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**Special Issue  
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# Challenging Religious Issues

**Adam Willows  
on Technology and  
Human Nature**

**Jeff Astley  
on Evolution and the  
Argument from (or to)  
Design**

**Andrew Village  
on Stewardship of  
Creation**

**David Wilkinson  
on Thinking about Being  
Human in a Universe of  
Aliens**

**Timothy Wall  
on Is Creation Complete?  
A Critique of Continuing  
Creation**

# Challenging Religious Issues

## Supporting Religious Studies at A-level and beyond

### Issue 15 Autumn 2019 Special Issue on Science and Theology

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## Technology and Human Nature

Adam M. Willows

*The article reviews some theological discussion about developing technology. It discusses how new technologies raise questions about our understanding of human nature, and how different theological responses might approach these questions.*

*Specification links:*

*AQA A Level Component 2: Study of religion and dialogues: [religious tradition] and science.*

*EDEXCEL paper 1: Philosophy of Religion; 6.3 Religion and science debates and their significance for philosophy of religion; paper 4: Study of Religion; 6.2: teachings and responses to issues of science. How [religion] has responded to these in the historical and contemporary world.*

*OCR H573/03-07: Developments of Religious Thought; e.g. Christianity: 6 Challenges. WJEC/CBAC/EDUQAS Component 1: A Study of Religion; Option A: Christianity; Theme 3: Significant social and historical developments in religious thought; Knowledge and understanding of religion and belief; E: The relationship between religion and society: respect and recognition and the ways that religious traditions view other religions and non-religious worldviews and their truth claims.*

### Introduction

In 1944, the first human-made object to reach space – a rocket – was launched. 25 years later, another rocket designed by the same man carried astronauts Neil Armstrong, Buzz Aldrin and Michael Collins to the moon. The man was German engineer Werner von Braun, and the two rockets were the V-2 ballistic missile and the Saturn V launch vehicle.

The technology von Braun designed in turn shaped his life and career, giving him a role in some of the most significant events of the 20th century – first as an SS officer, then as director of NASA's largest space centre.

It doesn't seem possible to properly understand von Braun's life without understanding the way it was affected by

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technology. More generally, how to relate to and understand technology is a challenge faced by individuals and societies throughout human history. The challenge seems particularly acute during times of rapid development and change. We need to know how to think about and respond to new technologies that might allow (e.g.) human enhancement or artificial intelligence. Attitudes to more practical or immediate questions are likely to be affected by the answers we give to broader and deeper questions about technology. Is technology itself somehow good or bad? Is there any fundamental difference between modern and ancient technology? What is technology, anyway? Theological thought about technology and its relationship to humanity tries to deal with questions at these different levels.

### What is technology?

If I asked you to list the technology you use every day, what would be on that list? Perhaps your phone, TV and maybe a form of transport like a train or car. What about shoes, a door handle or your favourite mug? The items on the first list are newer; but there was a time when the materials and techniques used to make the items on the second were just as new and cutting-edge as technology such as facial recognition and self-driving cars seem today. All of these items are tools or instruments that we use to fulfil a particular purpose, and so all of them are a kind of technology.

Humans have always been a technological species. Early technologies shaped the way we evolved, meaning that without technology humans would not exist as we do now.

The capacities for social, technical or cultural intelligence . . . coevolved with the cumulative

cultural evolution of technologies. (Kendal et al., 2011, p. 788)

When understood in this sense, technology is clearly part of everyday life for all of us – and always has been.

Some thinkers, though, claim that modern technology is not just distinct because it is recent. There is some fundamental difference that sets (e.g.) shoes and computers apart. Martin Heidegger was a German philosopher who claimed that modern technology was different – and problematic. He saw the use of technology as a fundamentally creative process (a ‘bringing-forth’) (Heidegger, 1977, p. 10). What is different about modern technology, he argued, is that it uses the natural world as a resource in a way that fundamentally alters it (a ‘challenging-forth’). Heidegger worried that this changes the way we see the world, and that technology of this kind lead us to think of things which are valuable in themselves as mere resources – even people.

Both of these attitudes to technology agree that it is crucial to understanding who we are. Below, I look at two areas where technology seems to pose particular challenges to our self-understanding: transhumanism and artificial intelligence.

### Transhumanism

All of us exhibit flaws and make mistakes. We might be forgetful or irrational. We age and our bodies decline. We are sometimes selfish or cruel. Helping us to address, explain or come to terms with human frailty and weakness is a task that has occupied many of the greatest theologians or philosophers. In the last 50 years there have been increasing calls to involve technology in this task, a position called transhumanism.

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The human species can, if it wishes, transcend itself . . . in its entirety, as humanity. We need a name for this new belief. Perhaps transhumanism will serve. (Huxley, 1968, p. 76)

Transhumanism is not just the view that we can and should use technology to improve ourselves. I have already suggested that this is unremarkable; humans have always used technology in a way that affects our minds and bodies. Instead, transhumanism is best understood as a distinctive attitude to the relationship between technology and the human. The transhumanist attitude emphasises:

- rapid development of technology;
- rapid, extensive and widely available integration between humans and technology, both physically and mentally; and
- a focus on technology as the means of improving social goods and reducing ills.

It will not always be clear where transhumanism begins or ends. Some technologies championed by transhumanists are in general use today, but most discussion focuses on technologies that are experimental or might be possible in the future. Some of these possibilities for enhancement are listed below.

- 'Study drugs' – stimulant medication used for nonmedical purposes (Ragan et al., 2013).
- Advanced prosthetics/exoskeletons. Used primarily for mobility and therapy, but increasingly for military, industrial and recreational purposes.
- Digital integration and alternative senses.

- Transcranial Magnetic Stimulation (TMS) which exposes the brain to strong magnetic fields and is used diagnostically and to treat major depression. There is some indication that TMS may temporarily improve response time on some cognitive tasks (Dresler et al., 2013).
- Brain-computer interfaces (both invasive and non-invasive) translate neural signals into digital commands and are currently used to allow paralysed people to control computers or machines (Clausen, 2013).
- Deep Brain Stimulation (DBS) involves the implantation of a neurostimulator to send electrical pulses through the brain and is used to treat OCD and Parkinson's disease (Clausen, 2013).
- Moral enhancement. Some chemicals appear to increase pro-social behaviour, and at least one (psilocybin) can induce permanent changes in empathy (Tennison, 2012).

More speculative possibilities include genetic 'editing', brain-to-brain communication, external memory and significantly extended or indefinite lifespan. None of these, with the possible exception of exoskeletons, are well understood. Those that can be implemented may all have significant and dangerous side effects.

### **Theology and transhumanism.**

The religious reception of transhumanism is very mixed. Some theologians are largely in favour, some against. Many transhumanists assume that their project is at odds with religion/theology – which irritates some theologians:

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Opening just one eye would disclose that religion is not the transhumanist's enemy here.

(Peters, 2015, p. 142)

Transhumanism is fundamentally goal-directed, or teleological. The claim that it is possible to improve our nature relies on some idea (explicit or implied) of what a better human nature would look like. Both transhumanists and theologians tend to agree that we could be improved, but often disagree on what counts as an improvement (Peters, 2015).

Transhumanism's advocates think they understand what constitutes a good human being, and they are happy to leave behind the limited, mortal, natural beings they see around them in favor of something better. But do they really comprehend ultimate human goods? (Fukuyama, 2004, p. 43)

### **Areas of agreement**

- Death and illness are the enemy and should be resisted and defeated.
- Humans could be more than they are.
- We should actively seek a transformation.

### **Artificial intelligence (AI)**

In his ground-breaking paper, *Computing Machinery and Intelligence*, digital pioneer Alan Turing argued that a sufficiently advanced machine could be capable of thought. Turing proposed a test he called the 'imitation game': if a computer could hold a good enough conversation to fool human judges into thinking it was human, then it would be reasonable to describe it as a thinking machine. Turing believed that by the year 2000, 'one will be able to speak of machines thinking without expecting to be contradicted' (Turing, 1950, p. 442).

Turing's proposal offers a format for identifying when a machine can imitate a human but does not go into great detail regarding the exact criteria for his test, and many different versions of varying levels of difficulty have been proposed. Despite increasing sophistication, computers cannot currently pass even less demanding versions of Turing's test (see Links below) but even the possibility has been enough to provoke a great deal of thought about human nature and what (if anything) makes us unique or special. If a computer could one day share in the most important parts of human nature, would there be any moral or spiritual difference between us and that machine?

One problem is that it is not clear that appearing intelligent is enough for us to be confident that a machine is actually thinking. In an influential argument, the philosopher John Searle claimed that even if a machine seems conscious, it might not be (Searle, 1980). A computer could have a conversation by following the rules of a program to produce the right responses to the right questions; but that would not necessarily show that the computer understood the responses themselves.

Searle distinguished between Strong AI and Weak AI. A 'Strong AI' is actually conscious and understanding, just like you and me. A 'Weak AI' is not really conscious or thinking, but is able to imitate consciousness so well that we cannot tell the difference. While both Strong and Weak AI are important topics of discussion, Strong AI in particular raises some very significant theological questions. Turing recognised this, anticipating a 'theological objection' to his position: 'God has given an immortal soul to every man and woman, but not to any other animal or to machines. Hence no animal or machine can think' (Turing,

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1950, p. 443). In fact, theologians have taken a more open attitude to this topic than Turing expected and have been willing to seriously consider the possibility that machines could possess both consciousness and souls (McGrath, 2011).

### Human nature and the *Imago Dei*

So there is no single theological position on either transhumanism or AI. Rather, both topics raise important theological questions, and the answers given will depend in large part on what theologians say about human nature. One of the key resources for theologians trying to deal with the questions discussed above is the doctrine of the *Imago Dei*. This is the claim that humans are made in the image of God, an important part of the biblical story of creation (in Genesis 1:26, God says ‘Let us make humankind in our image, according to our likeness’).

The *Imago Dei* does not mean that human beings are somehow the same as God; there is still a fundamental distinction between creature and Creator. It does, however, suggest that humans have a special status in creation, a special place in God’s plan or a special kind of relationship with God. There are different interpretations of what exactly being made ‘in the image of God’ means (Cortez, 2010, pp. 18–30).

1. Structural: the *Imago Dei* refers to particular universal human attributes or properties, such as rationality or an immortal soul.
2. Functional: the *Imago Dei* refers to particular human roles or activities, such as an obligation to be responsible stewards of God’s creation..
3. Relational: the *Imago Dei* refers to the capacity of humans for relationship in community – which is representative of the fundamentally relational nature

of the Trinity.

4. Multifaceted: the *Imago Dei* refers to all of the above.

A key concern for theologians discussing transhumanism is whether or not changing our nature could devalue or diminish the *Imago Dei* (Ben Mitchell, 2013). For example, radical transhumanist ideas such as uploading our minds into computers might be at odds with the functional account by putting an end to bodily activities. An important question is whether a non-human (e.g. a computer) could ever possess the *Imago Dei*. If, for example, a computer was capable of rational thought then the structural account might agree that it could share in the image of God; but supporters of a relational account might be more interested in whether or not a computer can love.

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### Links

As of 2019, the current holder of the Loebner prize for best chatbot is 'Mitsuku'. You can chat with it here:

<https://www.pandorabots.com/mitsuku>

Philosopher Nick Bostrom argues for the transhumanist project in his guide to Transhumanist Values at:

<https://nickbostrom.com/ethics/values.html>

Stanford Encyclopedia of Philosophy article on Artificial Intelligence:

<https://plato.stanford.edu/entries/artificial-intelligence/> (Selmer Bringsjord, 2018)

On the long-term bet about the Turing Test between Mitchell Kapor and Ray Kurzweil, see:

<http://longbets.org/1/>

### Discussion points

1. Would transhumanism reduce or increase social division and injustice?
2. Does a transhumanist project deserve our time and resources, or would these be better spent elsewhere?
3. Is it acceptable to 'enhance' future generations without their consent?
4. Are attempts to enhance ourselves sensible or hubristic [excessively self-confident]? Could we lose our humanity (and would that matter)?
5. If a computer could think, would it then count as a person? Would it be wrong for us to create a 'person' like this?
6. Might an AI have a soul? Could an AI be religious?
7. Should an AI have particular rights?



### References

- Ben Mitchell, C. (2013). The audacity of the Imago Dei: The legacy and uncertain future of human dignity. In *Imago Dei: Human Dignity in Ecumenical Perspective* (pp. 79–112). Ed. T.A. Howard, Washington, DC: Catholic University of America Press.
- Clausen, J. (2013). Bonding brains to machines: Ethical implications of electroceuticals for the human brain. *Neuroethics*, 6, 429–434.
- Cortez, M. (2010). *Theological anthropology: A guide for the perplexed*. New York ; London: T. & T. Clark International.
- Dresler, M., Sandberg, A., Ohla, K., Bublitz, C., Trenado, C., Mroczko-Wąsowicz, A., Kühn, S., & Repantis, D. (2013). Non-pharmacological cognitive enhancement. *Neuropharmacology*, 64, 529–543.
- Fukuyama, F. (2004). Transhumanism. *Foreign Policy*, 144, 42–43.
- Heidegger, M. (1977). *The question concerning technology and other essays*. New York: Garland Pub.
- Huxley, J. (1968). Transhumanism. *Journal of Humanist Psychology*, 8, 73–76.
- Kendal, J., Tehrani, J.J., & Odling-Smee, J. (2011). Human niche construction in interdisciplinary focus. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*, 366, 785–792.
- McGrath, J.F. (2011). Robots, rights, and religion. In *Religion and Science Fiction* (pp. 1–8). Ed. McGrath, J.F., Cambridge: Lutterworth Press.
- Peters, T. (2015). Theologians testing transhumanism. *Theology and science*, 13, 130–149.
- Ragan, C.I., Bard, I., & Singh, I., 2013. What should we do about student use of cognitive enhancers? An analysis of current evidence. *Neuropharmacology*, 64, 588–595.
- Searle, J.R. (1980). Minds, brains, and programs. *Behavioral and brain sciences*, 3, 417–424.
- Tennison, M.N. (2012). Moral transhumanism: The next step. *Journal of Medical Philosophy*, 37, 405–416.
- Turing, A.M. (1950). Computing machinery and intelligence. *Mind*, 59, 433–460.

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## Evolution and the Argument from (or to) Design

Jeff Astley

*The article summarises the effect of Darwin's proposed mechanism for evolution on the design argument for God's existence.*

*Specification links:*

*AQA 3.1.1 A. Philosophy of Religion: Arguments for the existence of God.*

*EDEXCEL Paper 1: Philosophy of Religion; 1.1 Design argument and 6.2 Influences of developments in religious belief.*

*OCR H573/01: 2. Existence of God: The teleological argument and challenges to arguments from observation; H573/03: Developments in Christian thought; 2 Foundations, Knowledge of God's existence . . . of God's Existence . . . as seen in the order of creation.*

*WJEC/CBAC Unit 2, Section B, Theme 1B: Inductive arguments – teleological.*

### Introduction

The argument from apparent design in the universe to an intelligent supernatural designer has usually been formulated as an inductive inference, which:

- *either* appeals to an *analogy* with human design,
- *or* reasons that a supernatural designer is the *best explanation* of this phenomenon (in an 'abductive argument').

Prior to Darwin, most people believed that the adaptation of organisms to their environment and their needs was so

striking that it demanded some sort of supernatural explanation. Nature, they claimed, was *intentionally designed*: an artefact produced by an intelligent agent. In William Paley's thinking, a living organism, like a watch, shows 'adaptation to the purpose' – both are a means to an end. 'And the question . . . is', he argued, 'whence this contrivance and design.' He answered, 'The thing required is the intending mind, the adapting hand, the intelligence by which that hand was directed.' Furthermore, for organisms, as for watches, 'when several different parts contribute to one effect . . . [this is]

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decisive evidence of understanding, intention, art' (Paley, 1802, ch. II, p. 16; ch. XV, p. 282).

Arguably, Paley's reasoning represents not so much an argument from the analogy between a watch (the existence of which implies a watchmaker) and the 'works of Nature',<sup>1</sup> as an inference to the best explanation of the adaptation of living things to their environment and ways of life, and the adaptation of their parts to specific functions.

### The difference Darwin made

This functional organisation or 'adaptive complexity' of living things clearly requires *some* explanation. 'Teleological arguments' held that only a Designer God could adequately explain these characteristics of living things.<sup>2</sup>

But Darwin was able to offer a *naturalistic explanation* in terms of the natural selection of (mainly) chance variations, which he regarded as the main mechanism driving evolution. Darwin accepted that organisms are 'designlike' (Michael Ruse's term), in that they possess adaptations that have a purpose or end – and, in that sense, they are teleological. (Eyes and wings, for example, are 'for' seeing or flying, as means to such ends.) But 'one of Darwin's great achievements was to argue that you can have the appearance of design without a designer' (Kitcher, 2007, p. 101). In evolutionary terms, 'design is no more than a metaphor' (Sarkar, 2007, p. 50). Moving eventually from deism to a religious agnosticism, by 1876 Darwin had come to believe that 'there seems to be no more design in the variability of organic beings and in the action of natural selection, than in the course which the wind blows' (Barlow, 1958, p. 87).

Thus, evolution now appears to many to allow room for no more than a 'blind

watchmaker': 'The only watchmaker in nature is the blind forces of physics . . . A true watchmaker has foresight . . .

Natural selection, the blind, unconscious, automatic process . . . has no purpose in mind' (Dawkins, 1988, p. 5). Jacques Monod (1974, p. 110) particularly stresses the significance of 'pure chance, absolutely free but blind' in the mutations that give rise to inheritable variation.<sup>3</sup> Coupled with the 'iron necessity' of selective pressures, *chance* militates against any understanding of organisms as the product of design.

But note that chance could not produce evolutionary adaptation on its own. 'If Darwinism were really a theory of chance, it couldn't work' (Dawkins, 1997, p. 87). Evolution is only adaptive because of the 'nonrandom survival of small random hereditary changes' (Dawkins, 2003, p. 81). The products of chance events are inevitably filtered or sieved by the processes of nonrandom, cumulative *natural selection*, in which those organisms that are better adapted survive longer, are healthier and therefore leave more offspring that share their genes.<sup>4</sup>

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<sup>1</sup>This analogy had already been criticised by David Hume on grounds such as the uniqueness of the universe and its apparent imperfections (Hume, 1779, parts II, V; cf. Zagzebski, 2007, pp. 32-33; Coyne, 2009, pp. 86-91).

<sup>2</sup>Such arguments posit the activity of God as the explanation of specific features of the world, especially the function (*telos*, purpose, end or goal) of biological structures and processes; or, more widely, of the whole universe's order, complexity or intelligibility.

<sup>3</sup>A *mutation* is an inheritable change in genetic material that produces variation in a population. (Darwin himself knew nothing of genes.) Specific gene mutations (from DNA copying-errors or other causes) and more major breaks in, or changes in the number of, chromosomes happen in a way that is unrelated to the actual survival needs of the organism – as do the assortment and recombination of different alleles (versions) of genes during the production of gametes (sex cells) and zygotes (the cells produced from the union of gametes), as well as 'genetic drift' and various environmental changes. They are therefore all regarded as 'random' or 'chance' events: that is, 'random in the sense of not appearing on demand according to need' (Ruse, 2001, p. 83).

<sup>4</sup>Darwin also recognised the process of *sexual selection*, in which (mainly) females preferentially select healthier or stronger mates.

## Evolution and the Argument from (or to) Design

Further, evolution works in a piece-meal fashion, adapting the functions of existing elements; it does not happen all at once – like a hurricane sweeping through a junk-yard and assembling a plane. Computer simulations have shown that simple random changes, together with the selection of particular beneficial adaptations, *can* produce complex structures and processes.

### Reformulations of the design argument

This has been attempted by those who argue for the enormous improbability of any kind of life, and especially of specific complicated adaptations such as the eye or complex biochemical reactions. Some (including advocates of *intelligent design*) still repeat the claim that ‘chance alone’ could not possibly produce at least some forms of complexity ‘from scratch’, and insist that miraculous interventions by a designer must be responsible rather than chance mutations (see Astley, 2009, 2013; Peterson, Hasker, Reichenbach & Basinger, 2013, pp. 97-101).

Others, however, find the hand of God in the law-like constraints of natural and sexual selection, which are continually being exercised on genetic mutations and other random changes (which are also ultimately God’s creation). F. R. Tennant wrote of a ‘wider teleology’: ‘the discovery of organic evolution has caused the teleologist to shift his ground from special design in the products to directivity in the process, and plan in the primary collocations’ [placing things together according to some system or order] (Tennant, 1930, p. 85). Much later, exponents of an *Anthropic Principle* would argue that the nature of the universe, its ‘fundamental constants’ and its laws of interaction (and perhaps even features of the earth itself) are ‘fine-tuned’ for the evolution of (human) life (cf.

Swinburne, 2004, pp. 172-188; Pruss and Gale, 2005, pp. 131-4; Collins, 2007).

### Chance, design and God

The notion of design has been traditionally associated with a pre-existing plan in the mind of God, but ‘evolutionary design’ that incorporates true chance would have to be much more general and less predictable than that, providing only ‘general directions but no detailed plan’ (Barbour, 1990, p. 173). Chance appears to be essential in the evolutionary perspective. It is a form of chaos (disorder or entropy) that serves as the pre-condition of the creation of new forms and new types of order. Arthur Peacocke celebrated its positive role, viewing chance as ‘the search radar of God, sweeping through all possible targets available to its probing’ and as an expression of ‘God’s gratuitousness and joy in creation as a whole, . . . the overflow of divine generosity’ (Peacocke, 1979, 2004, pp. 95, 111). Because of the balancing of chance and necessity in God’s dealings with the world, theologians often predicate ‘patience’, ‘vulnerability’ and ‘subtleness’ of the creator (e.g. Polkinghorne, 1987, p. 69).

Various theological positions on *the relationship between God and chance* are possible.

- (a) On one account, God creates the conditions of both pure chance and necessity, but then leaves evolution free to develop as it may. Here God designs the process but it is up to the process to produce the products. (Some would consider this a form of ‘deism’, although if God is thought to continue to preserve the universe in being, it is more correctly thought of as a theistic view.) In 1860, Darwin declared that he was ‘inclined to look at everything as resulting from

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designed laws, with the details, whether good or bad, left to the working out of what we may call chance' (quoted in Ruse, 2009, p. 166).

- (b) Others deny that there really are any – or as many – chance events. *Either* every mutation (perhaps as a microevent at the subatomic level) is determined by God. This may happen in a hidden way, below the level of statistical scientific laws, allowing for a universal general providential (and non-interventionist) 'steering' of the course of evolution that would be invisible to us. Or God may act through his special activity only in certain cases (sometimes thought of in terms of miraculous intervention into Nature, as in intelligent design theory).
- (c) Between these two extreme positions, God may be said providentially to *influence but not control* the apparently chance events (or some of them) in a non-interventionist way, so that these events are not 'pure chance'.

With both (a) and (c), evolution is seen as something of a trial-and-error experiment in which God takes various degrees of risk. Thus, 'God bestows a certain autonomy not only on human beings, . . . but also on the natural order as such to develop in ways that God chooses not to control in detail' (Peacocke, 1993, p. 156). For John Haught, evolution should thus be seen as a manifestation of God's humble, self-emptying (*kenotic*) love, which strives to 'let the other be' and renounces the 'manipulative management of cosmic affairs' (Haught, in Clayton and Simpson, 2006, p. 707).

An infinite love must in some sense 'absent' or 'restrain itself', precisely in order to give the world the 'space' in which to become something distinct from the creative love that constitutes it as 'other'. We should anticipate, therefore, that any universe rooted in an unbounded love would have some features that appear to us as random or undirected. (Haught, 2000, p. 112)

### Glossary

*deism*: belief in a God who makes the universe but does not act further by intervening in it (or, for some, even sustaining it).

*gene*: the basic physical unit of heredity (a segment of DNA code along a chromosome that, when translated into a protein, expresses an inherited characteristic).

*induction*: inferring a general claim from particular instances (cf. *deduction*: inferring particular instances from general laws or principles).

## Evolution and the Argument from (or to) Design

### Links

[https://en.wikipedia.org/wiki/Watchmaker\\_analogy](https://en.wikipedia.org/wiki/Watchmaker_analogy) (Wikipedia on the watchmaker analogy)

<https://www.khanacademy.org/test-prep/mcat/biomolecules/evolution-population-dynamics/v/evolution-natural-selection> (Khan Academy on natural selection)

<https://www.khanacademy.org/science/biology/her/evolution-and-natural-selection/a/darwin-evolution-natural-selection> (Khan Academy on Darwin, evolution and natural selection)

### Discussion points

1. In what main ways does Darwin's work challenge the design argument?
2. In what sense is design 'no more than a metaphor' (Sahotra Sarkar) in evolutionary terms?
3. 'I believe in design because I believe in God; not in a God because I see design' (John Henry Newman). What is the difference?
4. Why is 'the argument from design' sometimes renamed 'the argument to design'?

### References

Astley, J. (2009). Religion versus Darwin: Should evolution denial go to school? *Theology*, CXII, 868, 270-278.

Astley, J. (2013). Evolution and creation. *Challenging Religious Issues*, 1, 2-7 [http://www.st-marys-centre.org.uk/resources/challengingreligiousissues/Issue%201\\_ChallengingReligiousIssues.pdf](http://www.st-marys-centre.org.uk/resources/challengingreligiousissues/Issue%201_ChallengingReligiousIssues.pdf)

Barbour, I.G. (1990). *Religion in an age of science*. London: SCM Press.

Barlow, N. (Ed.) (1958), *Autobiography of Charles Darwin, 1809-1882*. London: Collins.

Clayton, P., & Simpson, Z. (Eds.) (2006). *The Oxford handbook of religion and science*. Oxford: Oxford University Press.

Collins, R. (2007). The teleological argument. In *The Routledge companion to philosophy of religion* (pp. 351-361). Eds. C. Meister & P. Copan, London: Routledge.

## Evolution and the Argument from (or to) Design

- Coyne, J.A. (2009). *Why evolution is true*. Oxford: Oxford University Press.
- Dawkins, R. (1988, 1991). *The blind watchmaker*. London: Penguin.
- Dawkins, R. (1997). *Climbing Mount Improbable*. London: Penguin.
- Dawkins, R. (2003). *A Devil's chaplain*. Boston: Houghton Mifflin.
- Haight, J.F. (2000). *God after Darwin: A theology of evolution*. Boulder, Colorado: Westview Press.
- Hume, D. (1779). *Dialogues concerning natural religion*. Various editions.
- Kitcher, P. (2007). *Living with Darwin*. New York: Oxford University Press.
- Monod, J. (1974). *Chance and necessity*. New York: HarperCollins.
- Paley, W. (1802). *Natural theology*. London: R. Faulder.
- Peacocke, A.R. (1979, 2004). *Creation and the world of science*. Oxford: Oxford University Press.
- Peacocke, A.R. (1993). *Theology for a scientific age*. Minneapolis, Minnesota: Fortress.
- Peterson, M., Hasker, W., Reichenbach, B., & Basinger, D. (2013). *Reason and religious belief*. New York: Oxford University Press.
- Polkinghorne, J. (1987). *One world*. Princeton, New Jersey: Princeton University Press.
- Pruss, A.R., & Gale, R.M. (2005). Cosmological and design arguments. In *The Oxford handbook of philosophy of religion* (pp. 116-137). Ed. W.J. Wainwright, New York: Oxford University Press.
- Ruse, M. (2001). *Can a Darwinian be a Christian?* Cambridge: Cambridge University Press.
- Ruse, M. (2009). Charles Darwin. In *Nineteenth-century philosophy of religion* (pp. 161-174), Eds. G. Oppy & N.N. Trakakis, Durham: Acumen.
- Sarkar, S. (2007). *Doubting Darwin: A critique of intelligent design*. Oxford: Blackwell.
- Swinburne, R. (2004). *The existence of God*. Oxford: Clarendon.
- Tennant, F.R. (1930). *Philosophical theology*, Vol. II, Cambridge: Cambridge University Press.
- Zagzebski, L.T. (2007). *Philosophy of religion: An historical introduction*. Oxford: Blackwell.

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## Stewardship of Creation

Andrew Village

*The Jewish-Christian tradition has been partly blamed for creating an attitude towards the environment that sees it as something to be dominated by humans and exploited for their benefit. It also stresses the idea that humans are 'stewards' of creation, given the task to look after the planet for God. But what does it mean to steward creation? This article describes two examples of the way in which human activity has shaped different habitats and had complex effects on the birds that live there.*

*Specification links:*

*AQA A Level Component 1: Philosophy of Religion and Ethics: The application of [normative ethics] to issues of non-human life and death; Component 2: Study of Religion and Dialogues: Good conduct and key moral principles: dominion, stewardship, treatment of animals [various religions].*

*EDEXCEL paper 2: Religion and Ethics; 1.1 Environmental ethics, (a) concepts of stewardship and conservation; paper 4: Study of Religion; option 4B: Christianity; 1.1 The nature of God as personal and creator, (a).*

*OCR H5730/6: Developments in Buddhist Thought; 6: Challenges; Buddhism and social activism.*

### **The problem: Human 'dominion' over creation**

In the 1960s, people in the USA and Europe were becoming aware of a growing environmental crisis. This was long before the idea of climate change was widely spoken of; concerns at the time were mainly about population growth, pollution and the threat from the nuclear industry. Demographers worried

about how to feed the burgeoning populations in places such as India or China, and there was a rush to develop more intensive forms of agriculture that would yield better harvests. Rachel Carson's influential book, *Silent Spring* (Carson, 1963), highlighted the way in which pesticides such as DDT and



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Dieldrin, which had been so beneficial to farmers, were having devastating effects on wildlife. The nuclear arms race between the West and the Soviet Union was at its height, and there were some frightening accidents at nuclear power stations such as the Windscale fire at Sellafield, UK in 1957. Perhaps for the first time, humans became aware that what they did could actually destroy or seriously degrade the entire planet.

In 1967, a professor of medieval history at the University of California, Lynn White Jr, published a paper in the journal *Science* in which he argued that the root cause of what he called our 'ecologic crisis' could be traced back to some forms of religion. He pointed out that the rise of modernity began around the time of the Protestant Reformation and that that was no coincidence. Earlier in the century, the sociologist Max Weber had also suggested that the way in which capitalism and technology have developed was heavily influenced by this form of Christianity. White's particular hypothesis was that it was the literal interpretation of the account of creation in the Bible that had led Western societies to have a destructive attitude towards the environment. In Genesis 1:28 God says to the man and woman he has created, 'Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth' (New Revised Standard Version). Animals and plants were depicted as resources for humans to exploit and that, said White, was where the problem arose.

White's suggestion was that this notion of human 'dominion' over creation had led to a world-view that separates us from the rest of creation, making it easier for us to pursue our own success at the expense of other creatures with whom we

share the planet. White suggested that religions such as Zen Buddhism offered a totally opposite view to the Western Judeo-Christian attitude. Within Christianity he suggested that Saint Francis of Assisi promoted a different sort of attitude to the natural world, which replaces the 'monarchy' of humans with a 'democracy' of all creatures.

### **Alternative views: Human 'stewardship'**

Responses to White's paper were mixed. Some rejected any connection between Christianity and a belief in 'dominion' over nature, arguing instead for a more 'sacramental' perspective whereby creation is seen to be a sign of God's presence (Haught, 1993). A number of sociologists, mainly in the USA, looked for connections between people taking a literal view of the Bible and having little concern for the environment. Results were mixed (Hitzhusen, 2007), but there was some evidence that fundamentalist or conservative Protestant churchgoers may have less concern for the environment than their fellow citizens. Some theologians stressed the idea that what the Bible says about humans is that they are 'stewards of creation', that is, they were made in order to look after God's creation, not to exploit it. This has been an increasingly popular notion (Berry, 2006), but is this what humans actually do and, even if they want to, what does it actually mean to 'look after creation for God'?

Although stewardship is, perhaps, a more sympathetic notion of human relationships to the environment it is still 'anthropocentric', in that it places humans in a superior and central position in creation. On planet earth this centrality of humans would seem to accord with our experience. Whatever our evolutionary links to other animals, no other species

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comes even close to our level of mental ability, technological sophistication and ability to manipulate ecosystems. It may be comforting to think that humans are 'looking after' the plant, but the reality of how humans have shaped the natural world shows just how complicated it is to 'manage' the environment. Even when we think we are doing good, our activities inevitably have mixed effects. Two examples can show how human stewardship has unintended consequences.

### **Humans, birds and environments: Case studies**

The following two examples illustrate how humans tend to use environments for their own ends, inadvertently altering the lives of other living things.

#### ***Birds in Southern Scotland***

The Southern Uplands of Scotland include some of the most beautiful and isolated parts of Britain. Fifty years ago these hills were mainly barren grassland and heather moor, similar to some parts of the Moffat Hills today.



The Southern Uplands near Moffat. Photo Andrew Village

This may look like a natural landscape, but in fact it is very different from what it would have been before humans arrived in the area. After the last Ice Age, 10,000 years ago, the vegetation gradually recovered until most of the area would

have been dense oak woodland (Smout, 2004). Humans began clearing this for farming over 5000 years ago, probably by burning. The rate of clearance has varied since then, but by the middle of the nineteenth century there was virtually no native woodland left. The animals and birds that lived in the ancient woods have long gone, some such as bears, wolves, beavers and goshawks becoming extinct in Britain. The change favoured open-country birds such as eagles, ravens, curlews and meadow pipits. People got used to this denuded habitat, eventually coming to think of it as 'natural' and 'wild'. Yet this was farmland that was almost entirely devoted to supporting the wool industry that allowed Border towns like Hawick, Jedburgh and Galashiels to flourish.

In the 1960s and 1970s sheep farming became unprofitable, the Border towns fell on hard times, and the land was turned over to huge forestry plantations. What was planted was not native deciduous trees but imported conifers such as Sitka spruce. These grew well and provided timber for sawmills and pulp factories. In the early years, the trees were small and the grass grew rapidly, providing habitats for small mammals such as field voles. These in turn attracted large numbers of vole predators, such as kestrels and owls (Village, 2010). The demise of some



Young plantations in the early years provide good habitat for voles and their predators. Photo Andrew Village

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A male kestrel. Photo Andrew Village

species was to the benefit of others.

Today, these huge plantations make the area look very different again. There are blocks of mature conifers mixed with replanted areas as the new rotation gets underway. The forest industry is booming, providing employment for people who work the machines and lorries that take the wood to sawmills and factories. The wildlife has changed again. Since the 1970s, buzzards have become abundant as they are less persecuted by gamekeepers than they used to be. Goshawks were reintroduced into the area and have done well. However, they eat smaller birds of prey such as kestrels and owls, and these are now very scarce. Human management or 'stewardship' has had profound effects on the fauna of this area over centuries.



Mature plantations offer more varied habitats suitable for birds such as buzzards and goshawks. Photo Andrew Village



Buzzards have replaced kestrels as the main bird of prey in the Southern Uplands. Photo Andrew Village

### ***Birds in Hawai'i***

The story of Hawai'i shows how rapidly humans can change an area and how their activity can have unintended consequences. This volcanic island chain is the most isolated in the world, lying as it does in the middle of the Pacific Ocean. As with the Galapagos islands, a single species of finch arrived on the island tens of thousands of years ago and began to evolve into different species that filled the niches occupied by very different birds in other parts of the world (Pratt and Jeffrey, 2013). A good example is the colourful 'iwi, which has evolved a very un-finch like beak to sip nectar from native trees. This unique avifauna began to change when the first humans arrived from Polynesia, probably around 800 CE. They brought food plants with them that rapidly establish in their new home. A second wave of migrants in the 1300s may have brought pigs and chickens, which soon became feral and began changing the landscape.

When James Cook stumbled across Hawai'i in 1778 he opened the way to European and American settlement, and things really began to change. Within a few years, Captain George Vancouver brought goats to the island to feed his sailors; the goats escaped, and their descendants now run wild on many islands, devastating natural plants. In the

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nineteenth century, Christian missionaries came to help the native peoples, introducing new crops and animals. Sugar cane was a valuable crop for a while, giving work and wealth to the growing population. The cane became infested with rats that had arrived on sailing ships, so the farmers brought in mongooses to eat the rats. But rats are nocturnal and mongooses hunt during the day, so the rats were safe but the native birds were easy prey.

Another stowaway on the ships were mosquitoes, which brought with them a form of avian malaria. The native species were defenceless and now there are none where there are mosquitoes. Many native birds are already extinct, and the remaining ones are limited to the high mountains, where mosquitoes cannot live. But as the climate warms, the mosquitoes get higher up the mountains year by year, and the future for the remaining species is bleak. Hawai'i is part of the USA, the richest country in the world, and a place where many people visit for their holidays. Meeting the demands of local residents and visitors has put a huge strain on the wildlife of these islands.



The 'I'iwi is one of Hawai'i's endangered native birds. Photo Andrew Village

### **Can humans be stewards without exploiting and damaging the environment?**

These two examples could be repeated many times around the world. We live in a time when the pressure from humanity on the environment is higher than ever before. As the climate warms because of human activity we are again acutely aware of a new looming environmental crisis. In the summer of 2019, there was outcry over the deliberate setting of fires in the Amazon rainforest. The intent was to clear land for agriculture, to improve the lives of people living there. Faced with international condemnation from countries such as Britain, some in Brazil pointed out that a long time ago we had done what they are doing. Our case study from Scotland suggests this is true. We have lived with degraded and denuded habitats for so long we have begun to think they are 'natural'. The truth is that there are very few parts of the world untouched by humans, and climate change means that even if we are not living in a landscape it will feel the effects of our presence elsewhere.

People are increasingly trying to be 'good stewards' of the environment, and there are many organisations that try to promote 'environmentally-friendly' behaviours. Although these can lessen the effects of human presence on other creatures on the planet, the complexity of ecosystems and human society mean that such actions can have unintended consequences. So we need to have clear ideas about what it means to be 'stewards' and what our ultimate goals should be. One group of environmental scientists recently defined local environmental stewardship as 'the actions taken by individuals, groups or networks of actors, with various motivations and levels of capacity, to protect, care for or responsibly use the

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environment in pursuit of environmental and/or social outcomes in diverse social–ecological contexts’ (Bennett et al., 2018).

This definition does not indicate what would be legitimate environmental or social outcomes for, say, Christians to pursue. For example, it is clear that we nearly always manage the land to meet human needs. This had little effect when there were a few million people, but it certainly does when there are seven billion and rising. The Bible suggests that God values humans above all creatures, and the Christian tradition values all human life. It has often fought against abortion or euthanasia, and Christians have condemned countries such as China that once had draconian rules preventing married couples having more than one child. Yet it seems impossible for humans to limit the damage they do to the natural world: so, the more humans, the more damage. Does God mind about this and, if so, is it better to have fewer people? These are difficult questions to ask, let alone answer. While it is easy to espouse a belief that ‘God loves everyone’, it is harder to tell if that means the more people the better.

In terms of the idea of stewardship it is also easy to make theological statements that sound environmentally-friendly, but which fail to grapple with the reality of life. If we are looking after creation for God, what sort of creation are we meant to foster? It seems that it is impossible to balance the understandable human desire and aspiration to escape poverty and live comfortable lives against the requirements of other living creatures for space and safety. Should we drastically reduce our footprint on the planet if that means preventing many people in poorer countries from attaining the comfortable lifestyles enjoyed by their richer neighbours?

How we answer these questions is likely to be shaped by deeply-embedded assumptions about what is ‘good’, ‘natural’ and ‘desirable’ for our planet and for human beings. The task of religious people is to articulate what it is that a well-looked-after planet looks like, and how this accords with the desire of a God who seems to value people above all else.

### Links

<https://www.ecowatch.com/environmental-stewardship-examples-2520328397.html> (10 ways to be a better environmental steward)

<https://www.bbc.co.uk/news/world-latin-america-49460022> (Fires in the Amazon rainforest)

<http://www.bbc.co.uk/earth/story/20150625-islands-where-evolution-ran-riot> (Hawaii: The islands where evolution ran riot)

<https://www.nature.scot/professional-advice/land-and-sea-management/managing-land/forests-and-woodlands/history-scotlands-woodlands> (History of Scotland’s woodlands)

<http://www.bbc.com/earth/story/20170206-religion-can-make-us-more-environmentally-friendly-or-not> (Religion can make us more environmentally aware – or not)

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### Discussion points

1. Do you agree with the definition of environmental stewardship put forward by Bennett and colleagues? What kind of planet would we have if humans were good stewards of creation?
2. What difference does it make to see the earth as God's creation, rather than the product of purely natural cosmic evolution?
3. How should we balance the needs of poor people wanting to make a living from the land against the need to preserve other species in 'pristine' habitat such as rainforests? Should we evict people from some areas in order to preserve or 're-wild' the environment?
4. Does God care more about people than the birds?

### References

- Bennett, N.J., Whitty, T.S., Finkbeiner, E., Pittman, J., Bassett, H., Gelcich, S., & Allison, E. H. (2018). Environmental stewardship: A Conceptual Review and Analytical Framework. *Environmental Management*, 61(4), 597-614.
- Berry, R.J. (Ed.) (2006). *Environmental stewardship: Critical perspectives - past and present*. London: T & T Clark.
- Carson, R. (1963). *Silent spring*. London: Hamish Hamilton.
- Haight, J.F. (1993). *The promise of nature: Ecology and cosmic purpose*. New York: Paulist Press.
- Hitzhusen, G. E. (2007). Judeo-Christian theology and the environment: Moving beyond scepticism to new sources for environmental education in the United States. *Environmental Education Research*, 13(1), 55-74.
- Pratt, H.D. and Jeffrey, J. (2013) *Hawai'i's birds and their habitats*. Honolulu: Mutual Publishing.
- Smout, T. C. (2004). *History of the native woodlands of Scotland 1500-1920*. Edinburgh: Edinburgh University Press.
- Village, A. (2010). *The kestrel*. London: Bloomsbury.

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## Thinking about Being Human in a Universe of Aliens

David Wilkinson

*One of the most compelling scientific issues of our generation is the Search for Extraterrestrial Intelligence (SETI). The question whether we are alone in the universe has long fascinated the media and the public and has received fresh momentum in the discovery of exoplanets, a small minority of which have Earth like characteristics. The discovery of life elsewhere in the universe, especially if it is intelligent, poses major questions for the Christian faith in areas such as creation, incarnation, redemption and the nature of what it means to be human.*

*Specification links:*

*AQA A Level Component 2: Study of Religion and Dialogues: [religious tradition] and science.*

*EDEXCEL paper 1: Philosophy of Religion; 6.3 Religion and science debates and their significance for philosophy of religion; paper 4: Study of Religion; 6.2: teachings and responses to issues of science. How [religion] has responded to these in the historical and contemporary world.*

*OCR H573/03-07: Developments in Religious Thought: significant social and historical developments in theology or religious thought including the challenges of secularisation, science, responses to pluralism and diversity within traditions . . . [e.g. Christianity: 6 Challenges].*

*WJEC/CBAC/EDUQAS Component 1: A Study of Religion; Option A: Christianity; Theme 3: Significant social and historical developments in religious thought; Knowledge and understanding of religion and belief; E: The relationship between religion and society: respect and recognition and the ways that religious traditions view other religions and non-religious worldviews and their truth claims [also for other faiths]. Component 2: Philosophy of Religion; Theme 2: Challenges to religious belief; Issues relating to rejection of religion.*

### Introduction

I woke up recently to a surprise on Good Morning Britain. Its main concern was Love Island where perfectly toned young people coupled and decoupled in the full view of cameras. Yet in the midst of this world-changing story, there happened to be two others. One was a Twitter

conversation about what came before the Big Bang; the other (on world UFO day) a discussion on the existence of aliens. This alien discussion was led by a Shaun Rider, a singer with the band Happy Mondays, who claimed to have seen a UFO, and a young science writer who

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made a brave – but ultimately unsuccessful – attempt to inject some basic science into the studio!

I could not help but reflect on how this breakfast news programme might react to the news that primitive life had been found under the permafrost of Mars. I suspected that the producers would be trying to get Thom Yorke from Radiohead to see parallels with his song Subterranean Homesick Alien or Elton John to reflect on how why it is 'going to be a long, long time' before any Rocket Man turns up from another galaxy.

The more serious challenge for philosophy and theology is how to be an authentic part of such popular discourse. The Big Bang twitter exchange and the alien discussion raised huge questions of scientific methodology and theological implications.

It is good to ask such questions now. The discovery of exoplanets, which currently include 153 terrestrial planets of the 3735 confirmed, has led to a new flourishing of scientific interest in SETI. The James Webb telescope, after numerous delays and reviews, will now launch in early 2021. One of its main uses will be to study the atmospheres of exoplanets and that, of course, will lead to renewed interest in possible inhabited planets.

### Theologians and aliens

It is here that it is worth being reminded of the way that speculation about other worlds has often been intertwined with Christian theology and that Christian theology has encouraged such speculation. While questions of human uniqueness, the origin of sin and the universality of the work of Jesus on the cross have sometimes given support to the position that we are alone in the universe, a number of key theological insights have been pointed the other way.

- First, God's freedom in creating cannot be limited by our perspective and experience. God has the freedom to create in whatever way God wants and thus other worlds should not be ruled out.
- Second, if God is the foundation and sustainer of the universal laws of physics, the physics that leads to human intelligence may lead to intelligence elsewhere.
- Third, and perhaps most importantly, Cardinal Nicholas of Cusa in the fifteenth century and others made a key theological move by suggesting that the special nature of human beings is defined by the gift of an intimate relationship with God rather than by our being at the centre of, or alone in, the universe.

Together, these form a strong theological foundation which encourages SETI.

### The questions of aliens and the questions of human beings

The questions raised by SETI are very similar to questions raised by consideration of the uniqueness of Christ in the midst of other faith communities, and by how you define what it means to be human in the midst of questions that are deeply embedded in medical questions such as the beginning and ending of life.

I suggest that the key theological questions that SETI raises for Christian faith are the following.

- What does it mean to be human?
- Does humanity have to be unique in order to be special?
- What is the relation of incarnation to other forms of revelation by God?
- What are the nature, origin and consequences of sin?
- What is the relation of revelation and



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redemption?

- What is the extent of the universality of the death and resurrection of Jesus Christ?

In reflecting on the nature of human beings, therefore, it may be that we can begin to see human beings as still exceptional, but not unique as the only intelligent life in the universe. Sharing much with other life forms, even perhaps intelligence and self-consciousness, human beings are embedded in the story of God's particular acts. This is not an appeal to human superiority. It is about an exceptional relationship but not an exclusive relationship. Human beings can be special without denying God's love and concern for other intelligent beings.

When it comes to questions of revelation, incarnation, sin and redemption, SETI can ask questions which explore the universality and particularity of Christian theology – even if the scientific evidence is not conclusive one way or the other. For example, if there is intelligent life elsewhere in the universe, then would that mean that God would have to become incarnate in a way similar to how he took flesh in Palestine? Yet there theology cautions against multiple incarnations if there is ETI, for several reasons.

- First, to drive a wedge too far between the 'cosmic Christ' and the 'human Jesus' begins to open the door to the view that Jesus was just a good man used by God.
- Second, if God's nature is to reach out in love in embodied form, why should there not have been multiple incarnations in different cultures on the earth? Even when Christian theology recognised that other faith communities have insights into truth, the incarnation of God in Jesus is still

held to be supreme.

- This leads us on to our third reason: that God does not only reveal himself to intelligent life forms through incarnation alone. The Bible is full of other images of God communicating, including through visions, awe at the natural world, angelic visitations, burning bushes, dreams, the written word, prayer and prophets. At times, God's communication is mysterious, as when Jacob wrestles with a man; and, indeed, sometimes God stays hidden. We do well to remember that the incarnation is the central but not the only form of relational communication.
- The fourth reason is perhaps the most important and the most difficult. In answer to the question, why did God become a human being in Jesus, Christians reply that it was not only to show us the nature of the creator God, but also to save us from our sin. The incarnation is about both revelation and salvation. And as we have only one case to study – human being – it is difficult to know whether incarnation always comes with both revelation and salvation.

### Looking at things from a different perspective

SETI, either in the current speculation of what may happen in the future, or indeed if it is successful, challenges the anthropocentricity which is so characteristic of much western Christian theology. John Polkinghorne has argued that the context of science is very important for theology, and likens this relationship to movements such as feminist and liberation theology. These movements showed how dominated theology has been by structures of gender and power. SETI in particular can help theology to be liberated from seeing

## Thinking about Being Human in a Universe of Aliens

human beings and the earth as the sole focus of God's love and work. This is a further step beyond those who in the past have focused God's attention on one nation, on men, on the rich and powerful or on the religious. SETI may teach Christian theologians humility, or to put it another way Christian theologians need to come to SETI with humility.

In this, Christian theology may be a useful dialogue partner.

- First, theology can assist in examining some of the assumptions upon which SETI is built. Theology gives philosophical grounds for believing that the laws of nature are the same throughout the universe. However, it is cautious about claiming that whatever is possible tends to be realised. The doctrine of creation stresses the freedom of the Creator and also that this creation is not destined simply to go on forever. In addition, theology would want to stress the value of all life as God's creation, rather than just believing that intelligent life is important. Although theology also encourages the Copernican principle, as opposed to an Aristotelian universe, at the same time it rejoices in the nature of humanity in terms of God's gift of intimate relationship.
- Second, theology will want to stress the importance of an ethical dimension in any contact with life forms elsewhere in the universe. While Christianity shares in the legacy of the misuse of the earth's environment, it now seems to have learnt its lesson. Indeed, there is a very important religious dimension to environmental care, for cultural change cannot be achieved by scientific arguments alone. The World-Wide Fund for Nature implicitly

acknowledged this when it held its 25th anniversary celebration in 1986 at Assisi and called on the world's great religions to proclaim their attitudes towards nature. They recognised that the scientific has to go with the theological, with the result that there is a deeper spiritual and practical understanding of nature and the environment than ever before.

Decisions about contact with ETI, and perhaps more likely the conservation of a diversity of simpler life-forms, will be part of this discussion. In addition, the engineering of planetary atmospheres for human habitation is already being discussed. Martin Rees sees the importance of this 'terraforming' as giving the human race a safeguard against possible disasters affecting the Earth. But how should this be done in a way that stops other planets and other life-forms simply being exploited for human gain? Christian theology's emphasis on the whole universe as creation and God's purposes of transforming the whole creation to new creation has a contribution to make here.

- Third, as Douglas Vakoch of the SETI Institute has suggested, theology may help us in thinking about the nature of extraterrestrial life or indeed our own assumptions about the nature of ETI. Central to the theological task has been a long engagement with the question of what makes us human, and the complex nature of good and evil within human personalities and communal structures.
- Fourth, theological perspectives may help anticipate the consequences of future contact. Vakoch suggests that religious and non-religious people may react differently and therefore affect public policy if a signal is

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received. Faith communities continue to be a significant dimension and indeed in some parts of the world show considerable growth. This is a really helpful invitation to religious thinkers to participate in discussion about the research and preparations for possible contact.

We are now at a stage where physicists, governments, psychologists, anthropologists, philosophers and legal scholars are taking part in conversations on how alien contact or evidence for life on other planets might impact society and strategy for future space research. Should theologians have a role in this?

I believe the answer is yes. Now, there are those, such as cosmologist Paul Davies (1995, p. 52) and SETI pioneer Jill Tarter, who believe that the impact for religion would be negative and severe. They have suggested that technologically advanced alien intelligence would either have no room for religious belief or that alien religion would be philosophically far more advanced than the religious communities of the earth. This would sweep away traditional religious belief.

Yet, as we have seen, this is really a recent myth, for the history of the relationship between SETI and Christian belief has been more than fruitful. Indeed, surveys of attitudes show a relaxed attitude on the part of individual believers. In a survey of 1300 people, Ted Peters asked whether they thought the discovery of extraterrestrial intelligence would shake their belief and the strength of their religion as a whole, or would adversely affect the beliefs of other religions (Peters, 2011). The conclusion was that across the different religious traditions (Roman Catholics, evangelical Protestants, mainline Protestants, Orthodox Christians, Mormons, Jews, and Buddhists), the vast majority of

believers see no threat to their personal beliefs. Some anxiety was expressed that their religious leaders might face a challenge, but even so there was overwhelmingly confidence that their tradition would not collapse. This was in contrast with those who identified themselves as non-religious, of which 69% thought the discovery would cause a crisis for world religions.

The kind of theological engagement that we have been arguing for in this article would be important in maintaining this relaxed attitude. Religious beliefs are often caught up in culture shock. The conflict between science and religion embodied in six-day creationism was partly a response to the post-Darwinian controversies but also due to the culture wars of twentieth-century America. Protestant religion found itself more and more marginalized in public life, in entertainment and in education, and six-day creationism was an attempt by some to re-assert power.

In fact, while the church struggled at times in these previous cultural shocks, it has found ways of rediscovering a theology which has not only survived but been true to its biblical roots and fruitful in its mission in a changing world. In this way, a SETI shockwave could be seen to be an opportunity as well as a challenge.

## Thinking about Being Human in a Universe of Aliens

### Glossary

*anthropocentricity*: seeing everything from the perspective of human beings, who are regarded as the most important element of existence

*ETI*: extraterrestrial intelligence

*exoplanets*: planets orbiting other stars outside of the Solar System

*SETI*: the Search for Extraterrestrial Intelligence

*terrestrial planets*: earth-like planets composed mainly of rock and metals, compared to larger gaseous planets such as Jupiter

### Links

<https://exoplanets.nasa.gov/>

(An up to date source of discoveries of exoplanets)

<https://www.seti.org/>

(News and resources on the scientific search for extraterrestrial intelligence)

### Discussion points

1. Would the discovery of alien life somewhere in the universe be more significant for theology than the discovery of a new species deep in the oceans, and why?
2. Should we try and make contact with other intelligent life in the universe by sending out radio messages or should we keep our existence and location quiet? Argue both sides of this case.
3. Why are people so fascinated with SETI and science fiction?

## References and further reading

- Al-Khalili, J. (2017). *Aliens : The world's leading scientists on the search for extraterrestrial life*. First US edition, New York: Picador.
- Davies, P. (1995). *Are We Alone?*. London: Penguin.
- Peters, T. (2011). The implications of the discovery of extra-terrestrial life for religion. *Philosophical transactions of the Royal Society of London. Series A, Mathematical and physical sciences*, 369, 644-655.
- Polkinghorne, J.C. (2008). *Theology in the context of science*. London: SPCK.
- Consolmagno, G. (2014). *Would you baptize an extraterrestrial? ... And other strange questions from the inbox at the Vatican Observatory*. New York: Image.
- Wilkinson, D. (2017). *Science, religion and the search for extraterrestrial intelligence*. Oxford: Oxford University Press.

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## Is Creation Complete? A Critique of Continuing Creation

Timothy Wall

*The article explores the idea that creation is incomplete, through the concept of continuing creation. This arises from the dynamic world as described by science and in the Bible, but it is argued that it is ultimately flawed both scientifically and theologically. It is inherently problematic to say that creation is incomplete because it allows for no discontinuity between creation and new creation. The article suggests that a view of creation rooted in Christ may allow us to say that creation is both complete and dynamic.*

*Specification links:*

*AQA 3.2.2.2B Christianity; A: Christianity and science.*

*EDEXCEL paper 1: Philosophy of Religion: 6.3: Religion and science debates and their significance for philosophy of religion, (b) Creation themes and scientific cosmologies; paper 4: Study of Religion; option 4B: Christianity; 1.1 The nature of God as personal and creator; 1.4 Key moral principles, (b) The love of God as revealed in creation.*

*OCR Developments in Christian thought (H573/03): . Insight: whether or not heaven is the transformation and perfection of the whole of creation.*

The first biblical account of creation finishes by recounting the end of God's creative work:

Thus the heavens and the earth were finished, and all the host of them. And on the seventh day God finished his work which he had done, and he rested on the seventh day from all his work which he had done. So God blessed the seventh day and hallowed it, because on it God rested from all his work which he had done in creation. (Genesis 2:1-3)

The impression is that on the seventh day God rests because the work of creation is complete. It is surprising, then, that a number of theologians have argued that this impression is wrong. Rather, they argue that the dynamic world-view offered by science indicates that it is much better to view creation as being in a process, yet to find completion. They call this 'continuing creation'. In this article I will offer a critique of their proposals but suggest that if creation is rooted in Christ, then we can hold together a view of creation

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that is both dynamic and complete.

### **An inherently dynamic picture of creation**

If creation is complete then we might imagine the world as described by science to be fixed and static. In fact, the opposite is the case. Consider the physical matter of our bodies. The atoms in our bodies are in a constant state of flux – they are replaced every five or six years (Wilkinson, 2010, p. 98). There is thus inherent dynamism in the seemingly very static bodily matter. Indeed, the atoms that make up the world around us originate in dying stars – from supernova – and are part of the cosmic process of destruction and new formation (Stoeger, 2000, pp.21, 28). The point is, then, that a static, unchanging view of creation is not reflected in either the atomic or cosmic perspective. Rather they describe a universe in a constant state of change.

Change is also an inherent element of the world described by evolutionary biology. Indeed, evolution in its most basic sense refers to a 'historical account of change' in which species become modified through time (Losos, 2014, p. 3). This change is, in these basic terms, directionless in terms of the organism's adaptation to its environment, and is simply the result of variance in the genome because of chance mutations and recombination, and so called 'genetic drift' (changes in the genetic composition of populations due to environmental disasters, etc.) (Stearns, 2014, p. 184). Yet, when we consider the most significant mechanism of evolution – natural selection – the picture is quite different.

Natural selection is the process by which individuals with particular traits (that is their 'phenotype', typically influenced by an organism's genes and

environment) have greater reproductive success than those with alternative phenotypes (Losos, 2014, p. 4). When such traits are heritable then natural selection leads to evolution that is directional in terms of their adaption to a particular 'ecological niche' (Losos, 2014, p. 44).

The natural world then, is not just changing, but dynamic, involving directional change and modification. Such a view seems a far cry from the idea of a finished arrangement to creation. Evolutionary biology seems to imply that any such arrangement is only ever temporary.

If Genesis 2:1-3 depicted creation as complete and the work of creation at an end, this does not seem to be reflected in the scientific world-view. Indeed, it seems more apt to conclude, from the scientific evidence I have highlighted, that the work of creation continues.

### **Continuing creation**

Biblical accounts of creation are not just found in the first chapters of Genesis. Indeed accounts that are more in-line with the dynamic perspective offered by science, can be found in passages such as Psalm 103:

As for mortals, their days are like grass;  
they flourish like a flower of the field;  
for the wind passes over it, and it is gone,  
and its place knows it no more.

(Psalm 103:15-16)

This Psalm implies that creation, far from static, is naturally transient. Life flourishes and then fades, just as the seasons pass. This accords very well with the perspective from evolutionary biology, with life and death reflecting the change inherent within creation.

Theologians like Barbour have drawn on the coherence between these

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alternative biblical accounts of creation and the scientific perspective and argued that they are best understood by recourse to 'continuing creation' (Barbour, 1966, pp. 384-385). This is the view that creation refers as much to God's on-going activity as it does to its origins. Indeed, as Peacocke puts it, 'God is *semper creator*, all the time creating – God's relation to the world is perennially and eternally that of creator' (Peacocke, 1997, pp.138-9). This view seems to cohere better with the dynamic world 'as known to science' and implies that creation is still 'in the process of appearing' (Barbour, 1966, pp.384-5). Creation is thus incomplete.

There are two important points to note. The first is that if God is *semper* [always] *creator* then this leaves little room for the other works of God, or rather, they are subsumed within creation (Barbour, 1998, pp.219-220; Peacocke, 2001, pp. 87-88). Take eschatology, for example. In recent years, theologians have articulated eschatology in terms of 'new creation': the renewing of all things and the hope of a fruitful existence for humans beyond death, which are inaugurated by the resurrection of Jesus (Moltmann, 1967, p. 17; Wright, 2007, p. 119). In terms of continuing creation, the work of new creation becomes just the end point of creation itself: eschatology becomes the culmination of God's creative work.

The second point is that of incompleteness. Barbour describes the world as incomplete from a *scientific perspective* (Barbour, 1966, pp. 384-5). This is one step further than saying the world is dynamic: incompleteness implies some notion of completeness and it is not clear how Barbour understands this scientifically. Indeed, the dynamism of the universe might imply that no completed state is ever

achieved.

It is, however, possible to argue that creation is incomplete from the theological perspective of continuing creation. Peters and Hewlett argue that 'God creates from the future' (Peters and Hewlett, 2003, pp. 160-163). In other words, the nature of all things is defined by their part in God's new creation. We can, then, justifiably characterise creation as incomplete because it is still in the process of becoming what it will be in the consummation of God's creative work.

### Scientific and theological problems

The notion of continuing creation is an excellent example of how science and theology can enter into a mutually fruitful dialogue. However, I want to highlight two difficulties with it.

The first is *scientific*. Continuing creation argues that the dynamism of the universe reflects the continuing creative work of God, which one day will be brought to fruition in new creation. However, the scientific view of the future is bleaker. Recent cosmology has found that the increasing expansion of the universe will mean that it will continue to expand until it has dispersed to such an extent that there will be no new star formation, only 'dead stars and black holes' (Wilkinson, 2010, pp. 7-9, 15). The time scale for such a future is, admittedly, huge (stars ceasing to form after one trillion years), but the point is that the dynamic, fruitful world we are a part of now will not last forever.

This raises serious difficulties for continuing creation since it implies that the consummation of God's creative work is not new creation but 'heat death'. While it may appear that the universe is incomplete, moving towards eventual completion, the cosmological perspective implies otherwise.



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Admittedly, this is not a problem for Barbour, who argues that eschatology is ultimately rooted not in events, but in the eternity of God (Barbour 1998, p. 220). This seems to fly in the face of the notion that new creation is rooted in the event of Jesus' resurrection (Wall, 2015, p. 42); it is the 'first-fruits' of the resurrection to come (1 Corinthians 15:20). In fact, it is resurrection that is at the heart of the key *theological* difficulty with continuing creation.

Of central importance is the notion that continuing creation implies no discontinuity between creation and new creation. The latter is simply the final stage of the former. This is problematic scientifically, but also theologically. The New Testament authors depict the new creation as exhibiting both continuity and discontinuity with the present creation. A key text is Paul's discussion of resurrection in 1 Corinthians 15. Paul argues that the difference between our bodies now and our bodies in the new creation is analogous to the difference between a seed and a plant (1 Corinthians 15:38). There is 'organic continuity' between them but there is also radical discontinuity (Green, 2004, p. 98). Indeed, the same can be said of Jesus' resurrection body, for instance he can interact with the physical environment and yet he can disappear from sight (Luke 24:31, 42-43).

Therefore, there is some continuity between creation and new creation, but there is also radical discontinuity. The notion of continuing creation implies no such discontinuity; creation simple evolves into the new creation. Given that the universe is destined for futility, rather than fruitfulness, then such discontinuity is necessary. Holding that creation is incomplete is thus problematic because it implies that completion comes from

within the bounds of creation itself, without any discontinuity between creation and new creation.

### **Creation: In Christ all things hold together**

If we cannot hold that creation is incomplete, is it possible to hold together the dynamism of the scientific world-view and the completeness of creation? In this last section I want to outline a potential proposal based on Paul's letter to the Colossians.

In Colossians 1:15-20 – widely known as the 'Christ-hymn' – Paul portrays Christ as the central figure of creation and new creation: he is 'firstborn of creation' and 'firstborn from the dead' (vv. 15 and 18). Importantly, these roles are related (there is a clear parallel) and distinct. And yet, the way Paul speaks of Christ in creation indicates both completion and dynamism: 'all things have been created through him and for him' and 'in him all things hold together' (vv. 15, 16). This implies past and ongoing creative activity.

This Christological model of creation and new creation reflects the classical understanding of creation in Christian theology, that it is not primarily about origins as much as it is about God bringing into being and sustaining creation (Murray and Wilkinson, 2011, pp. 45, 53). This allows for dynamism in creation and for God's creative work to be a part of that dynamism, but does not equate it with a process of continuing creative work, which one day will be come to fruition. This all too brief proposal suggests that, if Christ holds all things in creation together, then part of that, theologically, is his holding together of a dynamic, ever changing and completed creation.

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### Creation and new creation

I have argued that the notion of continuing creation, while rightly recognising the changing nature of the world as evidenced by science, is inherently flawed. I have then sketched a proposal that allows for creation to be complete while at the same time dynamic and ever-

changing, because – while God’s creative work is related to that dynamism – it is not equated with it. It also suggests that the work of new creation is a distinct work of God, outside of the processes of creation, and therefore redeeming a universe seemingly destined to futility.

### Glossary

*genome*: all of an organism’s genetic information, mostly encoded within its DNA.

*eschatology*: the branch of theology that considers the end-times and the final destiny of humans and the world.

### Discussion points

1. To what extent does the concept of continuing creation reflect scientific and theological world-views?
2. What other problems might arise from saying that creation is ‘incomplete’?
3. How might a model of creation based around Christ reflect the dynamism of the world as described by science?

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### References

- Barbour, I. (1966). *Issues in Science and Religion*. London: SCM Press.
- Barbour, I. (1998). *Religion and Science*. London: SCM Press.
- Green, J. (2004). Resurrection of the body: New Testament voices concerning personal continuity and the afterlife. In *What About the Soul?* (pp. 85-100). Ed. J. Green, Nashville, Tennessee: Abingdon Press.
- Losos, J. (2014). What is evolution? In *The Princeton Guide to Evolution* (pp. 3-9). Ed. J. Losos, Oxford: Princeton University Press.
- Moltmann, J. (1967). *Theology of hope: On the grounds and implications of a Christian eschatology*. London: SCM Press.
- Murray, P. & Wilkinson, D. (2011). The significance of the theology of creation within Christian tradition: Systematic considerations. In *God, humanity and the cosmos* (pp. 44-67). Ed. C. Southgate, 3<sup>rd</sup> ed. London: T. & T. Clark.
- Peacocke, A. (1997). Chance and law in irreversible thermodynamics, theoretical biology, and theology. In *Chaos and Complexity* (pp. 123-146). Eds. R. Russell, N. Murphy, & A. Peacocke, Notre Dame, Indiana: University of Notre Dame Press.
- Peacocke, A. (2001). *Paths from science towards God*. Oxford: Oneworld.
- Peters T. and Hewlett M. (2003). *Evolution from creation to new creation*. Nashville, Tennessee: Abingdon Press.
- Stearns, S. (2014). Natural selection, adaptation, and fitness: Overview. In *The Princeton guide to evolution* (pp. 194-199). Ed. J. Losos, Oxford: Princeton University Press.
- Stoeger, W. (2000). Scientific accounts of ultimate catastrophes in our life-bearing universe. In *The end of the world and the ends of God* (pp.19-28). Eds. J. Polkinghorne & M. Welker, Harrisburg, Pennsylvania: Trinity Press International.
- Wall, T. Resurrection and the natural sciences: Some theological insights on sanctification and disability. *Science and Christian Belief*, 27, 41-58.
- Wilkinson, D. (2010). *Christian eschatology and the physical universe*. London: T. & T. Clark.
- Wright, T. (2007). *Surprised by hope*. London: SPCK.

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