

## 10 Robert Boyle and Religion: Why were scientists concerned about Religion in the Seventeenth Century?

### FOR TEACHERS

**Lesson Title:** Robert Boyle and Religion: Why were scientists concerned about Religion in the Seventeenth Century?

**Area of Learning:** evidence, empathy

**Aims:** pupils should be able to: gain factual knowledge and understanding of the history of Britain in the seventeenth century; describe past cultures and the history of ideas in seventeenth century science; use their knowledge to make links between features within and across different periods

**Vocab:** Genesis, universe, cosmological, Big Bang, origins, originate, matter, atheistic, species, Darwinism, species, evolution, evolved, Victorian, early modern, Divinity, theology

**Time Frame:** up to one hour, plus a homework task which could be preparation for a debate in a following lesson

**Resources:** worksheets; some research required, using a library or internet

**Pupil tasks:** pupils first tackle task A on their own. This could be followed by a brief feedback and discussion session where teachers further discuss the separation of science and theology in the 21<sup>st</sup> century.

The passage on Boyle and religion could be read silently by pupils, or tackled together as a whole class with frequent pauses for elucidation by the teacher. Pupils then need to work on the following questions either in silence or during a whole class question and answer session. It is possible that the research for task C could be completed in a longer lesson if teachers provide books/internet printouts for students. The debate could then take place in a following lesson.

## **A. Task**

Read both sources.

**Source One:** ‘In the beginning God created the heavens and the earth. And God said ‘Let there be light’ and there was light. God called the light ‘day’ and the darkness ‘night’. And there was evening and there was morning – the first day. On the third day God said ‘Let the land produce vegetation’. On the sixth day God said ‘let the land produce living creatures ... and ... let us make man in our image ...’ Extract adapted from The Bible (*Genesis*, chapter 1).

**Source Two:** ‘*Big Bang Theory* – the cosmological theory that the universe originated from matter of great density and temperature that exploded, possibly about 4,600 million years ago.’ Extract adapted from *The Oxford Dictionary of Science* (Oxford, 2003)

1. What process does each of these extracts explain? What is one of the main differences between the two? (hint: read the captions describing the provenance of each extract)

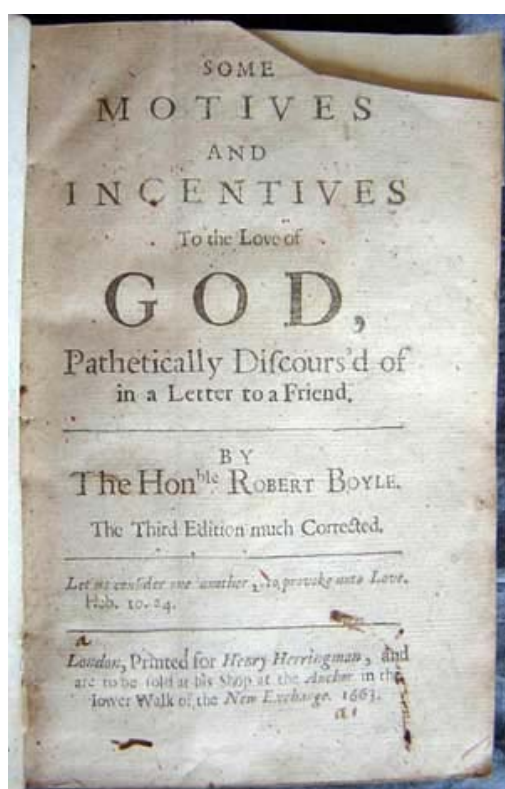
After having completed the task above you will be aware that science and religion offer very different views on how the universe was created. The modern idea, that science and religion are incompatible and not connected in any way, derives from Victorian times (19<sup>th</sup> century). During those times, Charles Darwin (1809-92) developed his theory of evolution. This theory was potentially atheistic (not religious) for it suggested that all animal and plant species were *not* created by God as the Bible states (‘a theory known as special creation’), but evolved from simpler ancestral species by a process of natural selection. Other Victorian writers saw science and religion as irreconcilable; for example, John W. Draper (1811-82) wrote a book published in 1874 entitled *A History of the Conflict Between Religion and Science*.



**J.W.Draper's book, *A History of the Conflict between Science and Religion* (1874). This is the 25<sup>th</sup> edition of 1910.**

Today, theologians (people who study religion) and scientists from all countries still debate how the idea of a universe created by a god can be reconciled with the notion of one created by purely natural chemical and physical processes.

However, things were different in the early modern period when Robert Boyle was alive. Although some churchmen did indeed worry that scientific enquiry would lead to loss of faith in the fact that God created the world, many scientists such as Boyle did believe that science and religion were complementary, rather than oppositional and contradictory, areas of knowledge. Boyle for example felt that the complexity of the universe could be explained quite easily by the concept of an intelligent creator – the Christian God – who shaped the world. Whilst most scientists of the 21<sup>st</sup> century show little interest in theology and religion, scientists like Boyle produced many essays on religious subjects, such as *Seraphic Love*.



***Some Motives and Incentives to the Love of God*, better known as *Seraphic Love*, first published in 1659, a devotional work by Boyle which proved his most successful book. This is the 3<sup>rd</sup> edition of *Seraphic Love*.**

Boyle even learned Hebrew so that he could study the Bible in its original language and in the mid 1680s he paid for the Bible to be translated into Irish. His general interest in religion was also apparent when, in 1662, he became director of the New England Company (a missionary organisation devoted to converting the American Indians). Furthermore, in his will he established the *Boyle Lectures*, a series of eight annual public lectures on Christian religion to be delivered at the church of St Martin the Fields in London.

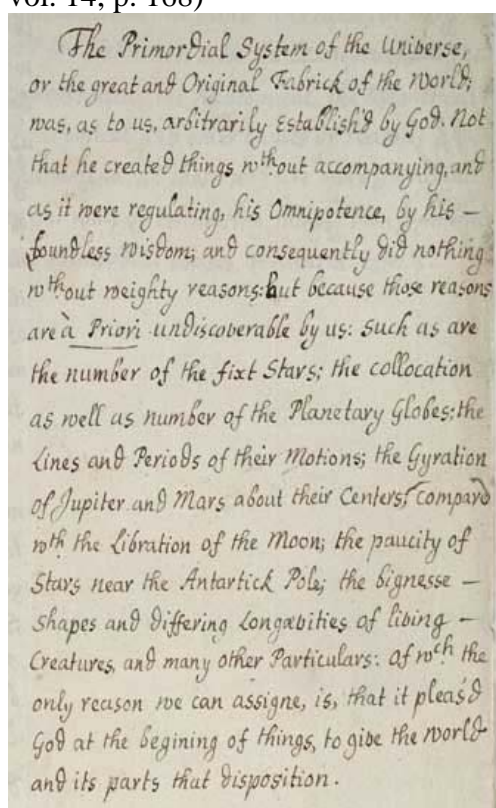
Boyle saw science as crucial to the task of defending religion. He also believed that his mechanical view of nature could play an important part in underpinning belief in God. In contrast to those who were worried that a mechanical view of nature made nature self-sufficient, he argued that matter in itself could achieve nothing, and that only the intervention of an intelligent creator could explain the way in which the universe operated. Look at your notes on the lesson on Boyle and the Mechanical Philosophy for more on this.

## **B. Questions**

1. How did Robert Boyle show that he was a religious man?
2. Read source three. How does it support the statements concerning Boyle's interest in religion made in the passage above?

### **Source Three: God's design**

The system of the universe or the great and original fabric of the world was ... established by God ... the number of the stars ... the planetary globes ... the moon ... The only reason we can find for God doing this is that it pleased Him to give the world and its parts that structure. (Adapted from appendix to *Disquisition about the Final Causes of Natural Things* (Works, vol. 14, p. 168))



The Primordial System of the Universe, or the great and Original Fabrick of the World; was, as to us, arbitrarily establish'd by God. Not that he created things without accompanying, and as it were regulating, his Omnipotence, by his — boundless wisdom; and consequently did nothing without mighty reasons: but because those reasons are *a Priori* undiscoverable by us: such as are the number of the fixt Stars; the collocation as well as number of the Planetary Globes; the Lines and Periods of their Motions; the Gyration of Jupiter and Mars about their Centers; compar'd w<sup>th</sup> the Libration of the Moon; the paucity of Stars near the Antartick Pole; the signesse — Shapes and differing Longevities of living — Creatures, and many other Particulars: of w<sup>ch</sup> the only reason we can assigne, is, that it pleas'd God at the begining of things, to give the world and its parts that disposition.

The original manuscript upon which source three is based (Royal Society Boyle Papers 9, fol. 40r. © The Royal Society)

## **C. Task**

Do some research on Charles Darwin and his theory of evolution using your school library, an encyclopaedia and the internet. Get a Bible and read some of the first book, *Genesis*. Divide the class into two halves (representing *Darwinians* and *The Church*) and pretend you are scholars living in the late nineteenth century. Do a debate on the motion 'This House believes that Darwinian theory correctly explains the origins of man'.