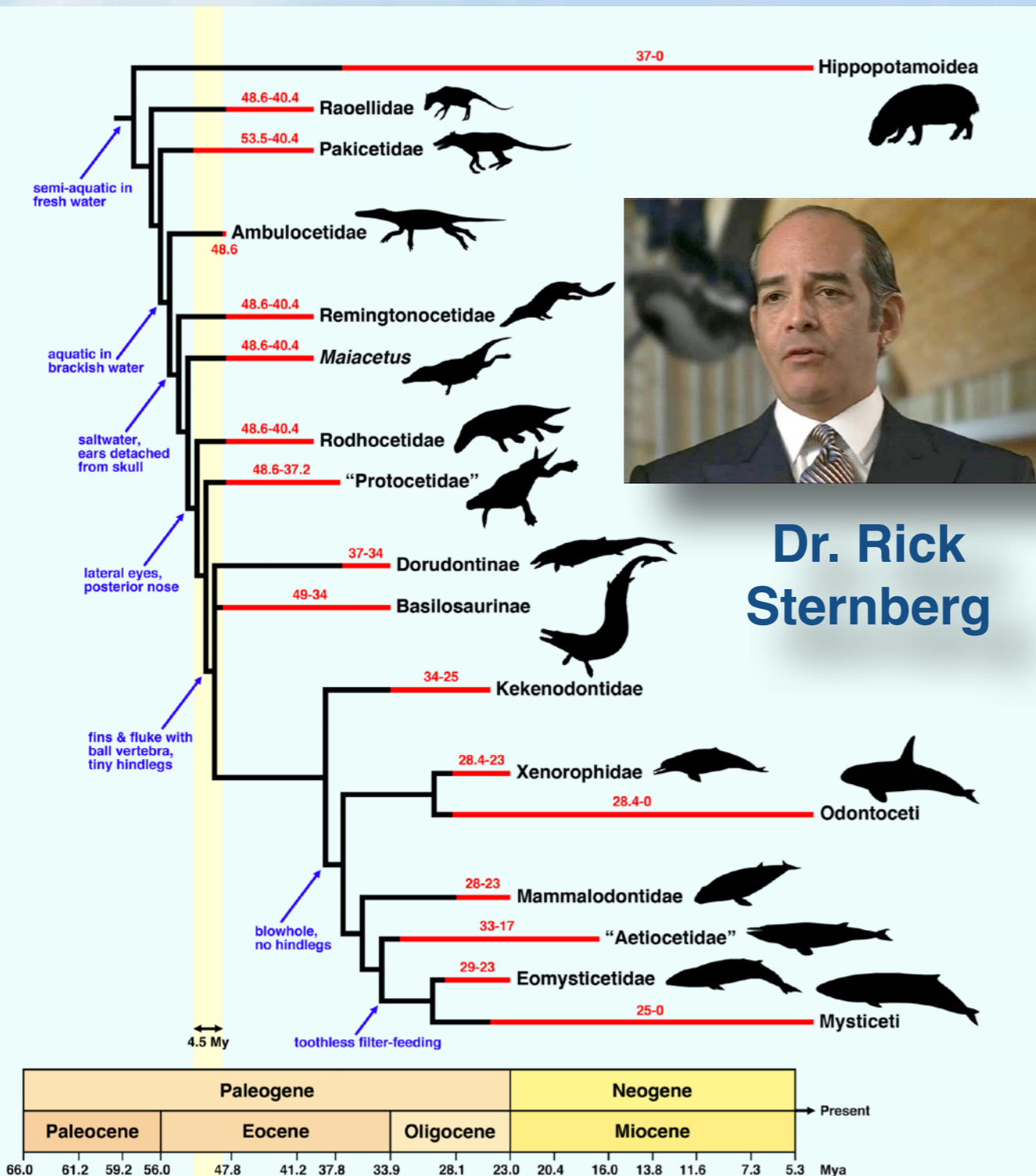




The Waiting Time Problem

The fossil record and population genetics combined do refute the mathematical feasibility of the Neo-Darwinian mechanism.

Geological available windows of time are much too short to accommodate the required genetic changes to arise and spread in the ancestral populations.



Mainstream Evolutionists Admit the Problem

Renowned evolutionary biologist Prof. Gerd Müller at his keynote talk to the conference “*New Trends in Evolutionary Biology*” at the Royal Society in London in November 2016.

THE ROYAL SOCIETY



- explanatory deficits of the MS theory
- phenotypic complexity
 - biases in the generation of variation
 - phenotypic novelty
 - non-gradual forms of transition
 - non-genetic factors of change

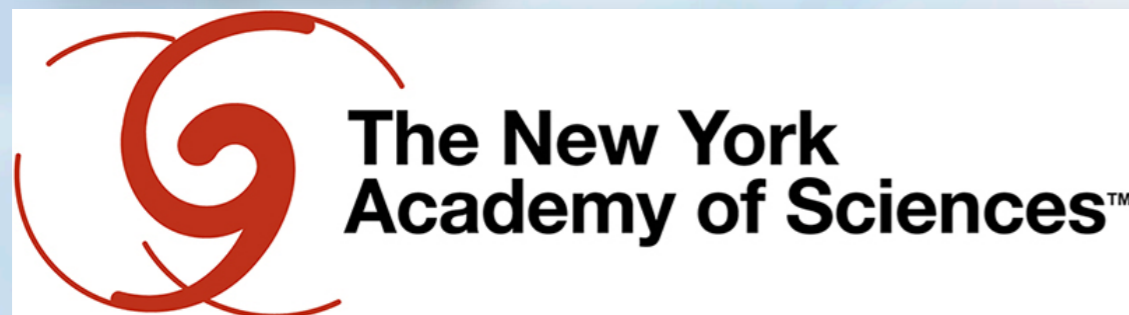
explanatory deficits of the MS theory

- phenotypic complexity ←
- biases in the generation of variation
- phenotypic novelty ←
- non-gradual forms of transition ←
- non-genetic factors of change



Neo-Darwinism Declared Dead in 2018

From the conference website: *“For more than half a century it has been accepted that new genetic information is mostly derived from random, error-based’ events. **Now it is recognized that errors cannot explain genetic novelty and complexity.**”*



Even Atheists Agree ...

... like atheist philosopher Thomas Nagel (2012) in his bestseller “*Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False*”.
Oxford University Press, 144 p.



Questions & Answers



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