

DNA And The Genetic Code

Why Everything we know about Digital Communication and Software Architecture points to *Design* in Living Things

By Perry Marshall

Author, *Industrial Ethernet* (2nd ed.)

www.CosmicFingerprints.com

What We're Going to Explore

- Is Life Random?
- Is Evolution Random?
- Communication Theory and Implications for DNA
- New directions for the origins debate.

Heated Argument on a Chinese Bus



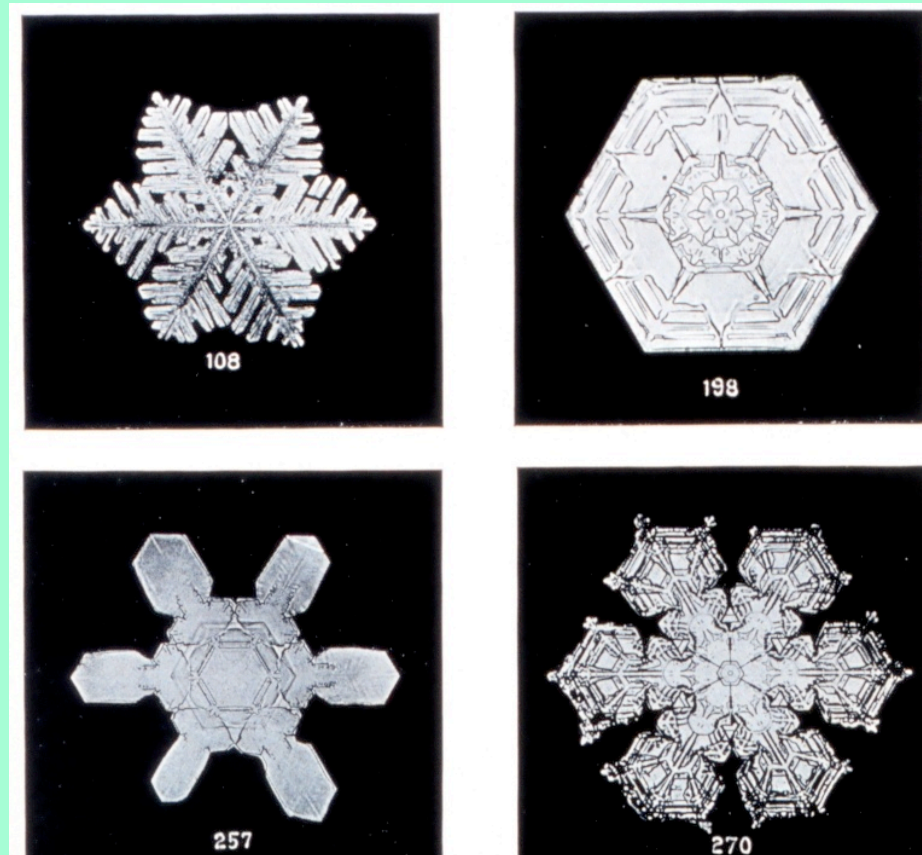
Patterns vs. Designs

Naturally Occurring Patterns

**Hot Air + Cold Air +
Moisture + Time =
Tornados & Hurricanes**

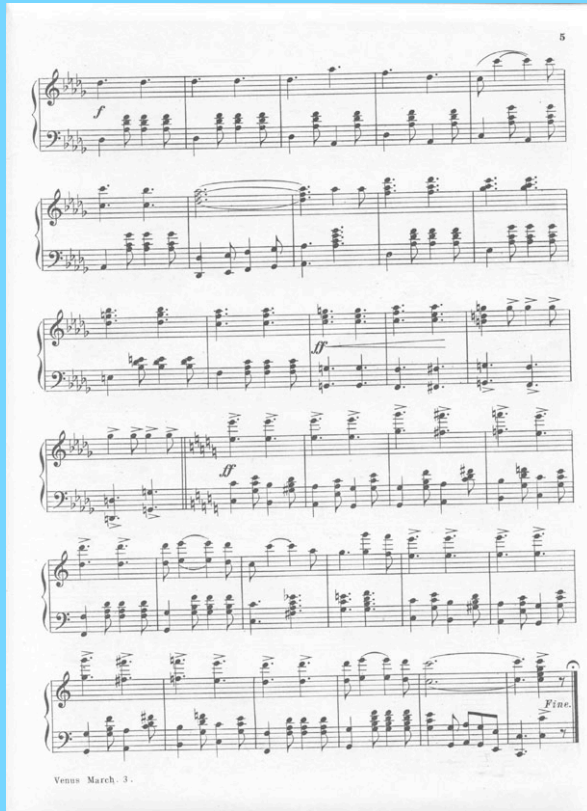


Naturally Occurring Patterns



**Water + Cold Air + Gravity + Wind +
Time = Snowflakes**

Designs: (Music) Code



**Symbolic
Representation**

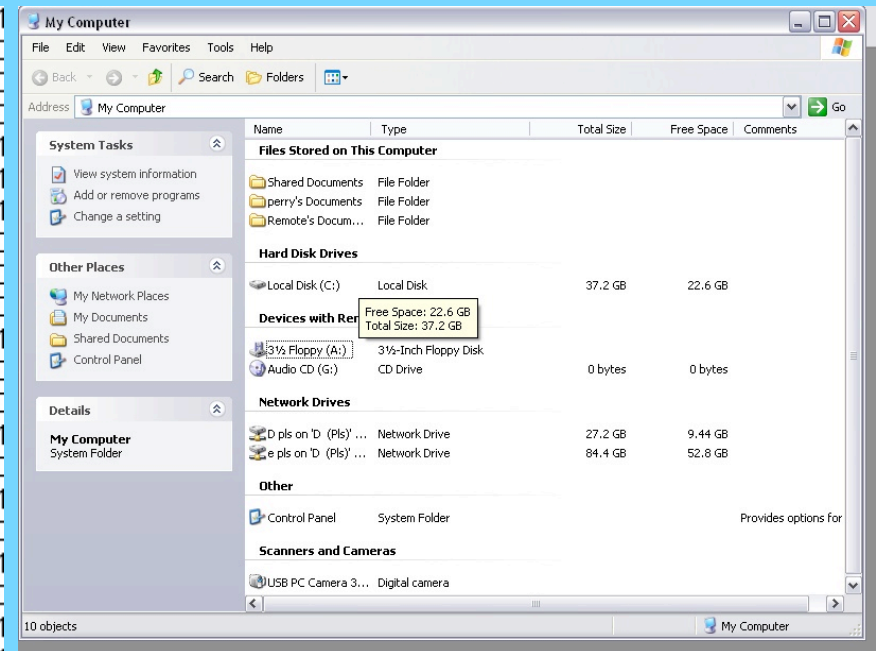


Implementation

Code: Microsoft Windows

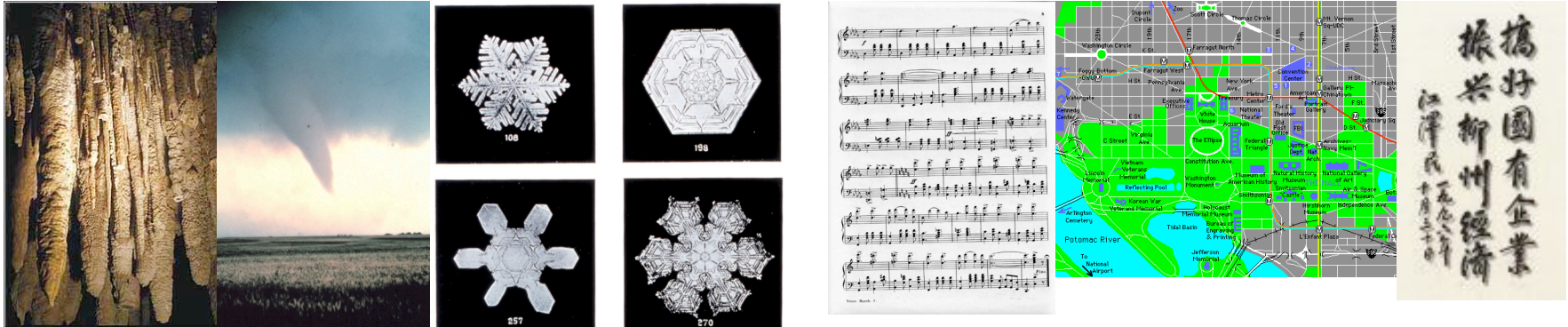
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**Symbolic
Representation**



Implementation

Patterns vs. Information

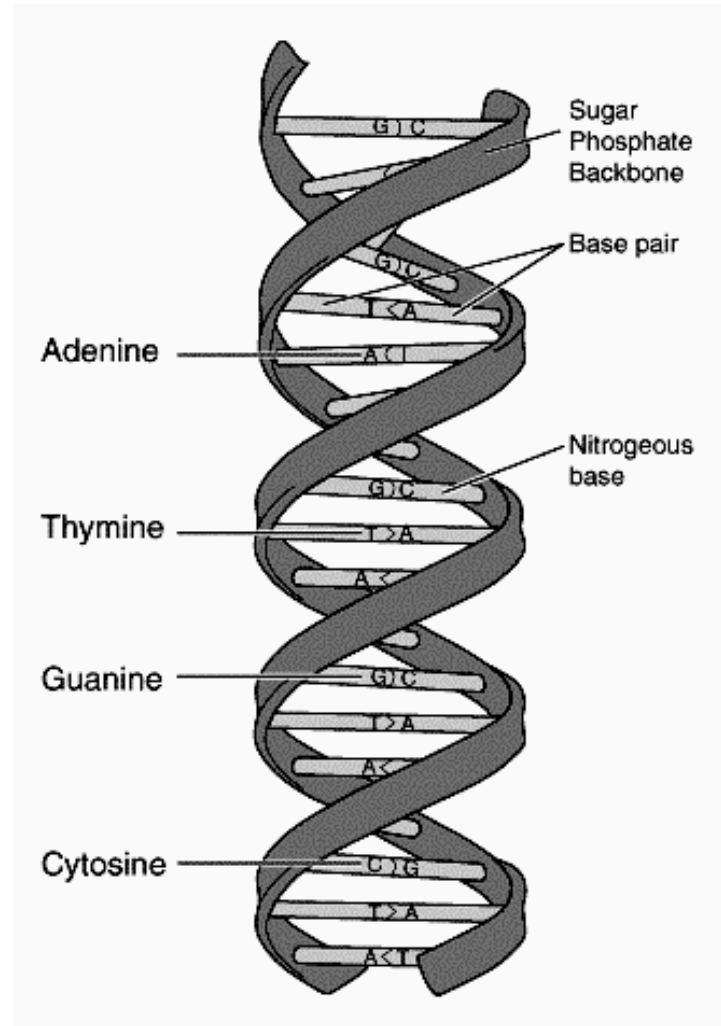


- Come from chaos
- Simply matter & energy
- Require no thought

- Based on CODE
- Matter + Energy + Information
- Requires thought

How Does DNA Work?

- Double Helix – Divides and bases attach
- **A**denine, **T**hymine, **C**ytosine, **G**uanine
- Encodes all information necessary for life
- 500,000 to 3 Billion Letters



The Language of DNA

- 4-Character Alphabet - A,T,C,G (comparable to binary 1 and 0 in computers)
- DNA is an Encoding / Decoding Mechanism
- Linguistics Analysis

DNA	Language
Nucleotide	Character
Codon	Letter
Gene	Word
Operon	Sentence
Regulon	Paragraph
Chromosome	Chapter

DNA and the OSI 7-Layer Model

DNA
Chromosome
Regulon
Operon
Gene
Codon
Nucleotide
Helical Structure

Computer Network
Application Layer
Presentation Layer
Session Layer
Transport Layer
Network Layer
Data Link Layer
Physical Layer

DNA: Pattern or a Language?

- DNA is a code (“The Genetic Code”)
- A DNA molecule symbolically represents something other than itself
- So which is it more like?
 - *Stalactites, Tornados, Snowflakes and Fractals*
 - *Music, Maps, Computer Programs and Chinese*

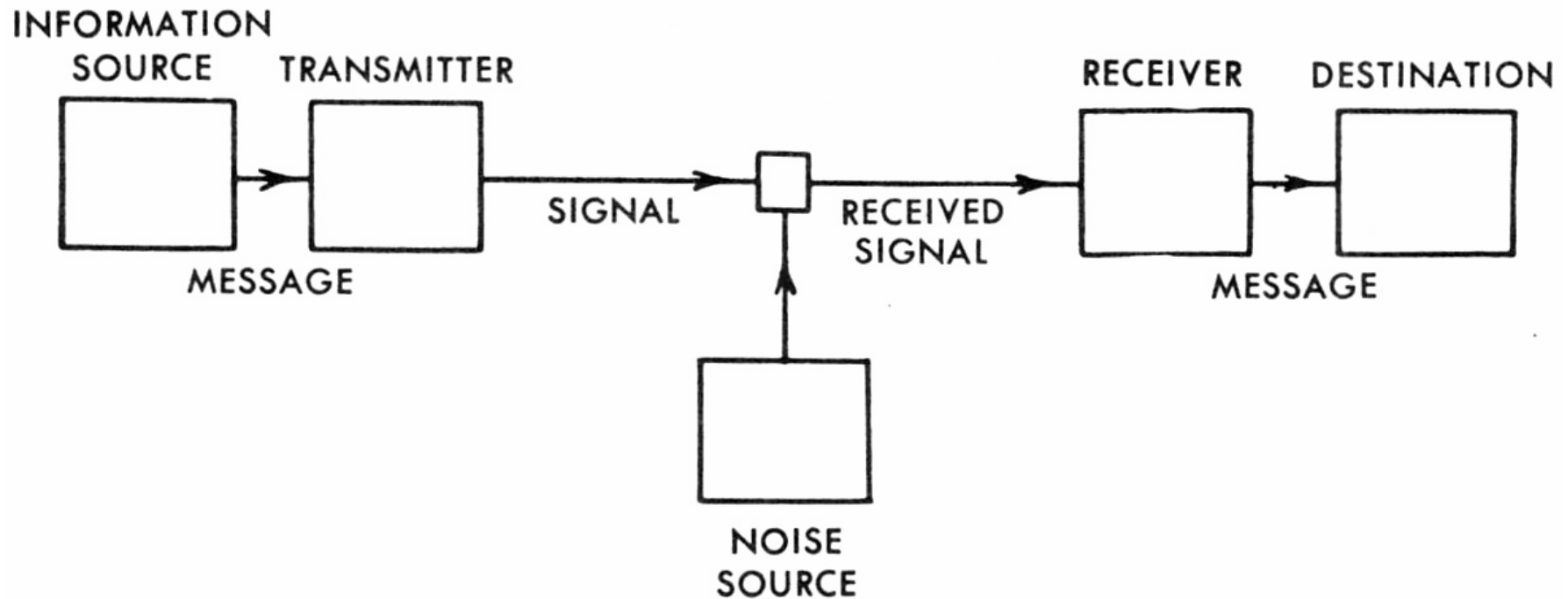


Fig. 1. — Schematic diagram of a general communication system.

Source: Claude Shannon and Warren Weaver, "The Mathematical Theory of Communication," Bell Labs, 1948, U. of Illinois Press 1998

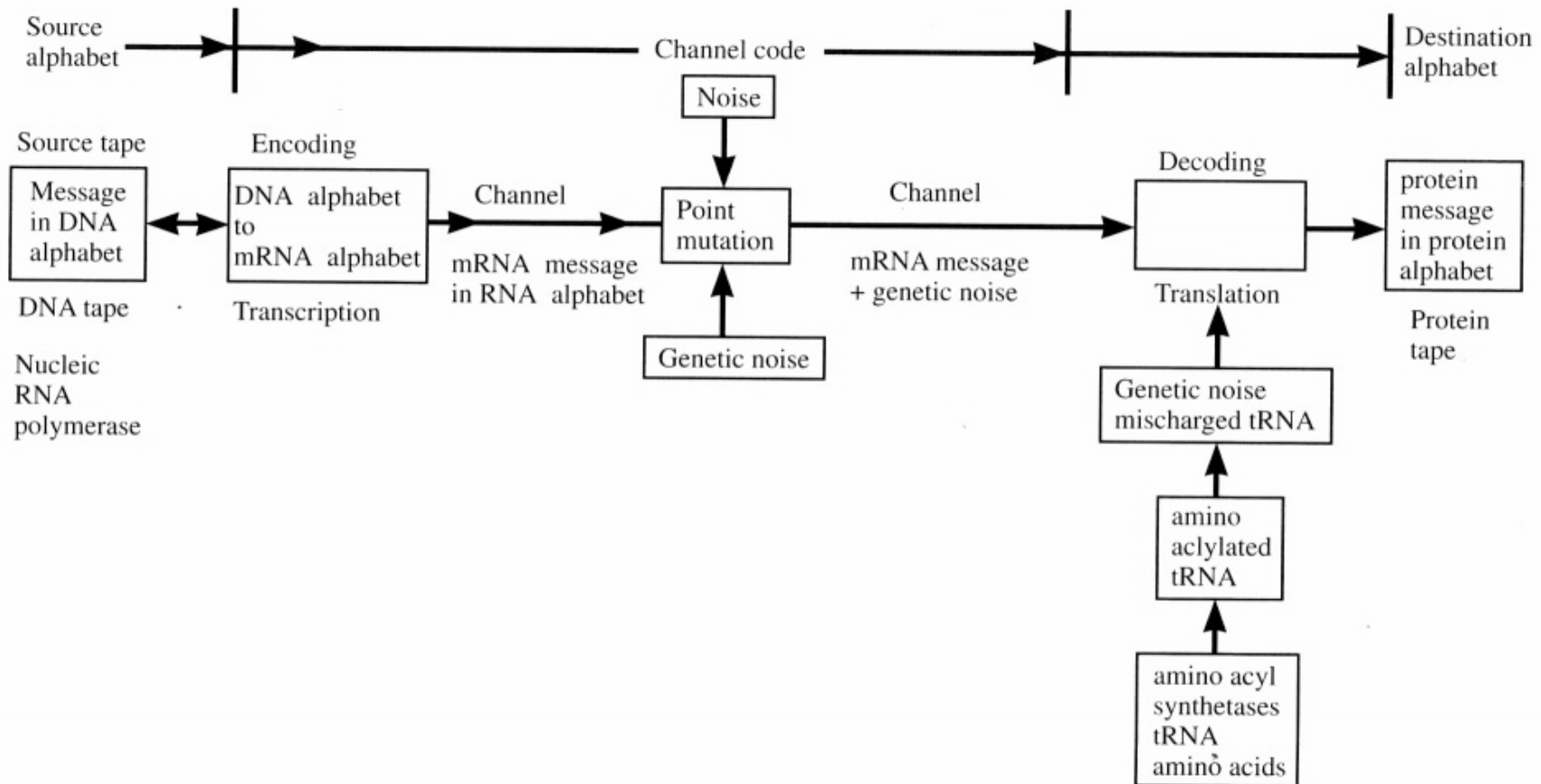


Figure 5.2. The transmission of genetic messages from the DNA tape to the protein tape as conceived in molecular biology. Genetic noise occurs in all stages but is lumped in the figure to fix the idea.

Source: Hubert Yockey, "Information Theory, Evolution and the Origin of Life"
Cambridge University Press, 2005

Where Do Codes Come From?

Patterns like snowflakes and hurricanes
occur naturally

Random processes don't create codes

No one has ever discovered a code that was
not ultimately designed by someone!

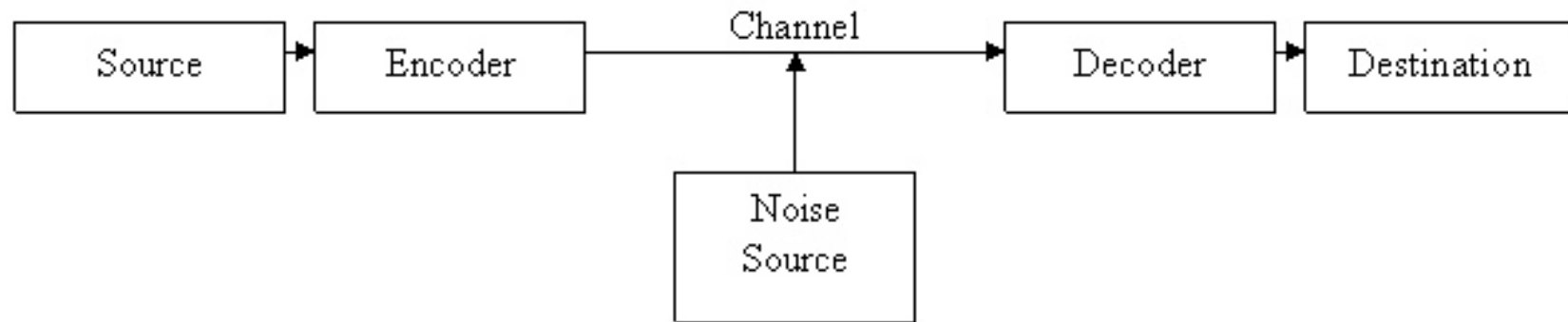


Figure 1 –A Communications System

**The Essential Unit of Biological Reproduction,
Evolution, and All Living Things:**

**Communication System with Encoder, Code &
Decoder**

Irreducibly Complex

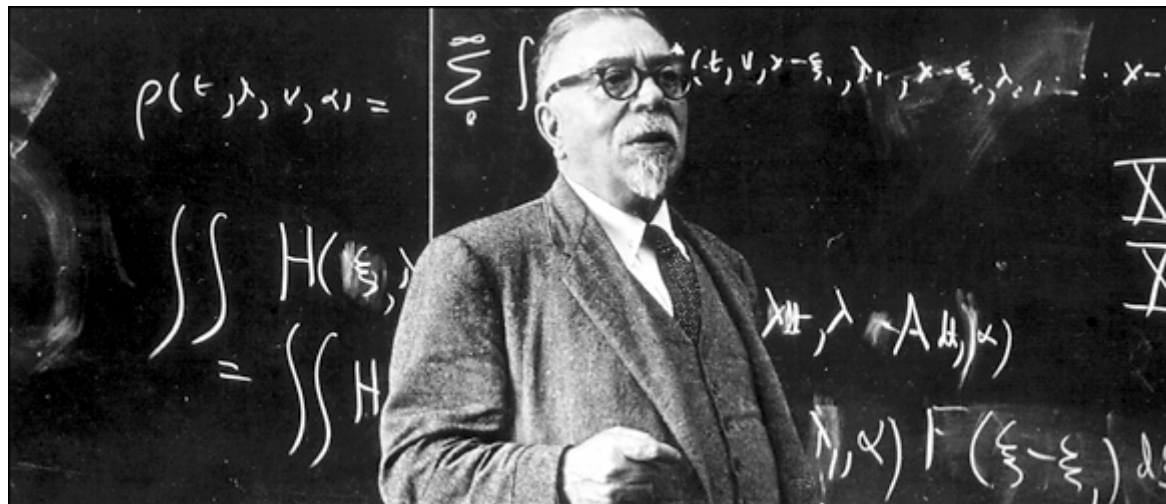
Origin of Life Issues

- Where did the first living cell come from?
- John Von Neumann (1950): All self-replicating machines require code
- Would have had both cell functions and a code to symbolize them, in order to reproduce
- Codes are symbolic and arbitrary
- Not derivable from the laws of physics

Nothing in the Purely Physical World Creates Plans, Instructions, Codes or Symbols.

“Information is information, not matter or energy. No materialism which does not admit this can survive at the present day.”

–Norbert Wiener, MIT Mathematician and father of cybernetics



Proof of an Intelligent Designer

1. DNA is a code
2. All codes we know the origin of are designed
3. Therefore DNA is designed.

Where Did The Information in DNA Come From? 5 Possibilities

1. Designed by Humans
2. Designed by Aliens
3. A Product of Chance
4. Undiscovered Law of Physics
5. Designed by God

The Atheist's Riddle

*“Show me a message that does
not come from a mind.”*

**So simple, any child can understand
So complex, no atheist can solve**

Prescient Revelation

- 1500 BC: “And God said”
- 90 AD: “In the beginning was the WORD, and the WORD was with God and the WORD was God... Through Him all things came into being.”

For More Information

Articles, lectures and downloads about DNA, information, the origin of life and the universe:

Visit www.CosmicFingerprints.com