

# The Darwinian Revolution

- Background: the impact of the Darwinian revolution
- "Man is the measure of all things" (PROTAGORAS)
- Aristotelian universe
- BUT THEN ---> the Copernican revolution

## The Darwinian Revolution

- However, biology remains of some solace to the anthropocentrically-inclined
- “Argument” from design - Paley's watchmaker
- BUT THEN ---> the Darwinian revolution
- Design and “chance” not the only alternatives

# The Darwinian Revolution

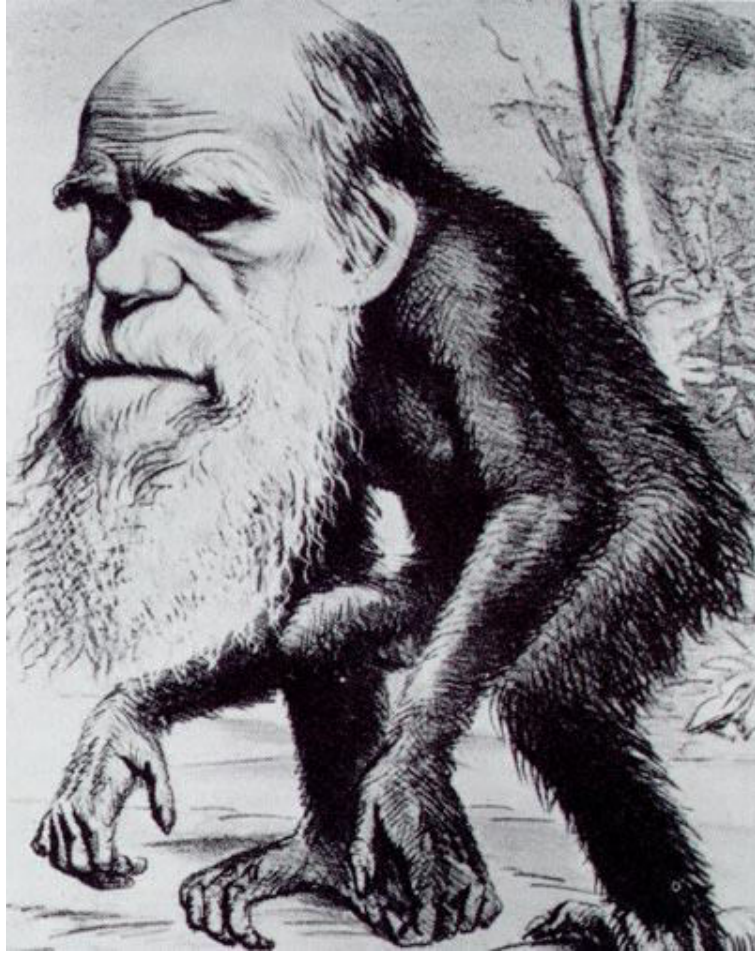
- Some of the central implications of the theory:
- i. The Earth is very old, certainly very much older than 4004BC (in fact over 4 billion years) and of course the Earth itself is a relatively late creation - there were eons of time when there was no earth and even after the Earth was formed eons of time when no humans were around.
- ii. Contrary to what the Bible appears to say (e.g. the story of the flood) the present 'kinds' that populate the earth have evolved from earlier radically different 'kinds' (indeed ultimately from chemical molecules)

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- iii. More specifically, humans are not the products of special creation but have themselves evolved from earlier and quite distinct species.
- iv. Nothing prevents us eventually evolving into a different species (i.e. members of which would be reproductively isolated from present humans) - indeed assuming that we don't go extinct, it would be an amazing coincidence if this were *not* to happen.

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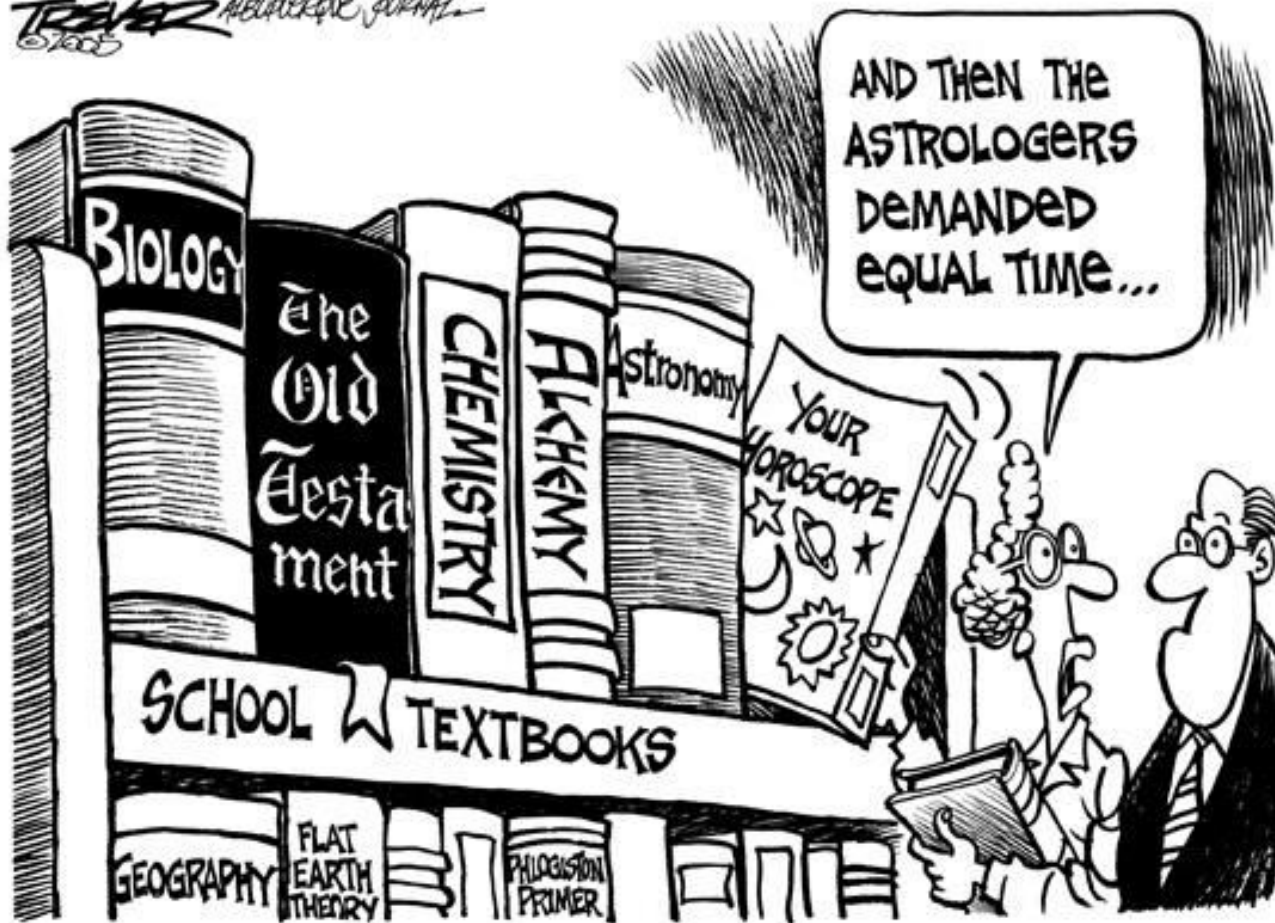
- So let's not pussyfoot around - there is a BIG tension between a religious view that seeks to give man some sort of special role in the universe and this particular scientific advance.
- And hence a big incentive to resist accepting this as a *real* advance – i.e. as likely to be true.
- No other case in history of science (not even the Copernican one) where these sorts of “science 'vs' religion”, “science and man's view of herself” issues have been so hotly and extensively debated.



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- And this tension is not just a historical phenomenon of course - the issues are still with us and an especial problem in the US.
- Indeed exactly the same sort of attempts to discredit Darwinian theory are made in the current “"Scientific" Creationist”/ “Intelligent Design” literature as were made at the time by Darwin's critics.

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## Intelligent Design Trial

A debate has arisen over a Pennsylvania school board's decision to teach both intelligent design and evolution in the classroom. Here are some highlights from the trial:

▶ Defense asks that scientific facts be stricken from record

▶ Beautiful painting of God creating universe with anvil and hammer admitted as evidence

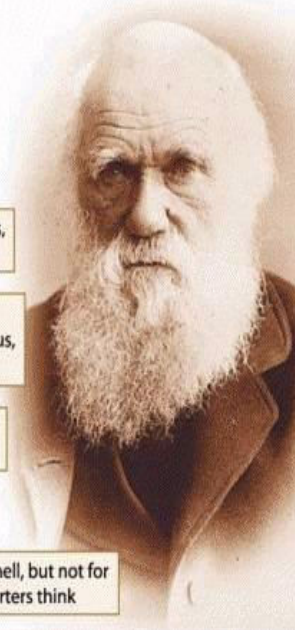
▶ Defense appeals to jury's reason, fairness, and fear of eternal damnation

▶ Final deliberations interrupted twice by mailmen, first bearing kids' letters to Jesus, then bearing kids' letters to Darwin

▶ Monkey called as witness fails to identify anyone in courtroom as his descendant

▶ Darwin found guilty on all charges

▶ It is proven that this country is going to hell, but not for the reasons the intelligent-design supporters think



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- So, although it seems ahistorical .. will study these issues with special reference to the current formulations of the arguments.
- Advantages:
- 1. The (especially clear) book by Philip Kitcher - *Abusing Science* MIT Press, 1982
- 2. The science has, of course, been greatly clarified in the meanwhile (means there is a lot less excuse now for being pro-Creationist, but main considerations apply historically too).
- 3. Though we need to be on guard against clearly objectionable forms of ‘Whig history’.

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- Just as an aside, things got even worse for the anthropocentrically-inclined after Darwin:
- i. Heat death
- ii. "Only"  $10^8$  more years before "our" sun explodes
- iii. Big bang - very close shave..
- If the universe really has a creator with a special soft spot for us humans, then she had a very funny way of showing it!

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- Back to Darwin:
- Strong incentive for finding something faulty with Darwinian theory
- But motives don't, of course, matter: do any of the arguments that anti-Darwinians have produced carry any rational/scientific weight?

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- Sorts of argument:
  - i. Darwinian theory is not really scientific at all.
  - ii. More particularly, it has often been argued that it is a mere ‘tautology’.
  - iii. Others have argued that while not totally unscientific, there is no real scientific evidence in its favour.
  - iv. In particular that there is no evidence that shows it to be preferable to rivals (Lamarckism and especially Creationism/Design).
  - v. There are many particular problems in the theory that render it incoherent/unacceptable.