WP-13 SCRIPTURE & SCIENCE

Genetic Entropy: Why Genomes Run Down, Not Up

STATEMENT

Every generation inherits its genome by copying, and copying adds errors. Measured data show that most mutations with any effect are harmful, that selection cannot remove the slightly harmful ones, and that beneficial changes usually break or blunt an existing gene. The observed trend is a genome that started complete and is slowly losing information, the opposite of what evolution requires.

Read time **5 min** | Sources & resources **13** | Series **Scripture & Science**

01 ABSTRACT

Evolution proposes that random mutation, filtered by natural selection, built every genome on earth, adding new genetic instructions over billions of years. Genetics lets us test that claim directly: we can count new mutations in parents and children, measure their effects, and watch microbes evolve over tens of thousands of generations. This paper summarizes what those measurements show, using mainstream peer-reviewed sources wherever possible, and answers the strongest counter-examples.

02 THE ARGUMENT

Premise 1	Each generation receives a copy of its parents' genome, plus new copying errors (mutations).
Premise 2	Of the mutations that have any effect, the large majority are harmful; beneficial ones are rare and usually degrade an existing function.
Premise 3	Natural selection removes seriously harmful mutations, but slightly harmful ones are invisible to it and accumulate.
Conclusion	Unguided mutation is a degrading process. Over time, genomes lose information rather than gain it, which fits a genome that began complete.

03 QUANTITY IS NOT INFORMATION

A genome can get larger. A gene can be duplicated, and some plants double their whole genome. But copying a page of a manual does not write a new chapter. The question for evolution is not whether DNA can be added, but whether random changes can write *new, working instructions* faster than other random changes erase existing ones. That is a measurable question, and the measurements run the wrong way for evolution.

04 AN ENGINEERING ANALOGY

Think of a master drawing photocopied, then the copy photocopied again, generation after generation. Each pass adds a few specks. Quality control rejects copies that are obviously ruined, but faint specks pass inspection and stack up. No one expects the

hundredth-generation copy to show a better design than the original. The best copy is always the first one.

05 EVIDENCE

OBSERVATION	DATA & SOURCE	CONFIDENCE
New mutations every generation	Sequencing of parents and children shows each person is born with roughly 70 new mutations not present in either parent (Keightley, Genetics, 2012). Keightley 2012 ↗	HIGH
Most effective mutations are harmful	Lynch (PNAS, 2010) describes mutation as producing predominantly harmful variants, and concludes that a substantial reduction in human fitness can be expected over the next few centuries in industrialized societies. Lynch 2010, PNAS ↗	HIGH
Beneficial mutations are rare	A study of human genes estimated that about 80% of amino-acid-changing mutations are harmful (Fay et al., Genetics, 2001). Reviews of the distribution of mutation effects find beneficial mutations to be a small minority (Eyre-Walker and Keightley, Nature Reviews Genetics, 2007). Fay et al. 2001 ↗	HIGH
Slightly harmful mutations escape selection	Evolutionary geneticist Alexey Kondrashov (J. Theoretical Biology, 1995) titled his paper on this problem “Why have we not died 100 times over?” He showed such mutations accumulate almost freely and that beneficial mutations cannot resolve the paradox.	HIGH
Helpful mutations usually break things	Behe’s review of four decades of laboratory evolution (Quarterly Review of Biology, 2010) found the most common adaptive changes were loss or modification of an existing function, not new function. Behe 2010, QRB ↗	MODERATE
Building new function by chance is slow	Mathematicians Durrett and Schmidt (Genetics, 2008), critics of intelligent design, calculated that one specific two-mutation change to a gene switch would take more than 100 million years to appear in the human line. Durrett and Schmidt 2008 ↗	HIGH
Working protein sequences are extremely rare	Axe (J. Molecular Biology, 2004) estimated that as few as 1 in 10^{77} sequences of a 150-amino-acid domain perform a given enzyme function. Axe 2004, JMB ↗	MODERATE
Degeneration observed in a real genome	Analysis of more than 4,100 H1N1 influenza genomes from 1918 onward found steady mutation accumulation, mostly non-adaptive and degenerative, along with lineage extinctions (Carter and Sanford, Theoretical Biology and Medical Modelling, 2012). Carter and Sanford 2012 ↗	MODERATE
Human intellect is genetically fragile	Stanford geneticist Gerald Crabtree (Trends in Genetics, 2012) estimated that in the last ~3,000 years each of us has picked up two or more mutations harmful to intellectual or emotional function, and suggested human intellect may have peaked thousands of years ago. Other geneticists dispute the size of the effect. Crabtree 2012 ↗	MODERATE
Lifespans decline after the Flood	Genesis records lifespans falling from 900+ years before the Flood, to about 120 by Moses’ time, to “seventy years” in Psalm 90:10. That pattern is consistent with a genome that began complete and has been degrading ever since.	INTERPRETIVE

High = directly measured or widely accepted across worldviews. **Moderate** = well-supported, with recognized scholarly debate. **Interpretive** = consistent with the text, but depends on how the passage is read.

06 OBJECTIONS CONSIDERED

OBJECTION

Gene duplication adds DNA, so offspring can have more genetic material than their parents.

RESPONSE

Agreed: the amount of DNA can increase. But a duplicate is a copy, not a new instruction. To become something new it must then mutate into a new function, which runs into the rarity of working sequences and the long waiting times measured above.

OBJECTION

Lenski's E. coli evolved the ability to use citrate, a new function.

RESPONSE

It took about 31,500 generations and appeared in only 1 of 12 populations. The cause was a duplication that placed an existing citrate-transport gene next to a switch that is active when oxygen is present (Blount et al., Nature, 2012). That is rewiring an existing gene, not writing a new one.

OBJECTION

Natural selection removes harmful mutations.

RESPONSE

It removes strongly harmful ones. Kondrashov, Lynch and others show the slightly harmful majority slip past and accumulate. Some geneticists, such as Keightley (2012), argue the resulting decline is too slow to detect soon, but none show selection reversing it.

OBJECTION

Evolution doesn't break the Second Law of Thermodynamics, because Earth is an open system.

RESPONSE

Correct, and this paper does not rely on that argument. The problem is information, not energy. Sunlight falling on a vacant lot does not build a house; building requires plans and machinery, and mutation degrades the plans.

OBJECTION

Evolution does not claim something comes from nothing.

RESPONSE

Evolution starts with a working genome already in place. It does not explain where the first one came from. No experiment has produced a coded, self-replicating genome from non-living chemistry, which runs against the Law of Biogenesis (see WP-09).

07 CONCLUSION

Measured genetics runs downhill. Copying errors accumulate faster than selection can remove them, beneficial changes usually trade away existing function, and building new function by chance faces steep odds and long waits. Evolution needs the opposite trend sustained for billions of years, and no mechanism for it has been observed. The data fit Genesis: life created complete and "very good," in slow decline ever since.

> *"The creation looks forward to the day when it will join God's children in glorious freedom from death and decay." Romans 8:21*

08 FURTHER RESOURCES

BOOK **Genetic Entropy** Dr. John Sanford, Cornell geneticist
https://www.christianbook.com/genetic-entropy-the-mystery-of-genome/john-sanford/9780981631608/pd/190021

PAPER **Experimental Evolution, Loss-of-Function Mutations, and "The First Rule of Adaptive Evolution"** Dr. Michael Behe (PDF)
https://www.lehigh.edu/~inbios/Faculty/Behe/PDF/QRB_paper.pdf

PAPER **Rate, Molecular Spectrum, and Consequences of Human Mutation** Dr. Michael Lynch, PNAS
https://pmc.ncbi.nlm.nih.gov/articles/PMC2824313/

VIDEO **How Genetic Science Confirms the Bible** Dr. Nathaniel Jeanson
https://www.youtube.com/watch?v=IfuCdS5DqGs

VIDEO **Secrets in the Cell** Dr. Michael Behe
https://www.youtube.com/watch?v=gw94qm4qdn8