The Scientific Case for Intelligent Design

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What Is Intelligent Design?

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Pattern best explained by intelligence?
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What Is Intelligent Design?

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What Is Intelligent Design?

Intelligent design is the study of information in nature that is best explained as the product of intelligence.
Intelligent design is therefore ...

* a theory of information

* fully a part of science
Example 1: Forensic Science
Example 1: Forensic Science
Example 2: SETI
Example 3: Archeology
Example 3: Archeology
MT. RUSHMORE

The backside
Example 4: Cosmology

The Privileged Planet

How our place in the cosmos is not a coincidence

Guillermo Gonzalez and Jay W. Richards

ILLUSTRAT A MEDIA PRESENTS

The Privileged Planet

SEARCH FOR LIFE IN THE UNIVERSE

ILLUSTRAT A MEDIA PRESENTS
Example 5: Biology

A Kinesin motor protein carries a vesicle along a microtubule.
Example 5: Biology
But Is Design in Biology Real?

- "Biology is the study of complicated things that give the appearance of having been designed for a purpose."
  —Richard Dawkins

- "Biologists must constantly keep in mind that what they see was not designed, but rather evolved."
  —Francis Crick
But Is Design in Biology Real?

“The illusion of purpose is so powerful that biologists themselves use the assumption of good design as a working tool.”

–Richard Dawkins (ROOE, 1995, p. 98)
But Is Design in Biology Real?

Molecular biologists have themselves needed to introduce the language of high-tech engineering to describe the systems they are seeing:

- information storage, retrieval, and processing (genetic code)
- signal transduction circuitry
- high-efficiency nano-engineered motors
- automated parcel addressing (UPS labels / zip codes)
- transportation, distribution, and communication systems
- complex monitoring, error correction, and feedback mechanisms
- self-replicating robotic manufacture
But Is Design in Biology Real?

“Apart from differences in jargon, the pages of a molecular-biology journal might be interchanged with those of a computer-engineering journal.”

–Richard Dawkins (ROOE, 1995, p. 17)
The Genetic Code

DNA (Gene)
mRNA (Gene message)
Protein (Gene product)
The origin of life itself... eh, it's not really my bag. The origin of species is where it's at!
The Cell in Darwin’s Day
The Proto-Cell in Darwin’s Day
Bathybius haeckelii
Cell 3 – bacterial cell

- Flagellum
- Granular inclusion
- Ribosomes
- Cell wall / outer membrane (if present)
- Cytoplasmic membrane
- Capsule
- Pili
- Mesosome
- Cytoplasm
- Nucleoid
Cell Phone vs. Laptop Computer
The Collapse of Darwinian Explanations

There are presently no detailed Darwinian accounts of the evolution of any biochemical or cellular system, only a variety of wishful speculations.

– Franklin Harold

The Way of the Cell
(OxfordUP 2001)
The Collapse of Darwinian Explanations

There are no detailed Darwinian accounts for the evolution of any fundamental biochemical or cellular system, only a variety of wishful speculations. It is remarkable that Darwinism is accepted as a satisfactory explanation for such a vast subject — evolution — with so little rigorous examination of how well its basic theses work in illuminating specific instances of biological adaptation or diversity.

– James Shapiro, 1996
Review of DBB
The Collapse of Darwinian Explanations

Anyone who tells you that he or she knows how life started on the earth some 3.45 billion years ago is a fool or a knave. Nobody knows.

– Stuart Kauffman, 1995
The Collapse of Darwinian Explanations

Anybody who thinks they know the solution to this problem of the origin of life is deluded.

– Leslie Orgel, 2004
No serious scientist would currently claim that a naturalistic explanation for the origin of life is at hand.

– Francis Collins, 2006
The Failed Challenge of Biological Evolution to Intelligent Design

Premise 1: If unguided evolutionary mechanisms adequately explain biological complexity and diversity, then intelligent design is superfluous.

Premise 2: Unguided evolutionary mechanisms adequately explain biology complexity and diversity.

Conclusion: Therefore, intelligent design is superfluous.
The Received Wisdom

By attributing the diversity of life to natural causes rather than to supernatural creation, Darwin gave biology a sound scientific basis.

— Campbell’s BIOLOGY, 5th ed.
The Received Wisdom

He [Darwin] dismissed it [design] not because it was an incorrect scientific explanation, but because it was not a proper scientific explanation at all.

— David Hull
The Received Wisdom

Intelligent design is not science because it cannot be science.
Design Theorist?
Directed Panspermia
Panspermia
Directed Panspermia
Directed Panspermia
Directed Panspermia
Signature in the Cell

DNA and the Evidence for Intelligent Design

Stephen C. Meyer
Craig Venter
Venter’s Synthetic Genomics
Venter’s DNA “Watermarks”

The five coded messages embedded in the first synthetic genome:

VENTERINSTITVTE
CRAIGVENTER
HAMSMITH
CINDIANDCLYDE
GLASSANDCLYDE

-Wired, 28jan08
How Do We Detect Design?
SETI: The Search for Extraterrestrial Intelligence
What persuaded the scientists that they had found an extraterrestrial intelligence?

The detection of a highly improbable or complex specified event!
A Criterion for Detecting Design

What should we be looking for?

- Complexity (improbability)
- Specification (independent pattern)
Connection between Complexity and Probability
Why Probability?

Unless we discipline how we attribute chance, we can explain anything.
This Is Spinal Tap
Dumb and Dumber
“Getting lucky” is not a scientific explanation!
"We can accept a certain amount of luck in our [scientific] explanations, but not too much."

–Richard Dawkins (TBW, 1987, p. 139)
Why a Pattern?

Just about anything that happens is highly improbable/complex. Thus to ensure that something didn’t just happen by chance, it must conform to a pattern.
What Do You See?
Why a Specification?

The patterns we use to identify design must be objectively given – we need to make sure that we’re not just reading the pattern into what we’re seeing.
Seeing What We Want to See?

“Perceiving the world as well designed and thus the product of a designer ... may be the product of a brain adapted to finding patterns in nature. We are pattern-seeking as well as pattern-finding animals. ... Finding patterns in nature may have an evolutionary explanation: There is a survival payoff for finding order instead of chaos in the world....”

— Michael Shermer

WDM, 2006
Seeing What We Want to See?

“We are the descendants of the most successful pattern-seeking members of our species. In other words, we were designed by evolution to perceive design.”

— Michael Shermer

WDM, 2006
Problem

You can’t use evolution to refute our ability to detect design since that ability in turn throws evolution into question. When two things call each other into question, deciding between the two requires looking to independent evidence.
Seeing What We Want to See?
Seeing What We Want to See?
Seeing What We Want to See?
Specifications as Statistical Rejection Regions
The Case of Cryptography

**Encrypted Text**

nfuijolt ju jt mjlf b xfbtfm

**Decrypted Text**

methinks it is like a weasel
The Explanatory Filter

- start
  - contingency?
    - yes
      - complexity?
        - yes
          - specification?
            - yes
              - design
            - no
              - chance
        - no
          - chance
    - no
      - necessity
THE DESIGN INFERENCE
ELIMINATING CHANCE THROUGH SMALL PROBABILITIES

WILLIAM A. DEMBSKI
What does the filter identify?

Specified Complexity
Estimating the Prevalence of Protein Sequences Adopting Functional Enzyme Folds

Douglas D. Axe*

Proteins employ a wide variety of folds to perform their biological functions. How are these folds first acquired? An important step toward answering this is to obtain an estimate of the overall prevalence of sequences adopting functional folds. Since tertiary structure is needed for a typical enzyme active site to form, one way to obtain this estimate is to measure the prevalence of sequences supporting a working active site. Although the immense number of sequence combinations makes wholly random sampling unfeasible, two key simplifications may provide a solution. First, given the importance of hydrophobic interactions to protein folding, it seems likely that the sample space can be restricted to sequences carrying the hydrophobic signature of a known fold. Second, because folds are stabilized by the cooperative action of many local interactions distributed throughout the structure, the overall problem of fold stabilization may be viewed reasonably as a collection of coupled local problems. This enables the difficulty of the whole problem to be assessed by assessing the difficulty of several smaller problems. Using these simplifications, the difficulty of specifying a working β-lactamase domain is assessed here. An alignment of homologous domain sequences is used to deduce the pattern of hydrophobic constraints along chains that form the domain fold. Starting with a weakly functional sequence carrying this signature, clusters of ten side-chains within the fold are replaced randomly, within the boundaries of the signature, and tested for function. The prevalence of low-level function in four such experiments indicates that roughly one in $10^{54}$ signature-consistent sequences forms a working domain. Combined with the estimated prevalence of plausible hydrophobic patterns (for any fold) and of relevant folds for particular functions, this implies the overall prevalence of sequences performing a specific function by any domain-sized fold may be as low as 1 in $10^{27}$, adding to the body of evidence that functional folds require highly extraordinary sequences.
"When future intellectual historians list the books that toppled Darwin's theory, *The Design of Life* will be at the top."

Michael Behe
Author, *Darwin's Black Box*
Intelligent Science...

Biologic Institute brings together scientists with diverse expertise, unified by the realization that a revolution in biology—with far reaching implications—is well under way. Like many revolutionary ideas, this one is powerful in its simplicity:

*The more we learn about the organization of life, the more clearly it reveals design.*
Evolutionary informatics merges theories of evolution and information, thereby wedding the natural, engineering, and mathematical sciences. Evolutionary informatics studies how evolving systems incorporate, transform, and export information. The Evolutionary Informatics Laboratory explores the conceptual foundations, mathematical development, and empirical application of evolutionary informatics. The principal theme of the lab's research is teasing apart the respective roles of internally generated and externally applied information in the performance of evolutionary systems.
Why Is This Important?

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.

–Romans 1:20