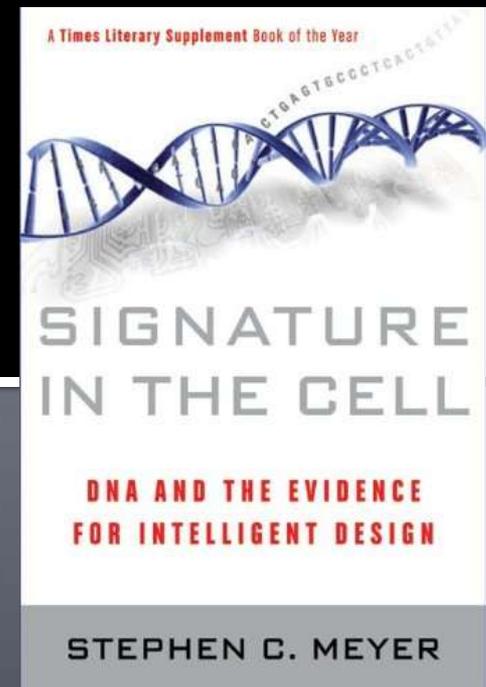


The case for “intelligent design” based on DNA

Book and topic review by Jason Browning

Signature in the Cell

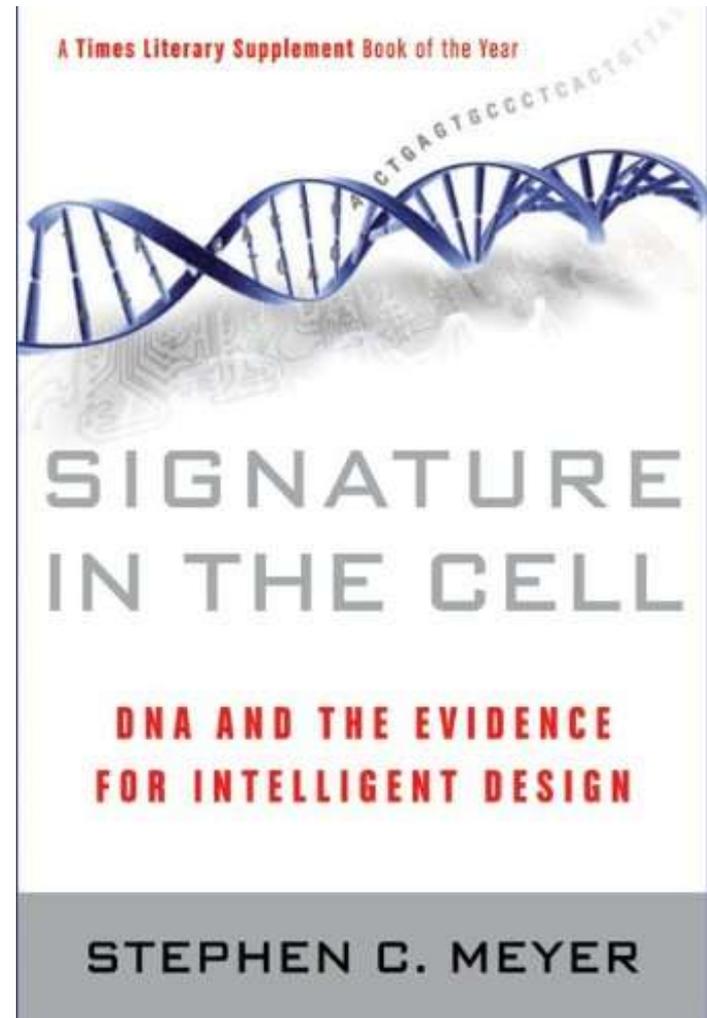
Stephen C. Meyer



Signature in the Cell (2009)

www.signatureinthecell.com

- How cutting-edge science reveals the design hypothesis as the best explanation for the origin of the information necessary to produce the first life
- A Times Literary Supplement 2009 “Book of the Year” by Thomas Nagel



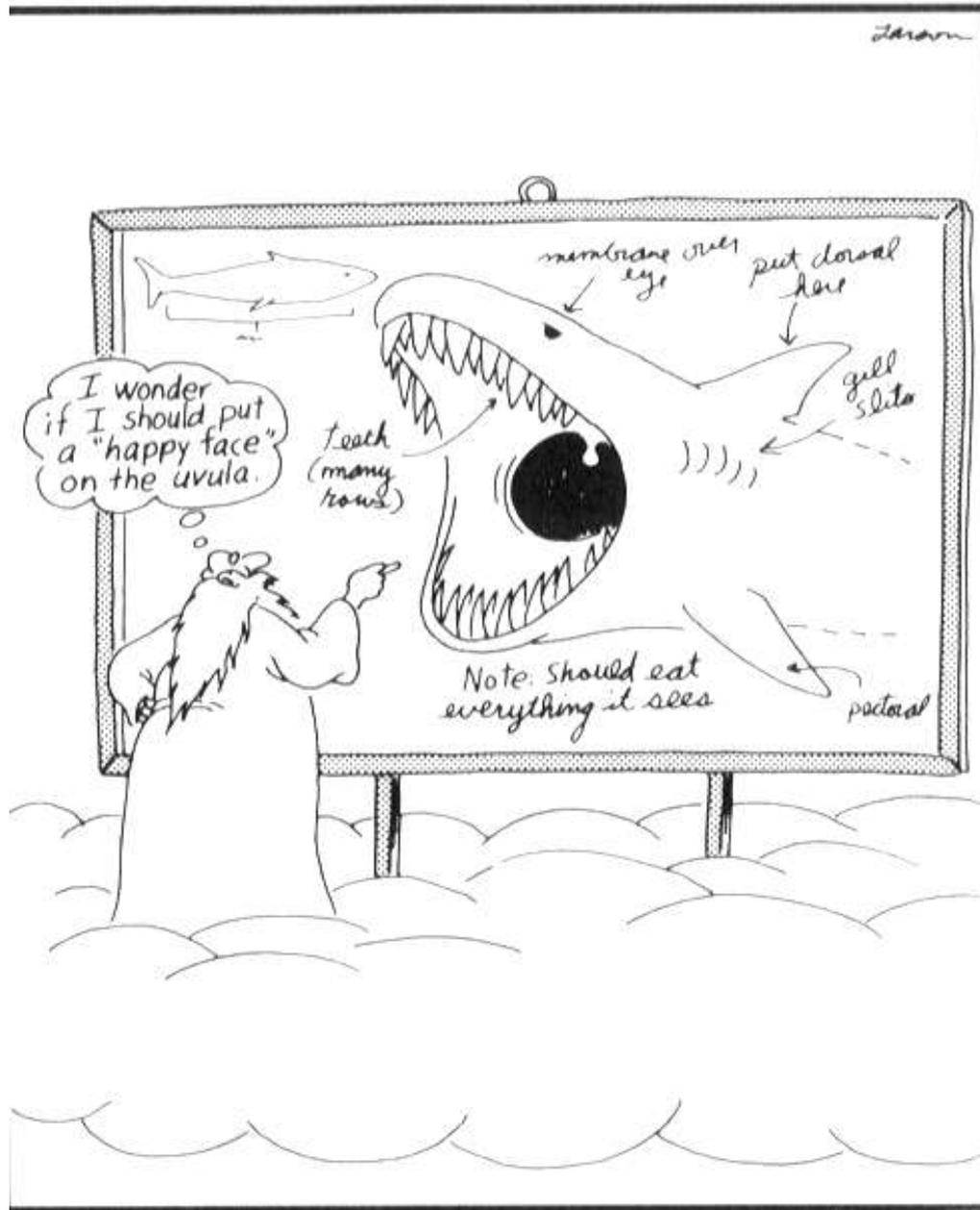
Stephen C. Meyer

- Ph. D. History and Philosophy of Science, Cambridge, 1991
- M. Phil. History and Philosophy of Science, Cambridge, 1987
- B.S. Physics/Earth Science, Whitworth, 1981
- Director and Senior Fellow at the Discovery Institute, Seattle, WA



What is “Intelligent Design”?

- Intelligent Design = the study of intelligent causes and their effects
- “Design” is rigorously formulated as a scientific theory of information
- Life demands an explanation
- Darwinism tries to make physical causes do the work of an intelligent cause



God designs the great white shark

Only two views of reality

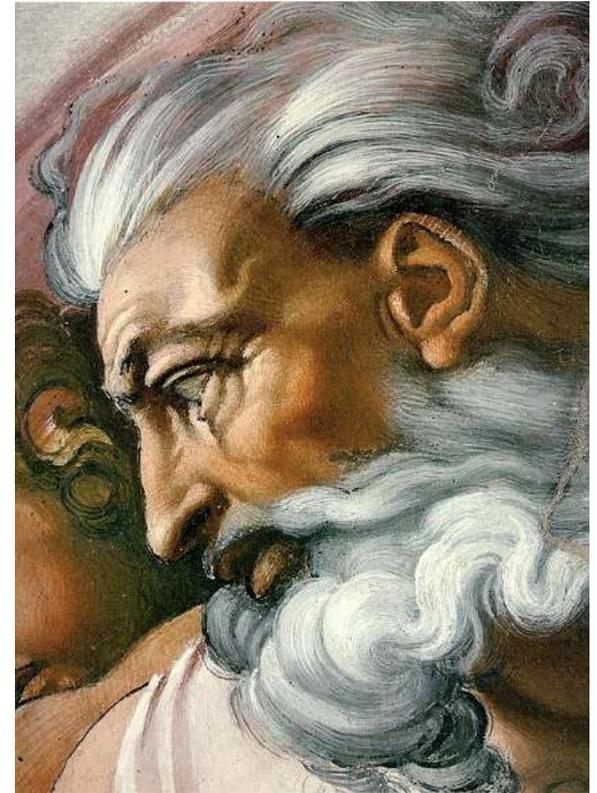
God

■ IS

- He created the universe and us
- The Bible and Christianity

■ ISN'T

- A natural process of evolution must have taken place
- Religion is man-made



Stated another way...

The ultimate reality is

■ Mind

- Material reality issues from a preexisting mind or shaped by a preexisting intelligence

■ Matter/energy

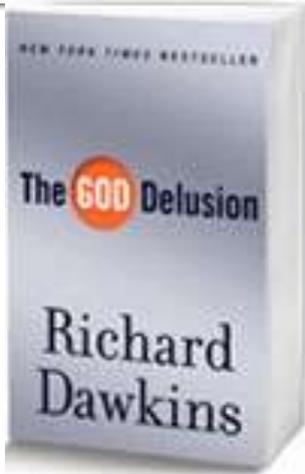
- Everything comes from matter/energy
- Matter comes first – conscious mind arrives much later and only then as a by-product of material processes

We live in a confused world

So many “authoritative” views regarding origins, what is really true?



The God Delusion



- Sold over 2 million copies to date
- In late 2006:
 - #2 on Amazon.com
 - #4 on New York Times Hardcover Nonfiction Bestseller list
- The main conclusion of the book:
 - “The factual premise of religion – the God Hypothesis – is untenable. God almost certainly does not exist.” (page 189)

WHO ASKED FOR THAT?

Intelligent Design

Not satisfied with the biblical God who created the world in six days, creationists developed a “science” that aims to explain the supernatural force behind the whole shebang: intelligent design. Because we cannot reverse-engineer things like the human eye, they say, it follows that all must be designed by a higher being. (The human knee presumably came together during a moment of distraction.) This tactic had some success easing intelligent design/creationism into American public-school science lessons. But in 2005 a jury prohibited its teaching in the schools of Dover, Pennsylvania, delivering a stinging rebuke.

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Discover magazine, October 2010
Assessing various things that have taken place over the past 30 years

About The BioLogos Foundation

BioLogos explores, promotes, and celebrates the integration of science and Christian faith. [Click Here](#) to read about our various projects.

Our Mission

The BioLogos Foundation is a group of Christians, many of whom are professional scientists, biblical scholars, philosophers, theologians, pastors, and educators, who are concerned about the long history of disharmony between the findings of science and large sectors of the Christian faith. We believe that the Bible is the inspired Word of God. We also believe that evolution, properly understood, best describes God's work of creation. Founded by Dr. Francis Collins, BioLogos addresses the escalating culture war between science and faith, promoting dialog and exploring the harmony between the two. We are committed to helping the church – and students, in particular – develop worldviews that embrace both of these complex belief structures, and that allow science and faith to co-exist peacefully.

evolution is how God created life

Introduction

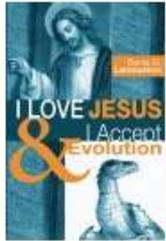
Chapters 8 – 10 of *The Language of God*, by Dr. Francis Collins, contain brief descriptions of Theistic Evolution, Intelligent Design and Creationism. Below are definitions of each term and clarifying points to distinguish them from BioLogos.

BioLogos

BioLogos is most similar to Theistic Evolution. Theism is the belief in a God who cares for and interacts with creation. Theism is different than *deism*, which is the belief in a distant, uninvolved creator who is often little more than the sum total of the laws of physics. Theistic Evolution, therefore, is the belief that evolution is how God created life. Because the term evolution is sometimes associated with atheism, a better term for the belief in a God who chose to create the world by way of evolution is BioLogos. BioLogos comes from the Greek words *bios* (life) and *logos* (word), referring to the gospel of John:

*"In the beginning was the Word, and the Word was with God, and the Word was God."*¹

I Love Jesus and I Accept Evolution



by Denis Lamoureux
Wipf & Stock Publishers, 2009
[Buy on Amazon](#)

"Although there are many fine books that treat the compatibility of 'faith and science' in general, **Lamoureux** is alone in treating with candor, sophistication, and pastoral sensitivity the interpretive issues that face any Christian reader of Scripture." - *Peter Enns*

Description

"In this thought-provoking book, born-again Christian Denis O. Lamoureux argues that the God of the Bible created the universe and life through evolution—an ordained, sustained, and design-reflecting natural process. In other words, evolution is not the result of blind chance and our creation is not a mistake. Lamoureux challenges the popular assumption that God disclosed scientific facts in the opening chapters of Scripture thousands of years before their discovery by modern science. He contends that in the same way the Lord meets us wherever we happen to be in our lives, the Holy Spirit came down to the level of the inspired biblical writers and used their ancient understanding of origins in order to reveal inerrant, life-changing Messages of Faith. Lamoureux also shares his personal story and struggle in coming to terms with evolution and Christianity."

- *Wipf and Stock Publishers*

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Join Our Mailing List

Sign up to receive our quarterly newsletter, filled with updates about the latest BioLogos projects.

Was Adam a Real Person? Part I

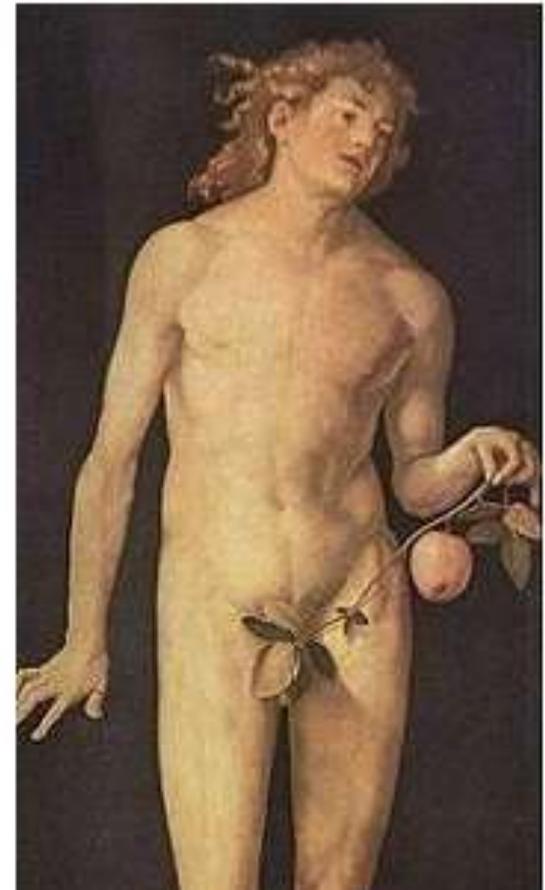
September 2, 2010

Category: Guest Features

 Print

"Science and the Sacred" is pleased to feature essays from various guest voices in the science-and-religion dialogue. Today's entry was written by [Denis Lamoureux](#). Denis Lamoureux is the associate professor of science and religion at St. Joseph's College in the University of Alberta. He holds a PhD in evangelical theology and a PhD in evolutionary biology. Lamoureux is the author of the books *Evolutionary Creation: A Christian Approach to Evolution* (2008) and *I Love Jesus and I Accept Evolution* (2009).

In the final chapter of *Evolutionary Creation: A Christian Approach to Evolution* (2008), Denis O. Lamoureux opens, "My central conclusion in this book is clear: Adam never existed, and this fact has no impact whatsoever on the foundational beliefs of Christianity." This is the first entry in a three-part series, in which Lamoureux answers the question: Was Adam a Real Person?



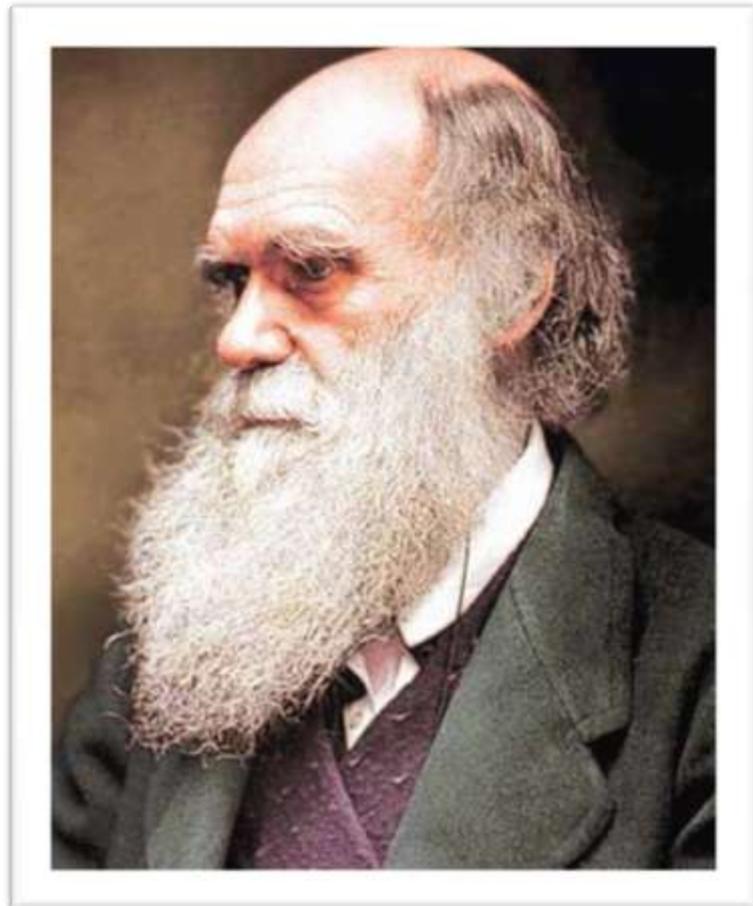
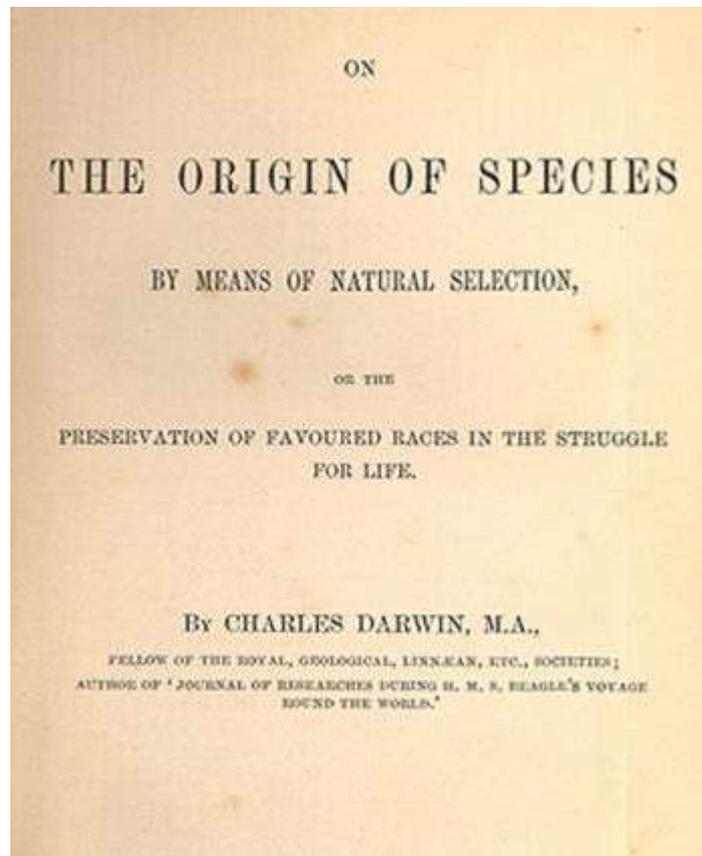
Evolution attempts to explain

Design without a designer!

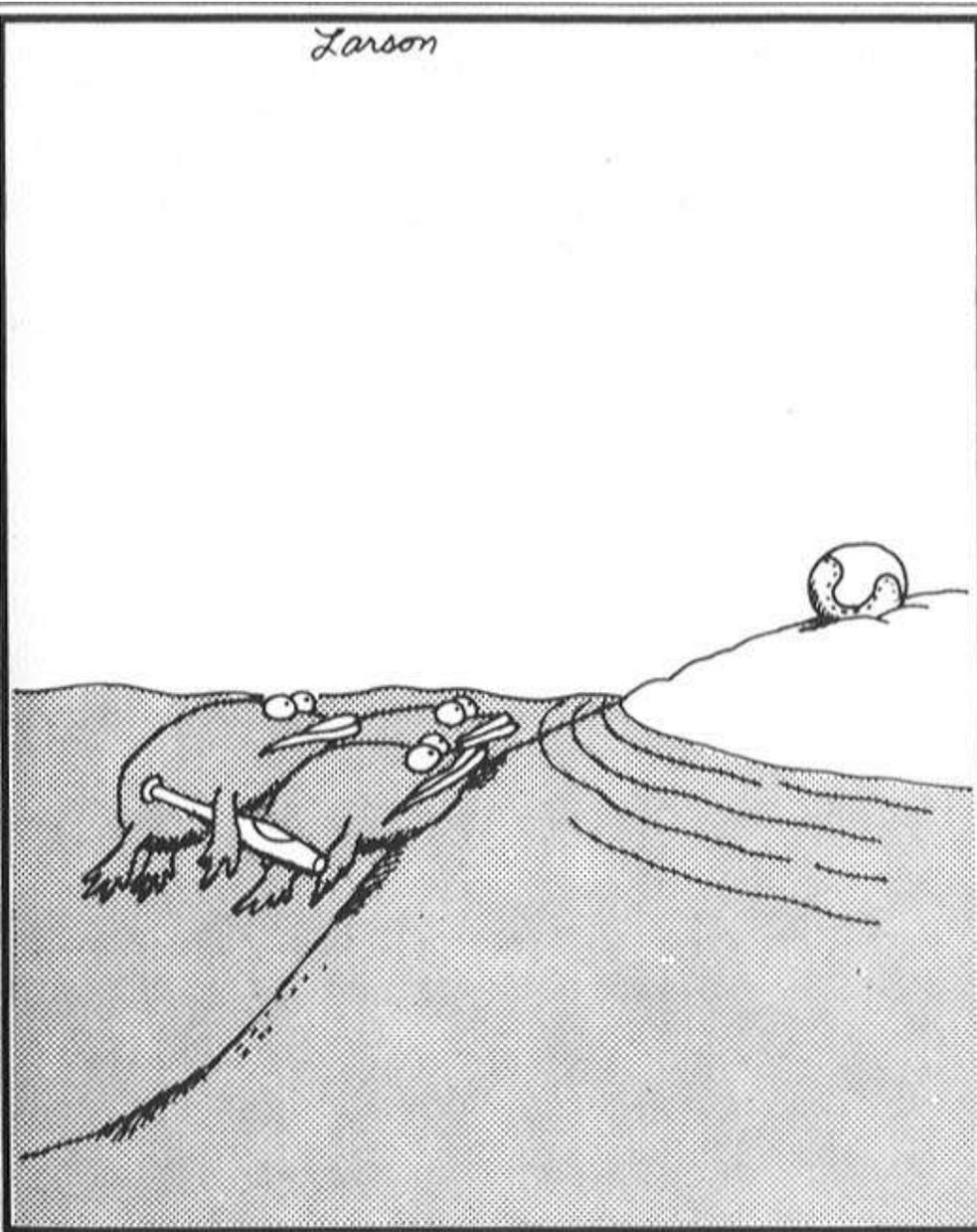
The theory provides a “designer substitute”

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 out no such case.

Charles Darwin - Origin of Species (1859)



Larson



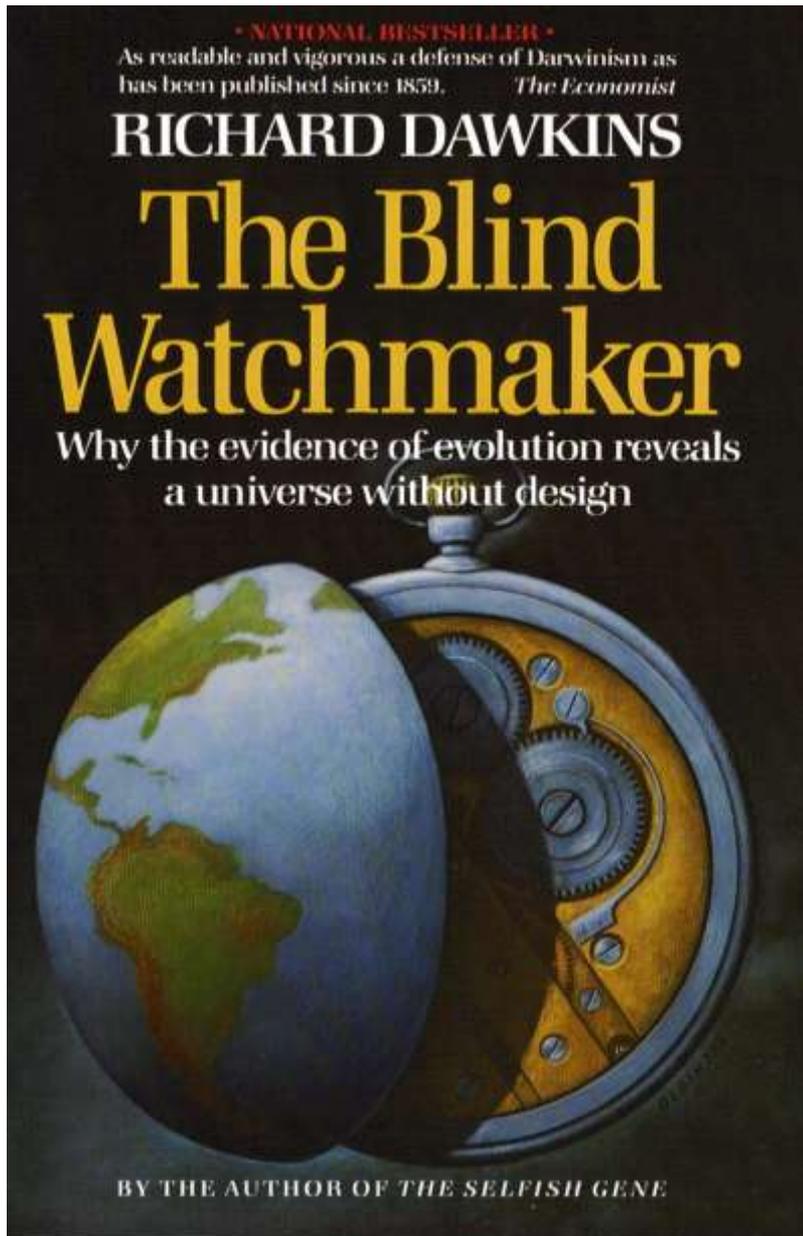
Great moments in evolution

Darwin's Designer Substitute

- “It was Darwin’s greatest accomplishment to show that the directive organization of living beings can be explained as the result of a natural process, natural selection, without any need to resort to a Creator or other external agent.”
 - Evolutionary biologist Francisco Ayala
- Thus, Darwinian biologists not only affirm that natural selection can produce “design without a designer”, they also assert that it is “creative without being conscious” (pg. 19)
- “Biologists *must constantly keep in mind* that what they see was not designed, but rather evolved”
 - Francis Crick

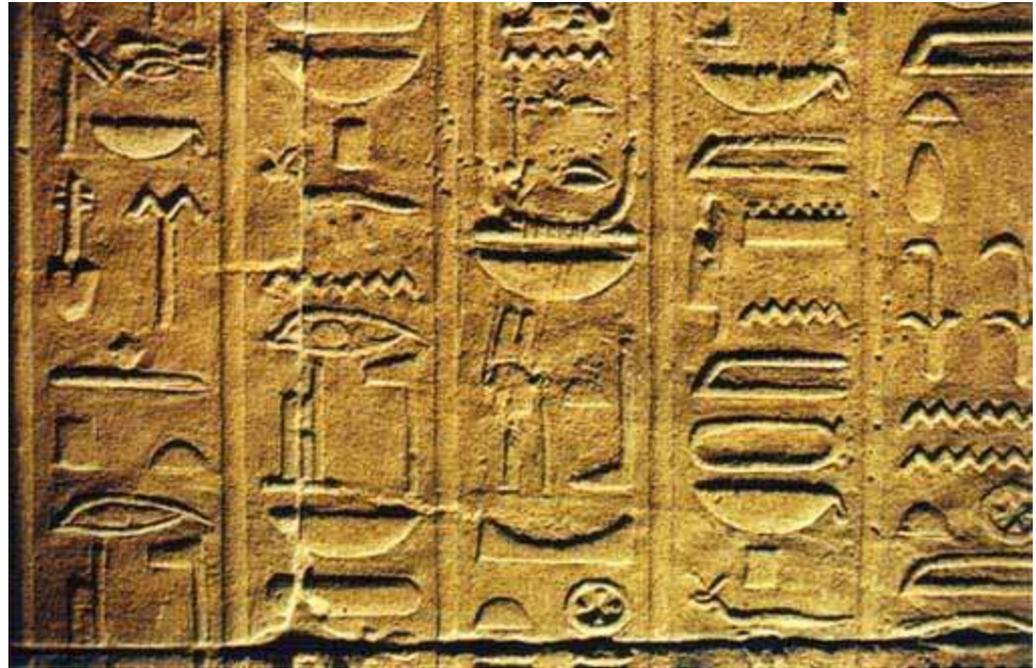
Is there design in living things?

Let's look at a few examples

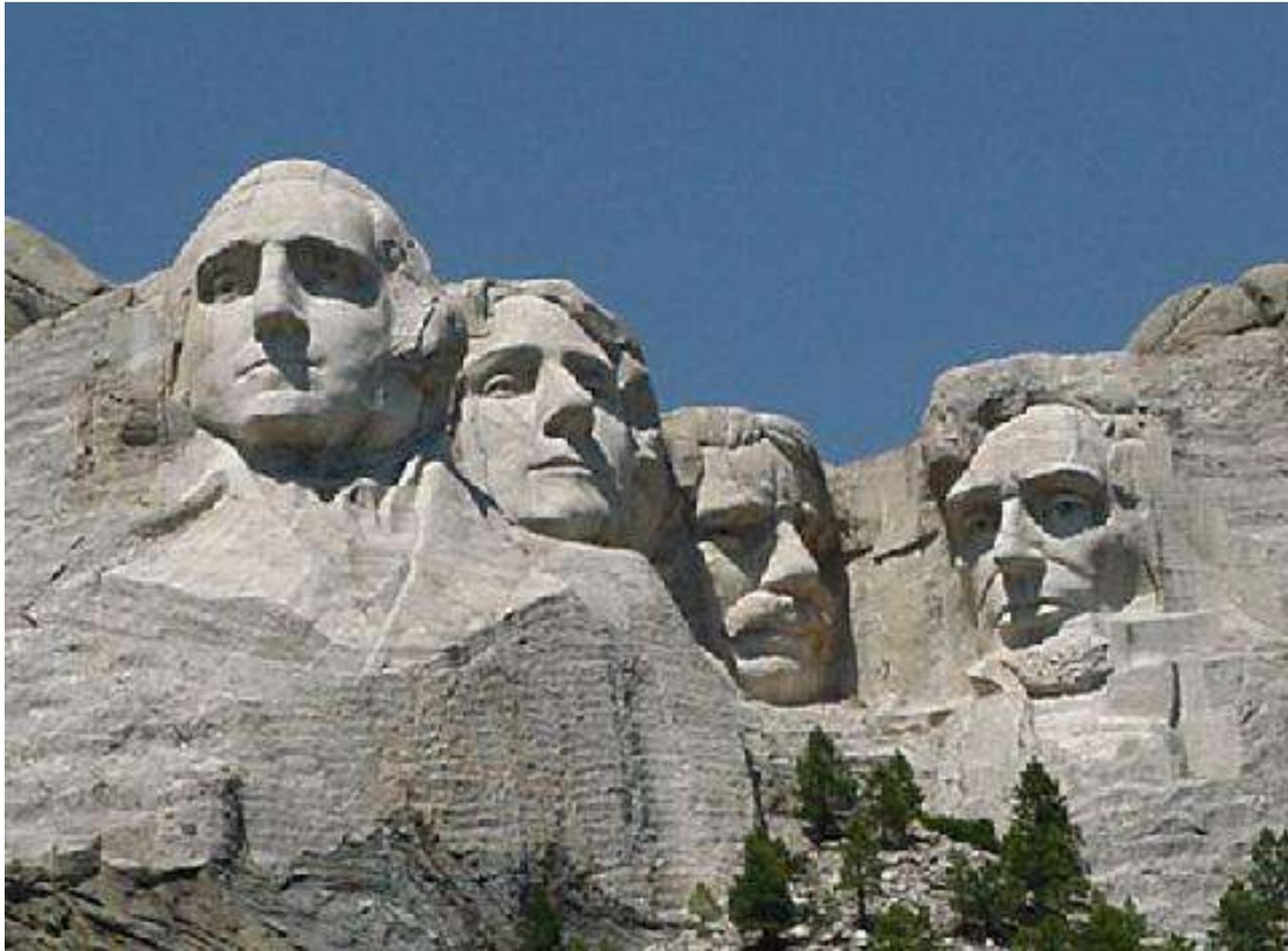


“Biology is the study of complicated things that give the appearance of having been designed for a purpose” (pg. 1)

Not living, but obviously designed

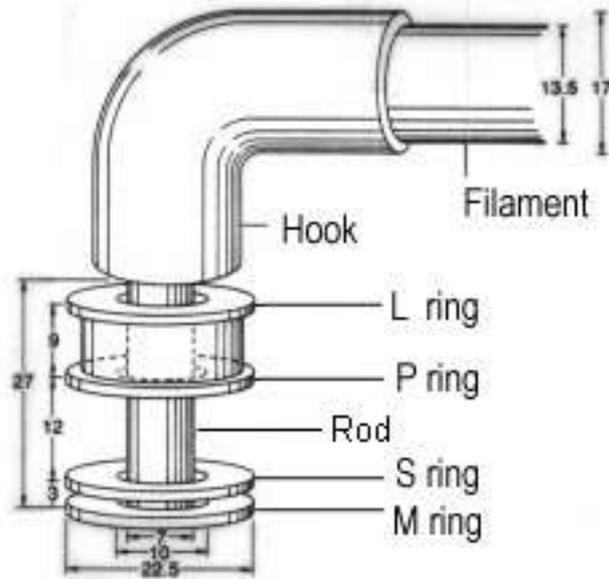


Is this a natural rock formation?

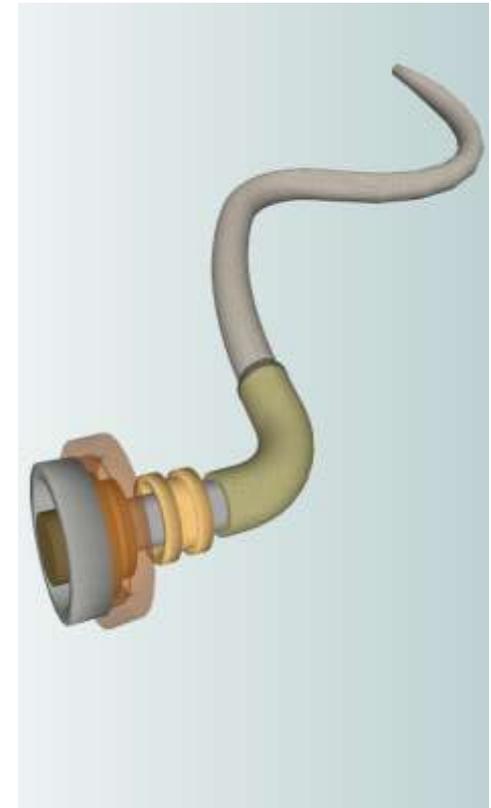


Molecular machines

The bacterial flagellum



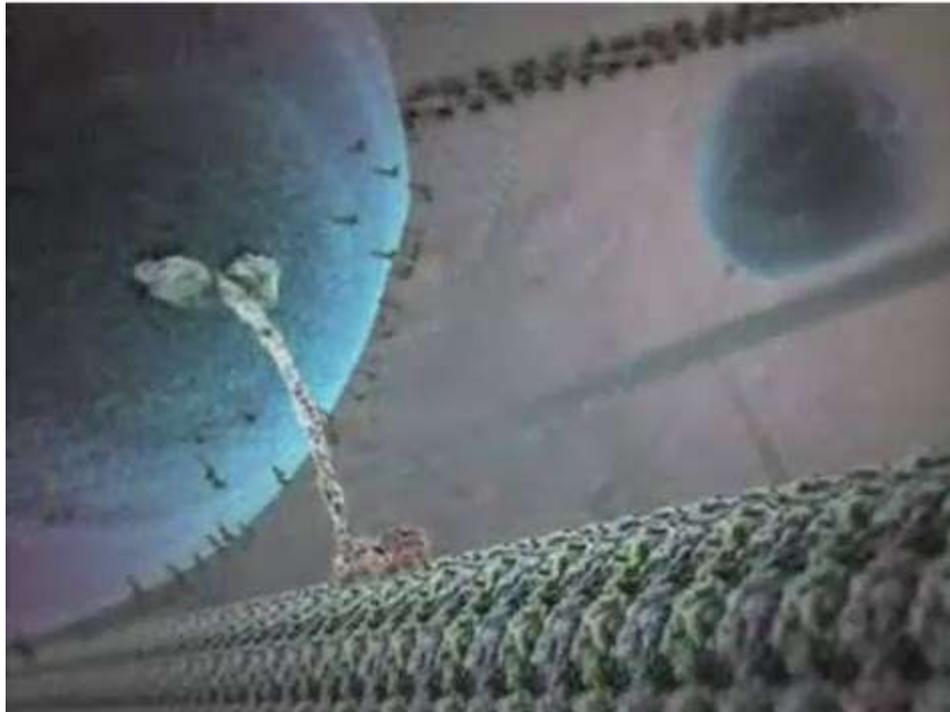
The bacterial flagellum of the *E. coli* bacteria has a motor structure of drive shaft, rotor, bushings, propeller, and a rotational speed of about 20,000 rpm



Molecular machines

The kinesin motor protein

Nano-tugboat. A kinesin molecule "walks" along a biopolymer "track" by alternately attaching and disconnecting each of two "feet," hauling cellular cargo in its wake

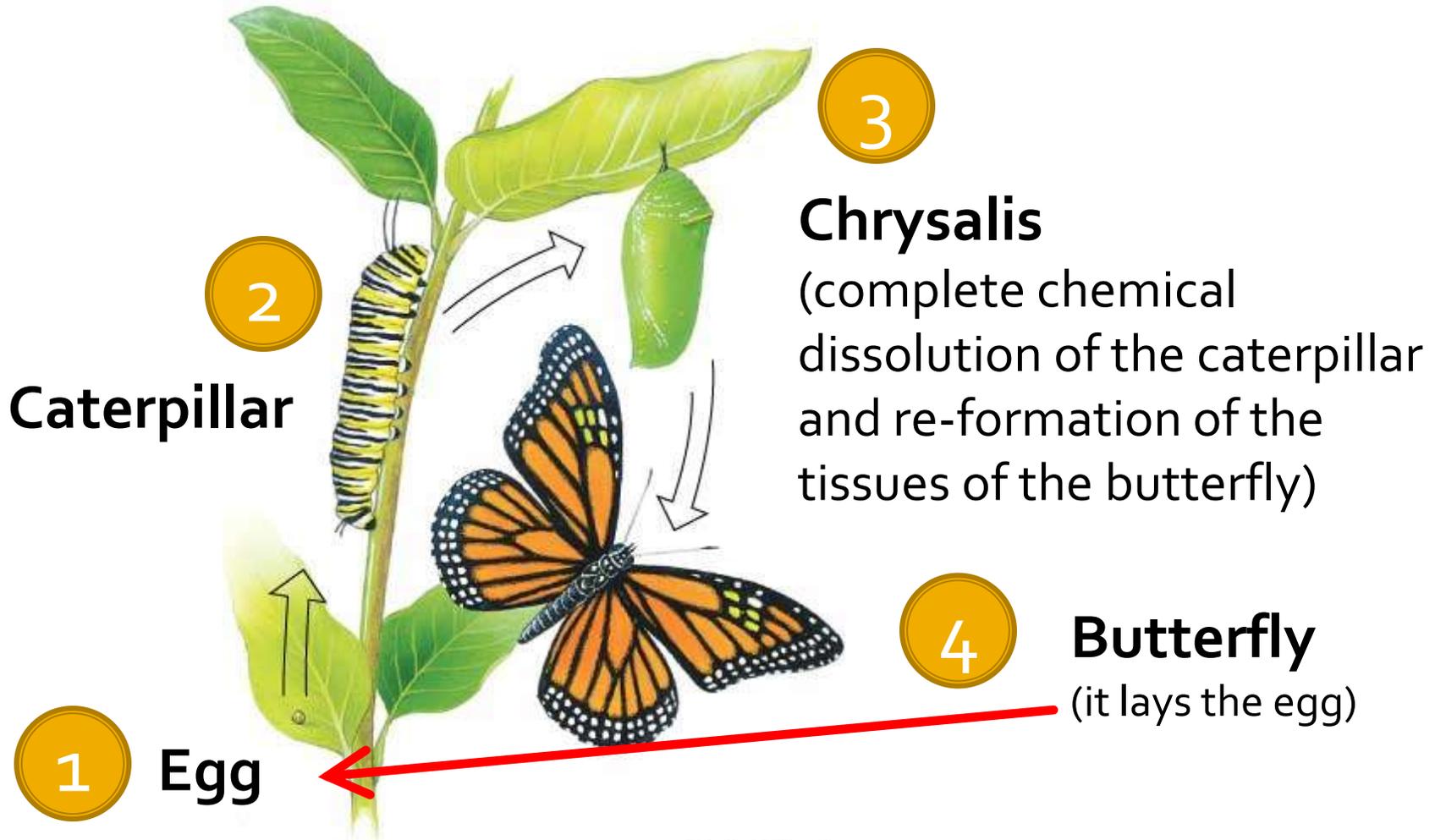


The Bombardier Beetle



Defends itself by squirting predators with a high-pressure jet of boiling liquid, involving several complex chemical reactions!

The Monarch Butterfly



Elizabeth Morales

Monarch Butterfly migration

Has a brain the size of a pinhead and yet migrates to a location 3,000 miles away and navigates there with an accuracy of 100 feet



Information is the key idea

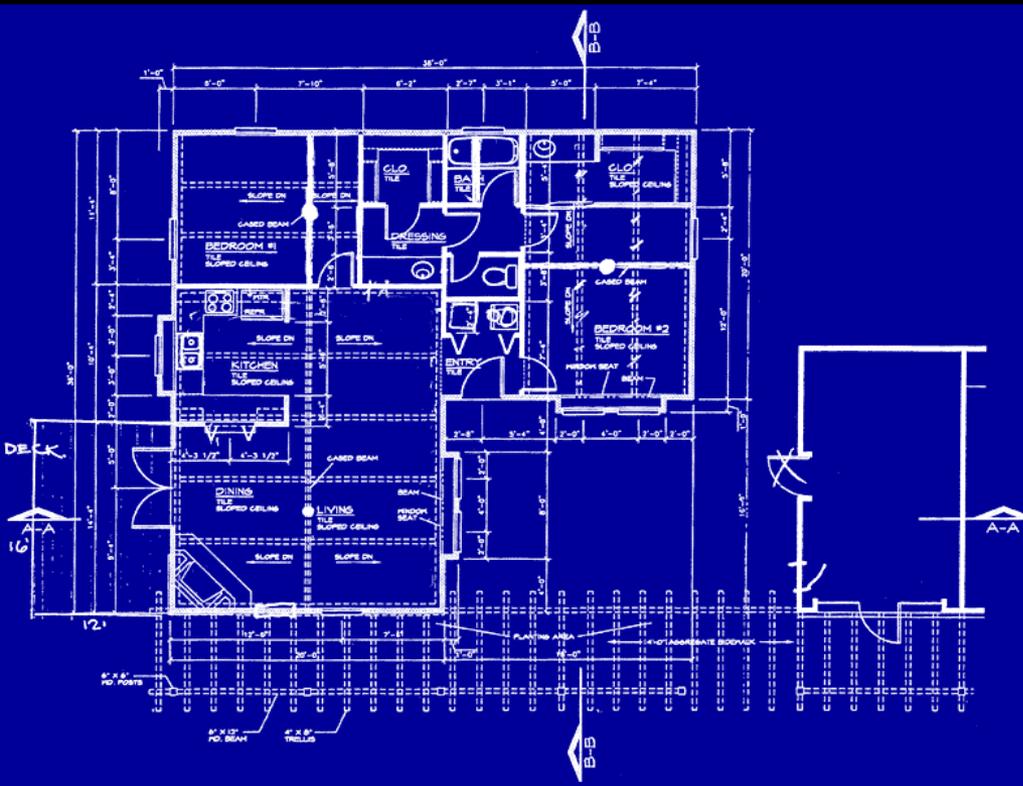
It is the main subject of *Signature in the Cell*



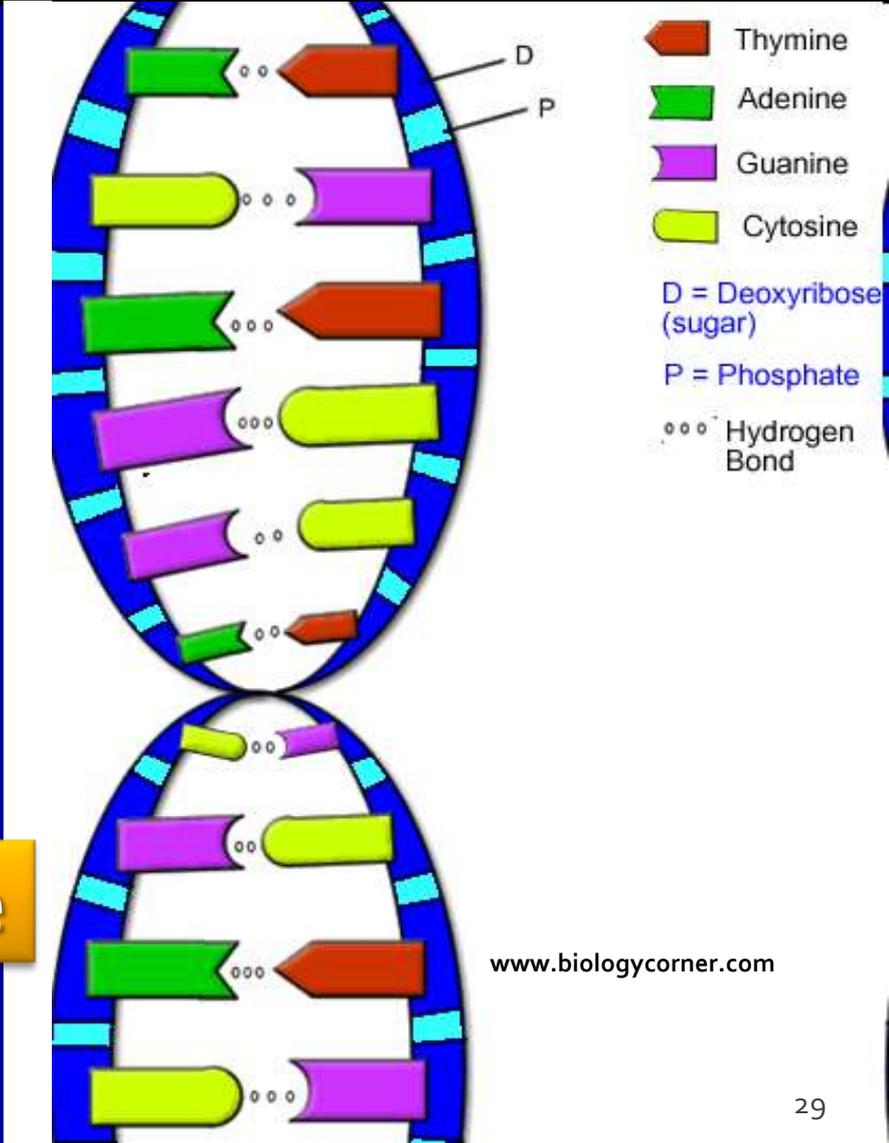
BIG IDEA #1

Life is based on information

Life boils down to "information"



DNA is the blueprint of life



www.biologycorner.com

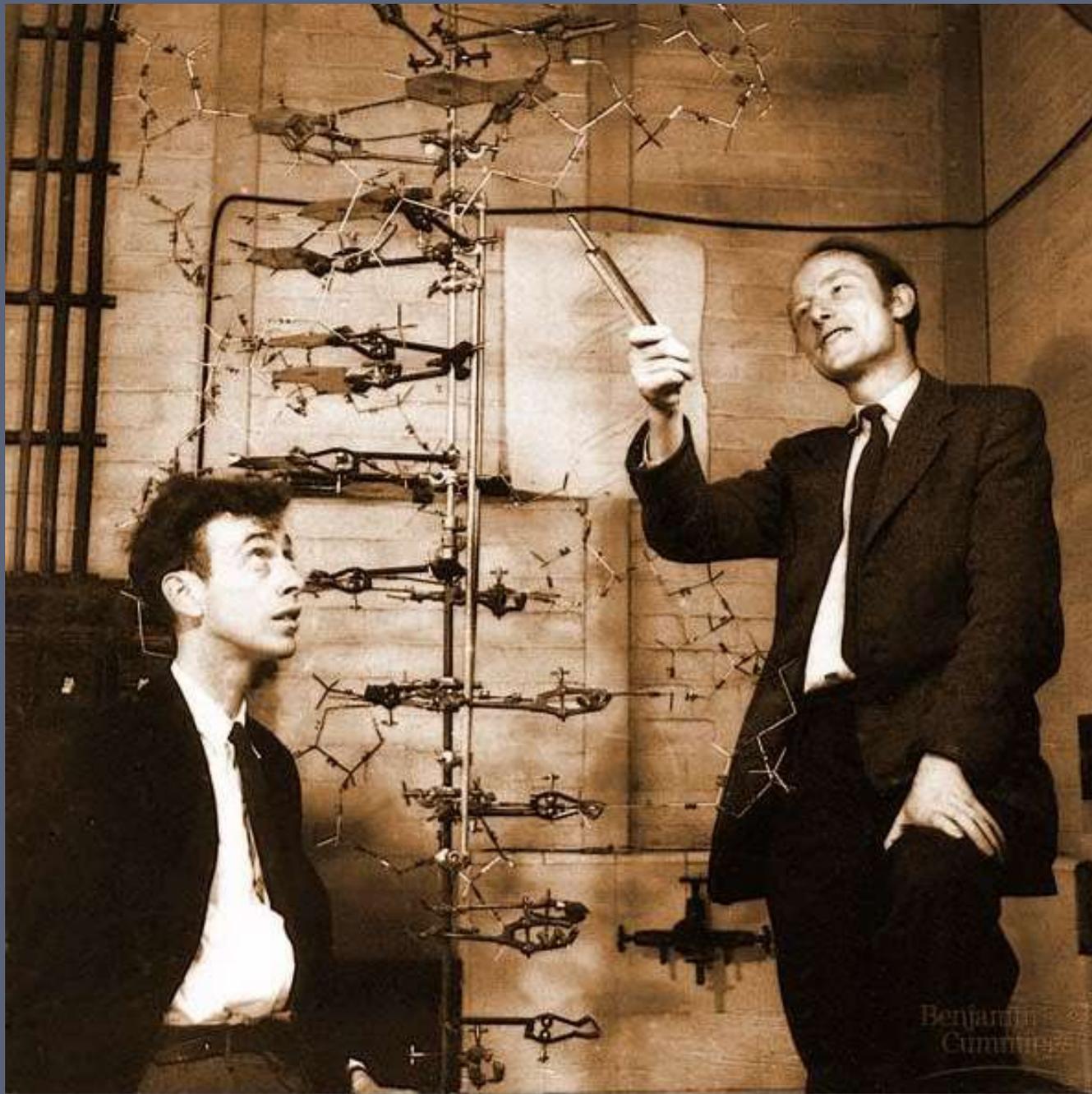
What is Information?

- Information = knowledge or instructions; a blueprint
- The more complex something is, the more information it contains
 - More words are needed to describe it
 - Longer instructions are needed to build it
- The information for how to build, operate, and repair life is coded in the DNA of the genome

The Sequence Hypothesis (1958)

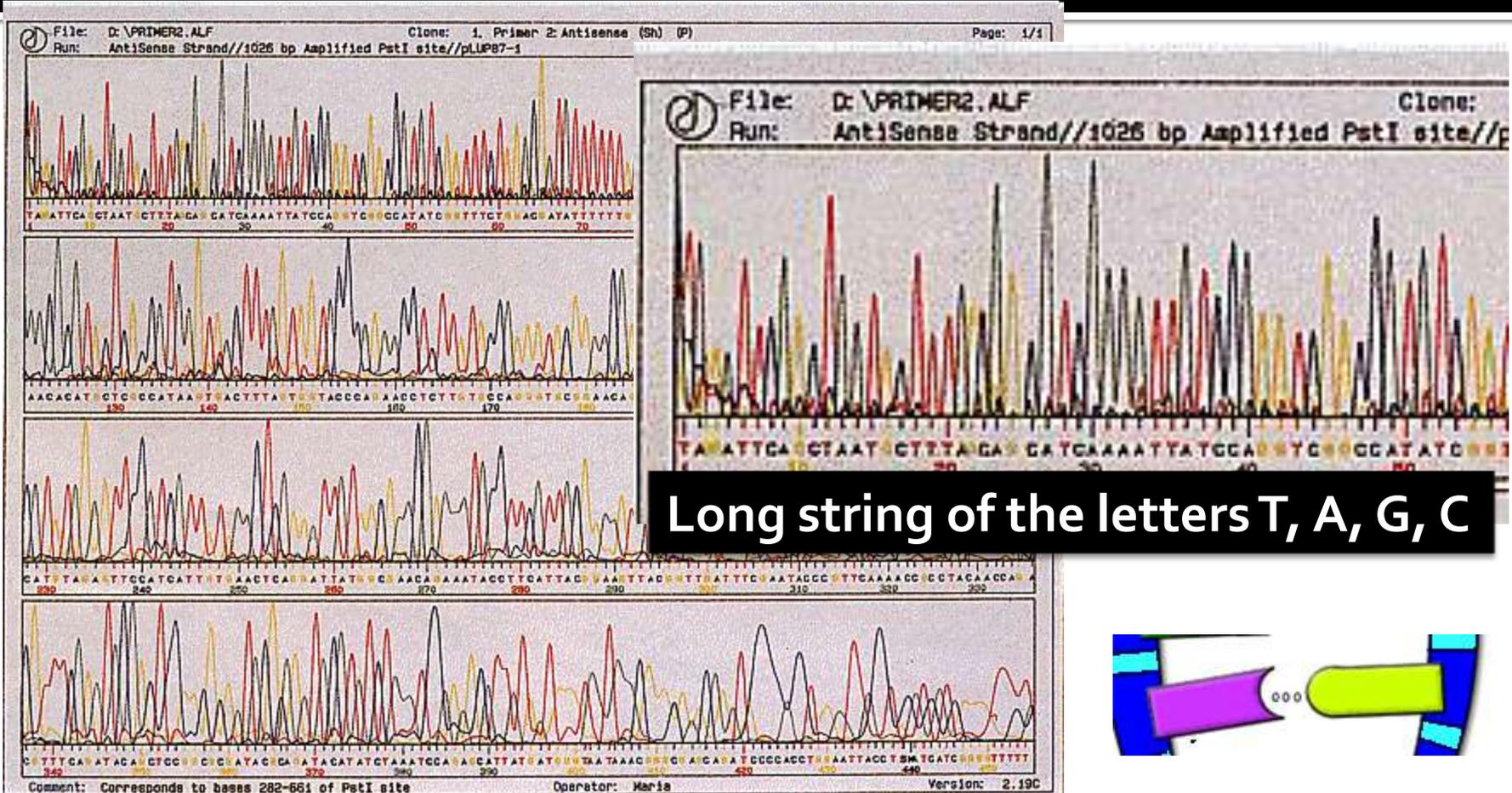
- “Sequence hypothesis”: Certain sequences of chemical bases along the spine of the DNA molecule convey precise instructions for building proteins
 - Francis Crick, co-discoverer with James Watson of the structure of DNA





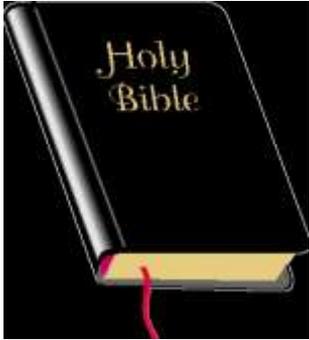
Benjamin
Cummings

DNA Sequencing Result

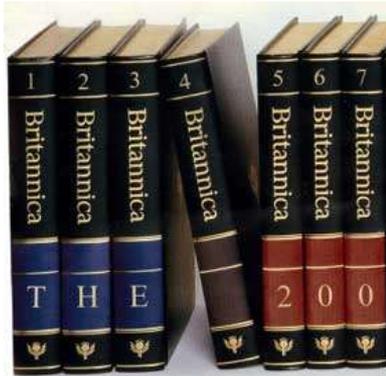


Your genome has 3 billion base pairs

Measuring Genetic Information



Bible
3.5 million
letters



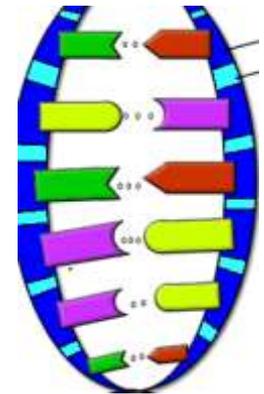
Britannica 2002
200 million letters



CD
650 million
letters



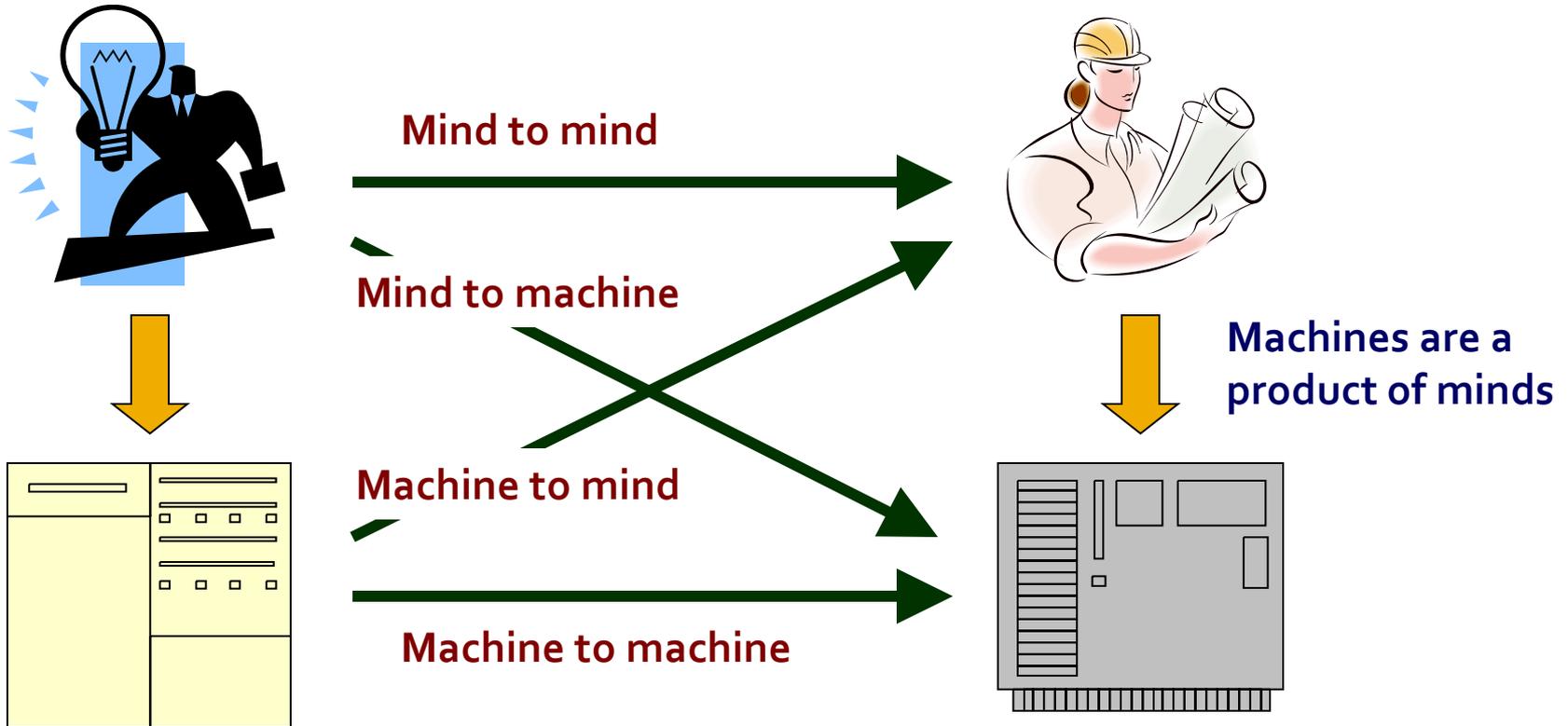
DVD
4.7 billion
letters



Human genome
6 billion genetic
letters

About 2000 x more than the Bible

Information = Message with a Purpose



Information communicates purposeful ideas from one mind/machine to another mind/machine

Meaning and Purpose

A message must have meaning and purpose for the receiver for it to be information

Meaning:

- Example: for an English-speaking person, “cat” = a small furry animal (has meaning)
- “xgh” = not an English word, has no meaning

Purpose:

- Randomly texting the word “cat” to someone has no purpose and therefore provides no information
- Texting the word “cat” in response to a prior question about animals has a purpose and provides information

Does DNA hold information?



DNA holds information

- “The machine code of the genes is uncannily computer-like”
 - Richard Dawkins
- “Apart from differences in jargon, the pages of a molecular-biology journal might be interchanged with those of a computer-engineering journal”
 - Richard Dawkins
- “DNA is like a computer program but far, far more advanced than any software ever created”
 - Bill Gates
- The Human Genome Project showed the importance of information to living things – biology has entered an information age (pg. 15)

Origin-of-life

- Must explain
 - The origin of DNA's capacity to store digitally encoded information
 - The origin of the large amount of information in DNA
 - The origin of the integrated complexity, the functional interdependence of parts, of the cell's information processing system

The DNA “enigma”

- “The problem of the origin of life is clearly basically equivalent to the problem of the origin of biological information”
 - Origin-of-life researcher Bernd-Olaf Koppers
- The DNA enigma – the mystery of the origin of the information needed to build the first living organism

The DNA is not the information

The DNA holds information but is not the information itself



BIG IDEA #2

There is big distinction between information itself and the housing of that information

The DNA is NOT the information

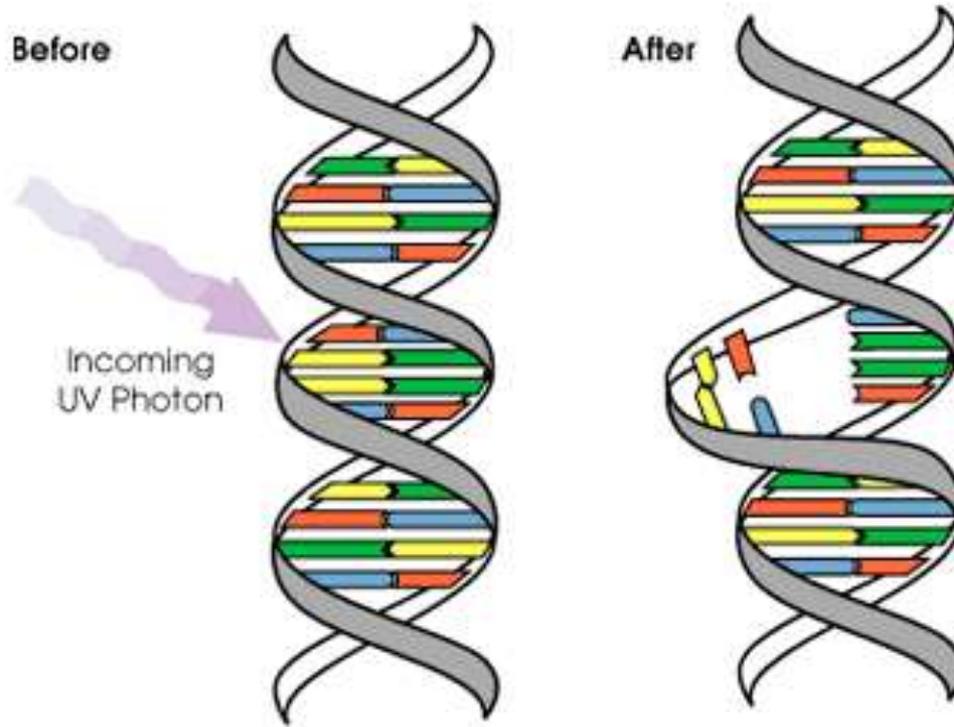
- “The gene is a package of information, not an object. The pattern of base pairs in a DNA molecule specifies the gene. But the DNA molecule is the medium, it’s not the message”
 - Evolutionary biologist George Williams



Changing the ink distribution on a newspaper
will not make a better story



Scratching a CD will not
make a better song

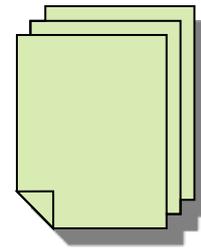


Whyfiles.org

Yet mutating the DNA has supposedly made better organisms!

Information is a Mental Concept

We must not confuse the physical representation of information with the information itself!



The information content in this PowerPoint is the same:

- **Stored on a computer hard-drive**
- **Stored on a CD,**
- **Viewed on a screen**
- **Printed on paper**
- **Read to you by someone**

The complexity of the cell

The simplest living organism is far from simple

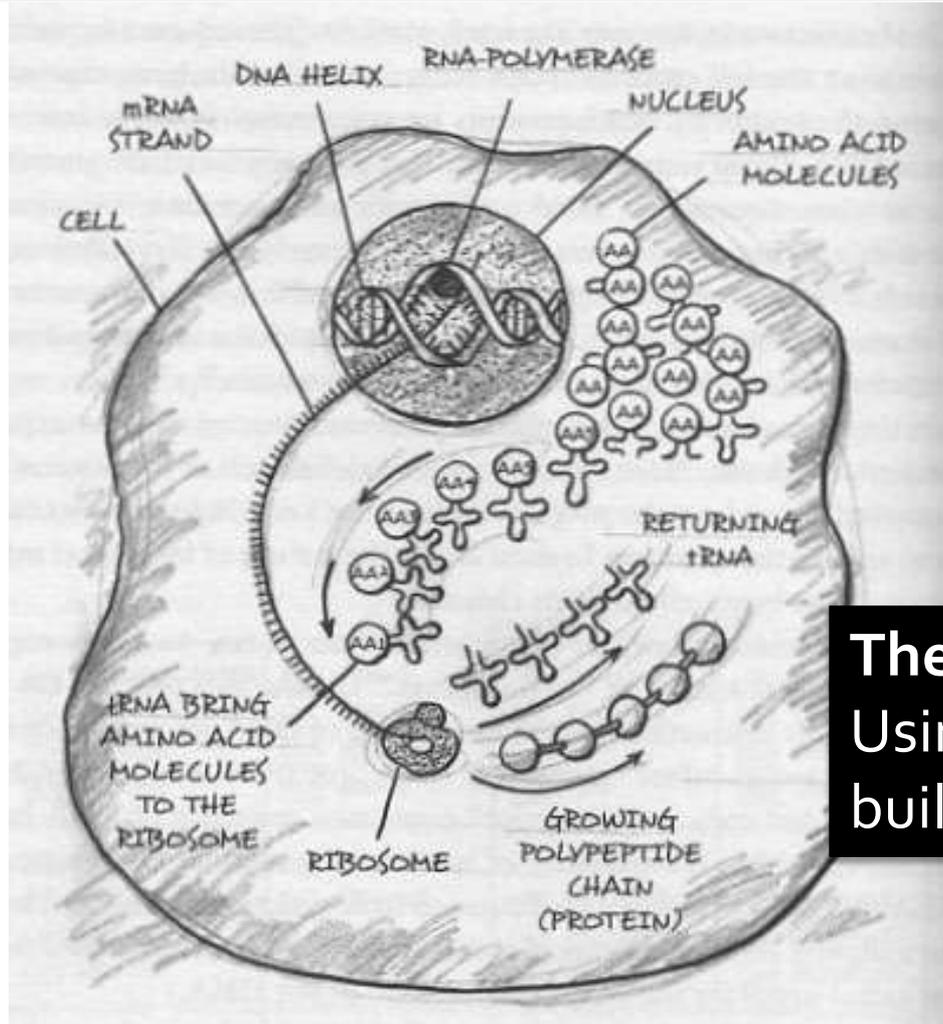
Charles Darwin and his 19th century contemporaries viewed "protoplasm" as the holistic content of a cell; in other words, cells were composed of a mysterious "proto-plasm," a substance that had the ability of self replication.

-- biology-online.org

The complexity of the cell

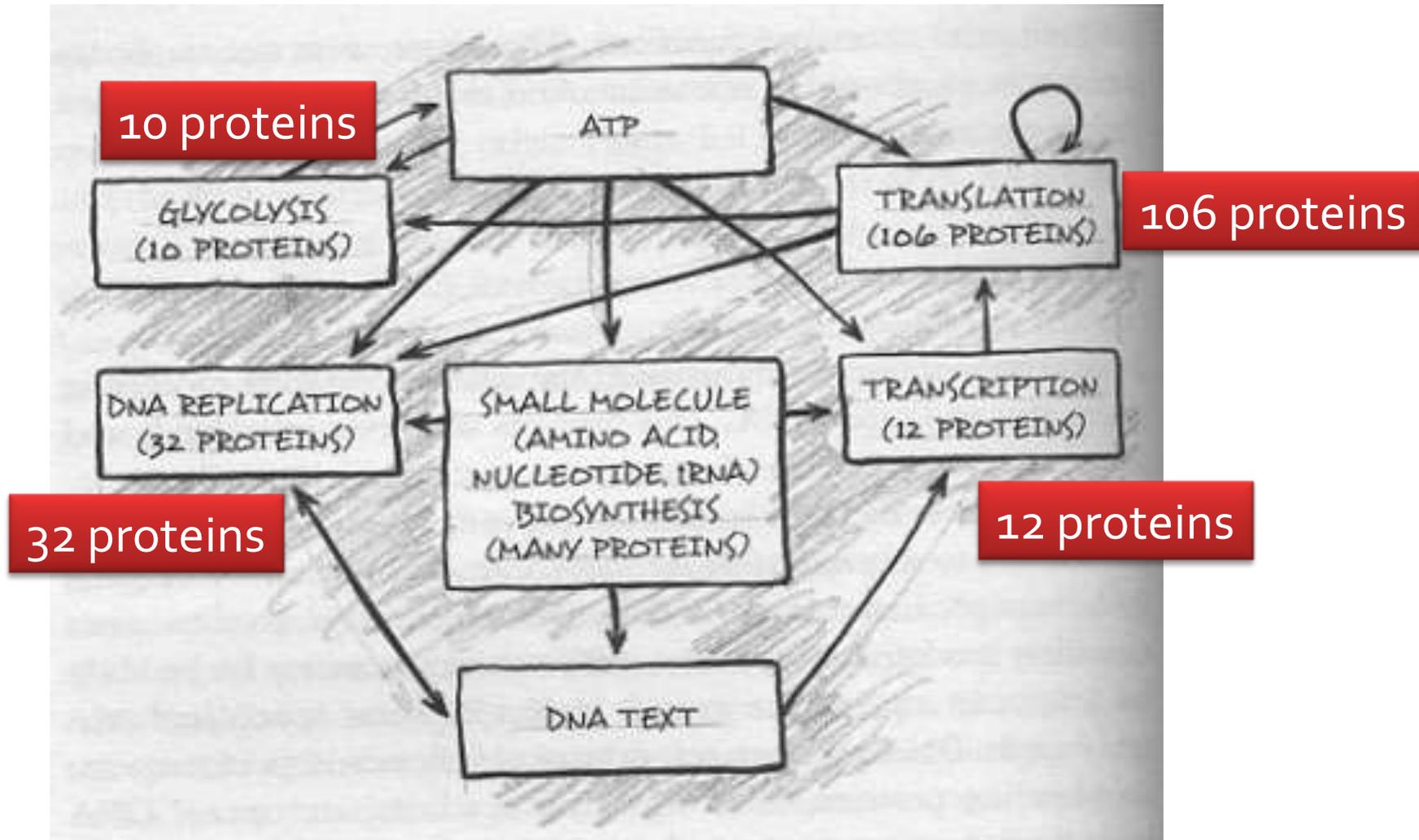
- Apart from the molecules comprising the gene-expression system and machinery of the cell, sequences or structures exhibiting such specified complexity or specified information are not found anywhere in the natural world (pg. 110)
- While computer scientists were developing machine languages, biologists were discovering that living cells had been using something akin to machine code all along (pg. 110)

Gene expression: transcription (template copy) and translation (protein formation)



The main point:
Using DNA genetic information to build proteins is a complex process

Cell information processing system – more than just the DNA text



Another enigma

- The production of proteins requires DNA
- The production of DNA requires proteins
- “Only whole cells may contain all the necessary machinery for self-reproduction... DNA is incapable of making copies of itself...proteins are made from other proteins, and without that protein-forming machinery nothing can be made”
 - Evolutionary biologist Richard Lewontin

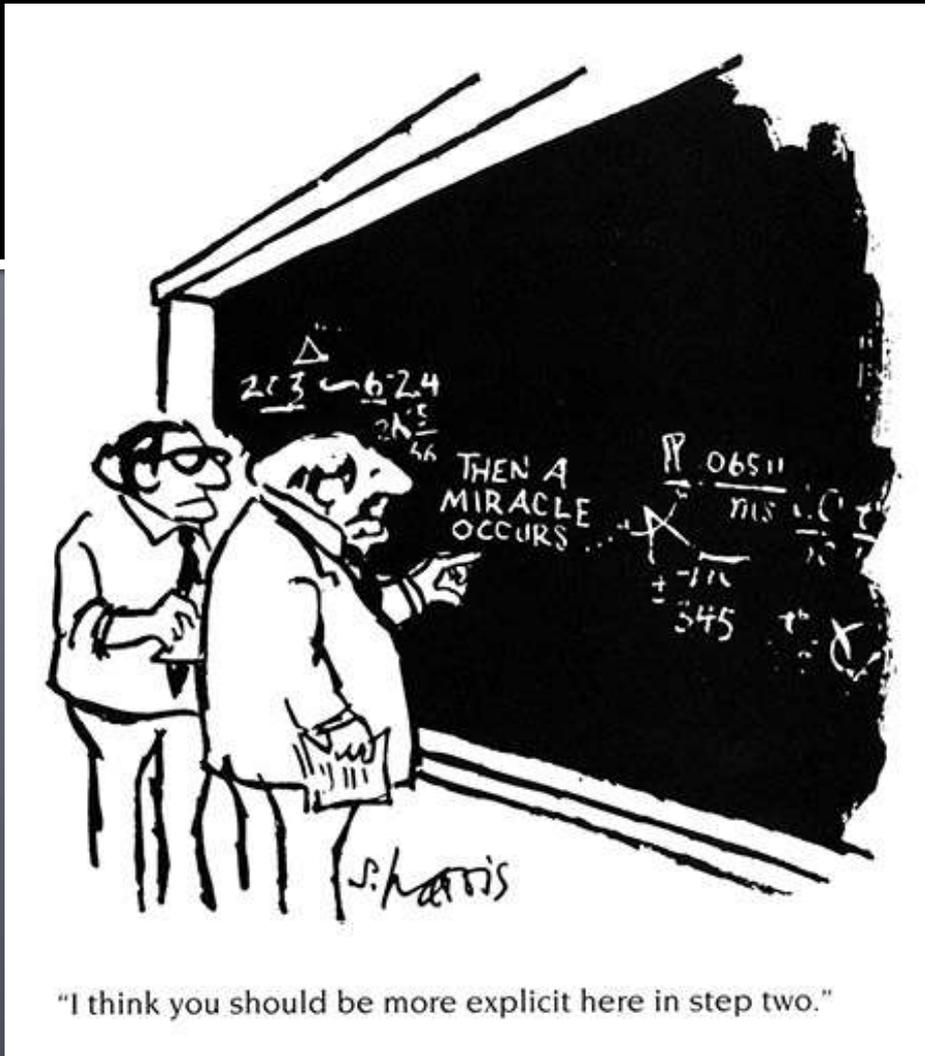
Another enigma

- “The code is meaningless unless translated”
 - Jacques Monod
- The code cannot be translated except by using certain products of its translation
- Even the simplest living things operate as complex system of multiple interdependent parts
- How this feature of life could have arisen is “exceedingly difficult to imagine”
 - Jacques Monod

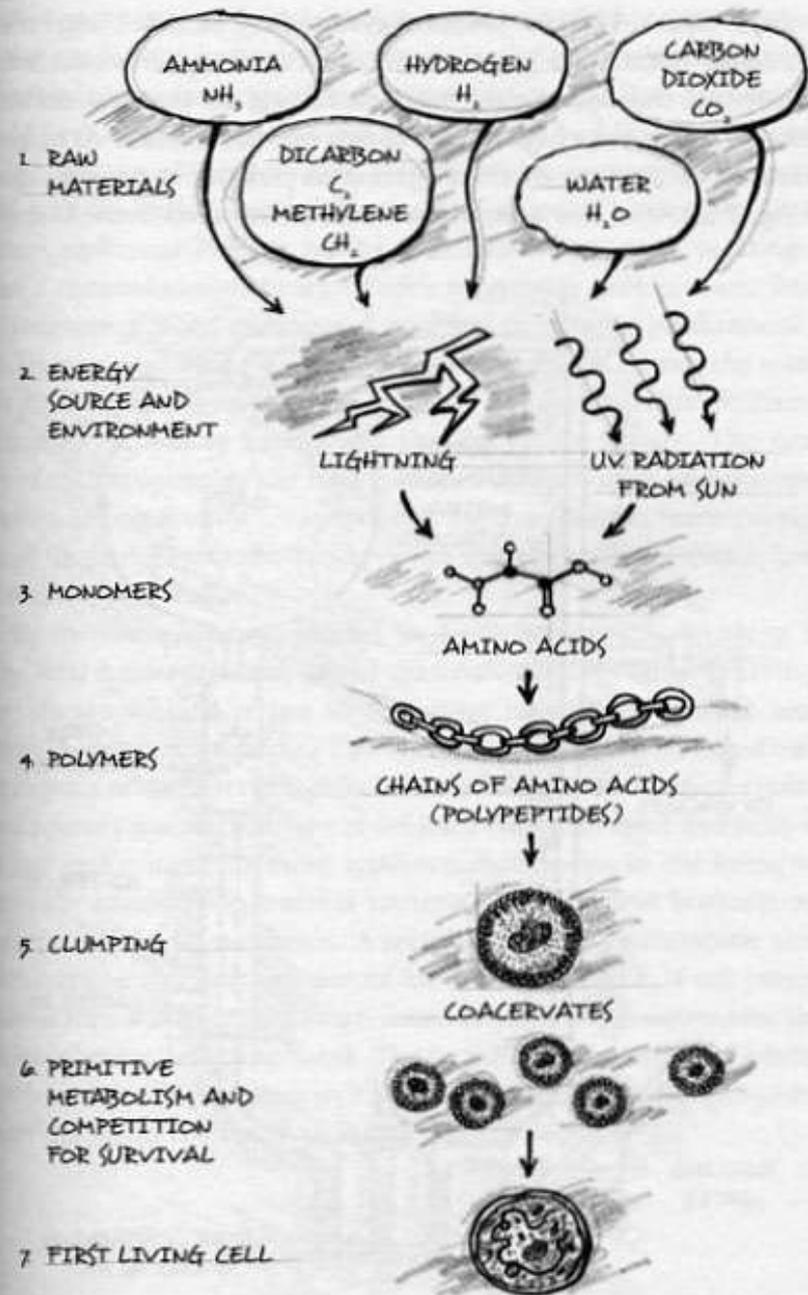
More than DNA

- Encoded information is worthless without a system that can use, read, translate or process the information
- DNA by itself can do nothing

Origin of life theories

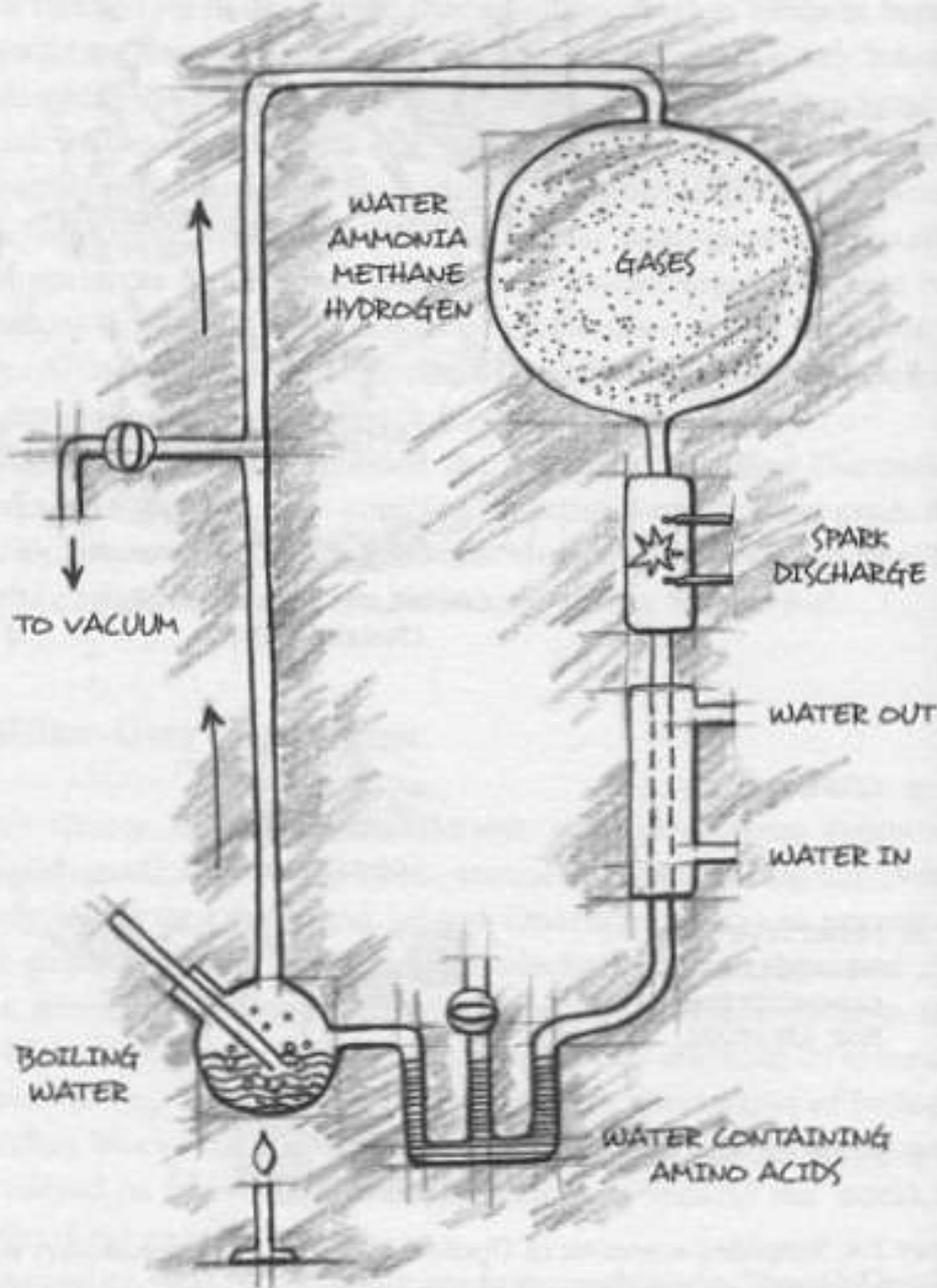


"I think you should be more explicit here in step two."



Oparin's 1936 chemical evolutionary scenario

Miller-Urey experiment

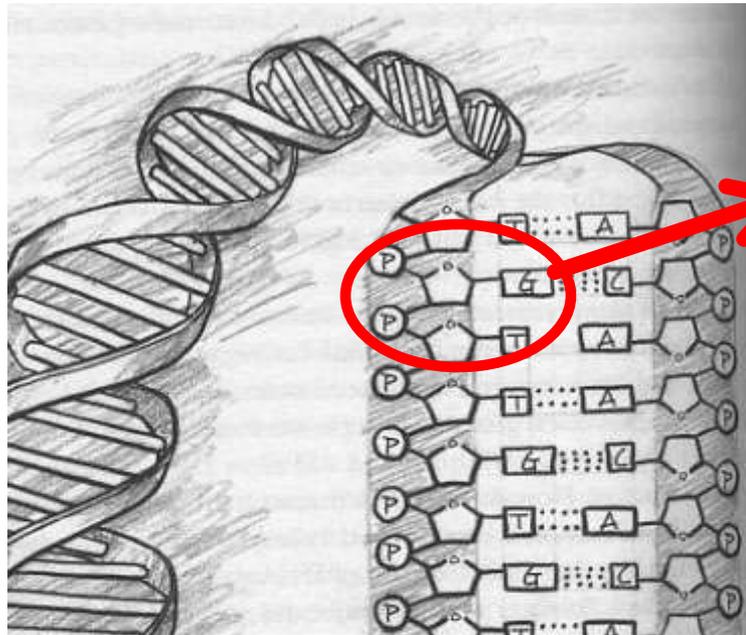


Has many problems, including:

1. Conditions that create amino acids rapidly destroy proteins
2. Had to start with pure compounds not normally found in life
3. Had to carefully control how energy was added to the system
4. Had strategic trap to remove products before they were destroyed
5. Produced both left and right-handed forms

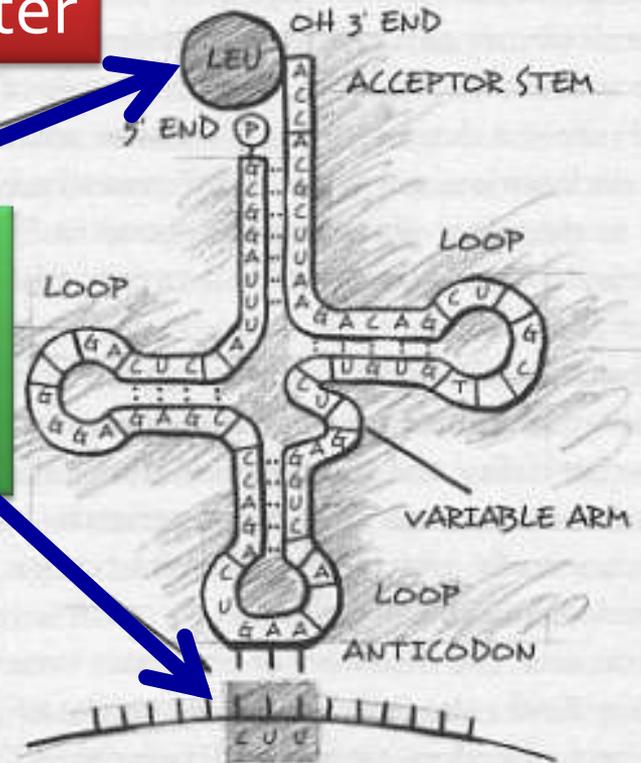
The main point:
Simulation experiments have not produced life

No chemical bond links adjacent letters – any letter can attach equally at any site



Genetic letter

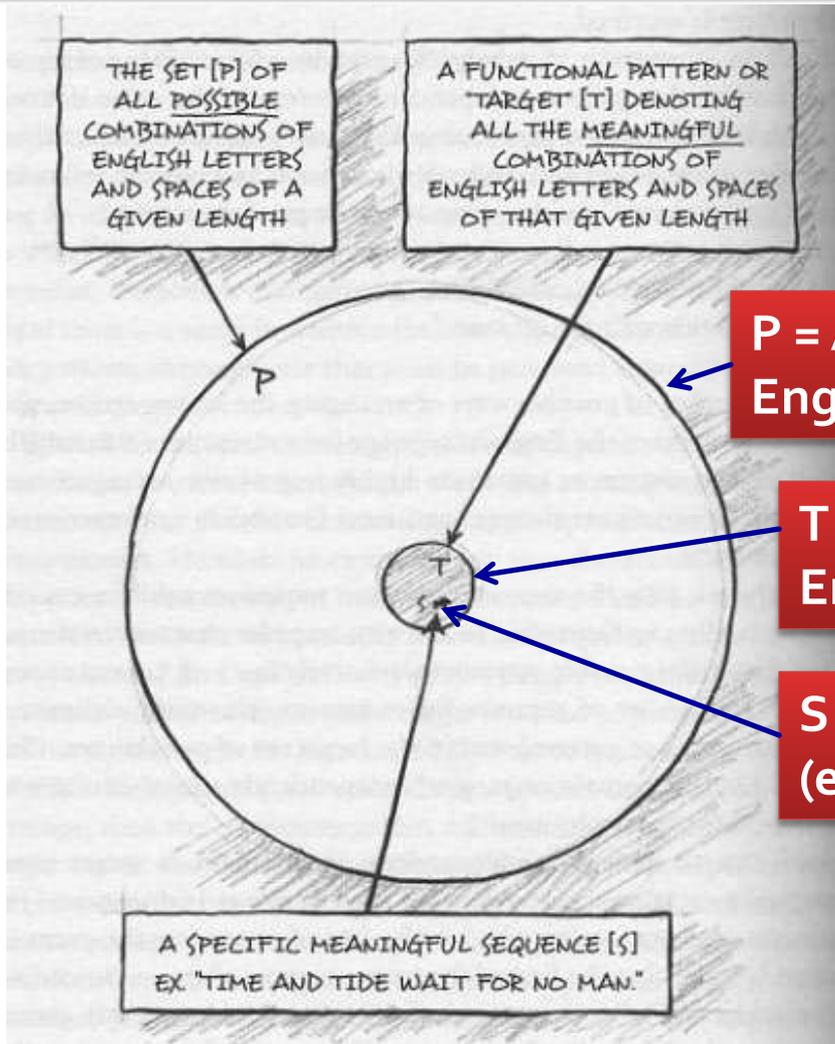
No direct chemical interaction



DNA spine

The main point:
Chemical “predestination”
did not form the DNA sequences

Meaningful English phrase is hitting a functional target within a larger space of possible letter arrangements

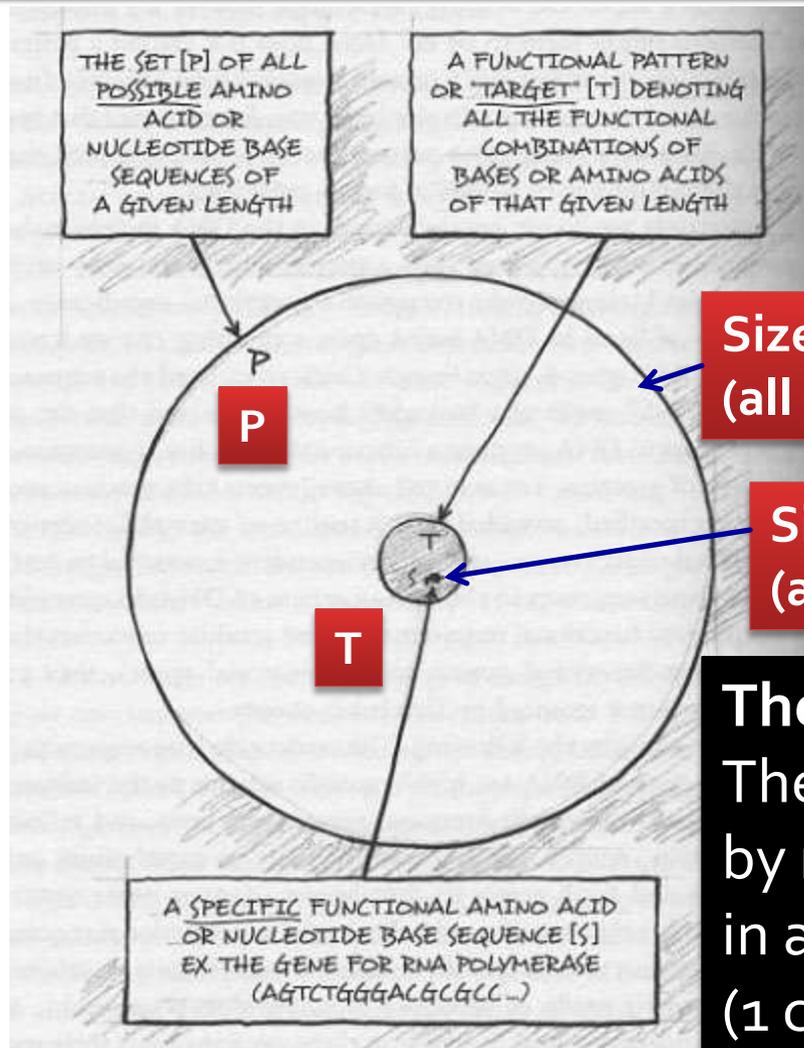


P = All possible combinations of English letters of a given length

T = All meaningful combinations of English letters of the same length

S = A specific meaningful sequence (e.g. "Time and tide wait for no man")

For a 150 amino-acid protein domain: ratio of circles P to T = Milky Way galaxy to a cotton ball



Douglas Axe experiments published 2004

Size of Milky Way galaxy
(all possible combinations of genetic letters)

Size of a cotton ball
(all functional combinations)

The main point:

The chance of forming a functional gene by random sequencing of genetic letters in a "primordial soup" is impossibly small (1 chance in 10^{**164})

Summarizing chance origin of life

- There are 10^{80} proton/neutrons/electrons in the entire universe
- Getting one functional protein by chance in a primordial soup is 1 in 10^{164}
- Producing the proteins necessary to service a one-cell organism by chance is 1 in $10^{40,000}$
- => Probability of building a minimally complex cell by chance is unimaginably small

Can “cumulative selection” produce information?

- Richard Dawkins makes the claim that “cumulative selection” is the source of information creation in evolution
- “In cumulative selection ... the results of one sieving process are fed into a subsequent sieving. The end product of one generation of selection is the starting point for the next generation of selection, and so on for many generations.”

Dawkins's example:

Initial sequence:

WDLMNLT DTJBKWIRZREZLMQCO P

Predetermined target sentence:

METHINKS IT IS LIKE A WEASEL

First test:

Gen. 01 WDLMNLT DTJBKWIRZREZLMQCO P

Gen. 02 WDLTMNLT DTJBSWIRZREZLMQLO P

Gen. 10 MDLDMNLS ITJISWHRZREZ MECS P

Gen. 20 MELDINLS IT ISWPRKE Z WECSEL

Gen. 30 METHINGS IT ISWLIKE B WECSEL

Gen. 40 METHINKS IT IS LIKE I WEASEL

Gen. 43 METHINKS IT IS LIKE A WEASEL

Dawkins's example:

Initial sequence:

WDLMNLT DTJBKWIRZREZLMQCO P

Predetermined target sentence:

METHINKS IT IS LIKE A WEASEL

Second test:

Gen. 01 Y YVMQKZPFJXWVHGLAWFVCHHQXYOPY

Gen. 10 Y YVMQKSPFTXWSHLIKEFV HQYSPY

Gen. 20 YETHINKSPITXISHLIKEFA WOYSEY

Gen. 30 METHINKS IT ISSLIKE A WEFSEY

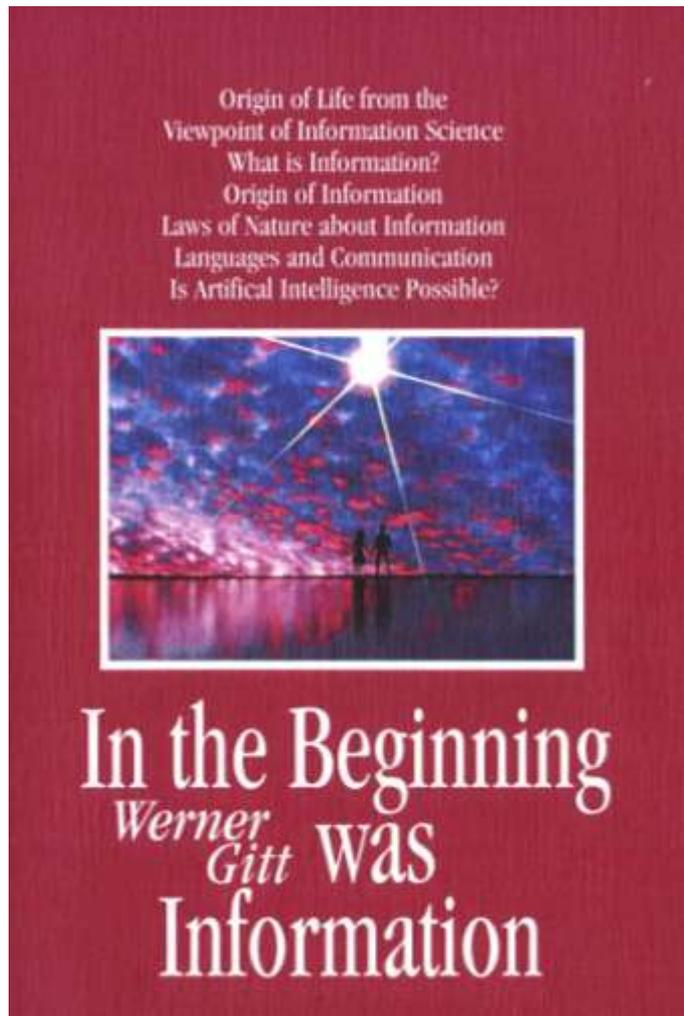
Gen. 40 METHINKS IT ISBLIKE A WEASES

Gen. 50 METHINKS IT ISJLIKE A WEASEO

Gen. 60 METHINKS IT IS LIKE A WEASEP

Gen. 64 METHINKS IT IS LIKE A WEASEL

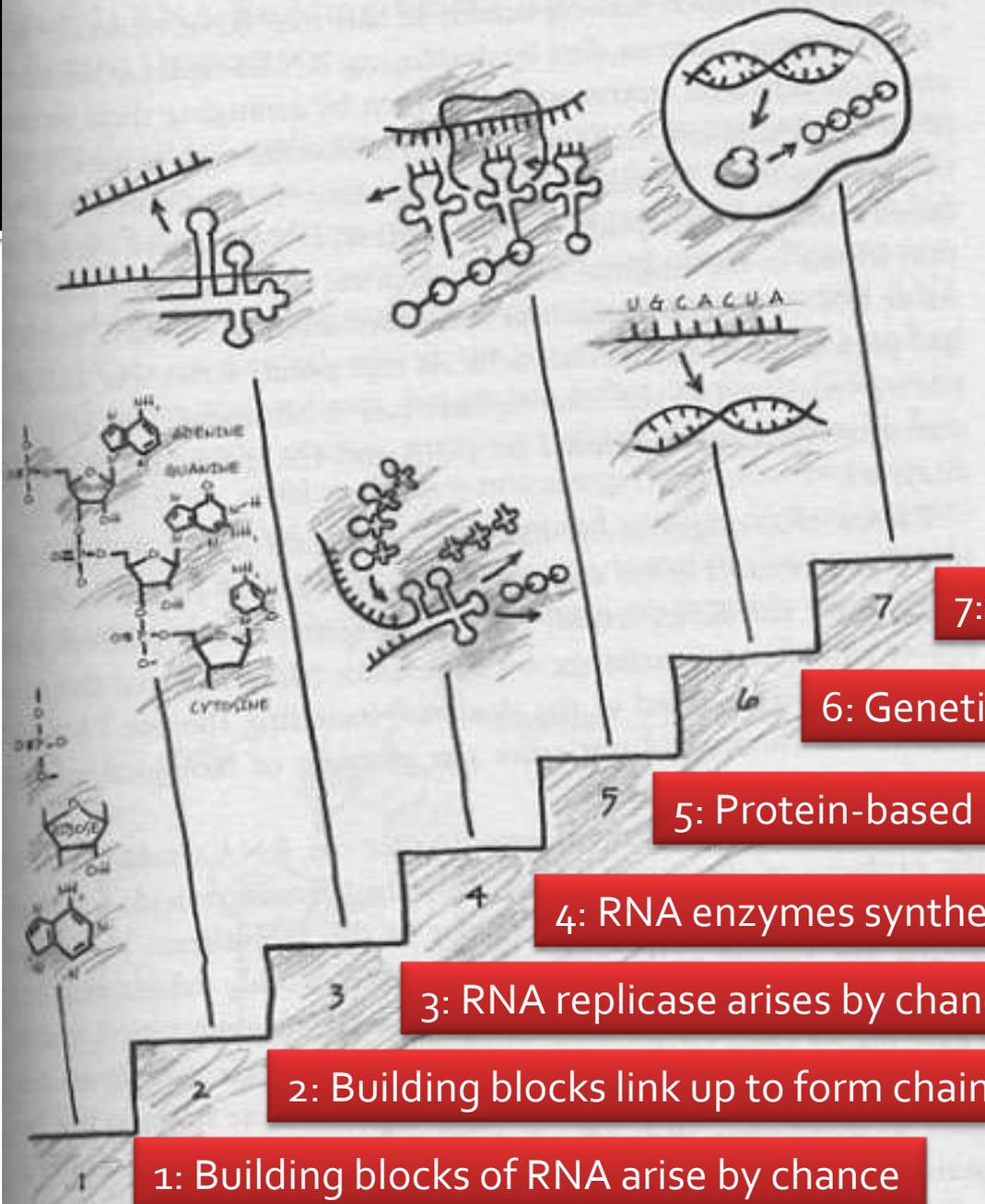
Gitt's Response to Dawkins



“Dawkins selects a **target sentence** and his entire program is designed towards this goal. This game can be played with any random initial sequence and the goal will always be reached, because the **programming is fixed**. Even the number of letters is given in advance. It is obvious that no information is generated, on the contrary, it has been predetermined.”

RNA World scenario

The most popular theory of how life began

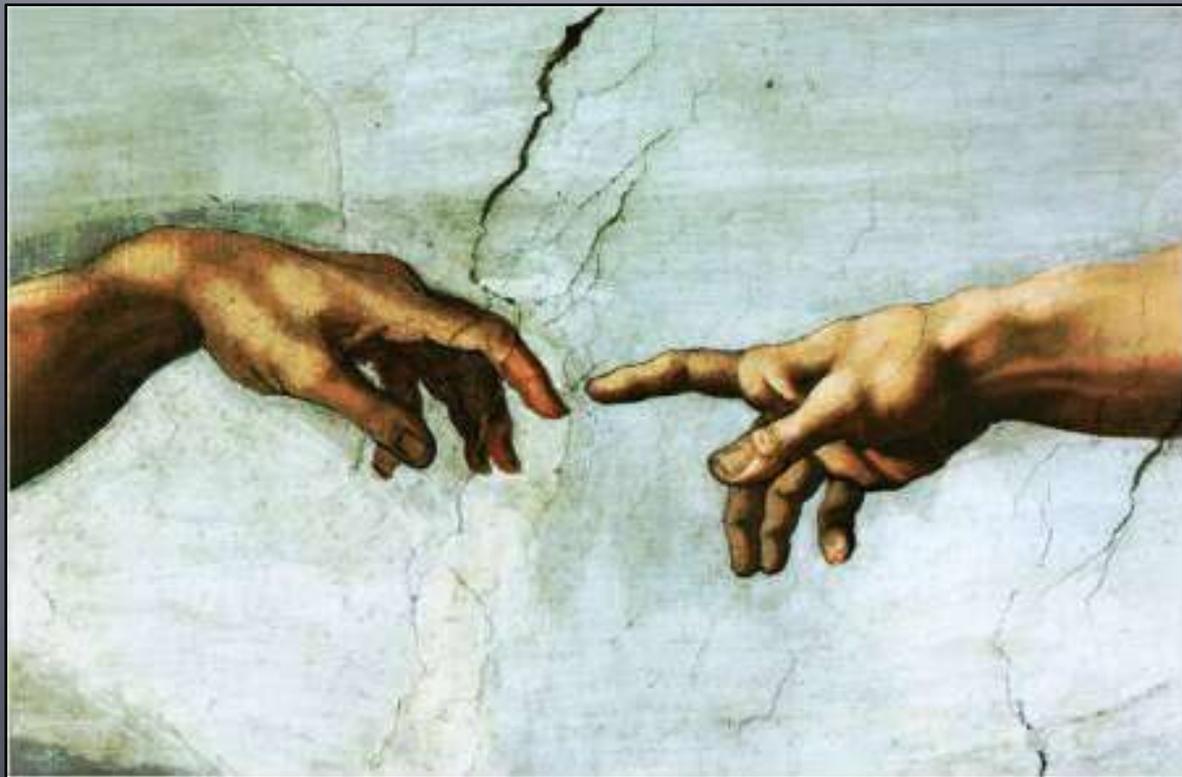


Problems with the RNA world

1. RNA building blocks are hard to make and easy to destroy
2. RNA molecules possess very few of the useful properties of proteins
3. No explanation of how self-replicating RNA evolved into modern cells that rely on proteins
4. Doesn't explain the origin of genetic information
5. Engineered RNA molecules don't simulate undirected chemical evolution

Intelligent design is the best explanation for life

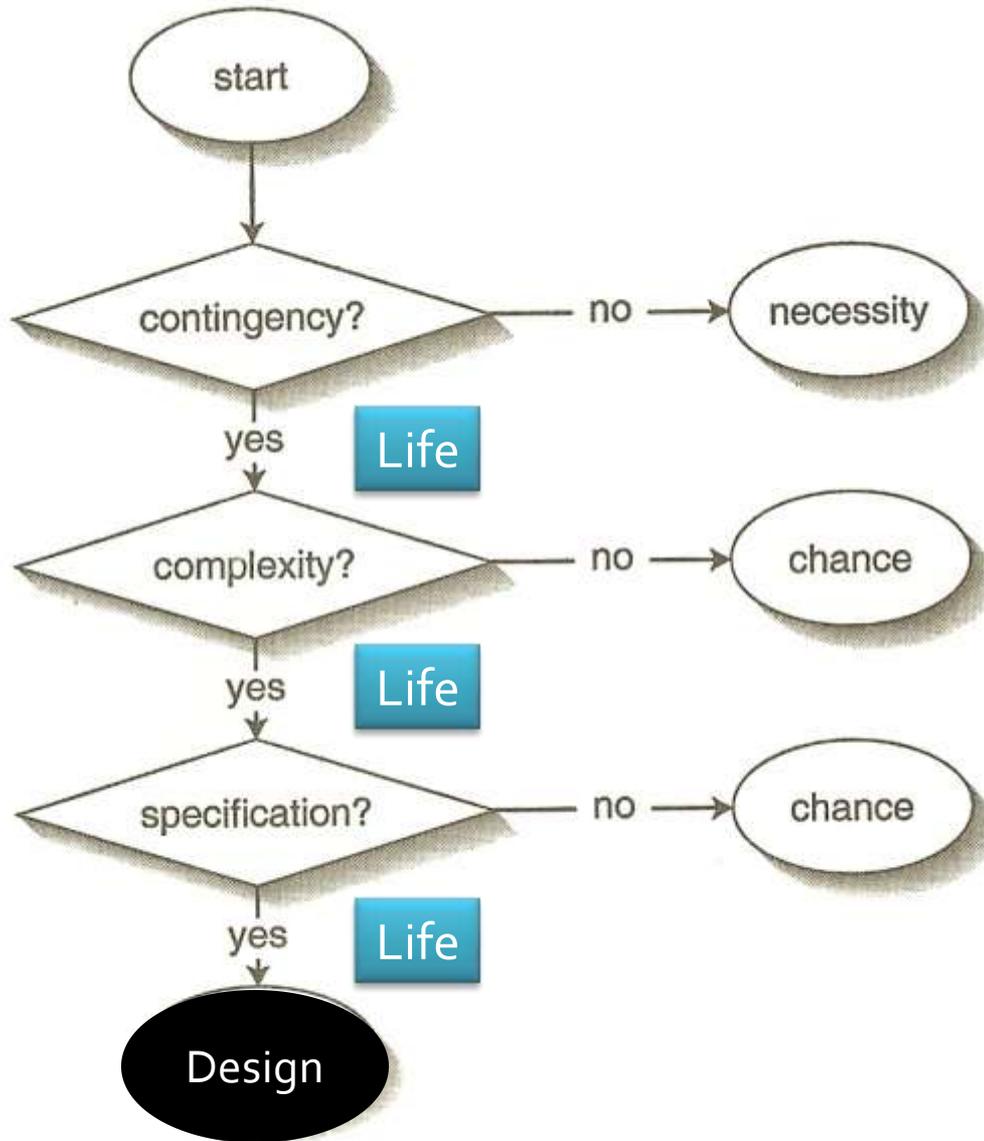
"Chance", "necessity" or some combination of these cannot explain life



Inference to the best explanation

- Best explanation of past events:
 - Causal adequacy – the cause is capable of producing the event in question
 - Causal existence – the cause existed at the right time and place
 - If there is only one possible cause then its existence is established
 - **Only intelligence is known to cause coded information**

Establishing Intelligent Design



- Life is contingent (did not have to occur)
- Life contains many irreducibly complex systems (multiple components simultaneously necessary for overall function)
- Life systems embody (pre) specified patterns independent of the actual living systems (necessary functionality, e.g. reproduction, ingest food, convert to useful energy)

Is the case for intelligent design “scientific”?

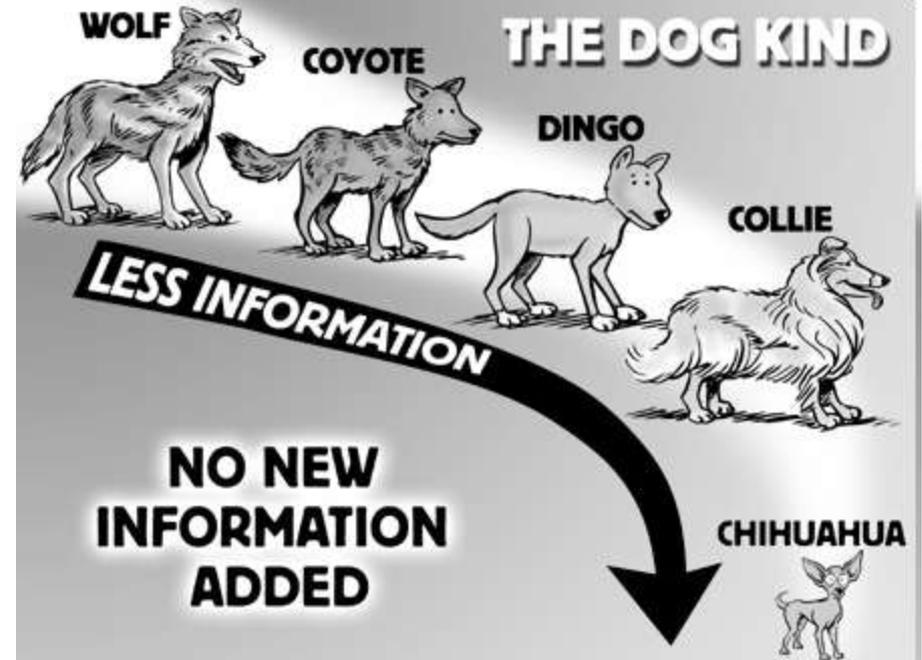
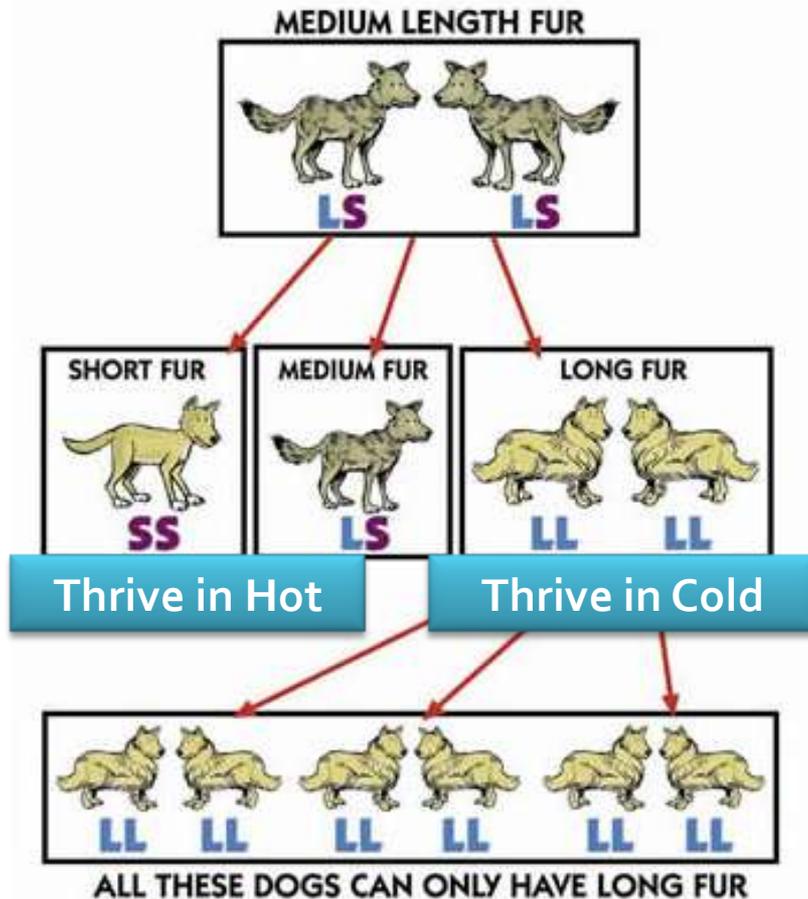
1. Based on empirical evidence (not religion)
2. Uses established scientific methods
3. Is a testable theory
4. Exemplifies historical scientific reasoning
5. Addresses a specific question in evolutionary biology (“how did the appearance of design in living systems arise”)
6. Supported by peer-reviewed scientific literature

Final thoughts

“If living things – things that we manifestly did not design ourselves – bear the hallmarks of design, if they exhibit a signature that would lead us to recognize intelligent activity in any other realm of experience, then perhaps it is time to rehabilitate this lost way of knowing and to rekindle our wonder in the intelligibility and design of nature that first inspired the scientific revolution.”

-- Stephen Meyer closing remark

Natural Selection is True – it is NOT Evolution – it involves a LOSS of information

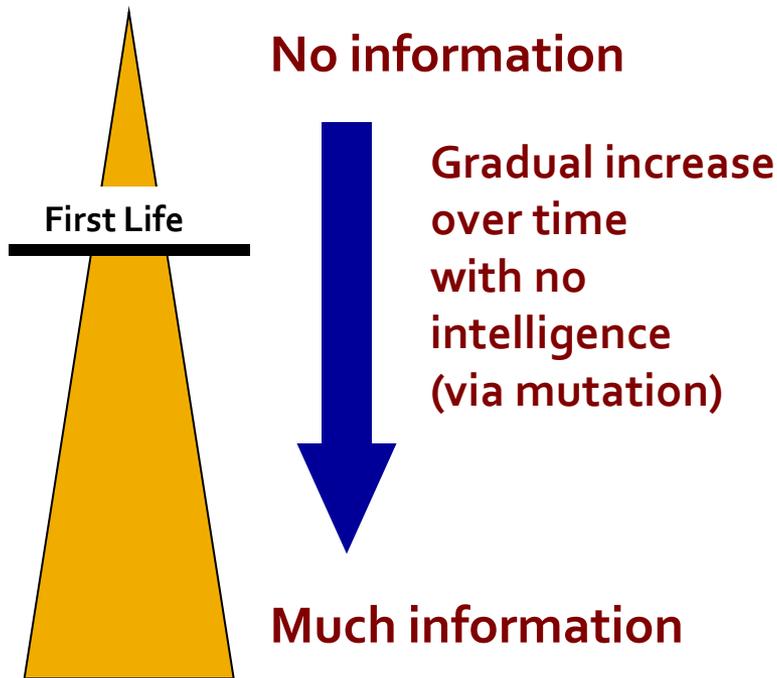


Answersingenesis.org

Natural selection selects from already existing information and causes a loss of information

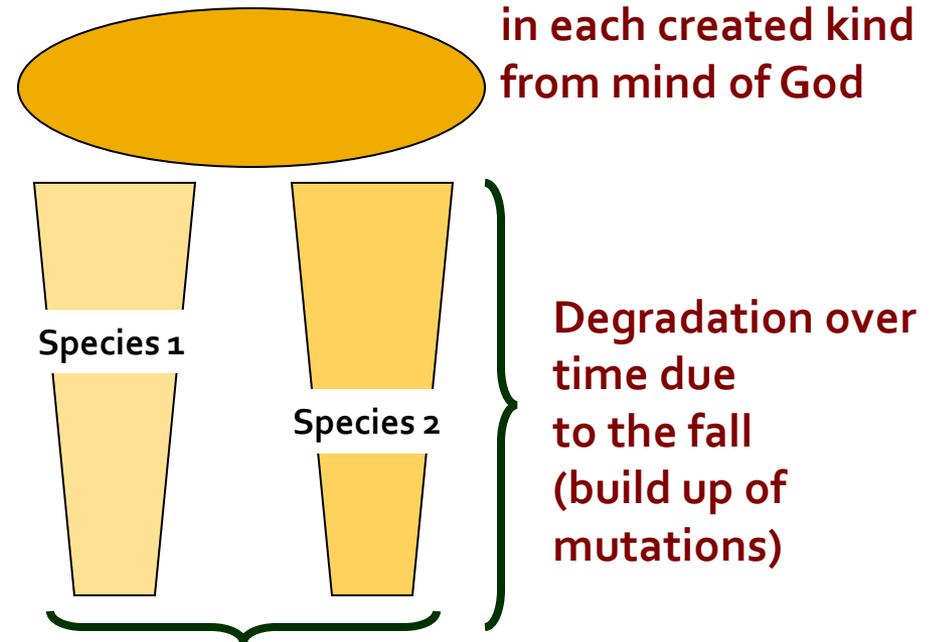
Evolutionary vs. Creation Views of Information

Evolutionary View



Note: mutation / natural selection only operates after the first replicating life form exists

Creation View



Kind diversifies into species due to environmental differences expressing different subsets of existing information

Conclusions from information

- Life is based on information
- Information always comes from a mind
- Information can **NEVER** arise from a physical process (like evolution)

DNA is God's signature in the cell!

It is scientific proof for the existence of God!



BIG IDEA #3

The information of life came from the mind of God

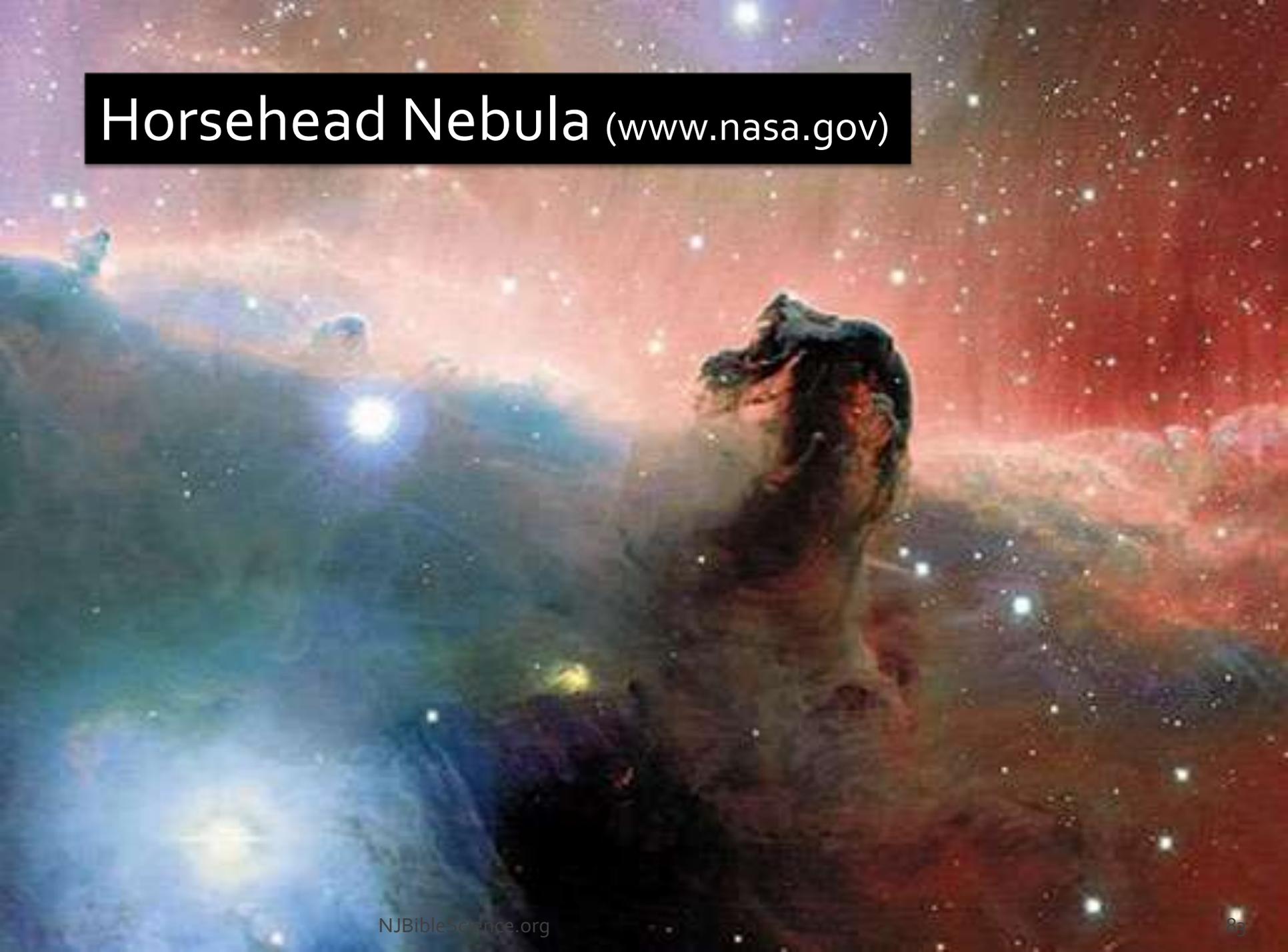
The LORD God formed the man from the dust of the ground and breathed into his nostrils the breath of life, and the man became a living being -- Genesis 2:7



Psalms 19:1-4 The heavens declare the glory of God; the skies proclaim the work of his hands. Day after day they pour forth speech; night after night they display knowledge. There is no speech or language where their voice is not heard. Their voice goes out into all the earth, their words to the ends of the world.



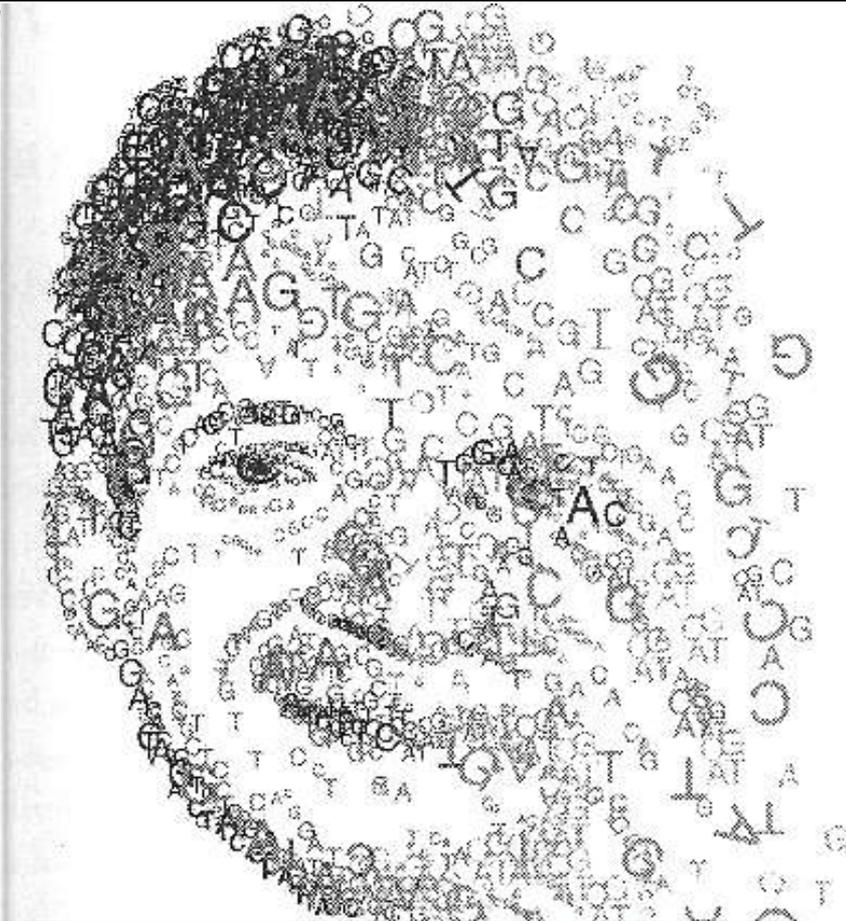
Horsehead Nebula (www.nasa.gov)



Romans 1:20-25

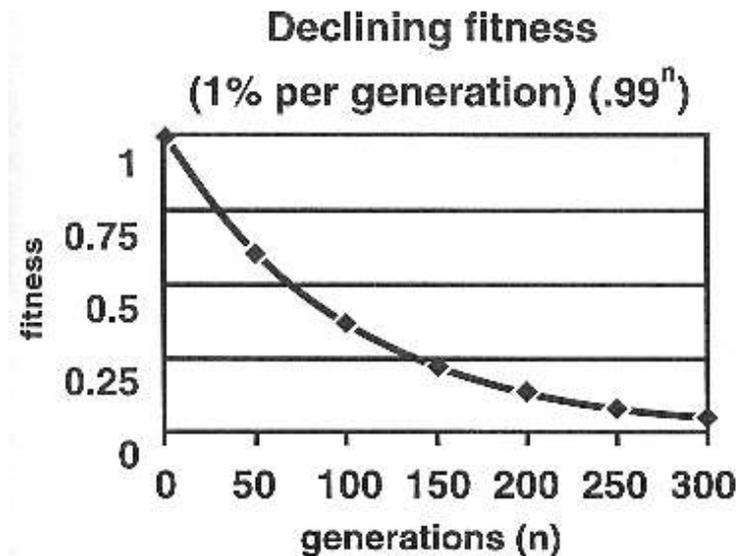
²⁰For since the creation of the world God's invisible qualities—his eternal power and divine nature—have been clearly seen, being understood from what has been made, so that **men are without excuse**. ²¹For although they knew God, they neither glorified him as God nor gave thanks to him, but their thinking became futile and their foolish hearts were darkened. ²²Although they claimed to be wise, they became fools ²⁵They exchanged the truth of God for a lie, and worshiped and served created things rather than the Creator

Our information is getting distorted!



We live in a fallen world!

The human genome is degenerating, as each person accumulates a minimum of 100 point mutations per generation. There is nothing man can do to halt it. It is biologically inevitable. It is why species go extinct.



(Jesus is speaking)

I tell you the truth, whoever hears my word and believes Him who sent me has eternal life and will not be condemned; He has crossed over from death to life. (John 5:24)

The big ideas



BIG IDEA #1

Life is based on information

BIG IDEA #2

There is big distinction between information itself and the housing of that information

BIG IDEA #3

The information of life came from the mind of God

