



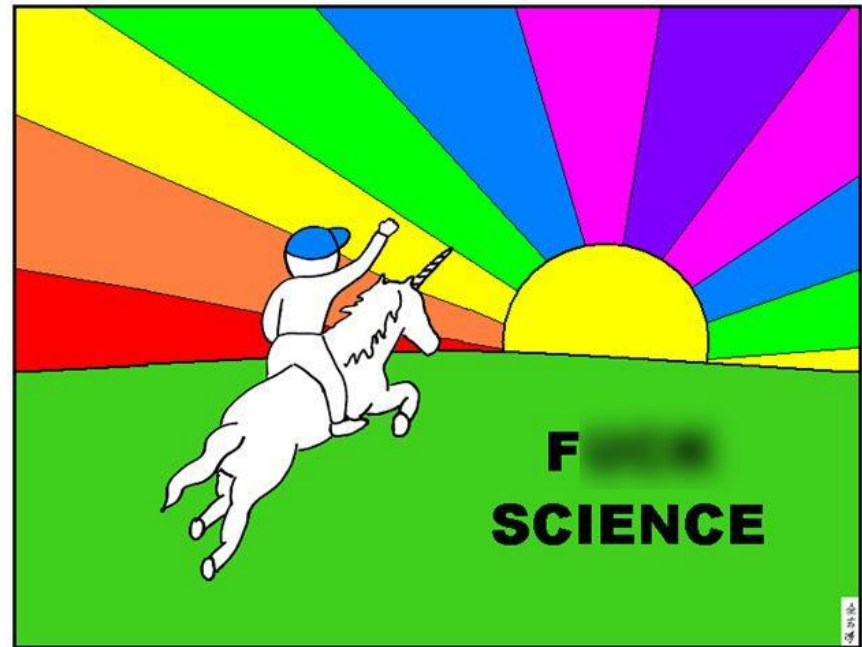
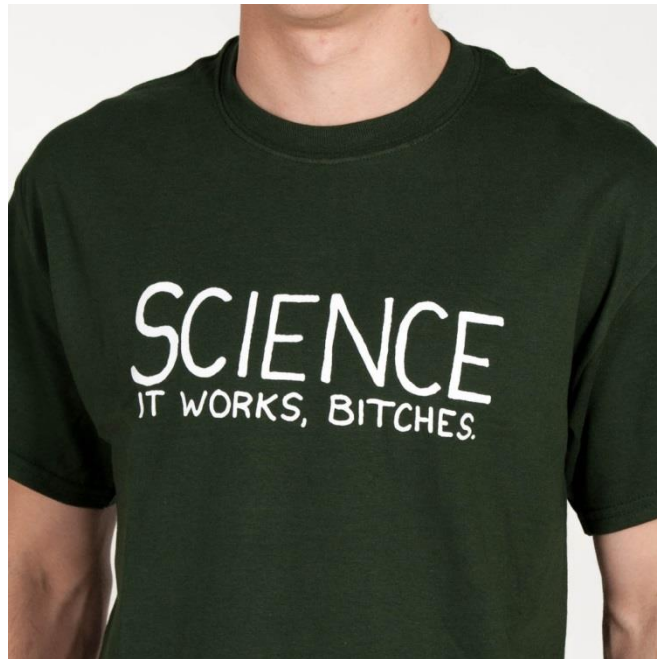
# Science vs Religion

Does Science discredit Religion?

Does science disprove or  
contradict religion?

No.

# Two Extremes?



# What is Science?

- From Latin *scientia*, meaning “knowledge”
- Study of the *natural* world using the *scientific process*
- Science works by constructing *models* which explain the natural world
- “[Discovery] and organisation of knowledge in the form of testable explanations and predictions about the universe” ~ Wikipedia

# The Scientific Process

- Observe
- Hypothesise
- Predict
- Experiment
- Analyse



$$\sum \mathbf{F} = 0 \Leftrightarrow \frac{d\mathbf{v}}{dt} = 0.$$

$$\mathbf{F} = \frac{d\mathbf{p}}{dt} = \frac{d(m\mathbf{v})}{dt}.$$



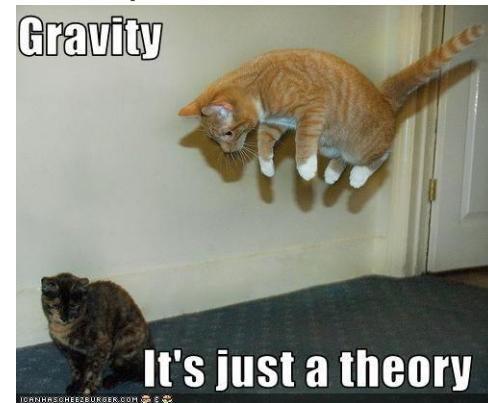
# The Scientific Process

- Repeat...
  - Gain new knowledge
  - Reverse previous understanding



# What is a Scientific Theory?

- **Not** a conjecture, hypothesis, guess, unsubstantiated or speculative.
- Well-substantiated explanation acquired through the scientific process
  - Testable
  - Observed
  - Confirmed
- Best theory has the greatest explanatory power while making the least amount of assumptions.



# Practical Problems with Science

- **Greed**

- “Proprietary” research
- Falsified results
  - Hwang Woo-suk
- Bad peer reviewing
  - <http://pdos.csail.mit.edu/scigen/>

- **Pride**

- Limits of human understanding
- Influence of human agendas and ideologies
- Projection of authority (“scientists says that...”)





# Practical Problems with Science



Alex Holcombe  
@ceptional



Following

Elsevier profit 36% and Wiley 42%. How?  
By paying authors nothing and charging taxpayers to read work they funded.

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<i>operating profit</i>	<i>company</i>	<i>industry</i>
7%	Woolworths	supermarkets, poker
12%	BMW	automobiles
22%	Coca-Cola	adding sugar to water
23%	Rio Tinto	mining
36%	Apple	premium computing
34%	Springer	scholarly publishing
36%	Elsevier	scholarly publishing
42%	Wiley	scholarly publishing

# Practical Problems with Science

Although association preferences documented in our study theoretically could be a consequence of either mating or shoaling preferences in the different female groups investigated (should we cite the crappy Gabor paper here?), shoaling preferences are unlikely drivers of the documented patterns both because of evidence from previous research and inconsistencies with *a priori* predictions. Our methods closely followed those of published mate choice experiments in this system (Tobler et al. 2009a,b; Plath et al. 2013),

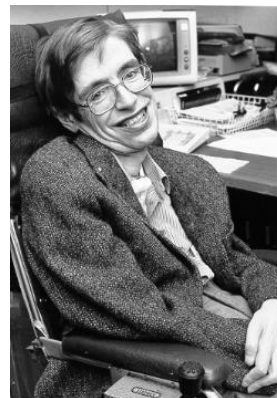
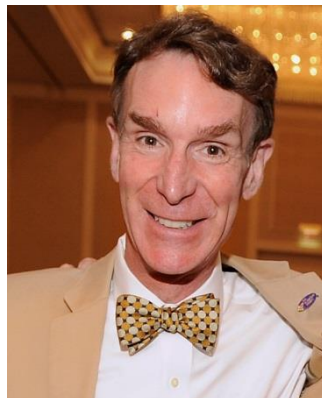
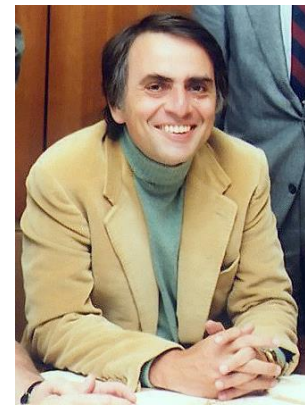
Photo credit: Robert Lanfear. The unfortunate highlighted line was not picked up by authors, editors, or reviewers until four months after publication.

# Is Science therefore Bad/Evil/Idolatrous etc.?

- NO
- DO NOT DISREGARD SCIENCE
- Remember, science is a *process*
- Application thereof can be corrupt or pure
- Science works
  - GPS
  - Vaccines
  - Rosetta & Philae
- Science is good and forms part of God's commandment to "subdue the earth"
- Encourages curiosity & healthy scepticism
  - Creates another problem...

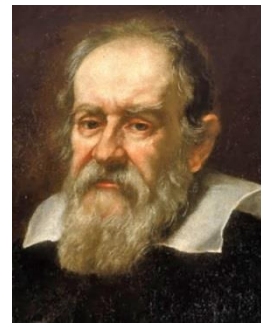
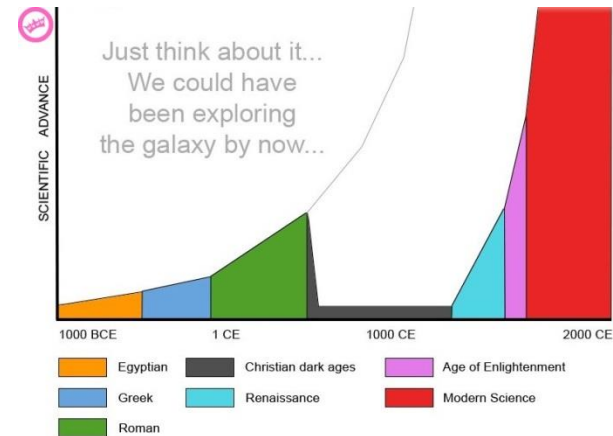
# Why Science vs Religion?

- Not science vs religion...
- *Scientific naturalism* or *scientism*
  - Worldview which *presupposes* that the physical is all that there is.



# Objections to Religion: Historic

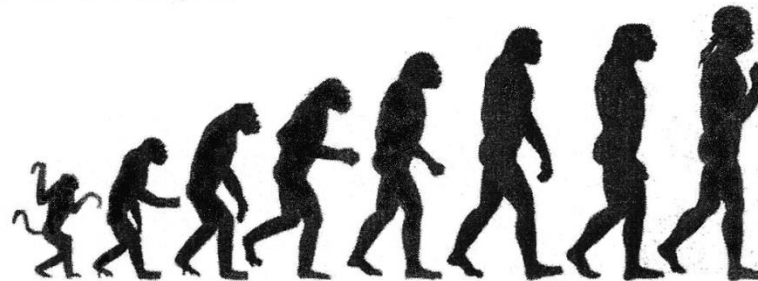
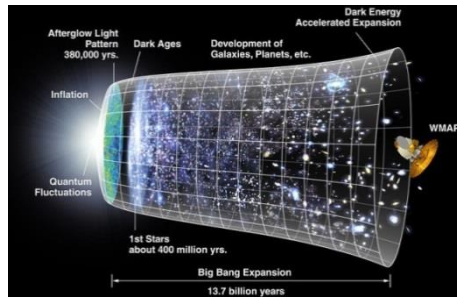
- Religion stifles scientific progress
  - Dark Ages
  - Galileo
  - More on next slide...
- Religion causes wars



# Objections to Religion: Naturalistic

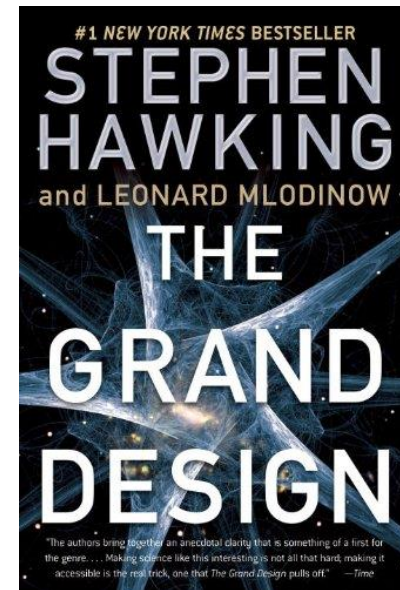
$$\rho \left( \frac{\partial \mathbf{v}}{\partial t} + (\mathbf{v} \cdot \nabla) \mathbf{v} \right) = \rho \mathbf{f} - \nabla p + \mu (\nabla^2 \mathbf{v})$$

- “I had no need of that hypothesis.”  
– Pierre-Simon Laplace
- Science explains the working of the universe (i.e. no “God of the gaps” required).
  - Big Bang
  - Evolution
  - Afterlife



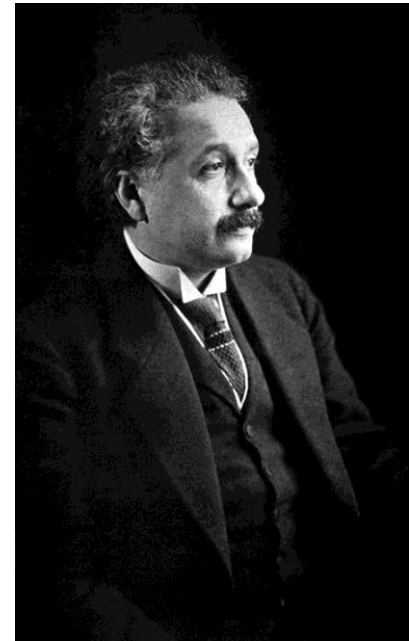
# Objections to Religion: Naturalistic

- *“Traditionally these are questions for philosophy, but philosophy is dead. Philosophy has not kept up with modern developments in science, particularly physics. Scientists have become the bearers of the torch of discovery in our quest for knowledge.” – Stephen Hawking, *The Grand Design**



# The Limitations of Science

- Science is the study of the *natural* world.
- It fundamentally cannot speak about the *metaphysical* or the *spiritual*.
- “*You are right in speaking of the moral foundations of science, but you cannot turn round and speak of the scientific foundations of morality. ... Every attempt to reduce ethics to scientific formulae must fail.*”  
– Albert Einstein





# The Limitations of Science

- Stephen Hawking & M-theory
  - Superstring theory
  - Attempt to unify all theories of particles & forces
- Lawrence Krauss & nothingness...



# The Limitations of Science

- Gödel's incompleteness theorems (1931)
  - Mathematics cannot solve all problems
- Church–Turing thesis (1939)
  - Limitations of computations
  - Is the brain a computer?
- Quantum mechanics & neuroscience
  - Heisenberg: limitations to what we can know absolutely in physics
  - A case for the soul?

$$\sqrt{\heartsuit} = ? \quad \cos \heartsuit = ?$$

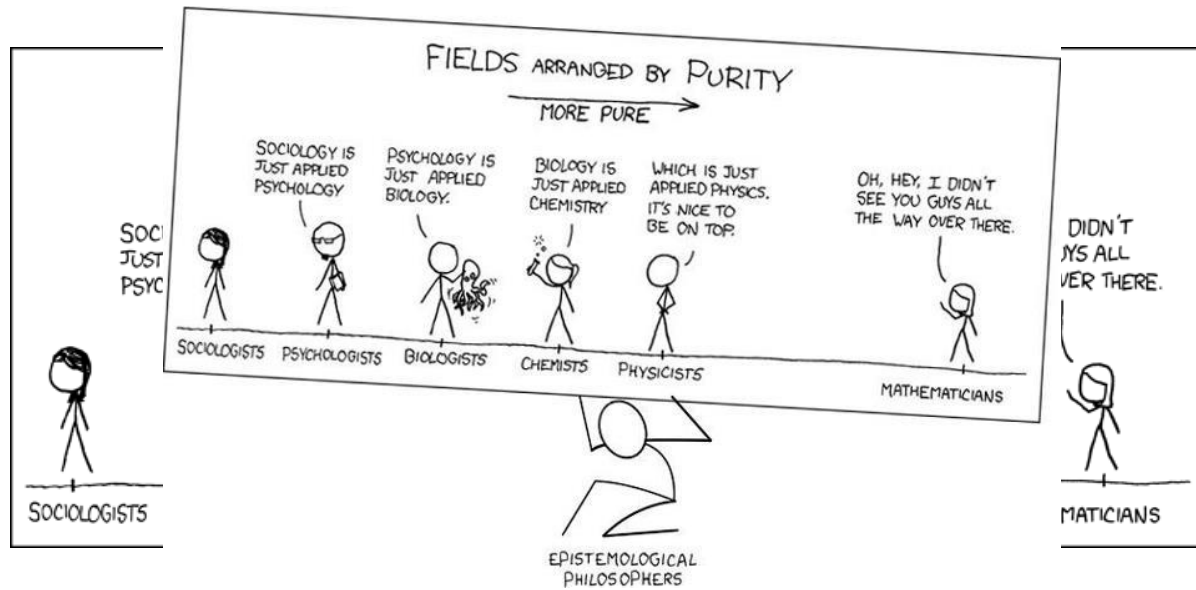
$$\frac{d}{dx} \heartsuit = ? \quad \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \heartsuit = ?$$

$$F\{\heartsuit\} = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\infty} f(t) e^{it\heartsuit} dt = ?$$

*My normal approach  
is useless here.*

<http://xkcd.com/55/>

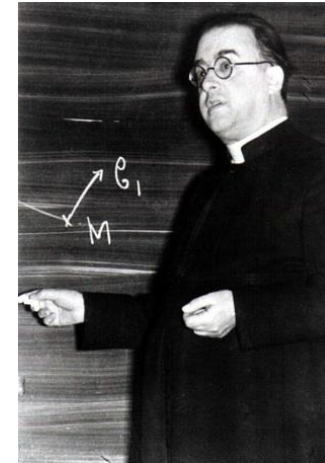
# The Limitations of Science



- Partial credit: <http://xkcd.com/435/>

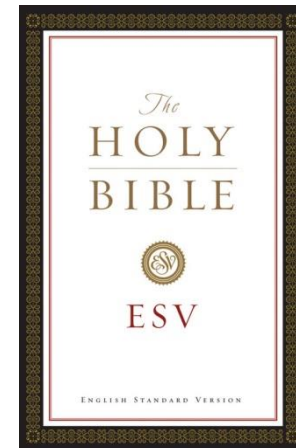
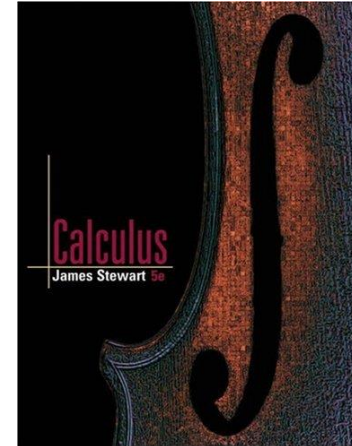
# Theists & Science

- Pew research 2009
  - 33% theist
  - 41% atheist
- Isaac Newton
- Georges Lemaître (Big Bang Theory)
- Francis Collins (Human Genome Project)
- Many others...



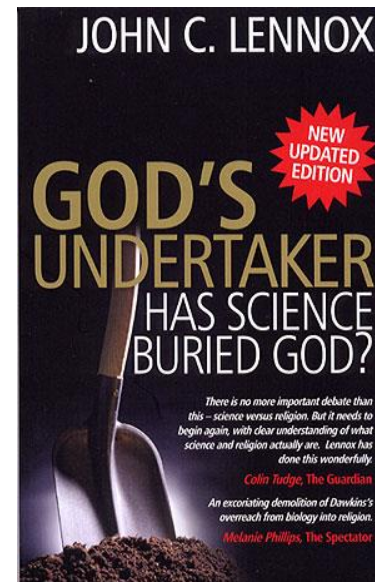
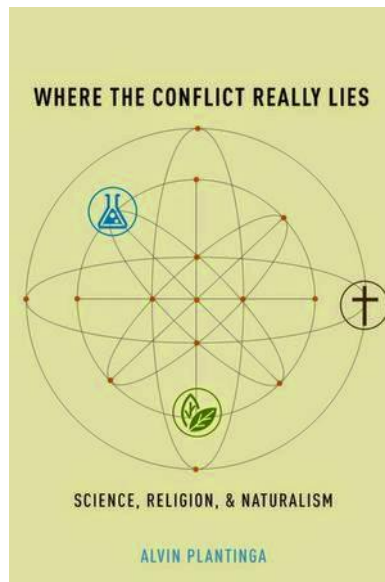
# Christian Understanding of Science

- A book can contain elements which do not form part of its primary purpose.
- The Bible is not primarily a book on economics, grammar, etiquette *or science*...
- The Bible contains history, poetry, etc., *but is primarily about God's salvation plan for a fallen human race.*



# Further Reading

- “Where the Conflict Really Lies” – Alvin Plantinga
- God’s Undertaker: Has Science Buried God?” – John Lennox



# Sources

- <http://www.pewforum.org/2009/11/05/scientists-and-belief/>
- <http://www.alternet.org/food/new-study-claims-gluten-intolerance-may-not-exist-separate-celiac-disease>
- <http://www.npr.org/2014/05/20/314138908/gluten-researcher-reverses-his-earlier-finding>

# Questions?

- Is anyone still awake?