Chapter 17

Evolution and Religion

17.1 Homework

Readings – Larson, Chap 9 and 1. van Fraassen *The Empirical Stance*, excerpt, and Lipton, "Science and Religion, the immersion solution"

Study questions :

1. Write a timeline of the American anti-evolution crusade with the main figures of the anti-evolution movement, their arguments and their methods.
2. What is the difference between Sunday or Bryan on the one hand, and Behe on the other (their views, their methods)?
3. Before you read: Write a paragraph about how you think science and religion relate to each other: do they conflict with one another? are they complementary? are they compatible? How?
4. After you have read: Write a paragraph on the same topic. Make sure to explain whether or not the readings have helped you clarify your own view, whether or not you changed your mind, and how.

17.2 Introduction

The special case of Evolution :

- while it is non-controversial within the scientific community, it is not accepted by the majority of the US general public (only 44% agreed with the descent of man from earlier species in the US)

- such public reluctance happens only with the theory evolution: other new theories, like the theory of continental drift, or relativity, are largely accepted by the public

One way to understand: Biblical literalism

The point of the chapter :

- is NOT to assess whether the theory of evolution is true or not (you know by now that this is a tough question for all scientific theories), even less to assess whether religious beliefs are true or not

- but is rather to explore the various ways in which science, and in particular the theory of evolution, relates with religion

The aim of the chapter :

- is NOT to tell you what to think

- but rather to help understand both your own views and the others' in a deeper way.

17.3 Evolution and Religion in Darwin's times

Reminder – Theism / Deism / Natural Religion / Fideism

Natural Religion – Find design in nature

Buckland, Paley – irreducible complexity of the eye

The theory of evolution is in contradiction with this idea of a perfectly designed world. Instead, the variations which are the base of evolution are *random*.

This does not mean that Darwin is an atheist!

Darwin presumably a Deist – that is, believes in the "God of the philosophers" : not personal, does not intervene in the world, no miracles, faith of reason.

There is room for God, but as the "Creator", rather abstract, remote entity, creator of the universe at the beginning of time.

Methodological Naturalism – By the end of the 19th century, methodological naturalism is accepted within the scientific community, even among the advocates of theistic evolution like Asa Gray.

Reminder: Distinction Methodological / Ontological naturalism

The point of methodological naturalism is that appealing to supernatural causes does not provide a satisfactory scientific explanation.

George Frederick Wirght, ordained minister and religious conservative:

"we are to press known secondary causes as far as they will go in explaining facts. We are not to resort to an unknown (i.e. supernatural) cause for explanation of phenomena till the power of known causes has been exhausted. If we cease to observe this rule there is an end to all science and all sound sense."(quoted in Larson p. 111)

$\longrightarrow$ *Methodological naturalism had been accepted as part of proper scientific method. Because Methodological naturalism leaves room for God (outside of science), evolution*

is not seem as a threat to religion any more. In the case of the advocates of theistic evolution, God appears as the last piece of the puzzle, just as in the case of physics. God is seen as the law maker. Biblical literalism was still not a problem.

So, what happened?

17.4 America's Anti-Evolution Crusade

Biblical literalism :

- Developed in the 20th century US: the Bible is not seen as the work of centuries of wisdom, but rather as "the word of God". They do not deny that there are parables and metaphors in the Bible, but they deny that the Genesis (and some other parts of the Bible) can be interpreted in any other way than the literal sense.

- Evangelicals: personal salvation through faith, Bible word of God

– Pentecostals: Healing Holy Spirit, prophecy, speak in tongues

– Fundamentalists: inerrancy of Scripture, miracles, end-time prophecy

$\longrightarrow$ *Note that these is far from the majority of believer on Earth. In the Christian, Muslim and Judaic worlds all alike, fundamentalists make themselves noticed at the expense of a vast majority of modernists / moderate believers.*

The ban laws – William Jennings Bryan – political left and religious right. Great speaker and writer.

- His arguments :

1. evolution is unscientific

2. evolution is dangerous for faith

- Why ban laws? The importance of education : Religion and Morality vs. Religious Freedom (no one's religion should set the standards for education)

- Timeline

1923: Six southern states discuss – 2 pass – Oklahoma + Florida

1925: Tenessee $500 fine for teaching evolution – American Civil Liberties Union (ACLU) proposes to pay for defense

1925: Scopes Trial (Monkey trial) – Dayton – Bryan against Clarence Darrow

- The trial: sticks to the offense – Scopes broke the law and that's it

- Beyond the trial: Darrow proposes to Bryan to defend the law on the Courthouse lawn – real zoo. Darrow attacks that literal reading of the Bible, with Copernicus and Newton. Bryan is forced to admit that he interprets the Bible

Since then – Few legislations actually ban the teaching of evolution in schools but there exists a de facto silence on the theory.

17.5 Modern Culture Wars

50's: Agreement within the scientific community – With the modern synthesis, the scientific community largely agree on the process of evolution.

It remains a full range of options for religious beliefs:

- God out: religion, as everything else, is the result of evolution

- God as the law maker: evolutionary process is yet another beauty of the world seen as a wonderful mechanism

- God for the yet unknown: soul / mind, morality etc.

No incompatibility between religion and science within the scientific community.

Radicalization of the Churches –

1950's : double movement:

1. Radicalization and growth of conservatives churches (Mormons, Assemblies of God, Seventh-day Adventists etc.) – Growing influence of the South.

2. Disaffection for the mainstream religious trends, in particular by intellectuals.

$\longrightarrow$ *Split between two worlds.*

The Modern Crusade –

The issue of education strikes back :

60's Textbooks on evolution in secondary schools – Battle for equal time teaching.

1973: Tennessee – equal time law – problems with freedom again

Hardening on both sides :

- materialists in science

- conservative churches' radicalization: back to the literal reading of the Genesis (against the tradition which started with Cuvier)

When religion pretends to be science :

- Henry Morris (hydraulic engineer), Grace Brethen (theologian), *The Genesis Flood* – strict literal reading of the the Genesis

- Leaves room for micro-evolution but not for evolution between species

- The Institution of Creation Research (ICR): Creationism is not an idea of conservative uneducated biblical literalist anymore, but is supposed to be supported by a scientific rationale: Creationism, or Creation Science

- Arguments: attacks on two fronts:

1. Evolution is not more scientific than Creationism

2. Creationism is not more an ideology than evolution (which is taken to promote atheism and more)

When Politics gets involved :

- Republican Party – Religious right – prayer in schools, abortion and evolution

- Reagan is the first, became a tradition since

The 80's battle :

- 1982: McLean vs. Arkansas – equal time laws declared unconstitutional, and then several times again

- Growth of Christian Schools

Intelligent Design :

- Johnson *Darwin on Trial* : against naturalism

- Behe *Darwin's black box*: irreducible complexity: an irreducible complex system is "a single system composed of several, well-matched, interacting parts that constitute to the basic function, wherein the removal of any one of the parts causes the system to effectively cease functioning"

- On the other side: Miller, Ruse etc.

17.6 Evolution vs. Creationism and ID: Sorting things out

Science and ideologies – Scientic theories are not ideologies.

That they may be used as part of ideologies does not make them ideologies. Nor does it make them not worth teaching.

Quite the contrary: to teach the theory of evolution makes you understand how, for example, social Darwinism hinges on a fundamental misinterpretation of it !

Science and Naturalism – distinction Ontological vs Methodological

Ontological naturalism is a philosophical stance about what the world is fundamentally made of.

Methodological naturalism is indeed the starting point of the theory of evolution, just because it is the starting point of any scientic theory. A scientist starts of with the idea to explain the world in term of natural processes. Appeals to supernatural forces indeed do not pertain to science. This does not imply that all explanations of the world must be that way, only that scientic explanations must.

Methodological naturalism has proved more fruitful both for techno- logical applications and for the advancement of knowledge.

Natural causes and scientific explanation – Appeal to natural causes and natural mechanisms are favored because:

1. they are observable

2. they are explanatory

It is clear that scientific methodology can change. In particular, the type of causes that are deemed scientific have changed in history. So, we could imagine that supernatural causes could be accepted as scientific. What would it take?

1. empirical evidence

2. explanatory or at least predictive power

The problem is that Creationism and ID lack both of these

Minimal requirements for science: Evidence and Prediction :

Empirical evidence – It is crucial for a scientific theory to be grounded in empirical evidence.

- On the evolution side: can we see evolution occurs

- On the Creationism or ID side: no evidence – just points to supposed gaps

Prediction and Falsifiability – It is a crucial aspect of scientic theories that they could be rejected by further evidence. Creationism and ID do not meet this criterion for scien- ticity.

Creationism and ID's dilemma is that:

- either they commit to some predictions (no extinction, perfect adaptation of species and environment, only perfect organs) and then it is falsified by the empirical evidence

- or they do not commit to any predictions (unknowable ways of God) and then they do not qualify as scientific.

The important of the unificatory power – Other criteria play an important role in our acceptance of a scientific theory

Darwinism's explanatory power crosses over a very large range of domains: anatomy, biogeography, embryology, molecular biology, geology and paleontology

A debate over words: theories and facts :

No scientic theory is a fact. This is a category mistake. The problem arises because the understanding of the notion of fact and theory di?er in the scientic community and in the general public.

No scientic theory is a fact. A bunch of facts does not make a scientic theory either. But this does not mean that they are mere conjectures that one should not take seriously, quite the contrary. Theories consists in systems of laws that together provide an unied explanation for a set of empirical facts. Thus, there are nor facts, but there are based on, and corroborated by facts.

Scientific theories are never proven to be true in any simplistic sense. Nor do they ever give a *complete, definitive explanation of the phenomena in their domain in every details*. But again, this does not mean that they are mere conjectures – far from it.

The notion of competitive theories – See Daniel Dennett "Show me science" (*New York Time article* – Scientific ways to propose an alternative scientific theory

There is no doubt that a new scientific theory can be proposed and eventually win over the presently accepted theory. This is just what history of science is about. That said, not any theory can pretend to overcome an accepted theory. Dennett distinguishes between three main ways in which an alternative theory can be accepted:

1. It has empirical predictions which are incompatible with the presently accepted theory, and such a prediction is empirically confirmed.

   Example: Einstein's theory and the curved path of light (Eddington 1919)

2. It gives an account of a well known empirical fact which the presently accepted theory cannot explain.

   Example: The orbital precession of Mercury (Vulcan)

3. It unifies several theories, and hence several domains, that were considered different before and are understood as ruled by the same laws within the new theory.

   Example: Maxwell's unification of Electricity and Magnetism

Creationism does not accomplish any of these. It does not qualify as an alternative theory worth considering from the scientific point of view: "no intelligent design hypothesis has even been ventured as a rival explanation of any biological phenomenon".

There are true scientific controversies, and this is not hidden. It is the main way in which scientific knowledge makes progress. That said, competitive theories in a domain are not discussed in textbooks, but in peer-reviewed journals. In theses articles, theorem proofs and experiments are discussed. No intelligent designer has shown the ability to come up with a good paper.

Establishment hostility is not enough to explain such a gap of publication. Many scientific theories have faced establishment hostility, but could get through. Young people get excited, and run in their labs in search for empirical evidence which confirms or refutes the theory. This is the most promising option for a carrier! But this can be only the case when the theory has a content...and intelligent design just lacks content. No content, no controversy.

The upshot is: intelligent design does not qualify as a competing theory to evolution from the scientific point of view.

17.7 Conclusion

Discussion Questions:

1. Criteria for a theory to be scientific? for a scientific theory to be accepted?

2. Why the development of biblical literalism in the US?
   - Immigrants: Conservative Protestants
   - Anti-Intellectualism
3. Why is the theory of evolution so special?