

Intelligent Design vs. Evolution

Defending God's Creation

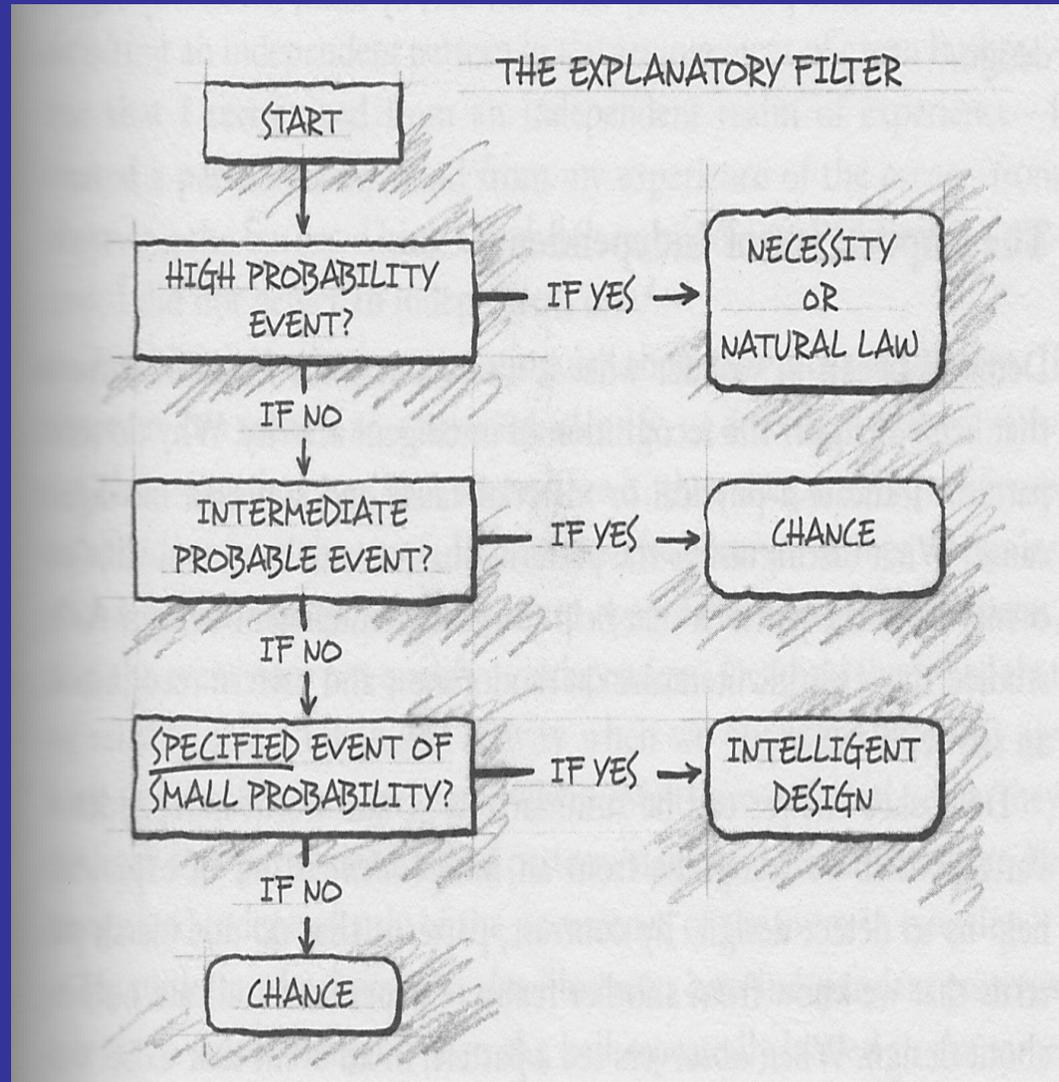
Romans 1:19-20

19 because what may be known of God is manifest in them, for God has shown it to them.

20 For since the creation of the world His invisible attributes are clearly seen, being understood by the things that are made, even His eternal power and Godhead, so that they are without excuse,

Intelligent Design

- Intelligent design is:
 - (1) improbable event
 - Cannot be explained by either natural regularity or chance
 - (2) recognized pattern
 - Also called specified complexity
- Not a “God of the gaps” argument



William Dembski, *The Design Inference*
Illustration taken from Meyer, *Signature in the Cell*, page 355

Irreducible Complexity

- Functionally integrated systems
 - Parts that are tightly adapted to each other to achieve the systems function
- Irreducible core
 - Multipart subsystem that cannot be changed without destroying the systems basic function

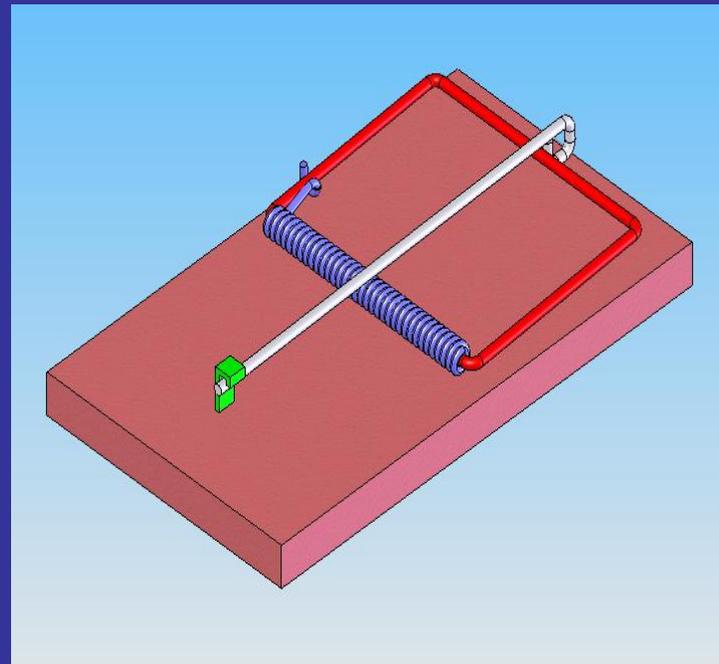
Irreducible Complexity

5 Pieces are needed:

- Base
- Spring
- Hammer
- Retainer
- Release

Most importantly

- Appropriate placement



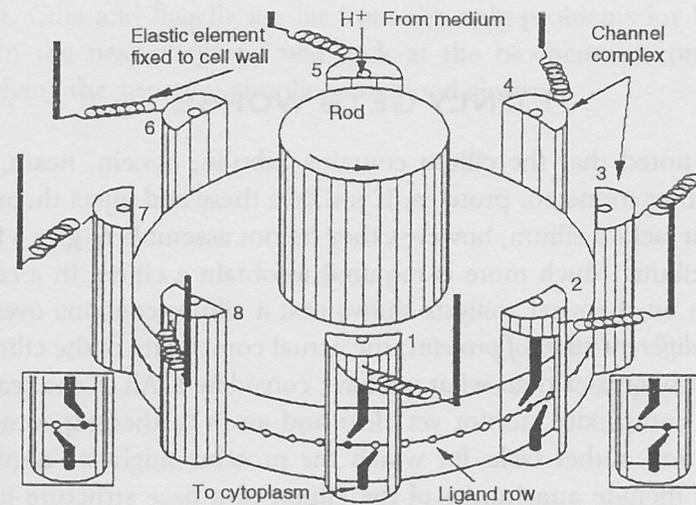
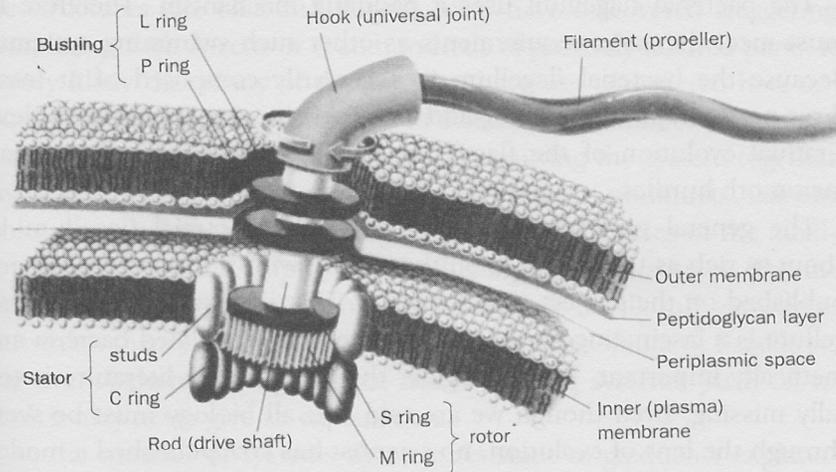
Irreducible Complexity

- Examples in biology
 - blood clotting system
 - bacterial flagellum

- From Behe, *Darwin's Black Box*, page 71

FIGURE 3-3

(TOP) DRAWING OF A BACTERIAL FLAGELLUM SHOWING THE FILAMENT, HOOK, AND THE MOTOR IMBEDDED IN THE INNER AND OUTER CELL MEMBRANES AND THE CELL WALL. (BOTTOM) ONE PROPOSED MODEL FOR THE FUNCTIONING OF THE ACID-DRIVEN, ROTARY MOTOR. THE DRAWING SHOWS THE INTERNAL COMPLEXITY OF THE MOTOR, WHICH IS NOT DISCUSSED IN THE TEXT.



Top from Voet and Voet, fig. 34-84, p. 1259.

Bottom from Caplan, S. R., and Kara-Ivanov, M. (1993), fig. 9A, p. 138. Figures reproduced with permission.

Irreducible Complexity

- Darwinian Mechanisms cannot explain
 - Direct method
 - Natural selection enhances function through time but function doesn't change
 - Indirect method
 - Evolves by continually transforming a systems function
 - Co-option: multiple parts from other systems break free and come together to form new system
 - Co-evolution: co-option plus gradual changes

Irreducible Complexity

- “We might think that some of the parts of an irreducibly complex system evolved step by step for some other purpose and were then recruited wholesale to a new function. But this is also unlikely. You may as well hope that half your car’s transmission will suddenly help out in the airbag department. Such things might happen very, very rarely, but they surely do not offer a general solution to irreducible complexity.”
 - University of Rochester biologist Allen Orr
 - From Dembski and Wells, *The Design of Life*, pages 152-3

Irreducible Complexity

- “An irreducibly complex system can be built gradually by adding parts that, while initially just advantageous, become-because of later changes-essential (i.e. indispensable). The logic is very simple. Some part (A) initially does some job (and not very well, perhaps). (B) later gets added because it helps A. This new part isn't essential, it merely improves things. But later on A (or something else) may change in such a way that B now becomes indispensable. This process continues as further parts get folded into the system. And at the end of the day, many parts may all be required”
 - University of Rochester biologist Allen Orr
 - From Dembski and Wells, *The Design of Life*, pg. 153

Type III Secretory System

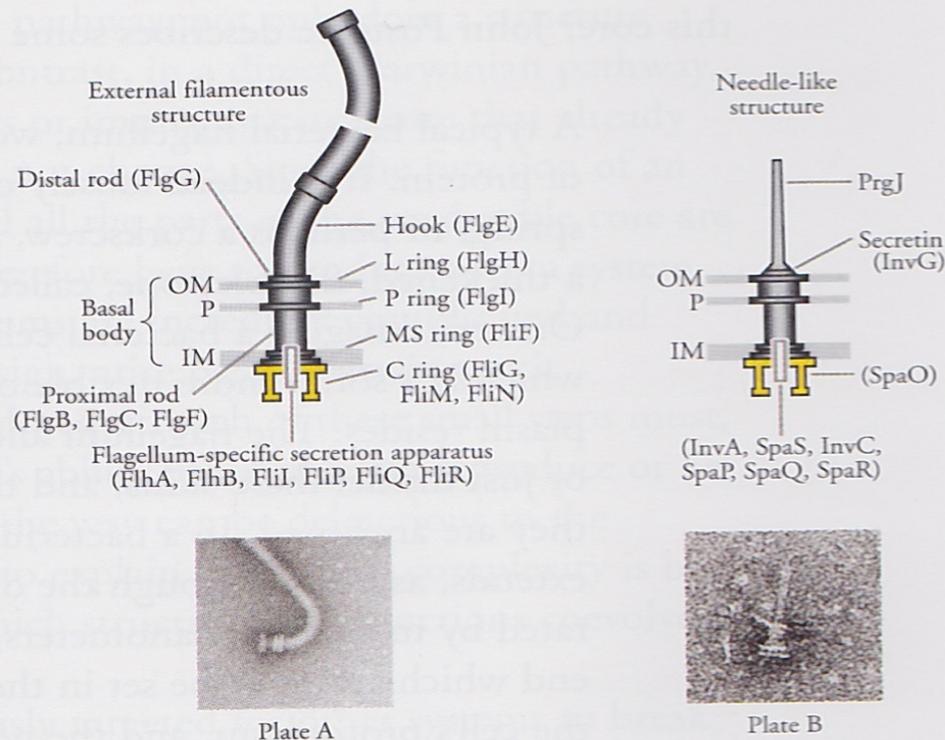


Figure 6.3 Grainy electron micrographs and clean schematics of the bacterial flagellum and type III secretory system.

Irreducible Complexity

- Darwinism offers vague concepts for mechanisms
- Intelligence has been shown to build irreducibly complex systems

DNA enigma

DNA

- Deoxyribonucleic acid
- Structure elucidated in 1953 by Watson and Crick
- 4 nucleotide subunits
 - Bases: Adenine (A), thymine (T), cytosine (C),
– Guanine (G)
 - Contain a sugar group attached to a phosphate group

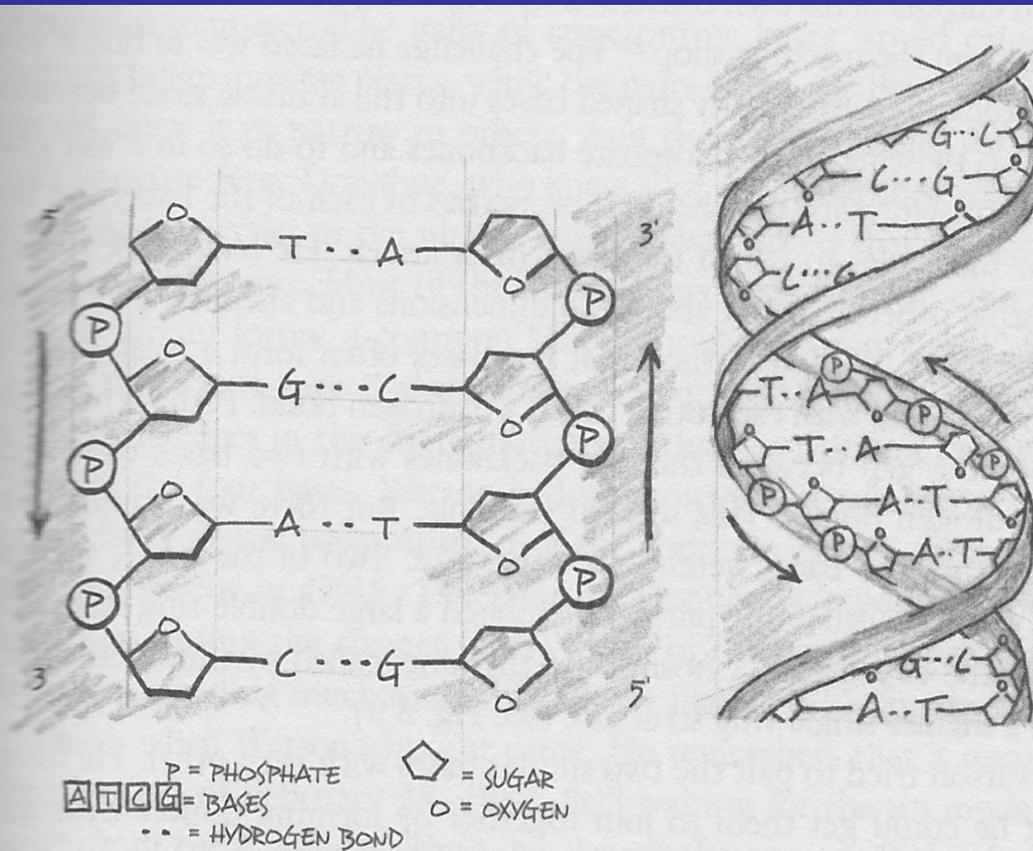


Figure 3.8. Antiparallel strands of DNA entwined around each other. Represented in two dimensions (*left*) and three dimensions (*right*).

From Meyer, *Signature in the Cell*, page 79

“We have discovered the secret of life!”

Watson and Crick

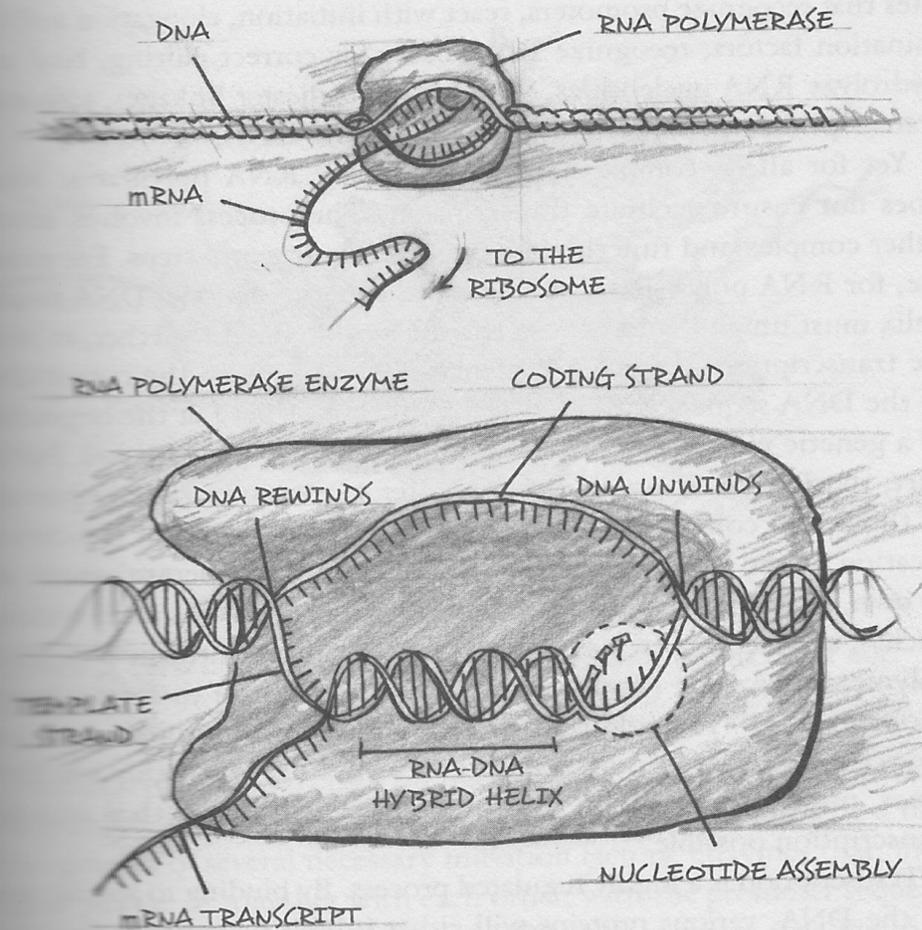


Figure 5-4. The process of transcription. The top view shows a view from outside the RNA polymerase. The bottom view is a close-up showing (in simplified form) what is happening inside the RNA polymerase.

From Meyer, *Signature in the Cell*, page 123

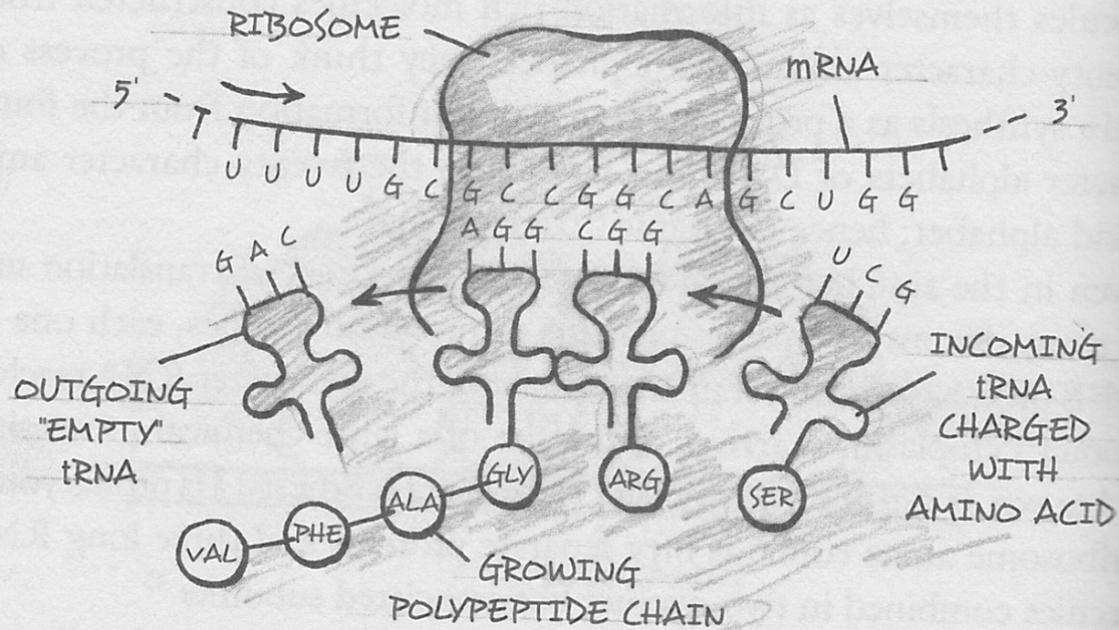


Figure 5.7. The translation of messenger RNA at the ribosome resulting in a growing amino acid chain.

From Meyer, *Signature in the Cell*, page 128

	U	C	A	G
U	<u>UUU</u> PHENYLALANINE <u>UUC</u> PHENYLALANINE <u>UUA</u> LEUCINE <u>UUG</u> LEUCINE	<u>UCU</u> SERINE <u>UCC</u> SERINE <u>UCA</u> SERINE <u>UCG</u> SERINE	<u>UAU</u> TYROSINE <u>UAC</u> TYROSINE <u>UAA</u> STOP <u>UAG</u> STOP	<u>UGU</u> CYSTEINE <u>UGC</u> CYSTEINE <u>UGA</u> STOP <u>UGG</u> TRYPTOPHAN
C	<u>CUU</u> LEUCINE <u>CUC</u> LEUCINE <u>CUA</u> LEUCINE <u>CUG</u> LEUCINE	<u>CCU</u> PROLINE <u>CCC</u> PROLINE <u>CCA</u> PROLINE <u>CCG</u> PROLINE	<u>CAU</u> HISTIDINE <u>CAC</u> HISTIDINE <u>CAA</u> GLUTAMINE <u>CAG</u> GLUTAMINE	<u>CGU</u> ARGININE <u>CGC</u> ARGININE <u>CGA</u> ARGININE <u>CGG</u> ARGININE
A	<u>AUU</u> ISOLEUCINE <u>AUC</u> ISOLEUCINE <u>AUA</u> ISOLEUCINE <u>AUG</u> METHIONINE <small>(START)</small>	<u>ACU</u> THREONINE <u>ACC</u> THREONINE <u>ACA</u> THREONINE <u>ACG</u> THREONINE	<u>AAU</u> ASPARAGINE <u>AAC</u> ASPARAGINE <u>AAA</u> LYSINE <u>AAG</u> LYSINE	<u>AGU</u> SERINE <u>AGC</u> SERINE <u>AGA</u> ARGININE <u>AGG</u> ARGININE
G	<u>GUU</u> VALINE <u>GUC</u> VALINE <u>GUA</u> VALINE <u>GUG</u> VALINE	<u>GCU</u> ALANINE <u>GCC</u> ALANINE <u>GCA</u> ALANINE <u>GCG</u> ALANINE	<u>GAU</u> ASPARTIC <u>GAC</u> ASPARTIC <u>GAA</u> GLUTAMIC <u>GAG</u> GLUTAMIC	<u>GGU</u> GLYCINE <u>GGC</u> GLYCINE <u>GGA</u> GLYCINE <u>GGG</u> GLYCINE

Figure 4.6. The standard genetic code showing the specific amino acids that DNA base triplets specify after they are transcribed and translated during gene expression.

From Meyer, *Signature in the Cell*, page 102

“With that,” said French molecular biologist Jacques Monod in 1970, “and the understanding of the random physical basis of mutation that molecular biology has also provided, the mechanism of Darwinism is at last securely founded.” As a consequence, Monod concluded, “Man has to understand that he is a mere accident”

From Wells, *The Myth of Junk DNA*, page 19

“DNA is like a computer program but far, far more advanced than any software ever created”

Bill Gates

“The problem of the origin of life is clearly basically equivalent to the problem of the origin of biological information”

Origin of Life researcher **Bernd-Olaf Koppers**

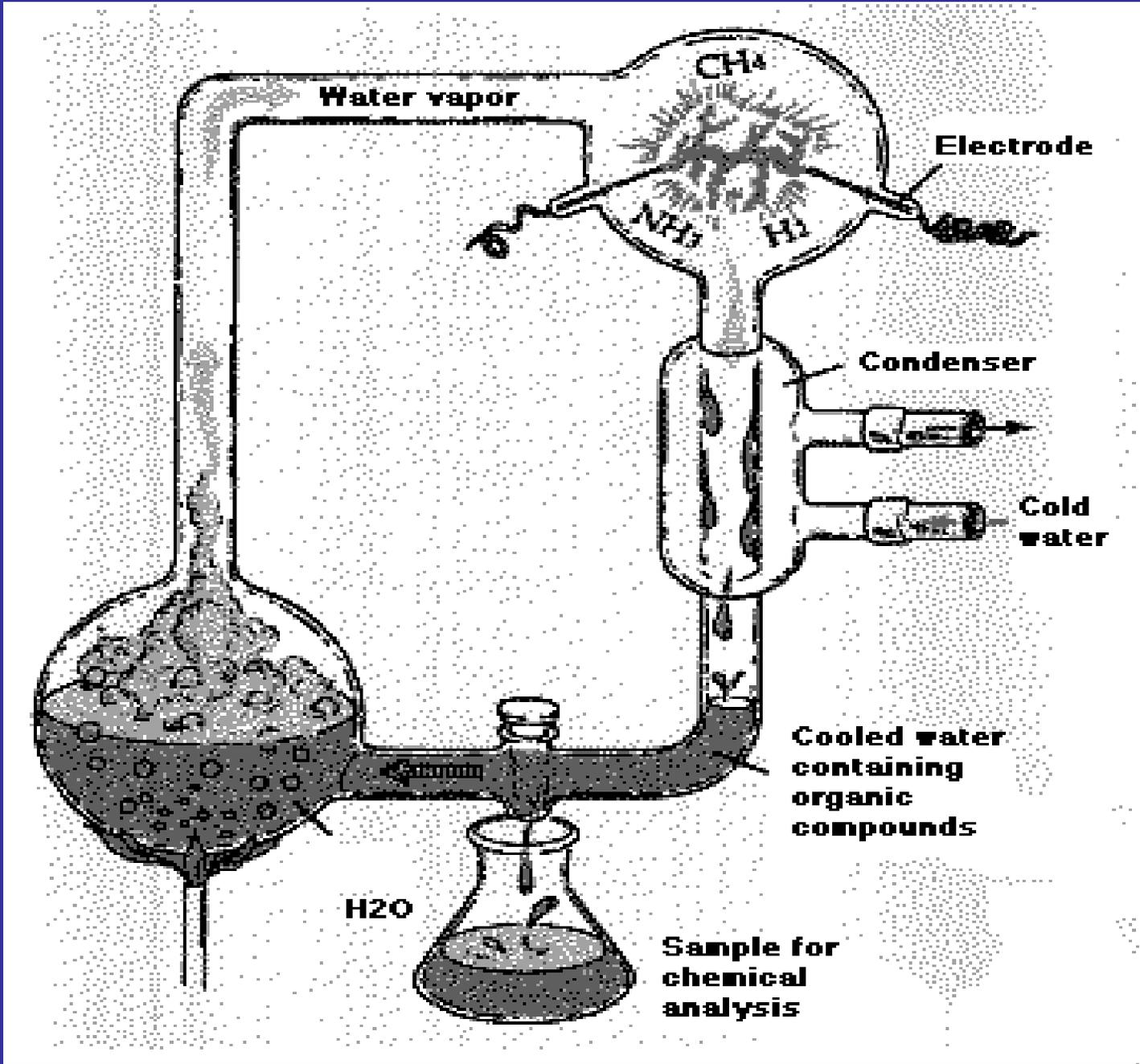
From Meyer, *Signature in the Cell*, page 13

DNA enigma

- Code for proteins that involved in transcription and translation reside on DNA
- Without the machinery, can't get the proteins
- Classic “Chicken and the egg” argument
- Where did the information come from?

Miller-Urey Experiment

- Origins of life experiment
- Oparin-Haldane hypothesis (1920's) that lightning in the primitive atmosphere produced the chemical building blocks of life
- 1953 experiment produced chemical building blocks from what they thought simulated the early atmosphere



Atmosphere is Crucial

- They proposed water, methane, ammonia, and hydrogen
- Must be devoid of oxygen (i.e. reducing)
- Were able to get several amino acids and other organic molecules from the sludge

Atmosphere

- But was atmosphere devoid of oxygen?
- Photodissociation
- Geological and Biochemical evidence points to at least some oxygen in the early atmosphere
- Usually ignored for statements like “the strongest evidence is provided by conditions for the origin of life. A reducing atmosphere is required” (James C. G. Walker)

Atmosphere

- Scientists now question the composition
- Most believe would contain carbon dioxide, water vapor, nitrogen, hydrogen
- Hydrogen lost to space and ammonia destroyed by ultraviolet radiation
- Debate over how much hydrogen present
- Without Hydrogen, no amino acids (get formaldehyde and cyanide)

Other Problems

- Continued energy breaks down organic molecules almost as soon as formed
 - Infusion of intelligence
- Cross reactions
 - Infusion of intelligence
- Living things use only L-amino acids and D-sugars
 - Experiments produce equal mixtures

Conclusions

- Serious problems with Miller-Urey experiment
- Still prominent in modern textbooks or at least misleading

Intelligent Design

- No evidence prebiotic soup ever existed (earliest rocks low in nitrogen)
- Even if assume have amino acids there is no plausible mechanism yet exists for formation of proteins, life

Intelligent Design

- Could not have formed by random chance
- Proteins complex
- Takes at least 100 proteins for primitive cell
- Big Bang starts the clock
- Odds against random formation of protein with 100 amino acids is 1 with 130 zeros after it

Intelligent Design

- Chemical affinities and self organization cannot explain proteins or DNA
- Affinities between amino acids slight
- Would result in only repetitive sequences, not information providing sequences
- Natural selection could not have been factor since by definition need a replicating system

Intelligent Design

- “Even reduced to the barest essentials, this template must have been very complex indeed. For this template and this template alone, it appears it is reasonable at present to suggest the possibility of a creator”

» Jay Roth, nucleic acid expert

RNA world

- 1980's RNA shown can act like enzyme
- How could form before living cells?
- Experiments to produce nucleotide bases use unlikely prebiotic conditions
- Even if could be produced in realistic conditions it is highly reactive and unlikely to survive

RNA world

- Infuse Intelligence
- Few enzymatic functions long way from complexity needed
- To self replicate would need to exact complimentary strands
- Only shifts what needs to be explained-the origin of information

RNA world

- “You have to build straw man upon straw man to get to the point where RNA is a viable first biomolecule”
 - Gerald Joyce, biochemist
- From Dembski and Wells, *the Design of Life*, page 240

Metabolic Pathways

- Some have proposed these as first steps
 - Example citric acid cycle
- None have been demonstrated to occur under realistic prebiotic conditions
- No explanation for proteins, DNA, RNA, etc.

Evidence for Intelligent Design

- Irreducible Complexity
 - Need cell membrane
 - DNA and its machinery (60 enzymes)
 - Ribosome and its machinery (50 enzymes)
- Origin of Information
 - i.e., the “code” of DNA

Evolution's Theology

- “It turns out that the main scientific issue is not the absence of any plausible explanation for the origin of life – which used to be the case – but an embarrassment of riches. There are many plausible explanations; the difficulty is to choose among them. That surfeit causes problems for the question “How did life begin on Earth?” but not for the more basic issue, which is “Can life emerge from nonliving processes?”
- Ian Stewart
- Quoted from *the Design of Life*, page 240.

Biologists must “constantly keep in mind that what they see was not designed, but rather evolved.”

Watson and Crick

from Meyer, *Signature in the Cell*, page 12

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

Richard Dawkins

from Dembski and Wells, *The Design of Life*, page 264

Job 38:4

- “Where were you when I laid the foundation of the earth? Tell me, if you have understanding.”