The Atheist’s Riddle

Language, Information, and the Case for Intelligent Evolution

By Perry Marshall
What We’re Going to Explore

• What do languages & information theory say about evolution?
• What is information and where does it come from?
• Do patterns and information occur naturally?
• New directions for evolutionary theory and the origins debate.
Patterns vs. Designs

• Nature has self-organizing properties
• Not all patterns are designed, but all designs have patterns
• The Defining Issue!
Naturally Occurring Patterns

Water + Minerals + Gravity + Time = Stalagmites & Stalactites
Naturally Occurring Patterns

Hot Air + Cold Air + Moisture + Time = Tornados & Hurricanes
Naturally Occurring Patterns

Water + Cold Air + Gravity + Wind + Time = Snowflakes
Designs: Music

Symbolic Representation

Implementation
Designs: Washington DC

Symbolic Representation  Implementation
Designs: Microsoft Windows

Symbolic Representation  Implementation
Designs: Chinese

Symbolic Representation
(Chinese characters, pin yin and English)

Implementation
Patterns vs. Information

- Come from chaos
- Simply matter & energy
- No exact copies
- Require no thought

- Based on language
- Matter + Energy + Will
- Exact copies
- Multiple Media
- Requires thought
Fundamental Questions of Evolution:

1. Can Patterns Lead to Designs?
2. Is DNA a Pattern or a Design?
3. How Do Designs Evolve?
How Does DNA Work?

- Double Helix – Divides and complementary bases attach
- Adenine, Thymine, Cytosine, Guanine
- Encodes all information necessary for life
- 500,000 to 3 Billion Base Pairs
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

<table>
<thead>
<tr>
<th>DNA</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nucleotide</td>
<td>Character</td>
</tr>
<tr>
<td>Codon</td>
<td>Letter</td>
</tr>
<tr>
<td>Gene</td>
<td>Word</td>
</tr>
<tr>
<td>Operon</td>
<td>Sentence</td>
</tr>
<tr>
<td>Regulon</td>
<td>Paragraph</td>
</tr>
</tbody>
</table>
What Makes a Language?

- Symbolically represents something other than itself
- Requires a transmitter and a receiver
- Alphabet (Statistics)
- Grammar (Syntax)
- Meaning (Semantics)
- Intent (Pragmatics)
- Error correction / redundancy
DNA: Pattern or a Language?

• DNA is an encoding / decoding system
• A DNA molecule symbolically represents something other than itself
• It has an alphabet and syntax, semantics and pragmatics
• Can be copied and even stored in other media with no loss of information
• So which is it more like?
  – Stalactites, Tornados and Snowflakes
  – Music, Maps, Computer Programs and Chinese
DNA:

• The pattern in DNA is not *like* a language; It *is* a language
• The DNA molecule itself is an *encoding* and *decoding* system
## Properties of Language

<table>
<thead>
<tr>
<th>Formal</th>
<th>Casual</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pragmatics</td>
<td>Intent</td>
<td>You’ve got a green light</td>
</tr>
<tr>
<td>Semantics</td>
<td>Meaning</td>
<td>Did he steal that car?</td>
</tr>
<tr>
<td>Syntax</td>
<td>Grammar</td>
<td>The car is red / Is the car red</td>
</tr>
<tr>
<td>Statistics</td>
<td>Alphabet</td>
<td>Morse Code / ASCII / Pin Yin</td>
</tr>
</tbody>
</table>
# Altering Language Layers

<table>
<thead>
<tr>
<th>Formal</th>
<th>Casual</th>
<th>Missing This Element, but still has the other elements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pragmatics</strong></td>
<td>Intent</td>
<td>-</td>
</tr>
<tr>
<td><strong>Semantics</strong></td>
<td>Meaning</td>
<td>Julio cranks his sky for wooden cheese</td>
</tr>
<tr>
<td><strong>Syntax</strong></td>
<td>Grammar</td>
<td>Dogs jumpy or strangers afraid of you should avoid definitely</td>
</tr>
<tr>
<td><strong>Statistics</strong></td>
<td>Alphabet</td>
<td>The Paomnnehal Pweor Of The Hmuan Mnid</td>
</tr>
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</table>
Properties of Language Cont’d

• Information is always distinct from the medium that carries it

• Information can be stored & transmitted by matter (book) or by energy (sound or light) but it is *neither matter nor energy*.

• Matter and energy all by themselves cannot produce information
Information: A Unique Entity

“Information is information, neither energy nor matter. Any materialism that fails to take account of this will not survive one day.”

– Norbert Weiner, MIT Mathematician and Founder of Cybernetics
The Three Fundamental Entities

X Axis: Matter

Y Axis: Energy

Z Axis: Will

Matter, Energy and Information: Independent from each other
William Paley vs. David Hume: The Design Debate

- Paley: Watch has obvious purpose, therefore watch has a designer; life has purpose, therefore life has a designer too.
- Hume: Analogy between watch and life is weak. Life’s purpose cannot be proven, therefore the design argument fails.
Perry Marshall’s 2005 Improvement to Paley’s Design Argument

• The essential distinction between pattern and design is language
• Element common to both watches and life is language
• All language comes from a mind
• Fundamental Property of all Designs: Idea precedes Implementation
• Idea must first represented by language
The Atheist’s Riddle

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

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