

Can evolution survive the new biological insights?

Leonard Brand

Professor of Biology and Paleontology
Department of Earth and Biological Sciences
Loma Linda University



Goals of this talk:

Evaluate the current state of the evidence for the evolution of life forms by random mutation and natural selection

Understand why the newest evidence is causing big trouble for Darwin's theory

History of scientific advance

Darwin (mid-1800's)

Molecular biology unknown

Genetics still decades in the future

Neo-Darwinian Synthesis (the Modern Synthesis)

1930's and 1940's

Synthesis of population biology, genetics, mathematical biology, and
paleontology

Molecular biology still in the future

Molecular biology

Especially since the 1950's, with rapid advance recently

What do we know now that we didn't know a few decades ago?

Recent developments – last 5 to 10 years

Rapid and spectacular advance in genetics and molecular biology

DEFINITIONS

Microevolution

Adaptation

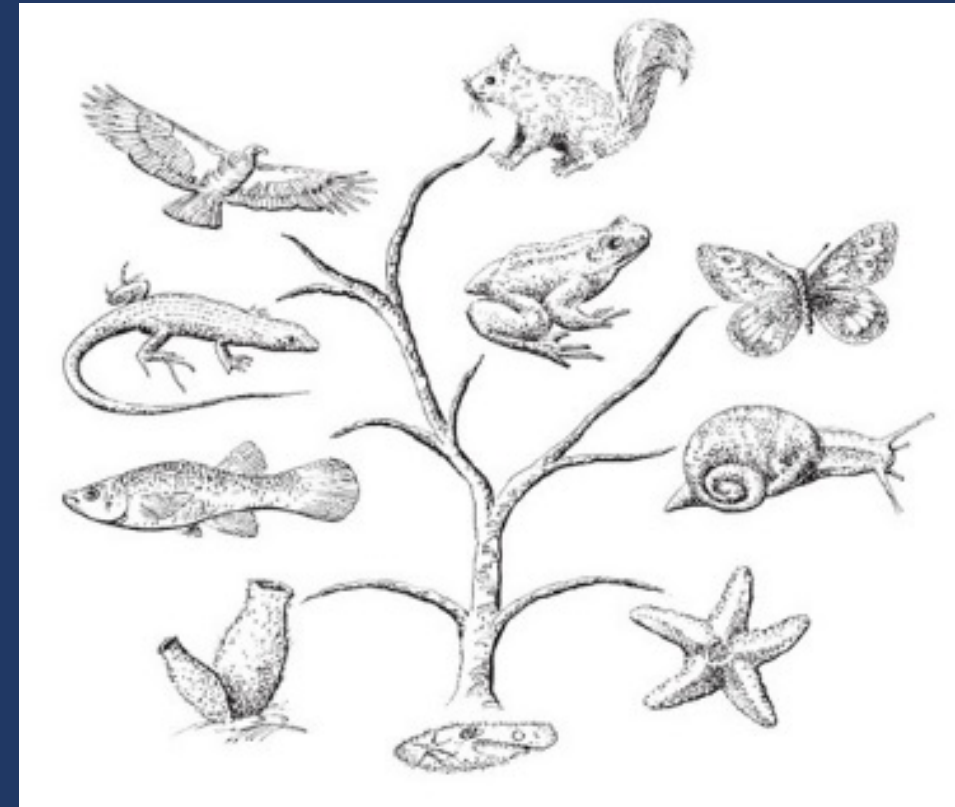
Changes within a species

The same lizard species: different environments



Macroevolution

Evolution of new major groups of organisms – Orders, Classes, Phyla



Microevolution

Adaptation

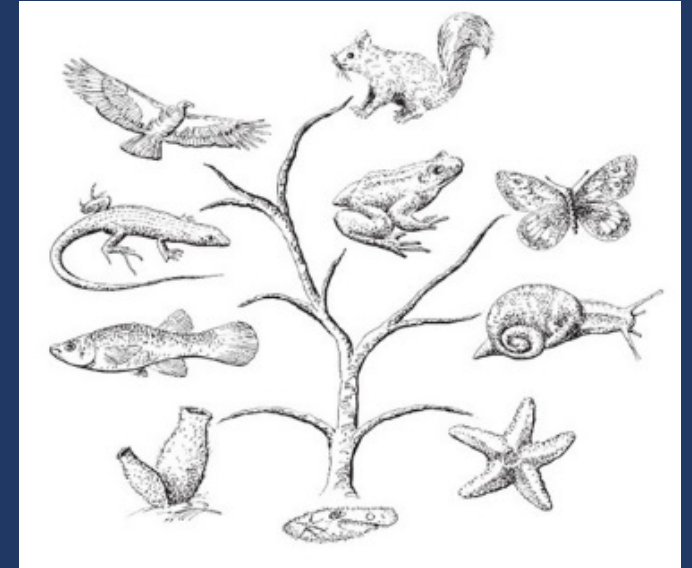
Changes within a species



Microevolution is compatible with creation – it is adaptations since the creation

Macroevolution

Evolution of new major groups of organisms – Orders, Classes, Phyla



Macroevolution is contrary to biblical creation

How does microevolution work? What is the process?

Accepted evolution theory:

1. Random mutations
2. Natural selection

These two concepts are the core of Neo-Darwinism

In Darwinian theory, the process *must* be random
Nowhere in the process can there be foresight
of what would be beneficial to the organism

Only natural selection (a naturalistic process)
determines which random change will succeed

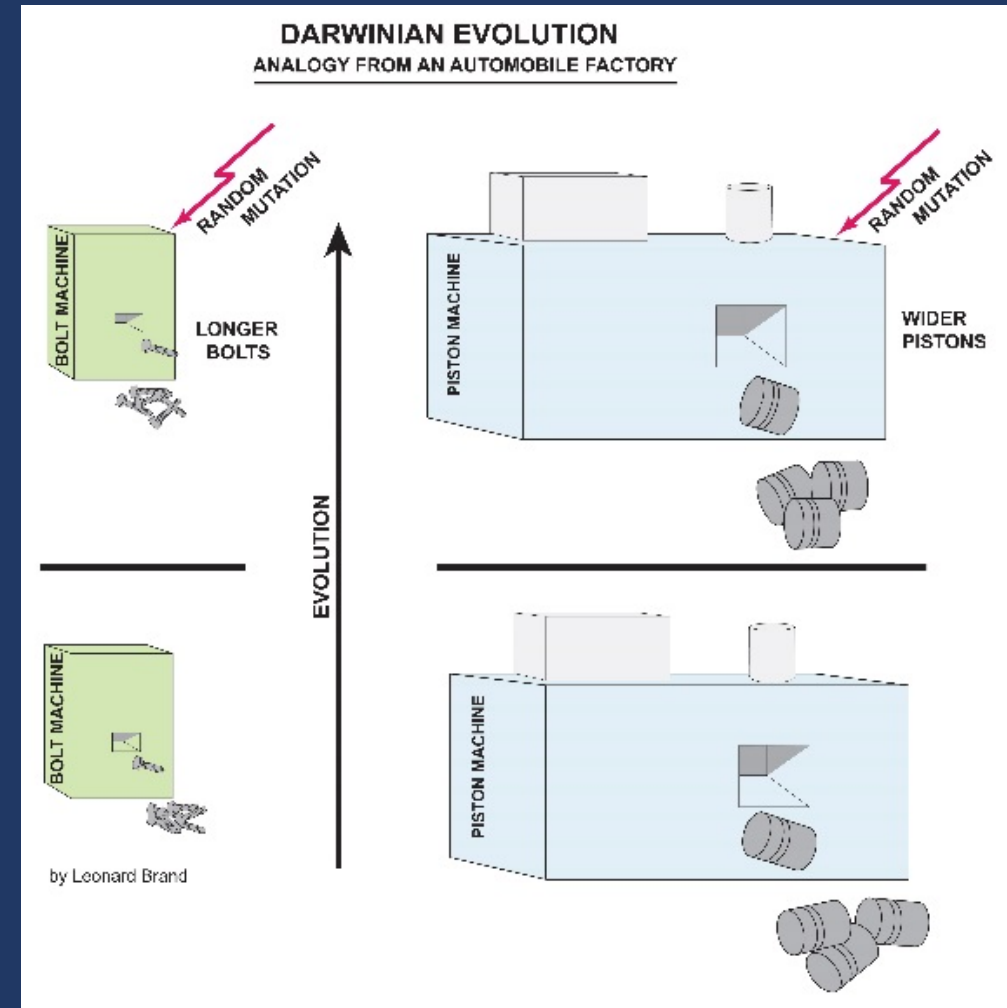


In Darwinian theory, the process *must* be random
Nowhere in the process can there be foresight
of what would be beneficial to the organism

Foresight would imply creation or
intelligent design

An analogy
of evolution

FEATHER



Problems for Darwinian theory of random mutation and natural selection

Problems are rapidly increasing, especially from advances in molecular biology

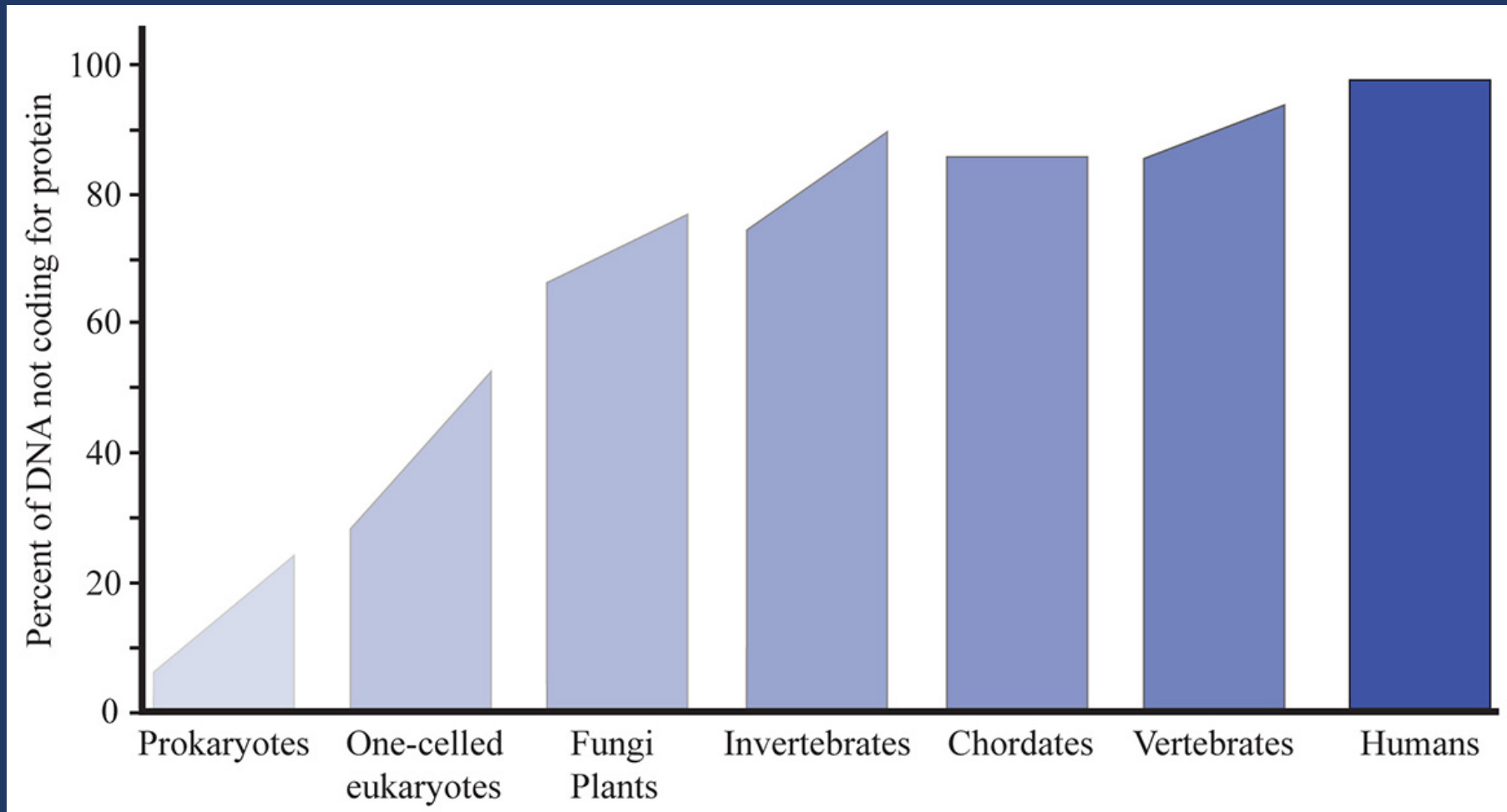
Problem # 1 – what is junk DNA?

About 98% of human DNA is called “silent DNA” because it does not produce protein

This has been interpreted as junk DNA – functionless remnants of evolution

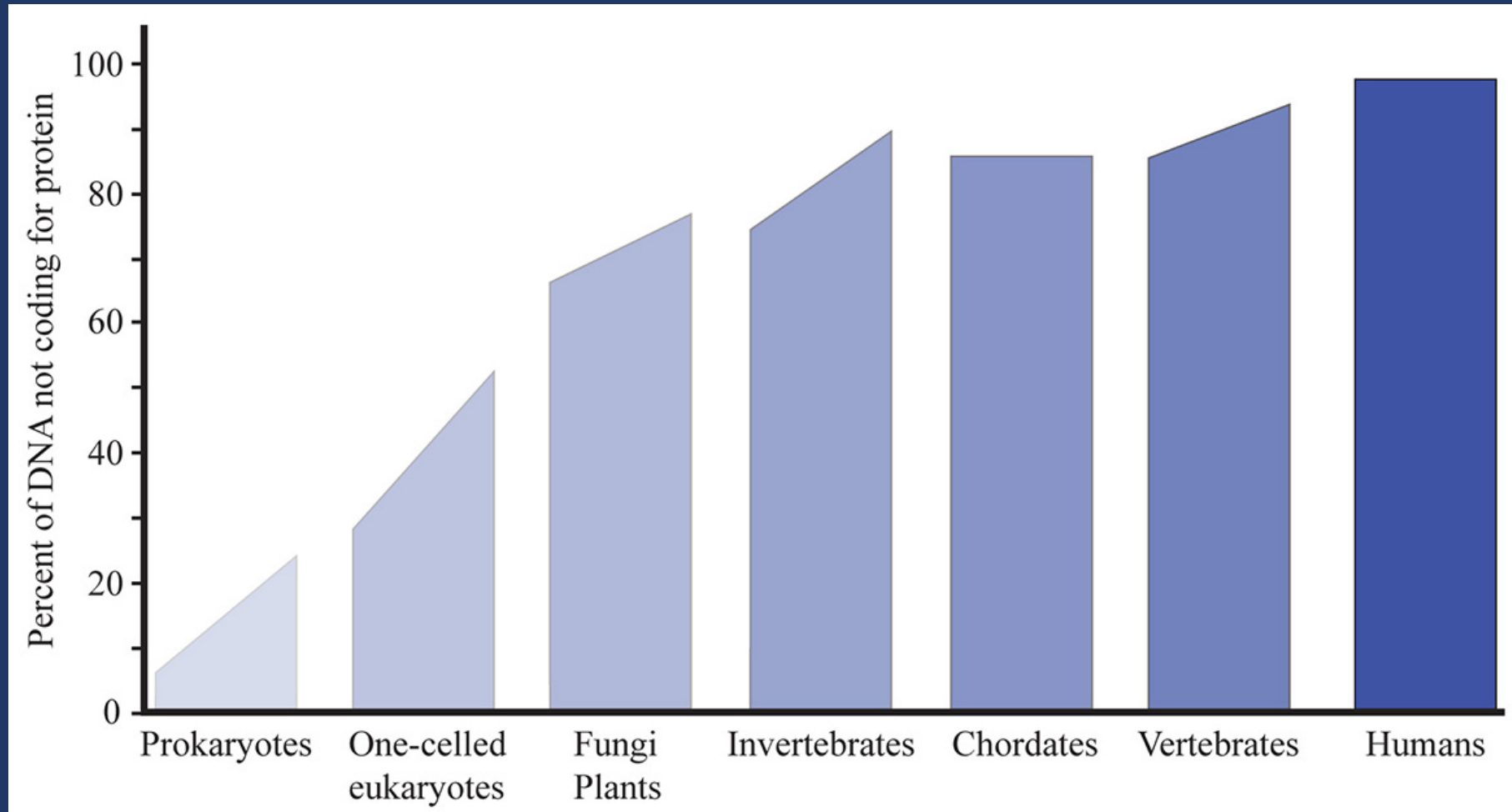
This DNA is needed by evolution as a resource for making new genes

Evidence: the percent of “junk DNA” is proportional to organism complexity



The percent of “junk DNA” is proportional to organism complexity

Thus the “junk DNA” seems to be involved in producing that complexity



A serious challenge to junk DNA

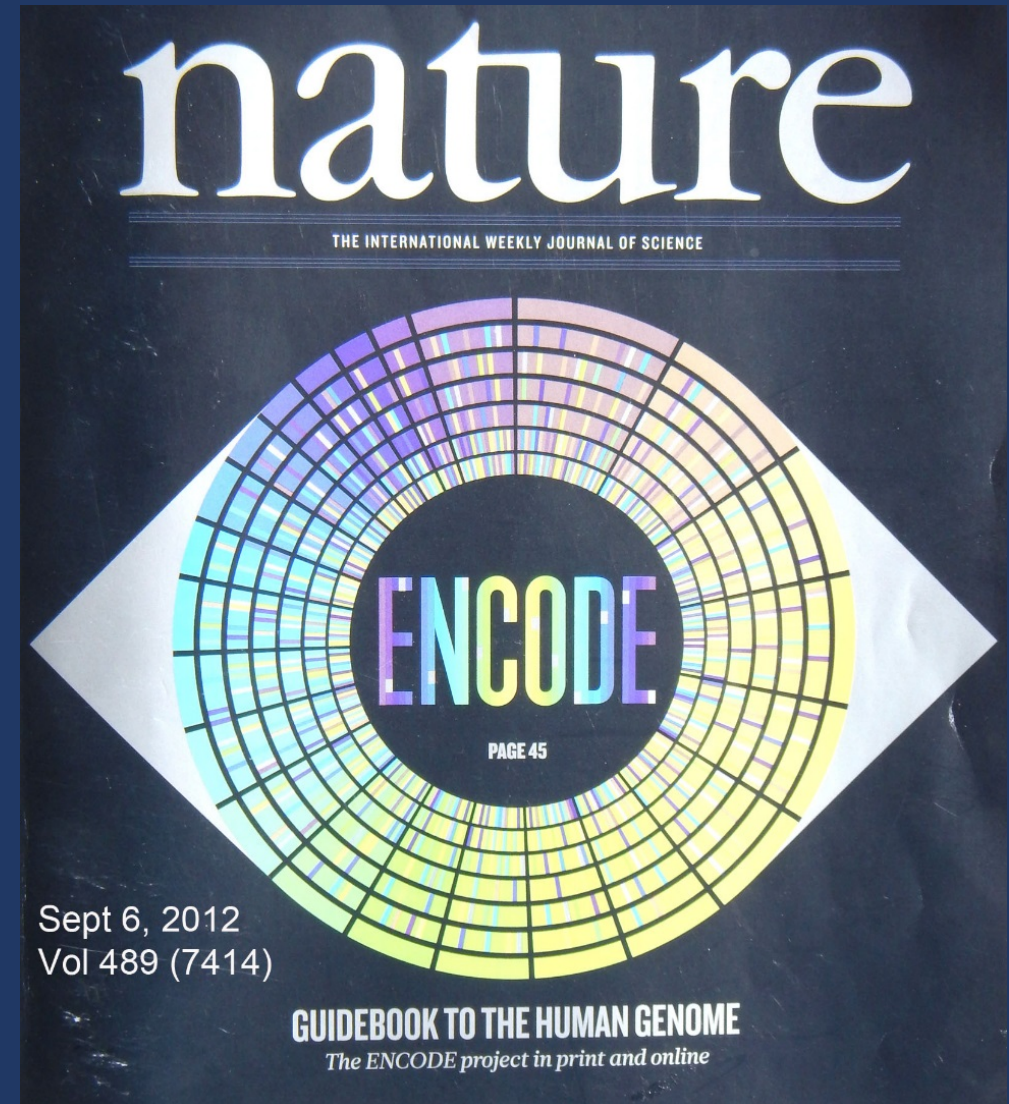


September, 2012

Results of the massive **Encode Project** published

All or most “junk DNA” is regulatory
DNA, controlling the protein-
coding DNA

Nature 489 (7414): 45-113, September 6, 2012.

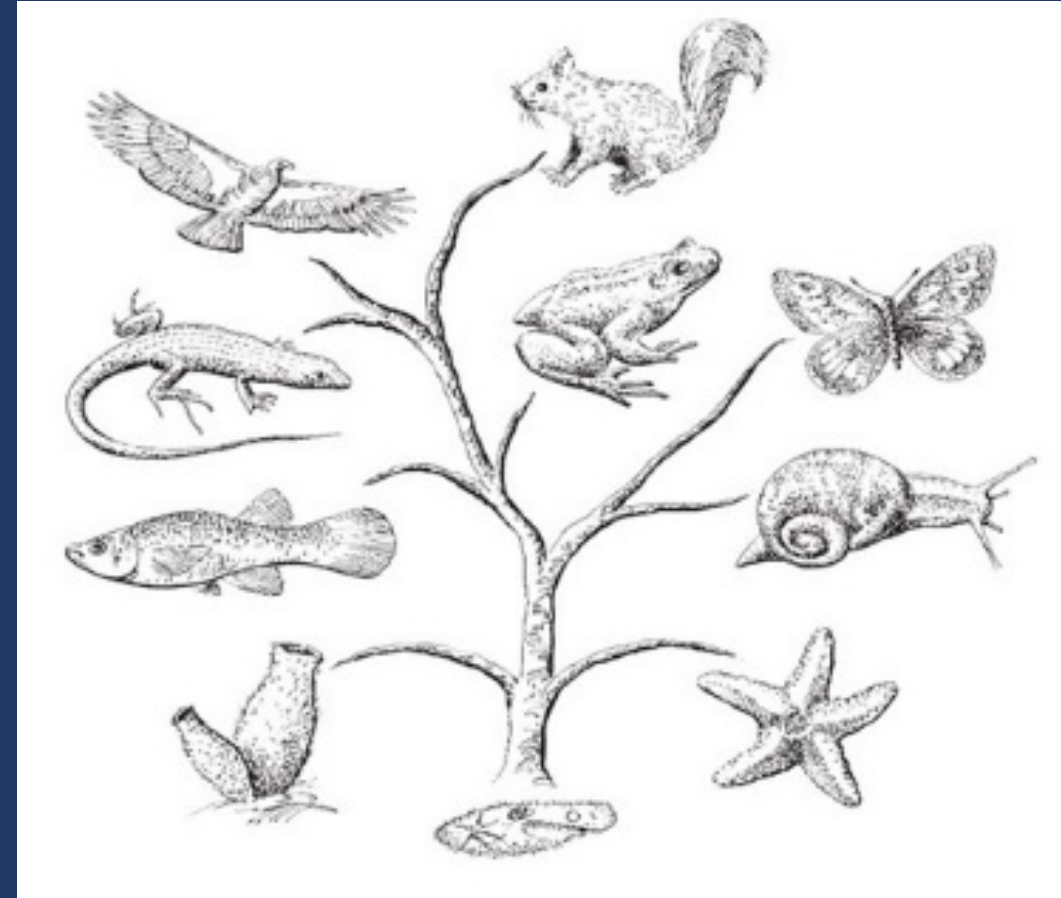


“Junk DNA” is no longer even a useful concept

The supposed junk DNA **controls** whether our protein-coding DNA will make a human, a chimpanzee, or a mouse

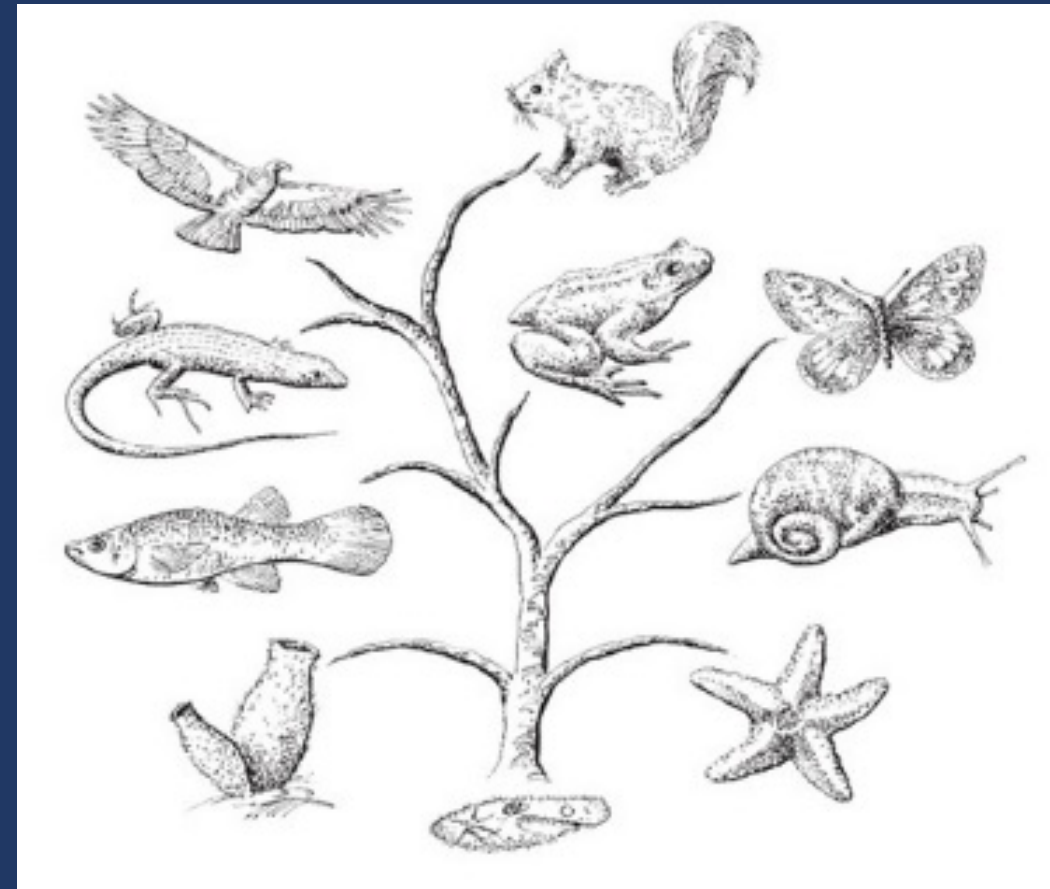
Problem # 2

Evidence for the tree of life (common ancestry of all genes and organisms) – **is facing serious setbacks**



Darwinian understanding of macroevolution requires that all new features arise by a **long, gradual series of small changes**

The tree of life is claimed to be a record of this series of changes



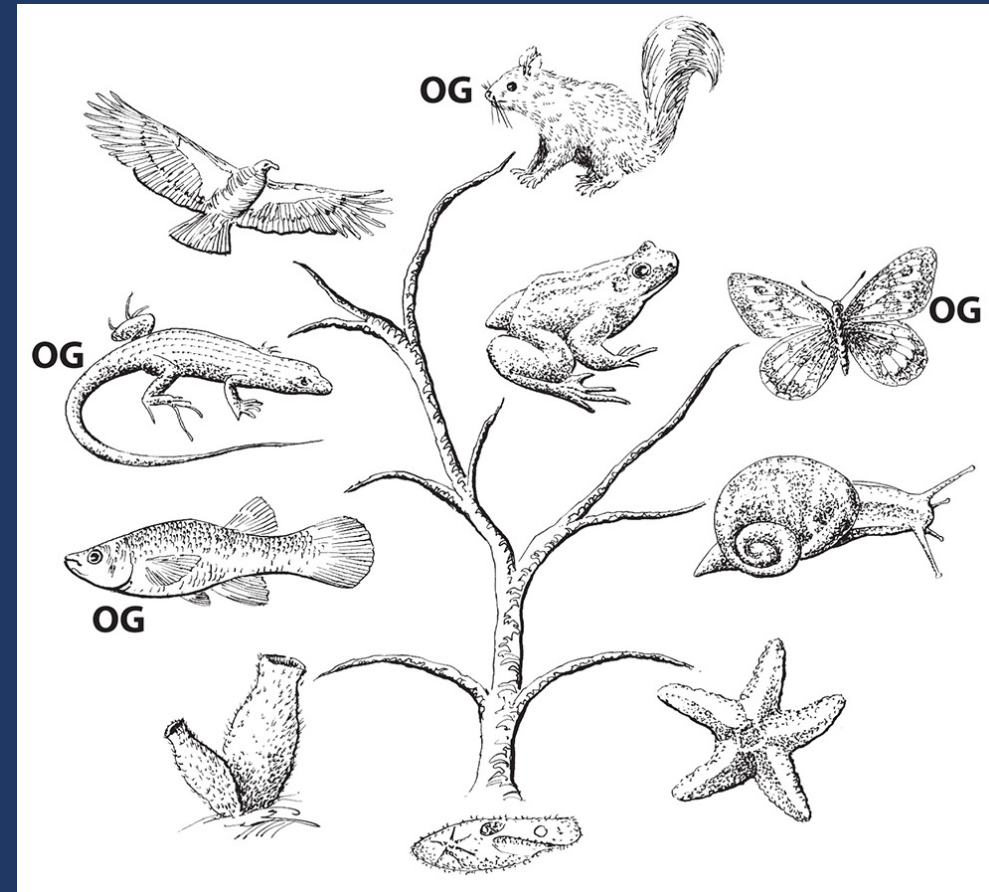
Problem: **ORFan genes** (orphan genes) – genes that seem to just appear with no evolutionary ancestry

At least 10 – 20% of genes are orphan genes

Hundreds of these in humans alone

Some are very important; one
is responsible for the large human brain

(OG – orphan gene)



Problem # 3: Epigenetics

Epigenetics is a management system that determines how to use the DNA

Sensors in the cell detect environmental factors

Places chemical tags on the DNA
(the little pink tags)

They turn genes on and off, without
changing the information in DNA



Exodus 20:5

“Punishing the children for the sins of the fathers to the third and fourth generation”

Epigenetics

Punishing the children for the sin of the fathers to the third and fourth generation

Ex. 20:5



Epigenetics

Epigenetic effects can last for several generations



Example:

Blind cave fish – how did they become blind?

Old explanation – random mutations destroyed sight

Example:

Blind cave fish – how did they become blind?

~~Old explanation – random mutations destroyed sight~~

New explanation – epigenetics

Their eye genes are intact, but have been turned off

No changes in the DNA

Epigenetics is a problem for Darwinism, because:

Epigenetic environmental influences initiate changes that are:

Beneficial

Inheritable

Non-random

Epigenetics is a problem for Darwinism, because:

Epigenetic environmental influences initiate changes that are:

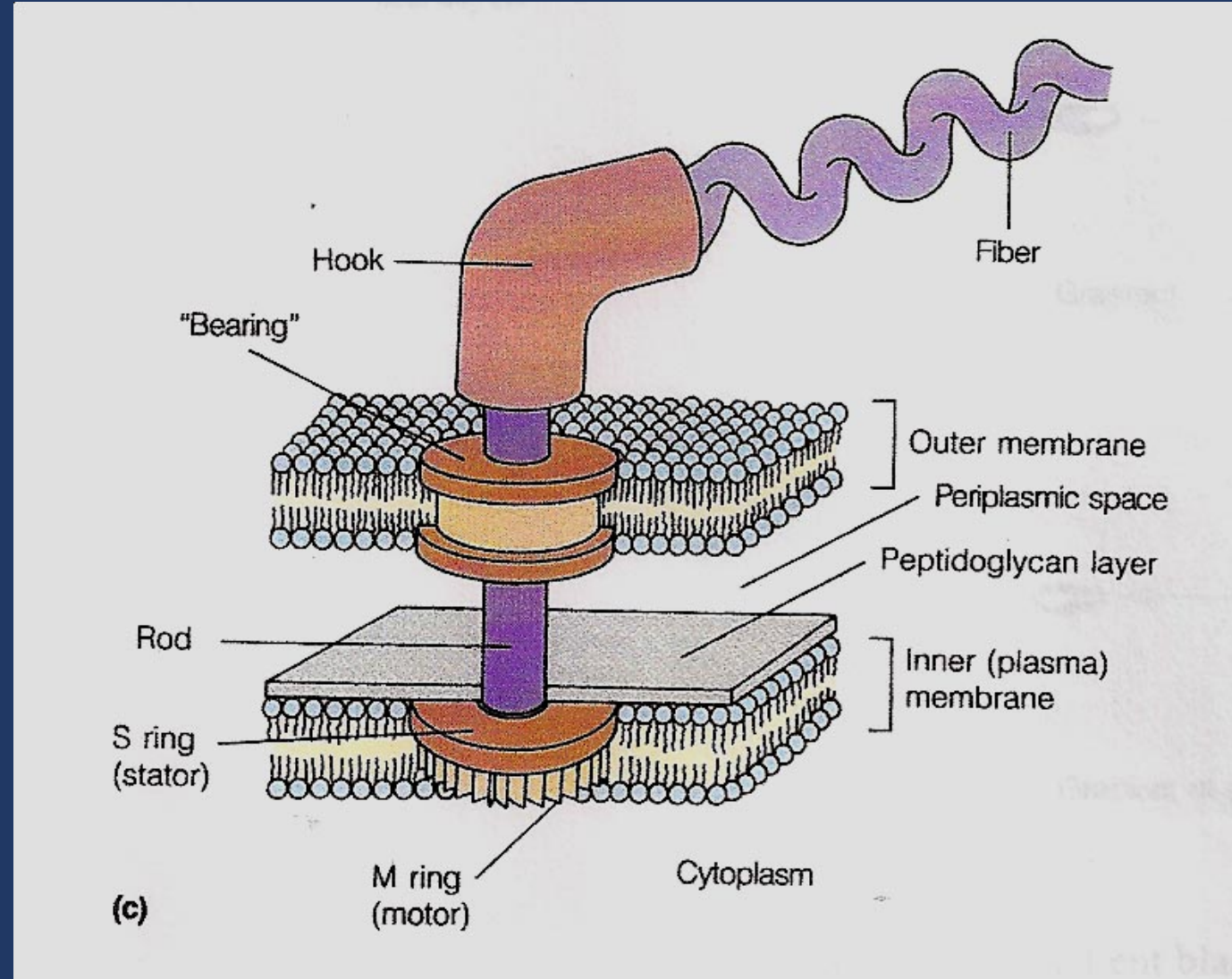
Beneficial

Inheritable

Non-random

How can this happen unless there is, somehow, intelligent awareness behind the design or operation of this system?

Problem # 4: Irreducible complexity



Problem # 4: Irreducible complexity



Problem # 5: Other new insights from molecular biology

A group of “new evolutionists” recognize that:

Darwinian random mutations and natural selection don't work

New genetic information must arise some other way

“the Modern Evolutionary Synthesis included an **ad hoc assumption** about the **random** nature of hereditary variation.” Shapiro p. 142

“It requires great faith to believe that a process of random, accidental genome change could serve this function” (adaptation). Shapiro p. 134

“hereditary change results from . . . **active cell processes** rather than a series of random accidents.” Shapiro p. 129

Natural genetic engineering – “cells are now reasonably seen to operate teleologically (with purpose): their goals are survival, growth, and reproduction.” Shapiro p. 137

Shapiro. *Evolution: A View from the 21st Century*.

How do these “new evolutionists” explain the evolution process?

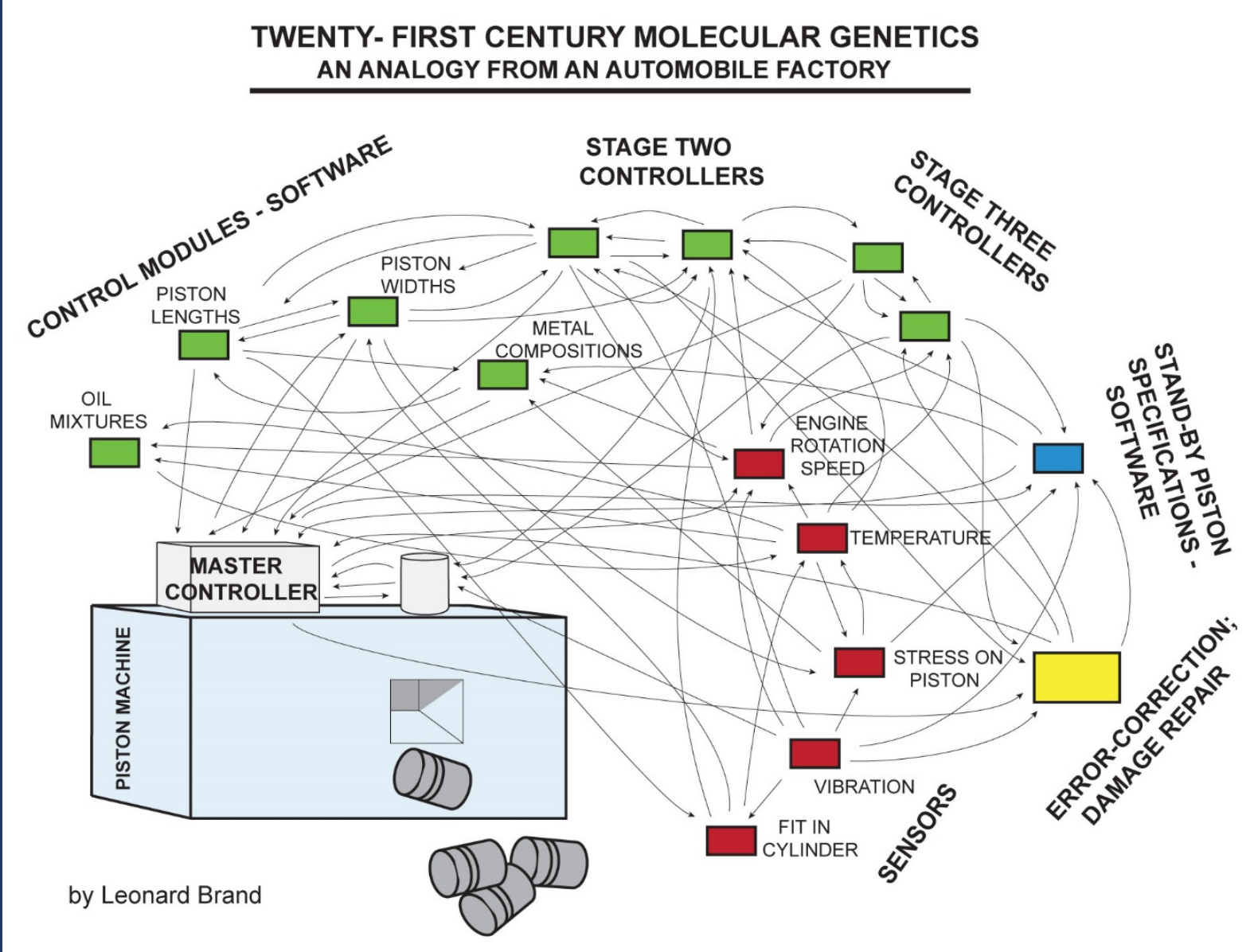
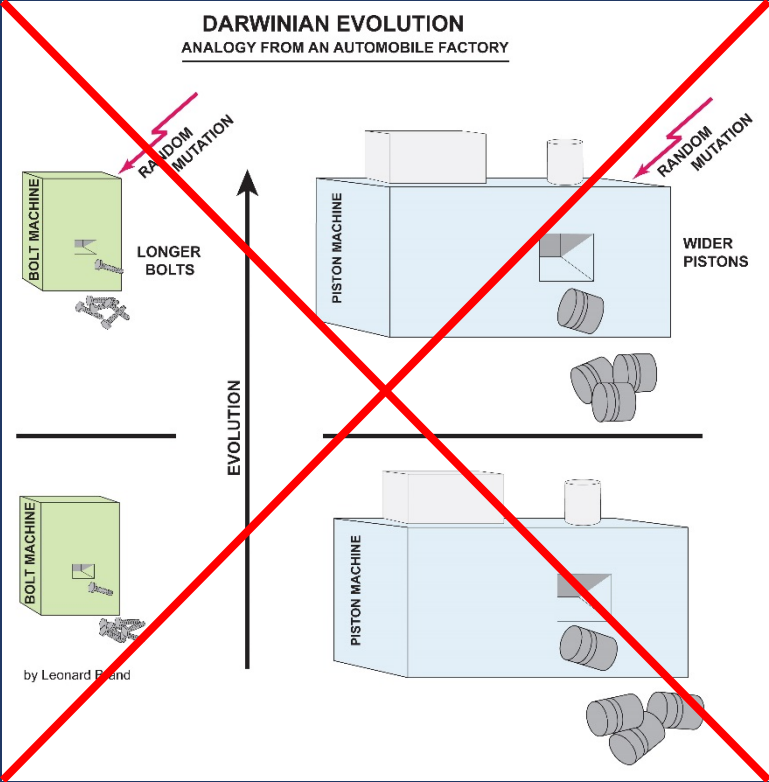
Active cell processes - not random accidents Shapiro p. 129

Natural genetic engineering – cells have goals - survival, growth, and reproduction.”
Shapiro p. 137

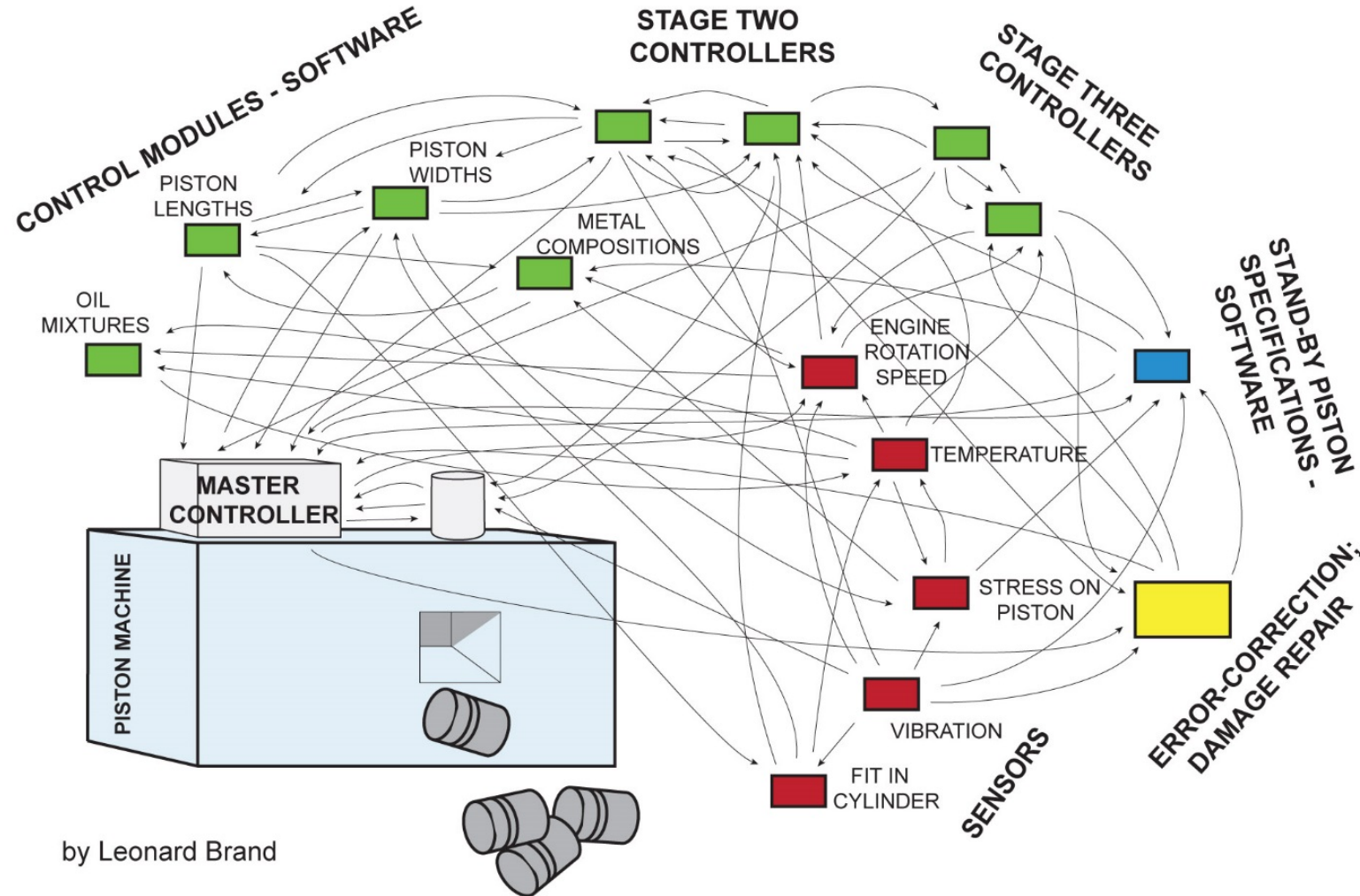
The complex biochemistry in the cell “decides” how to interpret the DNA.

Random mutations are not the source of genetic change

The analogy must be revised



TWENTY-FIRST CENTURY MOLECULAR GENETICS AN ANALOGY FROM AN AUTOMOBILE FACTORY



Organisms have “stand-by”
genetic information:

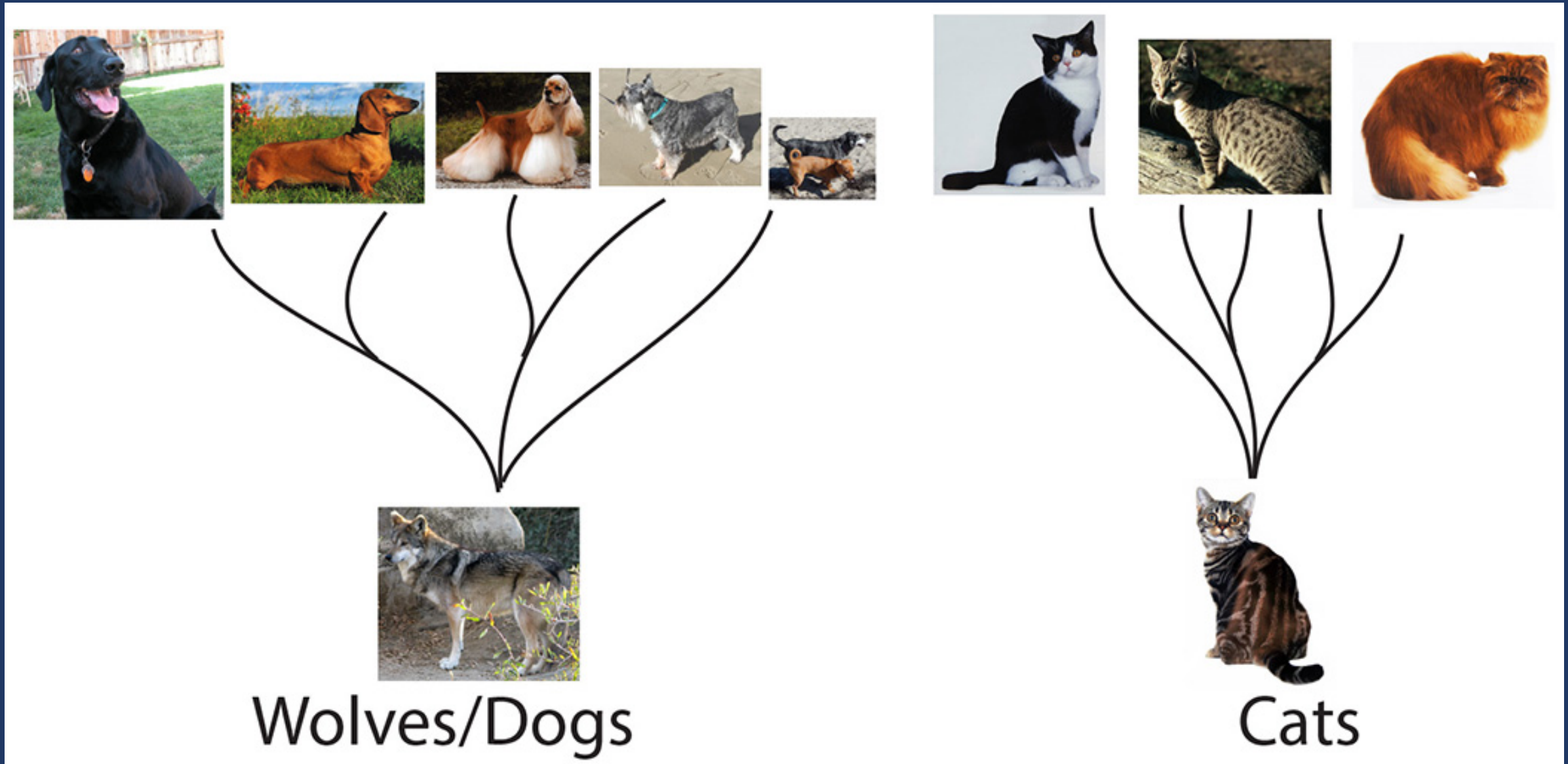


Potential for change

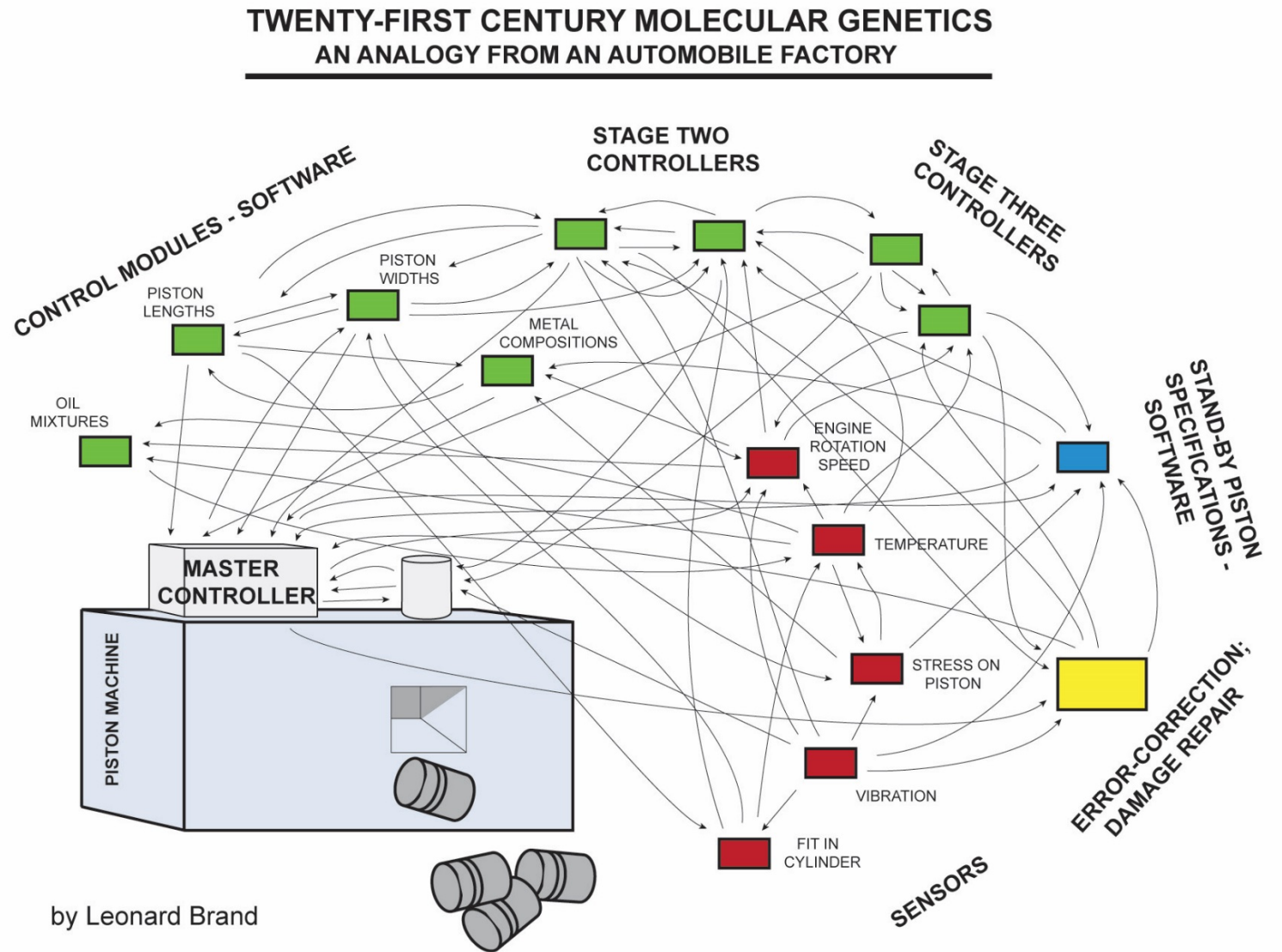
Stand-by genetic information – example: genetic variability in dogs



Dogs were created with enormous genetic variability: Cats have much less



If random mutations
(random damage) do
occur, what is the most
likely result?



MOST LIKELY RESULTS OF RANDOM MUTATIONS

1. SYSTEM FAILURE
2. REDUCED EFFICIENCY
3. MUTATION ELIMINATED BY ERROR-CORRECTION SYSTEM

Macroevolution: is it just an accumulation of microevolution over time?

Microevolution



Macroevolution



THE EDGE OF NATURALISM, MATERIALISM, ATHEISM

Naturalistic theory

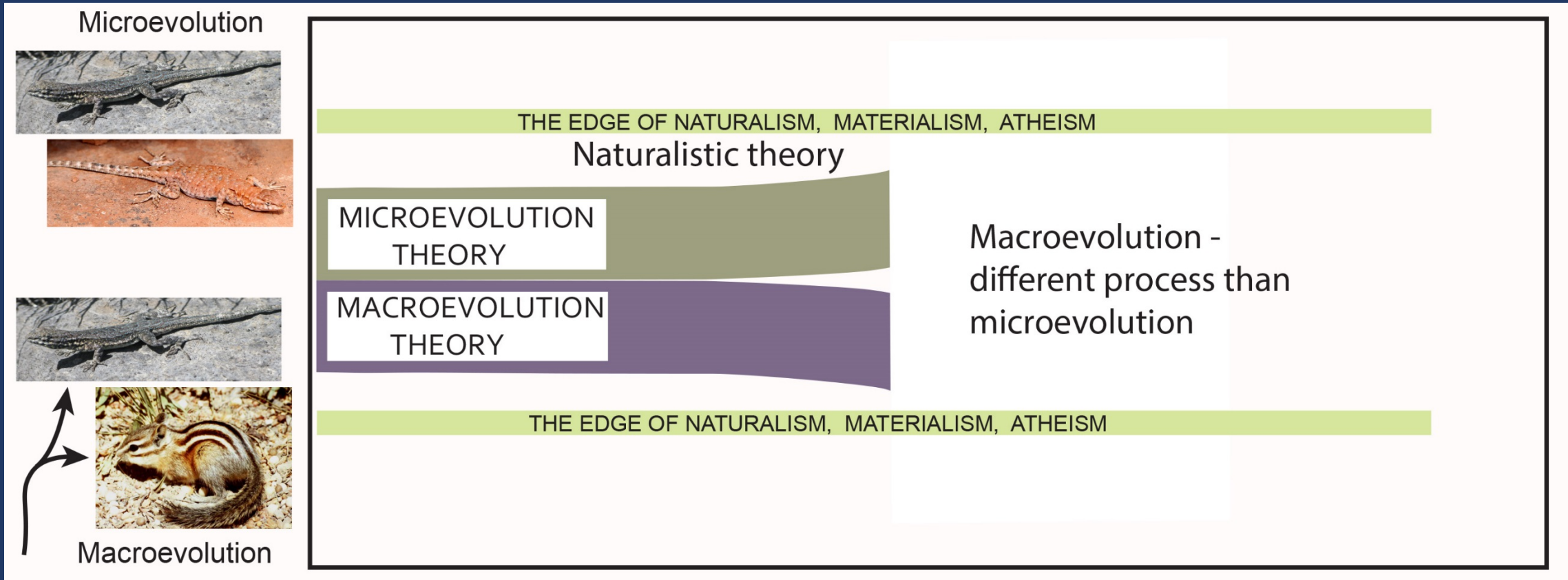
MICROEVOLUTION
THEORY

MACROEVOLUTION
THEORY

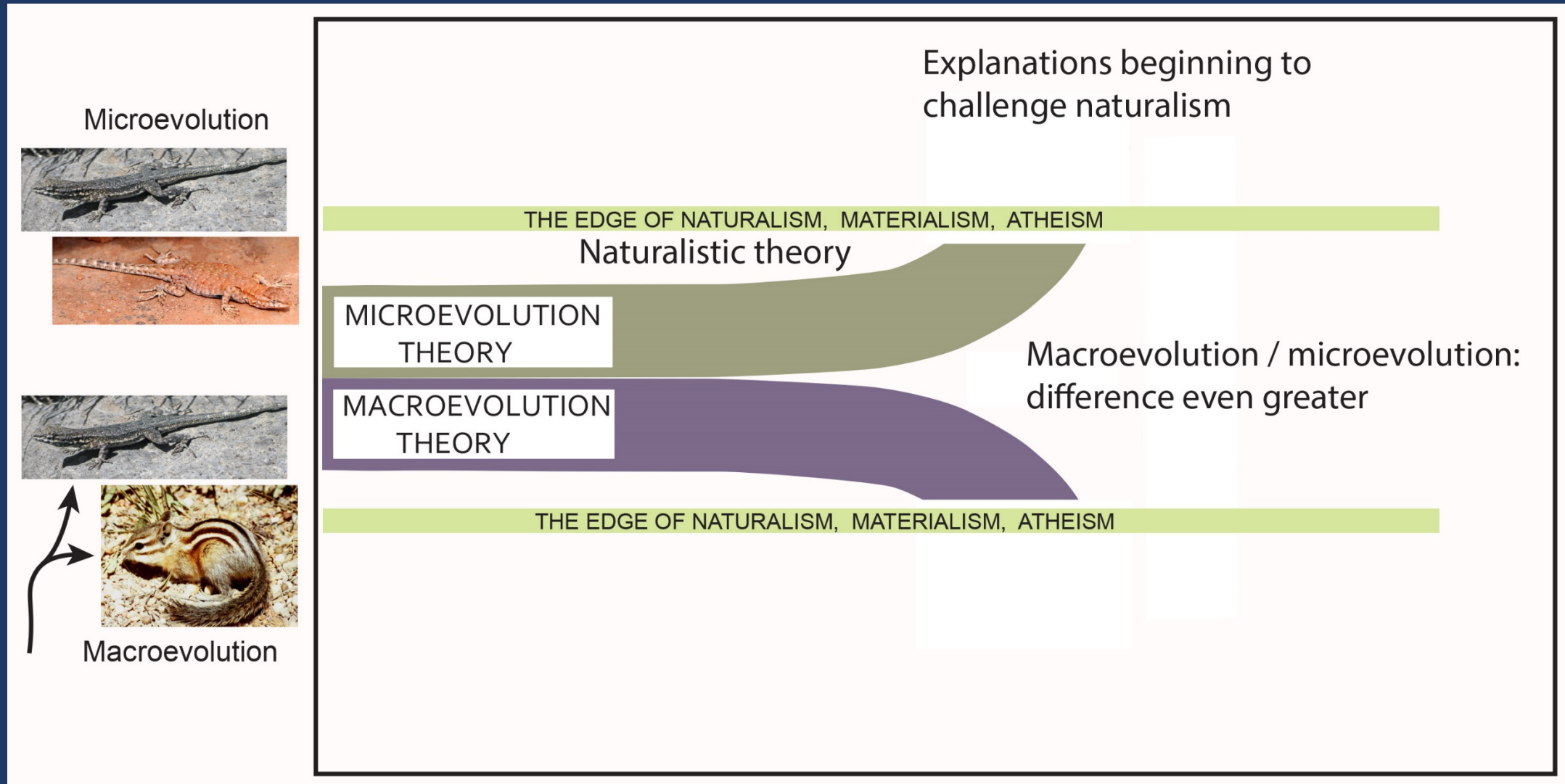
Macroevolution -
accumulation of microevolution
over long time

THE EDGE OF NATURALISM, MATERIALISM, ATHEISM

New molecular evidence is pushing micro and macroevolution apart.
Macroevolution is a different process:
It is not just accumulated microevolution over time

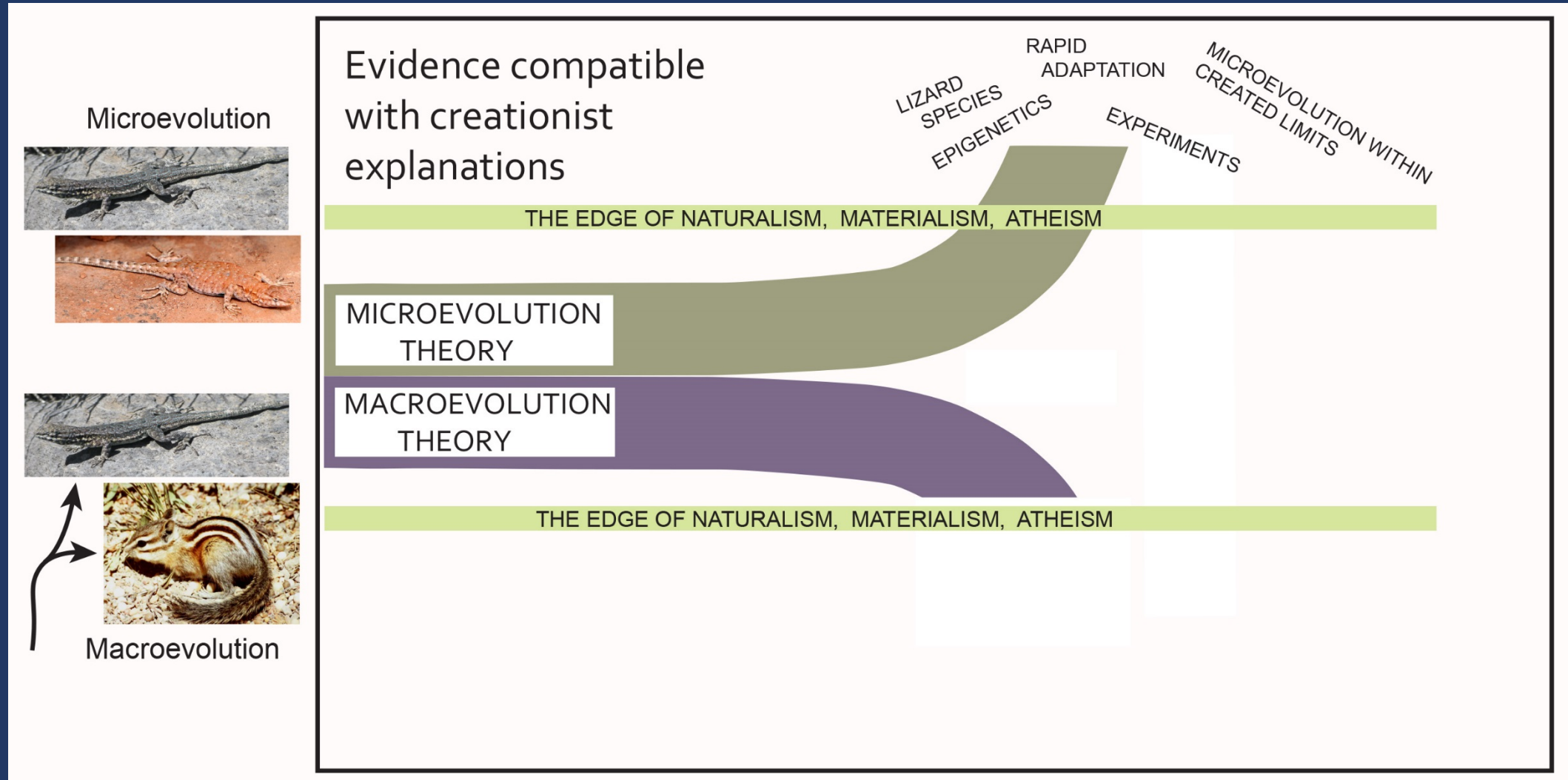


New molecular evidence is pushing micro and macro FARTHER apart.
Macroevolution is a different process:
It is not just accumulated microevolution over time



Problem # 5: Micro and macroevolution challenge naturalism

Microevolution: Rapid, and more than a naturalistic processes



And, macroevolution theory is collapsing

Microevolution



Macroevolution

Evidence compatible
with creationist
explanations

THE EDGE OF NATURALISM, MATERIALISM, ATHEISM

MICROEVOLUTION
THEORY

MACROEVOLUTION
THEORY

THE EDGE OF NATURALISM, MATERIALISM, ATHEISM

Macroevolution theory
collapsing

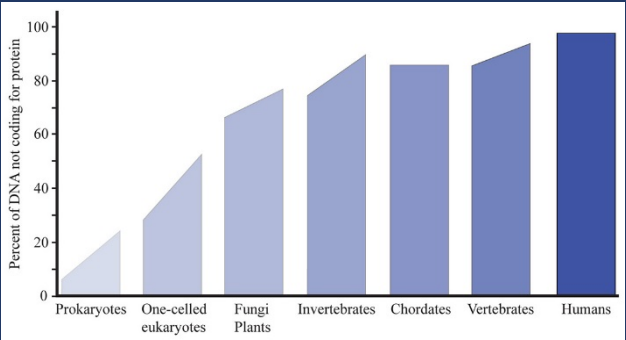
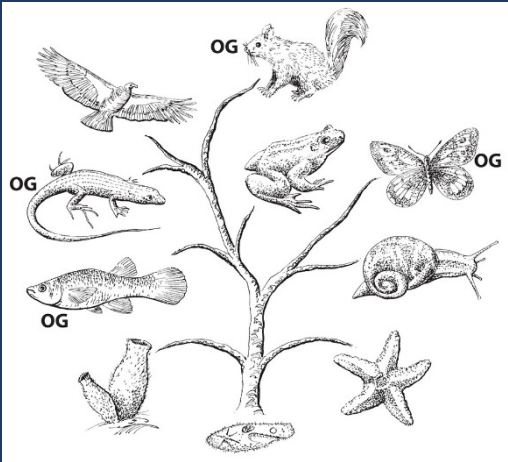
Evidence **favours** creation

LIZARD
SPECIES
EPIGENETICS
RAPID
ADAPTATION
EXPERIMENTS
MICROEVOLUTION WITHIN
CREATED LIMITS

INTELLIGENT
DESIGN
EVO-DEVO
INTERNAL
DEVELOPMENTAL
CONSTRAINTS
NO JUNK DNA
IRREDUCIBLE
COMPLEXITY
ORPHAN
GENES
EPIGENETICS
CHEMICAL
EVOLUTION ?
MOLECULAR
COMPLEXITY

How are evolutionary scientists responding to these challenges?

Orphan genes

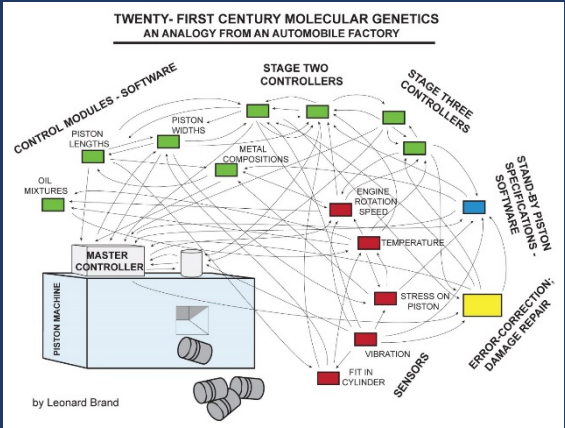


No junk DNA

Failure of Darwinism



Epigenetics

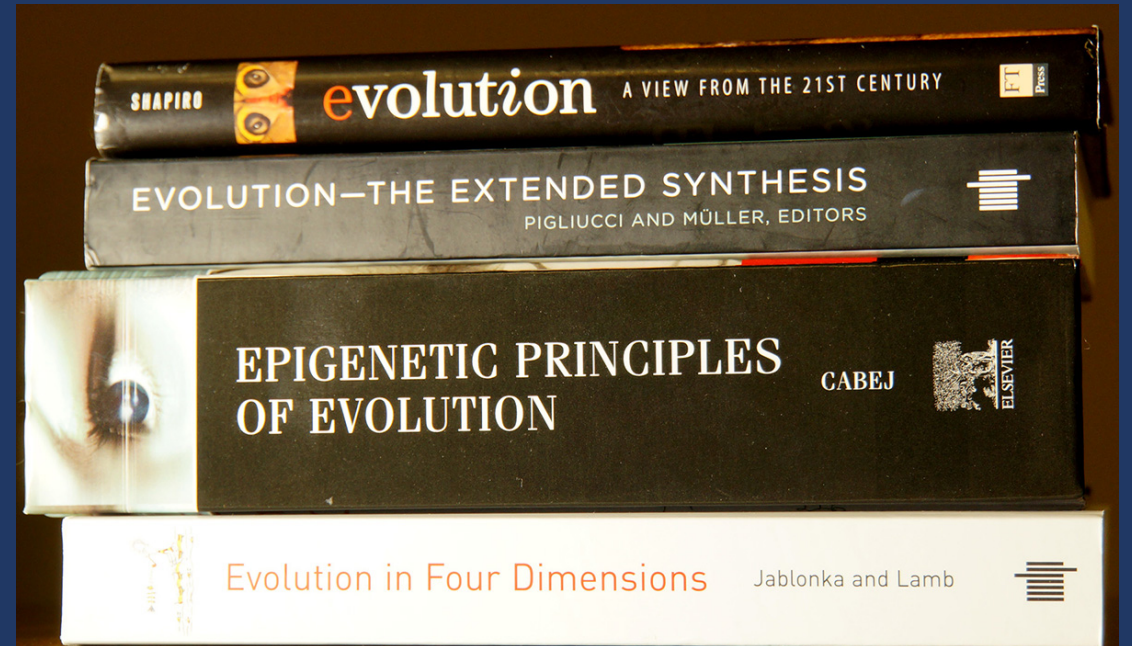


Two groups of current evolution textbooks

Epigenetics minimized or ignored
Orphan genes not mentioned



Epigenetics – the source of a new
evolution theory



FEATHER

Macroevolution is facing increasingly serious challenges

Eminent evolutionists, primarily molecular biologists, are raising those challenges and rejecting Darwinian theory

So –

Why do evolutionary biologists seem to be more committed to their theory than ever?

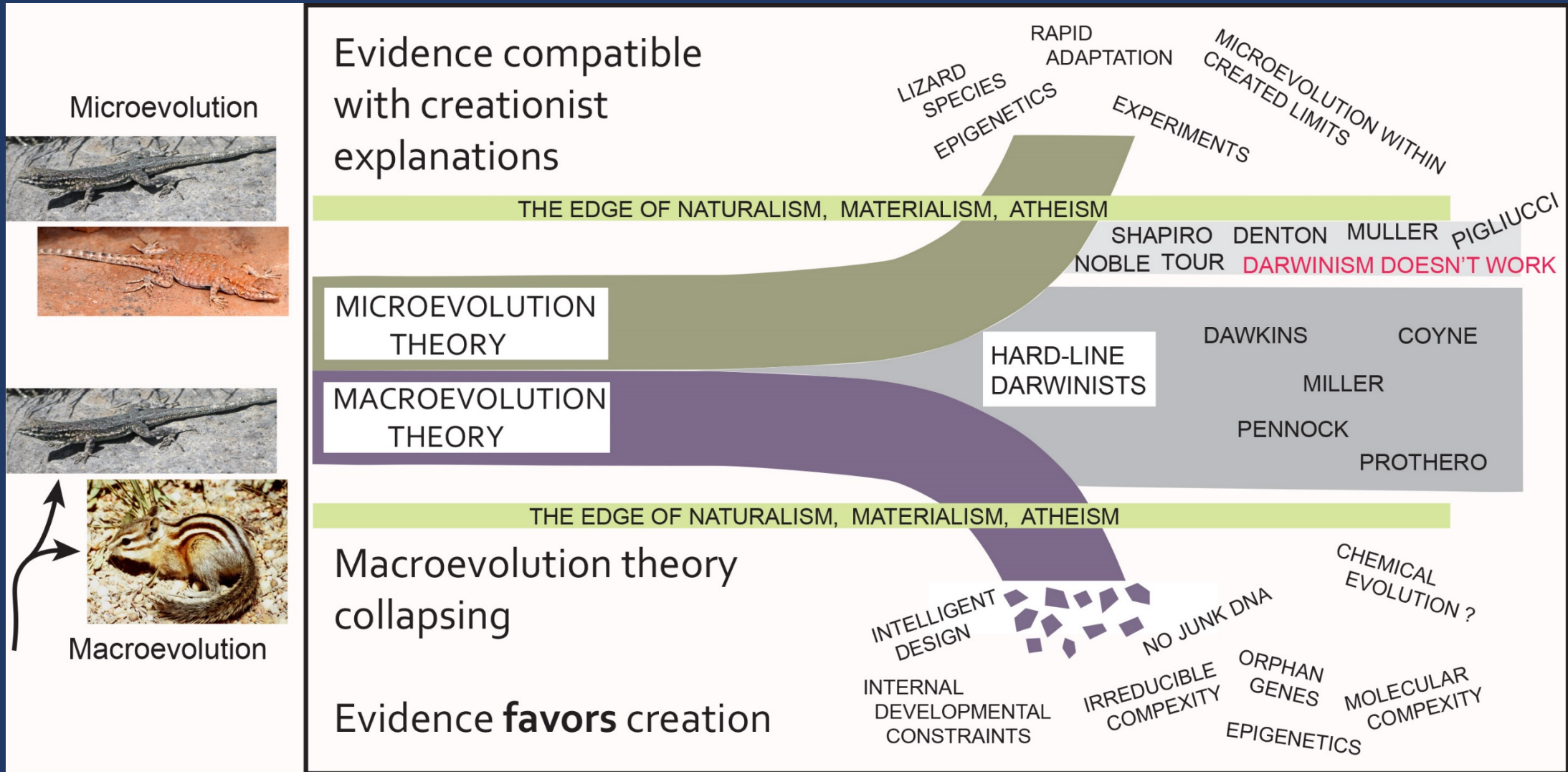
Macroevolution is facing increasingly serious challenges

Eminent evolutionists, primarily molecular biologists, are raising those challenges and rejecting Darwinian theory

So –
Why do evolutionary biologists seem to be more committed to their theory than ever?

It is because of philosophy, not evidence

Darwinian theory is collapsing, largely from the molecular challenges.
Hard-line Darwinists are relying on commitment to their naturalistic philosophy (worldview)



Conclusions

Darwinian theory of evolution through random mutations and natural selection is facing deadly challenges

There is a growing conflict *within science*, between hard-line Darwinists and the “new evolutionists” who recognize the collapse of Darwinism

Creationists have increasing reasons to be confident of the literal creation of life forms – *This is a new day for us*

Conclusions

How can we grasp the full truth about origins?

Gain a broad and deep understanding of life and all the complexities of life processes.

The deeper our broad-scale knowledge of the processes of life becomes, the more likely it is that ideas like abiogenesis (chemical evolution) and large-scale macroevolution will sink into an abyss of impossibility, right next to a plan to *build a railroad to Mars*.



Conclusions

God loves all persons.

Be respectful of those we disagree with, even though we reject their beliefs about origins

Our standard; our confidence - is still the Bible
But God is using science to encourage us