

TEACHER GUIDANCE SHEET

Science and religion: coexistence or conflict?

Religion and evolution can sometimes seem to be in conflict – but that does not have to be the case.

When Charles Darwin developed his theory of evolution by natural selection, Britain was a strongly religious country. Darwin was concerned about how religious authorities would react to his new idea. At a more personal level, his wife, Emma, was deeply religious and Darwin was also worried about how she would feel about his ideas.

The view that had dominated for centuries was that God had individually created all living species. The idea was captured by William Paley, who gave the analogy of someone finding a watch – all its parts worked together so the natural conclusion was that there must be a designer or watchmaker. The same must be true, he argued, for the incredible complexity of living things.

Darwin's ideas provided an alternative model, based on natural processes, that challenged Paley's interpretation. The beauty of evolution by natural selection was that it could produce complex structures from more simple predecessors. The end product might look deliberately designed, but that was only because the less well designed had been lost along the way.

The religious response to Darwin was mixed. Some people accepted the idea immediately. After all, it was only a mechanism. Evolution by natural selection could be the way that God had chosen to create different forms of life.

Others saw it as a more direct challenge to God's authority. Human evolution, in particular, seemed to contradict the idea that humans were created in God's image.

Much the same arguments survive today. Nevertheless, a conflict between science and religion is not inevitable: many scientists are also deeply religious; many religious people accept that evolution follows entirely natural processes.

Historically, the relationship between science and religion has varied considerably over time. It may even be an artificial debate: the 'relationship' may have depended on the individuals and communities concerned and cultural context, making generalisations all but meaningless.

One overarching framework identifies four possible ways in which science and religion may interact: conflict, independence, dialogue and integration. The starting point for such interactions is the recognition that science and religion are different ways of looking at the world. Science is founded principally on evidence and experiment; religion relies on revelation and faith. Stephen Jay Gould called these two very different approaches 'non-overlapping magisteria' or NOMA. The two represent different domains, each with their own set of tools for enquiring about the world and each equally valid. The domains or magisteria do not overlap, so the tools or methods of science are not applicable in the religious domain (and vice versa).

Science is suited to providing explanations for natural phenomena. Religion asks different questions that science cannot address, such as what the meaning of life might be. Science can help build aircraft and develop medicines; religion can provide spiritual nourishment.

This is not to say that interactions between the two cannot be fruitful – just that they can proceed more easily on the basis of mutual understanding. Conflict tends to arise when the boundaries of NOMA are crossed, either by scientists arguing for a scientific approach to religious questions or when religious ideology is brought into science.

Moreover, as far as an individual is concerned, the two world views are not mutually exclusive. Someone may see their health and well-being very much as a combination between science (e.g. nutrition) and a spiritual dimension.

This activity is designed to encourage students to think about the major differences between religion and science.

Materials

- pen or pencil
- paper



TEACHER GUIDANCE SHEET**Science and religion: coexistence or conflict?****Concepts**

There is considerable evidence for **evolution by natural selection**, although many details still need to be worked out.

Most evolutionary thinking is **compatible with most religions**.

Conflict between science and religion can be avoided if the two are seen as **different ways of looking at the world**. They occupy separate realms of **human existence** and use **different tools and ways of thinking**.

This model was popularised by the scientist **Stephen Jay Gould**, who referred to the two approaches as '**non-overlapping magisteria**'.

Individuals may choose to apply the two different approaches in **different areas of their lives**.

Guidance

Some students may hold strong beliefs about the existence of God. If they feel uncomfortable about working on this topic it may be important to stress that the activity is not about deciding which approach is 'right' but how religion and science use different ways of thinking to understand the world. Science need not be seen as a threat to religion and the two are entirely compatible. Indeed, many of the greatest scientists of their day believed they were uncovering the glories of God's creation.

There is no scientific controversy about the role of evolution in creating all living organisms, including humans. If your

students mention creationism or intelligent design, it is important to stress that these are not considered valid scientific theories. There is no evidence to support them and they make no testable predictions. They represent an attempt to bring religious explanations into science.

It is true that there are gaps in our understanding of evolutionary processes. This is an entirely natural aspect of science, where new knowledge is constantly being generated.

Many theologians also recognise that creationism and intelligent design are flawed theories.

Accepting the validity of evolution by natural selection is not the same as being an atheist. Many people believe in God and recognise that evolution is a reality. It does, however, contradict a strict literal reading of texts such as Christian Genesis. However, many Biblical scholars have argued that part of scripture should be read as allegory rather than literally.

Some scientists have argued that modern science renders belief in God unnecessary. Not all scientists agree, however. And while some scientists would say that there is no evidence for the existence of God, science cannot disprove the existence of God – it is not a question that can be answered by science.

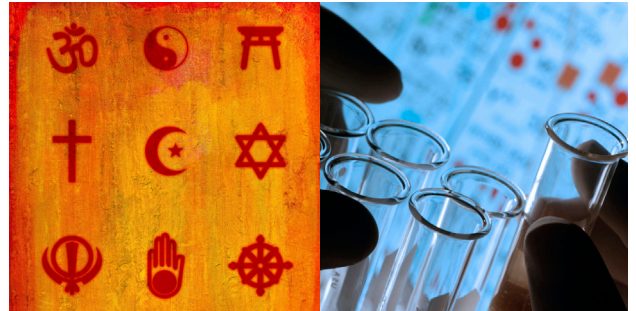
TEACHER GUIDANCE SHEET**Science and religion: coexistence or conflict?****Discussion Points**

There may be a temptation to see religion as providing an explanation for things that still baffle science. This can lead to the phenomenon known as ‘God of the gaps’. As science closes these gaps in knowledge, it will inevitably challenge these divine explanations. Again, it is better to see the two domains as separate – a gap in our understanding of natural phenomena is a challenge to science, but can be tackled by the methods of science and does not need to be filled by supernatural explanations.

When asked what studies of evolution had told him about the Creator, English biologist J.B.S. Haldane is said to have replied: “An inordinate fondness for beetles”.

How would a traditional religious view account for the extraordinary diversity of beetles on Earth? What explanation would evolutionary theory propose? How would science test a religious explanation?

Suppose science managed to explain completely how the Universe formed and operated, from the tiniest atom to the most complex living thing. What would this say about the existence or otherwise of a Creator?



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