

1 Lecture Notes: "(Un)intelligent Design" 4/17/06 - J. Wise

Why... do humans have so much trouble with wisdom teeth?

Why... is childbirth so dangerous and painful?

Because a big, thinking brain is an advantage, and ...

...evolution is imperfect.

2 **Darwin's Dangerous Idea ***

3 **Science**

A specific way of understanding
the *natural* world.

Based on the idea that our
senses give us accurate
information about the Universe.

Science is validated by its great
usefulness.

– Medicine, technology, engineering, your cell phone

Science cannot tell us anything about the supernatural.

Neither can it help us with questions of Good vs. Evil, Ethics, Morality, or whether or not
there is a God.

4 Charles Darwin's Dangerous Idea*

Charles Darwin's *The Origins of Species by Means of Natural Selection* changed the world.
(1859)

All life forms on this planet are related to each other through "Descent with modification
over generations from a common ancestor".

Natural processes fully explain the biological connections between all life on the planet.

5 Charles Darwin's Dangerous Idea*

Few important requirements are
needed to make his theory work:

1. Genetic connections through
the generations
2. Unbroken lines of descent
from one species to the next
3. Mechanisms to create new
variations in each generation.
4. Survival and reproduction of the fittest variations in each generation
5. A lot of time for variations to accumulate and new species to form.

6 Darwin's Dangerous Idea*

Why is his theory so dangerous?

"In a single stroke, the idea of evolution ...unifies the realm of life, meaning and purpose
with the realm of space and time, cause and effect, mechanism and physical law."

* Daniel Dennett in *DARWIN'S DANGEROUS IDEA* (New York, Simon and Schuster, 1995)

7 Darwin's Dangerous Idea*

If we have evolution, we no longer need a Creator to create each and every species.

Darwinism is dangerous because
it infers that God did
not directly and
purposefully
create us.

It simply states
that we
evolved.

8 Creationism

Most of the people in the US
opposed to the theory of
evolution are Christians

- conflicts with interpretations
of the Bible.

Many of these people believe in *literal interpretations* of the Book of Genesis that portray
God's creation of the universe in 6 days.

- "Young Earth Creationism"

This is a very difficult stand to take:

- Suspension of physics, geology, astronomy, chemistry, biology and (all?) other sciences because
they contradict it so strongly.

9 Creationism

Most western religions
interpret these biblical
descriptions as *symbolic*
truths, not as literal truths.

Eliminates most of
the problems with most of the sciences.

- Physics, astronomy, chemistry, geology are off the hook.

It still leaves a problem with biology.

- Many deeply religious people believe in evolution.
- They view evolution as the natural mechanism by which God enabled creation to proceed.

10 Intelligent Design

To others, the inference remains:

If evolution is correct, then we are not as "important" as we have been taught by religion.

"Intelligent Design" has been proposed as way out of this dilemma by a number of people.

- Phillip Johnson, David Berlinski and Michael Behe to name only three.

They accept Darwin's evolution if an Intelligent Designer is substituted for natural
selection.

1250 - St. Thomas Aquinas - first design argument

1802 - *Natural Theology* - William Paley - 1802

11 Intelligent Design

Proponents would have us believe that all the biological evidence points to

- an intelligent, sentient, thinking designer with the supernatural power to create anything and everything
 - An eye, a whale, a bird and man included
- and not to the short-sighted, sometimes stupid “survival and reproduction of the fittest”- mechanism (*evolution by natural selection*).

12 Intelligent Design

For intelligent design to work, however, the Designer needs to create each and every species on the planet.

- If one species can evolve, why not all of us?

Problems:

- Why did the Designer spend 2 billion years on bacteria and archaea when He/She could have created us right away?
- Why are there *always* a succession of organisms, from simplest to more complex from the beginning of the descent line to the end? ALWAYS!
- Why are the designs imperfect?

13 Problems with Intelligent Design

You’d think the elephant would be a perfect example of intelligent design:

- The massive skull counterbalancing the mass of the trunk.
- The thickened bones to support its weight.

This great animal must appear out of no where – designed de novo, fully formed and perfect in its conclusion.

But alas...

14 Elephants

There have been 22 new species in the last 6 million years.

20 of them are extinct.

In the last 4 million years there have been 10 successive species of Indian elephants alone.

Why so many species?

Did it really take so much practice to get it right?

15 More problems with Intelligent Design

This evolutionary pattern – the succession of one variation to the next – is seen in the fossil record dozens and dozens of times.

Why would an Intelligent Designer also be a deceiver?

Why so willfully mimic evolution?

Dinosaurs with feathers,
Birds with teeth,
Whales with legs and hips
and arm bones?

16 More problems with Intelligent Design

In *Darwin on Trial*

Phillip Johnson disputes
vertebrate evolution.

- (1991, Washington, D.C.,
Regenergy Gateway)
- Lobe-finned fish to amphibians

Johnson's criticism:

no indication of the transition between water-based fish and land-based amphibians in their soft tissues and internal organs.

But alas ...

17 Problems with Intelligent Design

1991 – *Acanthostega gunnari* is
discovered (fish-like tetrapod)

- one specimen is so well
preserved it has internal gills!

1998 – **A Devonian fish**
discovered in Pennsylvania

- the fossilized fin had soft
tissue so well preserved,
one can count the eight
fingers common to the earliest of tetrapods!

Fish with fingers! Tetrapods with gills!

Transitions and succession everywhere one looks.

18 Why would an intelligent designer use the same bones for running, swimming, flying and writing?

"What could be more curious than that the hand of man, formed for grasping, that of a mole, for digging, the leg of a horse, the paddle of a porpoise, and the wing of a bat, should all be constructed on the same pattern, and should include the same bones, in the same relative positions?"

**All vertebrates
descended from
a common ancestor.**

19 More Problems with Intelligent Design

Michael Behe's

"irreducible complexity":

- "a single system composed
of several well-matched,
interacting parts that

contribute to the basic function,
wherein the removal of any one of the parts causes the system to effectively cease functioning.”

If a system requires all of its parts to function,
and natural selection only works by selecting final functions,

how can natural selection account for the evolution of all the parts that individually have no function? See <http://udel.edu/~mcdonald/mousetrap.html> for mousetraps!

20 Irreducible Complexity

The eukaryotic cilium:
a whip like structure
found in most eukaryotes

- Very complex
- 9+2 microtubule arrangement
- Many additional protein parts
- Used for movement and locomotion
- Take away a part, no function.

21 Irreducible Complexity

Evolutionary simpler forms found in many different organisms: many simpler functional cilia have been found in Nature. Proof that simpler can easily be functional.

22 Complexity can Evolve through Intermediates

In 1859, Charles Darwin wrote,
“reason tells me, that if numerous gradations from a perfect and complex eye to one very imperfect and simple ... can be shown to exist,
... then the difficulty of believing that a perfect and complex eye could be formed by natural selection ... can hardly be considered a real difficulty.”

23 Complexity can evolve through intermediates

Five different eye forms found in mollusks are shown to the right.
The forms are real examples of “gradations from complex to very imperfect and simple”.
Lens material is “house-keeping enzymes”.
An evolutionary pathway from a simple light absorbing pigment to a complex camera-like eye is not difficult to conceive.

24 Design Isn't Intelligent – it is imperfect

- Recurrent laryngeal nerve
- One of the cranial nerves
 - Goes from the brain through a tube near the heart to the larynx.
- Direct route in fish.
 - Detour of ~ 1-2 feet in humans.
 - 10 to 15 feet of extra nerve in giraffes.

Why?

Because evolution and natural selection operates in the short term, with each step taking place as a modification of what is already present.

There was no intelligent design for the giraffe.

25 So What is it then?

Can we prove that an Intelligent Designer did not create the perfect design for a complex eye, the complex cilium, and in a snap of supernatural fingers, deliver all of the amazing structures to us, complete with their “design errors”?

We cannot.

Did the Intelligent Designer also include the evidence for our evolutionary ancestry as some kind of “deception” or “trick”? I think not.

26 The laws of nature work for biology

The rules of physics, chemistry and biology are sufficient for the evolution of simple to complex eyes, and for the evolution of all of the unbelievably beautiful and varied forms of life on this planet.

Is there a place in a scientist’s world view for a Creator of the Universe and Evolution?

- Certainly - Many religious people think that evolution is the natural mechanism which enabled creation to proceed.

We really don’t need an Intelligent Designer to give us the sometimes flawed, works-in-progress that we see.

The laws of nature and the mechanisms of natural selection work just fine to take care of those details.

27 Teaching ID as science is unconstitutional

United States District Court Judge John E. Jones, III - A very conservative, republican, Christian

Appointed by Pres. Bush in 2002

to U.S. District Court for the

Middle District of Pennsylvania

Assigned *Kitzmiller v. Dover Area School District*

- first federal court action against the school’s policy of mandating the teaching of intelligent design as an alternative to evolutionary science.

On December 20, 2005 he ruled that the mandate was unconstitutional in a 139-page decision.

28 Teaching ID as science is unconstitutional

A synopsis of the decision:

(1) ID is a religious view, a mere relabeling of creationism.

(2) There are no peer-reviewed publications in ID literature.

Conclusion: Intelligent Design is not science.

Bill O’Reilly (Fox News) accused him of being a “fascist” and an “activist judge”.

Somehow, I don’t think so... Judge Jones is a former...

- Assistant Scoutmaster, Boy Scouts of America
- Member / president-elect National Alcohol Beverage Control Association