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DOI:
[10.2307/j.ctvqc6h4s](https://doi.org/10.2307/j.ctvqc6h4s)

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Document Version
Peer reviewed version

Citation for published version (Harvard):
Hall, A 2019, A Humanist Blockbuster: Jacob Bronowski and The Ascent of Man. in *Rethinking History, Science, and Religion: An Exploration of Conflict and the Complexity Principle*. University of Pittsburgh Press, pp. 145-159. <https://doi.org/10.2307/j.ctvqc6h4s>

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CHAPTER 8

A Humanist Blockbuster: Jacob Bronowski and *The Ascent of Man*

Alexander Hall

The Ascent of Man was a thirteen-part television documentary series first broadcast by the British Broadcasting Corporation (BBC) in 1973. Written and presented by the polymath, Jacob Bronowski, the series traced the development of human society across history, via its understanding of science. Beginning with the evolution of hominids and coming right up to date covering cutting-edge scientific endeavours, such as genetics and cloning (EP12), the series covered the scientific ideas Bronowski believed to have most transformed humanity. The series was intended to convey its author's personal view, and as such, presented a humanist and progressive vision of science, which situated humans within a grand evolutionary narrative. The series was pioneering for many reasons; amongst others, its use of filming locations all over the world, its big budget generated via a co-production agreement and its use of state of the art computer graphics. The show and accompanying book of the series were well received, and subsequently the series was widely sold to television stations across the world.

The series was integral to the emergence of a format for primetime non-fiction documentary television, which is still in use today. These documentaries, referred to forthwith as 'humanist blockbusters', are big budget documentaries that utilise a grand narrative centred on the progressive nature of scientific discovery, and rely on spectacular visuals and the language of awe. They use scientific theory to show that humans are not fundamentally different from other animals; while also maintaining a form of human

exceptionalism, with scientific endeavour along with other cultural phenomena used to argue that humans are distinct from and superior to other species. This approach and narrative structure is part of a much longer tradition, which stretches back to a popular 19th century approach for communicating evolutionary science, known as the evolutionary epic.

This chapter questions whether the adoption of the evolutionary epic narrative for a television audience, via *The Ascent of Man*, affected popular public opinion on the relationship between science and religion. I ask if Bronowski's attempt to situate science within human society, as an endeavour connected to art, human emotion and politics, forwarded a more nuanced understanding of the relationship between science and religion? Or, did the connection of Western scientific development with a humanist tradition actually help to further the popular conception that science and religion are necessarily in conflict?

The chapter begins by giving an overview of the BBC's post-war programmes on biological evolution, showing the wide range of approaches and positions on science and religion taken across this corpus. In doing so, I show that Brooke's complexity thesis can be usefully applied beyond the realm of print culture, for which it was initially conceived. However, the vast majority of BBC shows on biological evolution have not discussed religion at all. Therefore it is argued that when considering the BBC's programming on evolution the model today most popularly referred to as "Non-Overlapping Magisteria" (NOMA), after the biologist Stephen J Gould's work in the 1990s, may be more apt. Yet in this framing, Bronowski, and indeed Gould himself, are merely rearticulating ideas on the separation of science and religion, which have been prevalent in Anglo-American culture since the 19th century.

Next I briefly present the history of scientific, religious and humanist broadcasting at the BBC. Introducing the chapter's protagonist, Jacob Bronowski (1908-1974), I show how his earliest broadcasts at the corporation were in line with an earlier tradition of scientific

humanism as developed by the biologist and science populariser Julian Huxley (1887-1975), who in turn was influenced by a suite of late 19th century popularisers, most notably his grandfather, biologist Thomas Henry Huxley (1825-1895). The chapter then analyses *The Ascent of Man*, its reception and subsequent widespread influence. I make the argument that it should be considered a foundational humanist blockbuster, and conclude that while this approach to science documentary may treat religion as a separate other, as per Gould's NOMA model, we should not assume that this approach is amenable to all. It is likely to alienate specific sectors of its intended audience, and as such highlights that NOMA is not always a model centred on compatibility or accommodation.

Situating *The Ascent of Man*

Between 1945 and 2009, the BBC broadcast over 1,100 individual television and radio shows about biological evolution (FIG 8.1).¹ Across this corpus of shows, a wide spectrum of positions on the relationship between evolution and religion can be found; from shows that focus on conflict, such as a 1965 radio version of the play, *Inherit the Wind*, about the 1925 Scopes Monkey Trial,² to those centred on compatibility between religion and science, such as a 1951 lecture series by the Reverend Charles E. Raven on *Science and the Christian Man*.³ Given this variety, the corpus of post-war BBC shows about evolution supports the complexity thesis: the idea that the relationship between science and religion, or at least in this instance evolution and religion, should be viewed within the changing circumstances where each episode occurred, as defined by each particular historical situation, the beliefs of those involved, and the ideas of the scientific and religious figures vested in debates.⁴ Prior studies have largely explored complexity in the relationship between science and religion with regards to print culture, by considering radio and television this chapter extends the application of this approach, and shows that the complexity thesis is both valid

and useful in helping us to understand the depiction of science and religion across non-print media.

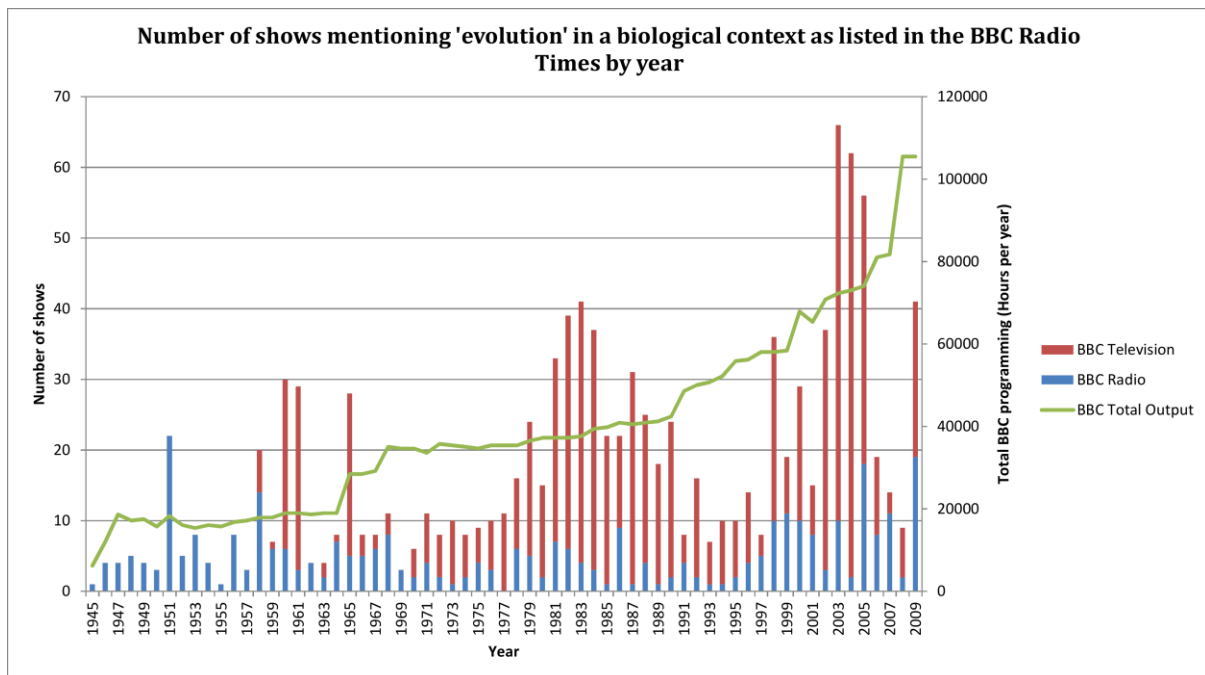


Figure 8.1: BBC shows about evolution by year. *BBC Genome Project*, accessed November 19, 2018, <http://genome.ch.bbc.co.uk/> and *BBC Handbooks*, online at British Online Archives, accessed November 13, 2018 <https://microform.digital/boa/collections/6/volumes/10/bbc-handbooksv>

Despite the diversity of positions covered across the BBC's programming on evolution, we can identify some normative positions prevalent across the whole corpus. Firstly, although some shows questioned specific aspects of scientific theory, all of the shows in the corpus accept the science behind contemporaneous evolutionary theory. Secondly, nearly all of the shows placed evolutionary theory within a wider framework of scientific progressivism. And finally, the vast majority of these programmes are not about evolution and religion. In fact, just over 7% of the shows the BBC made about biological evolution between 1945 and 2009 also contained content about religion.⁵ Therefore, if we are thinking about generalised theses or models for the BBC's output on biological evolution, given that over 90% of episodes about evolution did not also contain content about religion, it may be a model of separate spheres or domains to which we turn.

The idea that science and religion occupy distinct domains, is today most popularly associated with Stephen J. Gould's moniker, Non-Overlapping Magisteria (NOMA), a term the biologist coined in a 1997 magazine essay, in which he stated that science and religion should "not be in conflict, for their teachings occupy distinctly different domains".⁶ However Gould's NOMA, was only the latest iteration of a call to keep religion and science separate, which has been prominent in Western culture since at least the late nineteenth century.⁷ While this model has been critiqued by both religious and atheistic commentators,⁸ it persists as a popular position amongst those working in science communication. Thus, while Gould's NOMA formulation came after much of the corpus of BBC shows on evolution was created (FIG 8.1), its central tenet—the separation of science and religion—has long been influential amongst those creating content on popular science in the UK.

While the absence of religion in the majority of these BBC broadcasts about evolution may align with the idea of NOMA, we cannot assume that NOMA itself is always a model centred on compatibility, harmony or even at a minimum accommodation. With this in mind, the 1973 BBC/Time-Life series, *The Ascent of Man*, presents an interesting case study. It is one of the only television programmes in the period that, while not focussing on evolution and religion per se, still took an explicit position on the implications for traditional religious beliefs in light of modern evolutionary theory.

Science, Religion and Humanism on the BBC

In the late 1960s when discussion for a new "History of Science" series began,⁹ on-air discussion of humanism on BBC television and radio was still largely restricted.¹⁰ In the immediate post-war years, humanist organisations repeatedly appealed to the BBC to receive more broadcast time for their worldview.¹¹ Although by the mid-1960s the Religion Department was beginning to give more airtime to some non-traditional Christian denominations and other religions, such as Judaism, official BBC policy still retained a

special position for Christian religious broadcasting.¹² As detailed in a recent paper by historian of science Robert Bud,¹³ this longstanding opposition to humanism being allowed proportionate representation alongside religious programming at the BBC resulted in its emergence across other areas of BBC programming. Aspects of the worldview popped up on shows made by departments as diverse as Radio Talks and Schools Education;¹⁴ yet wherever humanist worldviews did receive airtime, they were almost always contrasted against, or profiled alongside, more traditional Christian beliefs. For example, when Julian Huxley pitched a radio talk about humanism in 1943, he was given the go-ahead only on the premise that the talk was one of a series of three, with his talk on “Scientific Humanism” being followed by talks on “Classical Humanism” and “Christian Humanism”.¹⁵ One area where humanist views managed to avoid this dichotomous framing was in scientific programming, where, as outlined by Bud, from the 1930s onwards a form of “scientific humanism” emerged and came to dominate the BBC’s scientific output.¹⁶ Spearheaded by evolutionary biologist Julian Huxley and BBC Features Producer Mary Adams,

[c]ollectively these widely attended-to talks defined a series of related discourses which together promoted the interestingness of science. They went beyond this, however, to deal with the major issues of religion, civilization and the nature of knowledge. In this way they could be seen as using talk about science as a proxy for scientific humanism.¹⁷

As radio programming on science developed during the 1930s, this way of talking about science in society, rather than as an abstract entity separate from everyday life, quickly became the *modus operandi* for science features at the BBC.¹⁸ So much so, that when the BBC came to review broadcasts on science in 1949, the physicist Mark Oliphant lamented:

What I would like to see is some break-away from the perpetual theme of ‘science and society’, with the inevitable excursions of the scientist into fields of politics where he does not shine, towards an attempt to present science as natural philosophy, as a way of life and culture in its own right. I believe it can be done.¹⁹

However, the science in society approach lent itself well to the visual aspect of the new medium of television, which after a wartime hiatus was being rolled out nationwide. Thus, despite Oliphant and others' perhaps well placed misgivings about the BBC's focus on applied science at the expense of "the fundamental science on which it rests" and the subsequent drive to redress this imbalance, the science in society approach continued to proliferate in the post-war years.²⁰

During the formal review of broadcasts on science, on which Oliphant was commenting in 1949, Jacob Bronowski sent the BBC an unsolicited application, offering his services in a self-proposed new role as a BBC science advisor. Since 1946 Bronowski had been a regular on BBC radio, so was already familiar to senior figures at the organisation.²¹ In this application Bronowski stated: "[i]f non-scientists are to blame for their neglect of science, then scientists cannot escape as great a blame for their ignorance of literature, the arts, and the general place of their work in culture and in history."²² Unsurprisingly, given the contradiction between this view and that concurrently being put forward to the General Advisory Council by Oliphant, Bronowski was politely turned down by the BBC.²³

The ideology of scientific humanism first iterated on the BBC by Huxley and his humanist peers in the 1930s, is clearly evident in Bronowski's earliest broadcasts on the BBC, most notably in a series of radio talks broadcast during the late 1940s. In one of these broadcasts, on "Unbelief and Science" in Victorian Britain,²⁴ Bronowski argued that, "Huxley and Clifford and Tyndall and their fellow scientists had undermined the popular basis of belief almost unnoticed and left it hollow and ready for a landslide."²⁵ Other radio lectures by Bronowski during this period, included titles such as "The Common Sense of Science" and "Evolution and Religion".²⁶ Jacob Bronowski was a younger contemporary of Huxley, and the two regularly appeared on the popular BBC panel show *The Brain's Trust*. The career path pioneered by Huxley was instrumental in providing a route for Bronowski to

follow, and both figures are inextricably linked with the twentieth-century popularisation of scientific humanism in Britain.²⁷

By the late 1960s, the fact that humanist, and even atheist, worldviews were receiving airtime via the backdoor by being parachuted into the content of other departments was well-known within the BBC,²⁸ and most acutely felt by senior figures in the Religion Department who were grappling to remain relevant in an increasingly plural and secularised society.²⁹

The Ascent of Man

After the success of Kenneth Clark's *Civilisation*, an ambitious 13-part series that told the history of man through art, first broadcast in 1969, the Director of BBC 2 television, David Attenborough, was keen to produce a successful follow-up for the fledgling channel. Head of Features at the BBC, Aubrey Singer, had been surprised that a "scientific man" such as Attenborough had tackled art before science, and pushed the Director to commission a follow on series that focused on the history of man's scientific endeavours.³⁰

Bronowski had previously worked with Singer on the pioneering 1960 BBC TV documentary series *Insight*, which explored our "new understanding of nature" and was one of the first BBC television series dedicated to the development of science.³¹ Thus, Bronowski emerged as the first and obvious choice to front the new "Story of Science" series.³² When Bronowski was approached, he didn't agree immediately and during negotiations in the summer of 1969, while conceding to adhere to a historical structure, he signed-up on the condition that he could "present scientific ideas as the progressive solutions of major problems", through a "personal frame".³³ By the late 1960s Bronowski's desire "to create a philosophy for the twentieth century which shall be all of one piece",³⁴ had already been expounded and developed across several popular books, with many echoes of the seemingly

novel ideas and structure used in *The Ascent of Man* evident as early as 1951's *The Common Sense of Science*.³⁵

Despite Bronowski submitting an in-depth outline and synopsis for the series as early as August 1969, and the series being subtitled “A Personal View”, the final script, structure and production of the series was influenced by a vast range of experts. As well as direction from the large production team and extensive research by BBC staff, the series also relied on a number of external consultants from a diverse range of disciplines and institutions, including historian of science Colin Ronan.³⁶ While this resulted in a series that was not as hagiographical or ‘whiggish’ as other popular accounts of the history of science—in the first episode Bronowski credits the Mayan’s for their sophisticated astronomy and mathematics, developed independently of the Old World³⁷—it remains a paternalistic account, centred on an inherently progressive narrative of Euro-centric science.

Starting with the title, itself a play on Charles Darwin’s 1871 *The Descent of Man*, the series made the bold assertion that the history of science was inextricably linked to the history of human evolution.³⁸ While Bronowski avoided the popular, but incorrect depiction of biological evolution as directional, his unashamedly progressive narrative of man’s cultural evolution, a phenomenon he determined as completely separate from our biological evolution, on occasion inevitably slipped into the teleological.³⁹

Beginning with proto-apes in Episode 1 and coming right up to date with an episode on genetics and cloning (Episode 12), the series thematically skipped across the scientific ideas Bronowski thought had most transformed humanity. Despite its novel structure that dealt with historical scientific developments thematically across the series, rather than strictly chronologically, or by discipline (FIG 8.2), the narrative arc of *The Ascent of Man* followed a format already familiar to audiences. In situating humans within a grand evolutionary narrative, what the biologist E.O. Wilson called an “evolutionary epic”,⁴⁰ Bronowski’s

progressive story of humanity aligned with a tradition that historians of science have traced back to the early nineteenth century.⁴¹ Bronowski deliberately aimed to situate scientific progress and discovery within its cultural context, often connecting it directly to other human endeavours, such as art and poetry (FIG 8.2).

Episode	Scenes
1. Lower than the Angels	Shaper of the Landscape / The Rift Valley / Australopithecus / Physical Gifts / Precursors of Man / The hunter / The Ice Age / Cave Art
2. The Harvest of the Seasons	A Quiet Explosion / The Bakhtiari / Crossing the Bazuft / Wheat / Jericho / Agricultural Invention / The Horse / Genghis Khan
3. The Grain in the Stone	An Architect of his Environment / Splitting Stone / Machu Picchu / Pizarro / The Arch / Stonemasonry / The Sculptor / The Watts Towers
4. The Hidden Structure	Fire and the Alchemists / Copper / Bronze / Steel / Gold / Paracelsus / Oxygen / John Dalton
5. Music of the Spheres	A Harmony in Nature / Pythagoras' Theorem / Euclid and Ptolemy / The Coming of Islam / The Alhambra / Crystals / Toledo / Perspective
6. The Starry Messenger	Easter Island / Wheels Within Wheels / Galileo / The Starry Messenger / Heresy / Pope Urban VIII / The Inquisition / The Verdict
7. The Majestic Clockwork	Newton / The Spectrum / Leibnitz / Elliptical Orbits / Three Hours After Marriage / Space and Time / Einstein / The Heart of Knowledge
8. The Drive for Power	The Industrial Revolution / The Marriage of Figaro / Benjamin Franklin / Iron / Wedgewood and the Lunar Society / Steam / Eternal Delight / Trevithick and Joule
9. The Ladder of Creation	Charles Darwin / Wallace and Bates / The Rio Negro / Wallace Returns / Survival of the Fittest / The Origin of Species / Louis Pasteur / Building Blocks of Life
10. World Within World	Salt / Mendeleev / Niels Bohr / Spectrum Analysis / Atomic Structure / Discovery of the Neutron / Evolution of the Elements / Immortality and Mortality
11. Knowledge or Certainty	The Method of the Artist / The Invisible Waves / Karl Friedrich Gauss / Göttingen / Born and Heisenberg / The Principle of Uncertainty / Leo Szilard / The Tragedy of Scientists
12. Generation Upon Generation	Gregor Mendel / The Garden Pea / All or Nothing / Sexual Reproduction / The Double Helix / The Fertilised Egg / Clones / Sexual Selection
13. The Long Childhood	The Plasticity of the Mind / The Brain / Speech / The Ability to Plan / Guardians of Integrity / John von Neumann / The Computer and the Brain / A Scientific Civilisation

Figure 8.2: Table listing all of the episodes of *The Ascent of Man* and their constituent scenes. “The Ascent of Man – Viewing Notes”, *BBC DVD/BBC Worldwide*, 2005.

In the opening shots of the first episode, which ran prior to the title sequence,⁴² Bronowski gave the viewer an idea of what was to come; explicitly framing the narrative to follow:

Man is a singular creature. He has a set of gifts which make him unique among the animals, so that unlike them he is not a figure in the landscape, he is the shaper of the landscape...[N]ature, that is evolution, has not fitted man to any specific environment...he has a rather crude survival kit, and yet this is the paradox of the human condition: one that fits him to all environments. His imagination, his reason, his emotional subtlety and toughness make it possible for him, not to accept the environment, but to change it, and that series of inventions by which man from age to age has re-made his environment is a different kind of evolution; not biological, but cultural evolution. I call that brilliant sequence of cultural peaks, *The Ascent of Man*.⁴³

First broadcast in the UK on May 5th, 1973, the episode began the series with a sweeping depiction of *Homo sapiens*' evolution. The viewer at home was left in no doubt about the scientific, humanist and, at points, atheistic story Bronowski was about to tell, as speaking from the East African Rift valley, he stated:

The ancient stories used to put the creation of man into a golden age and a beautiful legendary landscape. If I were telling the story of Genesis now I should be standing in the Garden of Eden, but this is manifestly not the garden of Eden, and yet I am at the navel of the world, at the birth place of man here in the East African Rift valley near the equator, and if this ever was a Garden of Eden, why it withered millions of years ago.⁴⁴

The depiction of science in *The Ascent of Man* was somewhat at odds with wider social, political and media trends at the time. During the late 1960s and into the early 1970s, “[t]he scientific establishment became increasingly concerned about negative and critical attitudes towards science. Talk of a ‘crisis’ and fears of ‘anti-science’ were widespread.” Other BBC science programmes in the period reflected more closely the prevalent concerns of the day; for example shows such as *Controversy* (1971-1975), on which scientific experts

and a studio audience could discuss and disagree on controversial scientific subjects.⁴⁵ Yet the progressive arc of Bronowski's series did not completely evade discussion of scientific controversy or the moral and ethical implications of scientific practice and discoveries. In particular, at the end of Episode 11 on "Knowledge or Certainty", Bronowski addressed scientists' role in the creation of the atomic bomb. Episode 11 famously culminated with Bronowski standing in a tailings pond containing human ash at the former Nazi concentration camp of Auschwitz. Earlier in this purposefully visually and audibly visceral scene, Bronowski recalled:

I had not long been back from Hiroshima, when I heard someone say in [Leo] Szilard's presence, that it was the tragedy of scientists that their discoveries were used for destruction. Szilard replied, as he more than anyone else had the right to reply, that it was not the tragedy of scientists, it is the tragedy of mankind.⁴⁶

This quote is indicative of other instances during the series, when such moral dimensions are discussed, whereby Bronowski reserves neutrality for correct scientific endeavour. Despite many references to the messiness and contingency of science, and the connections between science and other cultural endeavours; ultimately Bronowski implored the audience to believe in a Baconian vision of science as value free and neutral.⁴⁷ In the final episode Bronowski stated that "knowledge is our destiny," and warns those in the West to "not retreat from knowledge," but to embrace our position as "nature's unique experiment to make the rational intelligence prove itself sounder than the reflex."⁴⁸ Much like Huxley's scientific humanism before him, for Bronowski moral and ethical implications were for society as a whole to deal with and scientists themselves were only one part of this discussion. Indeed, Bronowski's selective representation of Leo Szilard, and more generally his other popular works promoting the redemptive power of science, have been criticised by academics, who have noted the mythmaking and hypocrisy presented; especially given Bronowski's own personal involvement in ballistics and bombing during the war.⁴⁹

Reception

The Ascent of Man received plaudits from the popular press and the general public at large, with one BBC report estimating that 30% of the adult viewing population of the UK—some 10-12 million people⁵⁰—saw at least one episode of the series during 1973-74.⁵¹ Subsequently, the series was widely syndicated and aired on television stations across the world, from Sweden to Australia. The show's launch was accompanied by a large-scale, co-ordinated press and media campaign, which included essay versions of the episodes published in the BBC's magazine, *The Listener*, and radio appearances by Bronowski promoting the show.⁵² A repeat run of the series in November 1973 was preceded by Bronowski appearing on the primetime BBC chat show *Parkinson*, and accompanied by the launch of the book of the series in December 1973.⁵³

In the national press, when it was mentioned, the series as a whole was well received,⁵⁴ and in due course Bronowski was rewarded, winning the 1973 Writers' Guild Award for best documentary script, and a silver medal at the 1974 Royal Television Society Awards.⁵⁵ Praise was lauded not only on Bronowski himself, but also on the "superb professional talent" in the Features Department, including the producers Adrian Malone and Dick Gilling, the cutting edge graphics and filming techniques utilised, and the BBC itself, the only "broadcasting organisation in the world which could have undertaken it and succeeded."⁵⁶

Perhaps surprisingly given the occasional ad hominem swipes Bronowski took at organised religion—"the Bible is a curious history, part folklore, part record,"⁵⁷—the British religious press made little comment on the series. Where covered, criticism raised largely centred on the narrative and visual style of the series:

I am not qualified to criticise all this as science, but as a critic of television I should say that it was too lavish, too voluble, too arbitrary and too bedizened with images to make any clear impression, save

that of the Doctor pontificating from a studio witches' den of cauldrons, flames and bubbles, when he was not stepping out around the world.⁵⁸

Even more notable was a complete lack of mention of the series in the most popular humanist magazine of the day, *The Freethinker*.⁵⁹ Although that is not to say the humanist overtones of the series went unnoticed, with *The Times*' preview of the final episode in the series referring to it as a "humanist epilogue".⁶⁰

BBC audience research reports on the series largely reflect the media coverage, on the whole positively reviewing both the content and the ambitious presentation of the series. Notably however, the reports reveal that most viewers interpreted the series simply as a history of man and his scientific development, rather than Bronowski's own objective to create "a philosophy for the twentieth century, bringing together the experience of the arts and the discoveries of science." Individual gripes were aired, such as by a Parson, who complained about Bronowski's "anti-religious dogmatism", but of much more concern to those surveyed was that the intellectual level of the series was too complex.⁶¹ Likewise, while letters in the popular press criticised aspects as wide ranging as Bronowski's chauvinistic overtones, through to the historical accuracy of particular scenes,⁶² few, if any raised concerns about the religious implications of his worldview.

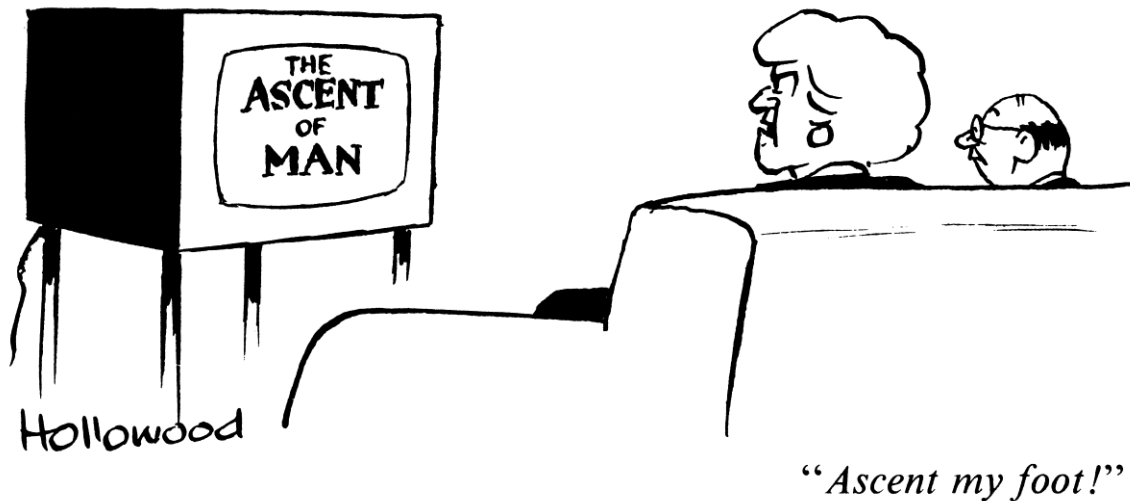


Figure 8.3: Punch magazine cartoon criticising *The Ascent of Man*. Bernard Hollowood, "Ascent my foot!" *Punch*, May 16, 1973. Reproduced with permission of Punch Ltd., www.punch.co.uk.

Overwhelmingly, the main criticisms levelled at the series, were about the oversimplification of historical developments and the overstretch of what science can, and does, tell us about our society and physical world. This argument was made in both popular forums, such as the *Punch* cartoon above (FIG 8.3), and academic forums, such as an *American Anthropologist* review of the series' US airing, which complained of the "ubiquitously naïve ethnocentrism" and referred to the series as an advertisement for culture.⁶³ Yet despite these initial criticisms, the series and the subsequent book, which was still on non-fiction bestseller charts late into 1975,⁶⁴ retained a continued popularity and went on to influence future non-fiction television programming, the formative field of science communication, and in turn, popular narratives on scientific progressivism.

Influence

The pre-production and production files for *The Ascent of Man* chart with great detail the intricacies, challenges and contingencies of producing such ground-breaking television. The series was pioneering for many reasons; among others, its use of multiple exotic filming locations, its massive budget generated via a co-production agreement between the BBC and

the US Time-Life productions worth approximately £420,000,⁶⁵ and its use of cutting-edge computer graphics to illustrate some of the most abstract scientific concepts introduced. Big budget documentary series were very much in the ascendency during the period, as the format of scientific documentary developed. As the media historian Jean Seaton has stated: “[t]hey cost a lot, but they made television into a mature medium.”⁶⁶ And while *The Ascent of Man* is part of this wider trend, which included other BBC 2 output from the period such as *Civilisation* (1969) and *America* (1972), it was also a foundational broadcast in a smaller subset of documentaries, which I have named humanist blockbusters. Aligning somewhat with the category of “blue-chip” wildlife films, which media studies scholar Derek Bousé has singled out for their reliance on visual splendour and dramatic storyline, while not matching these films for their marked absence of politics or historical reference points, *The Ascent of Man* does similarly rely heavily on an airbrushed and mythic narrative of science and its history.⁶⁷

Humanist blockbusters are big budget non-fiction documentaries with multiple, typically exotic, filming locations, cutting edge graphic technologies, and are often co-productions between different media companies. They use science to help situate humanity’s place within the universe, using a grand narrative centred on the progressive, and often redemptive, nature of scientific discovery. They rely on a language originally developed in a religious context, that of awe and spectacle, and use scientific theory to argue against any special place for humanity in the universe. Yet while they do this they maintain some element or form of human exceptionalism, which argues that we are not merely any old animal species.

Humanist blockbusters not only share stylistic, format and production norms, but they also share a common lineage that can be traced via direct patronage, commissioning editors, production teams, BBC departments and public scientists back to Bronowski’s *The Ascent of*

Man. For example, beyond the direct connection of David Attenborough between *The Ascent of Man* and 1979's worldwide success *Life on Earth*, there are numerous other staffing overlaps. In fact, during the long gestation period during which *Life on Earth* emerged, *The Ascent of Man* was regularly referred to by the production team, as they looked to develop a style of documentary that was less superficial than leading US productions.⁶⁸ Furthermore, as their careers progressed many of the original production team from *The Ascent of Man* moved to the US and were instrumental in globalising this very particular brand of documentary. Most notably Carl Sagan's *Cosmos: A Personal Voyage* (1980) was directed by *The Ascent of Man* Producer Adrian Malone, and co-director and cameraman Mick Jackson, before making it in Hollywood, worked on a number of US TV documentaries, including writing and directing an episode of *Nova*, a series itself modelled on the long running BBC science series *Horizon*.⁶⁹

Conclusion

While the blockbuster elements of *The Ascent of Man* may have been driven as much by the production team's ambition and emergent technologies, as Bronowski's desire for a grand narrative, the scientific humanism at the centre of the series was part of a longer tradition. How Bronowski spoke about science, embedded in society and imbued with scientific materialism and scientific humanist ideals was directly influenced by the work of earlier popularisers and producers, most notably Julian Huxley and Mary Adams. While the narrative arc of the series, whether knowingly or not, adapted the nineteenth-century science popularisers' evolutionary epic to the relatively new medium of television.

Although in this series Bronowski's humanist position was up front and fairly explicit, as the format for the humanist blockbuster coalesced, and the wider genre of science documentary progressed, the grand narrative of the evolutionary epic remained, while the notion that this was one of many philosophical positions or worldviews simply became part

of the furniture. For example, in subsequent series in this mode, such as Attenborough's *Life on Earth* not only is reference to religion completely absent, references to other aspects of human culture such as art are also vastly reduced. Yet at the same time a scientific progressivism, the religious language of awe, and a call to marvel at the beauty of nature, which is deeply rooted in a natural theological tradition all remain in the centre ground.⁷⁰

Overall, when considered as a whole, the great variety of BBC output which has dealt with evolutionary biology clearly supports Brooke's complexity thesis, showing that this approach, which was originally developed in regard to nineteenth century print culture, is a useful and valid way to investigate twentieth-century interactions between science and religion across different media. However in *The Ascent of Man*, one of the most influential science programmes the BBC has ever made, an implicit conflict position on the relationship between science and religion was taken. This is not an obvious conflict position of necessary or inherent conflict that we may recognise as a legacy of Draper and White, but a more normative nuanced position. Evolutionary science is presented as occasionally incompatible with religion, as largely separate from and superior to religion, and, ultimately, as superseding it as part of a grand evolutionary narrative of humanity's progressive climb.

While considering BBC television documentaries on evolution has highlighted the general validity of applying the complexity thesis to twentieth century multimedia, an in-depth analysis of *The Ascent of Man* has further reinforced the central tenets of recent historical scholarship on the relationship between science and religion. Namely, that when considering the relationship between these two vaguely-bounded, and often nebulous approaches to understanding the world, meaningful understanding can only be garnered by considering individual episodes in their complete social, cultural and political contexts. Further, historians of science and religion must interrogate more than just the well-known, contentious, or popular episodes from history. For as we have seen with *The Ascent of Man*,

even the seeming absence of religion—or equally in other cases, science—does not mean that the media artefact in question did not take a normative position on the relationship between science and religion, which in turn may have been extremely influential. So while *The Ascent of Man*, and the humanist blockbusters that followed, can be considered to fit into a separate spheres or domains model, we must remember that for significant sectors of the intended audience, this depiction of science may be considered a position of conflict. For the absence of religion in these science documentaries does not mean that they are not promoting other, often competing worldviews; here, science is aligned with progressive materialism, humanism and sometimes by implication atheism.

¹ For a succinct overview of science on British television see Timothy Boon and Jean-Baptiste Gouyon, “The origins and practice of science on British television,” in *The Routledge Companion to British Media History*, ed. Martin Conboy and John Steel (Abingdon: Routledge, 2014), 470–483.

² For more on the Scopes Monkey Trial and its popular depiction, see Adam R. Shapiro, *Trying Biology: The Scopes Trial, Textbooks, and the Antievolution Movement in American Schools* (Chicago: University of Chicago Press, 2013), 1–13.

³ All BBC shows mentioned throughout this chapter can be found online at the BBC Genome Project, a digitised version of the BBC’s listings magazine *The Radio Times*. BBC Genome Project, accessed Nov 21, 2018, <http://genome.ch.bbc.co.uk/>

⁴ See among others John Hedley Brooke, *Science and Religion: Some Historical Perspectives* (Cambridge: Cambridge University Press, 1991); David C. Lindberg and Ronald L. Numbers, *God and Nature: Historical Essays on the Encounter Between Christianity and Science* (University of California Press, 1986).

⁵ 86 shows out of the total corpus of 1,128 (FIG 1), contained religious content in their television listing in *The Radio Times*. This total includes 10 shows which used religious language only as a metaphor to discuss their scientific content.

⁶ Stephen Jay Gould, “Nonoverlapping Magisteria,” *Natural History* 106:2 (1997): 16–22.

⁷ Bernard Lightman, “Victorian Sciences and Religions: Discordant Harmonies,” *Osiris* 16 (2001), 343–366.

⁸ See for respective examples John Polkinghorne, “The Continuing Interaction of Science and Religion,” *Zygon* 40:1 (2005): 43–49; and Thomas Nagel, *Secular Philosophy and the Religious Temperament: Essays 2002–2008* (Oxford: Oxford University Press, 2009), Chapter 2. Gould expanded on and defended NOMA in: Stephen Jay Gould, *Rocks of Ages: Science and Religion in the Fullness of Life* (New York: Random House, 2002).

⁹ Noble Wilson, “Time-Life co-production: ‘History of Science’ Series,” BBC Memorandum, 3 September 1969, T64/64/1, BBC Written Archives, Reading, UK (BBC-WA).

¹⁰ The Beveridge Broadcasting Committee of 1949 had recommended that bodies which studied moral or spiritual issues, but were not religious should have the opportunity to broadcast, but only via the Talks Department rather than the Religious Broadcasting Department. In 1958 The Humanist Association complained that this recommendation was not being implemented. Penry Jones, “The BBC and the Humanists,” BBC Paper presented to CRAC, 24 February 1969, R6/21/10, BBC-WA.

¹¹ “Humanism and Religious Broadcasting,” BBC Paper presented to CRAC, 7 October 1958, R6/21/8, BBC-WA.

¹² Penry Jones, “The BBC and the Humanists,” BBC Paper presented to CRAC, 24 February 1969, R6/21/10, BBC-WA.

¹³ Robert Bud, ““The Spark Gap Is Mightier than the Pen”: The Promotion of an Ideology of Science in the Early 1930s,” *Journal of Political Ideologies* 22:2 (2017): 169–181, accessed November 22, 2017, doi.org/10.1080/13569317.2017.1298548.

¹⁴ For examples see: *Key Words*. “Christians and Humanists.” BBC Home Service, February 8, 1956; and *For Schools and Colleges*. “Living in the Present: Belief.” BBC One, November 29, 1965.

¹⁵ See “Rcont1 Talks. Sir Julian Huxley, File II, 1943-1949,” BBC-WA.

¹⁶ For more on the ideological depiction of science in television drama, see Robert Dunn, “Science, Technology and Bureaucratic Domination: Television and the Ideology of Scientism,” *Media, Culture & Society* 1:4 (1979): 343–54, accessed November 21, 2017, doi.org/10.1177/016344377900100403.

¹⁷ Bud, “The Spark Gap Is Mightier than the Pen,” 7.

¹⁸ In addition to Mary Adams, it was an approach forwarded at the BBC by amongst others Nesta Pain, Mary Somerville and Archie Clow.

¹⁹ Mark Oliphant, “The Broadcasting of Science,” Memorandum to the BBC General Advisory Council, 6 May 1949, R6/34 GAC – Science Sub-Committee, BBC-WA.

²⁰ Oliphant, “The Broadcasting of Science.” Other figures supporting Oliphant’s position included the physicist Sir Lawrence Bragg and the civil servant and politician Sir John Anderson, see: “The Presentation of Science,” Report of discussion of the BBC General Advisory Council, 2 June 1949, R6/34 GAC– Science Sub-Committee, BBC-WA.

²¹ During the autumn of 1946 Bronowski delivered several talks on the poet William Blake, and from this period onwards he was a regular guest on the radio and later television panel show *The Brains Trust*.

²² Correspondence from Jacob Bronowski to George Barnes, 29 May 1949, R6/34, BBC-WA.

²³ Correspondence from George Barnes to Jacob Bronowski, 25 January 1950, R6/34, BBC-WA. For more on this episode see Timothy Boon, *Films of Fact: A History of Science in Documentary Films and Television* (London: Wallflower Press, 2008), 190-191.

²⁴ Huxley also gave a talk in this series: *Ideas and Beliefs of the Victorians*. “Evolution and Human Progress.” Produced by Anna Kallin. Written by Julian Huxley. BBC Third Programme, 22 March 1948.

²⁵ *Ideas and Beliefs of the Victorians*. “Unbelief and Science.” Produced by Anna Kallin. Written by Jacob Bronowski. BBC Third Programme, 17 March 1948, script on microfilm at BBC-WA.

²⁶ The *Common Sense of Science* was also published as a book in 1951; see Jacob Bronowski, *The Common Sense of Science* (London: Faber & Faber, 2011).

²⁷ Ralph Desmarais, “Jacob Bronowski: A Humanist Intellectual for an Atomic Age, 1946–1956,” *The British Journal for the History of Science* 45:4 (2012): 573–89, accessed October 4, 2017, doi.org/10.1017/S0007087412001069; and Bud, “The Spark Gap Is Mightier than the Pen.”

²⁸ Penry Jones, “The BBC and the Humanists.”

²⁹ See the minutes and papers of the Central Religious Advisory Committee during 1963-1970; for example: Kenneth Lamb, “Progress Report,” BBC Paper presented to CRAC, 20 September 1965, R6/222/3, BBC-WA; and Penry Jones, “Progress Report,” BBC Paper presented to CRAC, 29 February 1968, R6/21/10, BBC-WA.

³⁰ Marcus Hearn, “The Ascent of Man – Viewing Notes,” BBC DVD/BBC Worldwide, 2005, 7.

³¹ During discussions for *The Ascent of Man*, Singer reflected that *Insight* was five years ahead of its time. *Insight*. Produced by Humphrey Fisher and Bill Wright. Written and Presented by Jacob Bronowski. BBC TV, November 1960 – April 1961; and Correspondence from Aubrey Singer to Jacob Bronowski, 15 August 1969, T64/64/1, BBC WA. For more on the content of *Insight* see the book that accompanied the series: Jacob Bronowski, *Insight* (London: Macdonald, 1964).

³² Humphrey Fisher, “The Story of Science,” BBC Memorandum, 31 January 1968, T64/64/1, BBC-WA; Wilson, “Time-Life co-production”; and David Attenborough, *Life on Air: Memoirs of a Broadcaster* (Princeton: Princeton University Press, 2002), 214.

³³ Correspondence from Jacob Bronowski to Robert Reid (Head of Science and Features, BBC TV), 28 July 1969, T64/64/1, BBC-WA.

³⁴ Jacob Bronowski, *The Ascent of Man* (London: Little, Brown, 1973), 17.

³⁵ For example the description of “The Principle of Uncertainty” (*The Ascent of Man*, Episode 11, 30:32 – 32:29), follows very closely Bronowski’s explanation in Bronowski, *The Common Sense of Science*, 80-84. See also Jacob Bronowski, *Science and Human Values* (London: Faber & Faber, 2011); and Jacob Bronowski, *The Western intellectual tradition: from Leonardo to Hegel* (London: Hutchinson, 1960).

³⁶ Those consulted included a wide range of experts at Universities including amongst others Cambridge and Manchester, and institutions such as the British Museum, as well as international experts including those based in the USA and the USSR. See T64/65/1, BBC-WA.

³⁷ *The Ascent of Man*. “Lower than the Angels.” Directed by Adrian Malone. Written by Jacob Bronowski. BBC/Time Life, 5 May 1973: 04:29 – 04:50.

³⁸ Andrew Cunningham and Perry Williams, “De-Centring the “big Picture”: The Origins of Modern Science and the Modern Origins of Science,” *The British Journal for the History of Science* 26:4 (1993): 407–432, accessed 4 October 2017, doi.org/10.1017/S0007087400031447.

³⁹ For more on teleology in contemporary television documentary see: Meryl Aldridge and Robert Dingwall, “Teleology on Television?: Implicit Models of Evolution in Broadcast Wildlife and Nature Programmes,” *European Journal of Communication* 18: 4 (2003): 435–53, accessed 4 October 2017, doi.org/10.1177/0267323103184001.

⁴⁰ Edward O. Wilson, *On Human Nature* (Cambridge: Harvard University Press, 1978): 201.

⁴¹ See James A. Secord, *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation* (Chicago: University of Chicago Press, 2003): 41–90; Bernard Lightman, *Victorian Popularizers of Science: Designing Nature for New Audiences* (Chicago: University of Chicago Press, 2009): 219–223; and Ian Hesketh, “The Recurrence of the Evolutionary Epic,” *Journal of the Philosophy of History* 9:2 (2015): 196–219, accessed 9 October 2017, doi.org/10.1163/18722636-12341300.

⁴² A technique known in television production as a ‘cold open’, more common in this period in the US, and rarely deployed on documentaries; one notable exception released the same year as *The Ascent of Man*, which used a cold open on every episode was: *The World at War*. Produced by Jeremy Isaacs. Narrated by Laurence Olivier. ITV/Thames Television, 1973–1974.

⁴³ *The Ascent of Man*. “Lower than the Angels.” 00:07 – 02:40

⁴⁴ *The Ascent of Man*. “Lower than the Angels.” 07:10 – 07:53

⁴⁵ Rupert Cole, “1972: The BBC’s Controversy and the Politics of Audience Participation,” *Public Understanding of Science* 26:4 (2017): 514–18, accessed 19 September 2017, doi.org/10.1177/0963662516684231.

⁴⁶ *The Ascent of Man*. “Knowledge or Certainty.” Directed by Mick Jackson. Written by Jacob Bronowski. BBC/Time Life, 14 July 1973: 43:25 – 44:00.

⁴⁷ In his academic work Bronowski engaged with contemporary philosophy of science, most notably the work of Michael Polanyi, and was familiar with the most contentious and unanswered philosophical aspects of contemporary evolutionary theory. See for example Jacob Bronowski, “New Concepts in the Evolution of Complexity: Stratified Stability and Unbounded Plans,” *Zygon* 5:1 (1970): 18–35, accessed 20 September 2017, doi.org/10.1111/j.1467-9744.1970.tb00181.x.

⁴⁸ Jacob Bronowski, *The Ascent of Man* (London: Little, Brown, 1973), 437.

⁴⁹ See Jerome R. Ravetz, *Scientific Knowledge and Its Social Problems* (Piscataway: Transaction Publishers, 1973): 65; David Edgerton, “British scientific intellectuals and the relations of science, technology, and war,” in *National Military Establishments and the Advancement of Science and Technology: Studies in 20th Century History*, ed. Paul Forman and José Manuel Sánchez Ron (Berlin: Springer Science & Business Media, 1996), 22–23; and Desmarais, “Jacob Bronowski.” For a more personal and reflective account of the relationship between Bronowski’s wartime work and his post-war promotion of scientific humanism, see *My Father, the Bomb and Me*, Written by Lisa Jardine, BBC Four, 26 January 2011.

⁵⁰ In 1971 the total population of the UK was 55.9 million, with 25.5% estimated to be under 16, thus 30% of the over 16 population is approximately 12.49 million. Jen Beaumont, “Population,” *Social Trends* 41, Office for National Statistics Report (London: Crown Copyright, 2010).

⁵¹ The show originally aired on Saturday evenings from May - July 1973, and was repeated on Thursday evenings from November 1973 - January 1974. “What the Ascent of Man Conveyed to Viewers,” An Audience Research Report, May 1974, T62/1/1, BBC-WA.

⁵² See for example Jacob Bronowski, “Lower than the Angels – the first of 13 essays on man’s relation to nature,” *The Listener*, 10 May 1973; and *Whatever You Think*. Presented by Cliff Michelmore. 29 April 1973, BBC Radio 4.

⁵³ *Parkinson*. Directed by Brian Whitehouse. Presented by Michael Parkinson. 3 November 1973, BBC London. For a full transcript of this interview see T64/64/1, BBC-WA.

⁵⁴ See for example Matthew Coady, “Mirror TV: Your Complete Programme Guide,” *The Mirror*, 21 May 1973, 18.

⁵⁵ “Television Today: Writers’ Awards,” *The Stage*, 16 May 1974, 13; “Television Today: Peter Willes wins RTS award,” *The Stage*, 30 May 1974, 13.

⁵⁶ Chris Dunkley, “The Ascent of Man,” *The Financial Times*, 7 May 1973. See also, Peter Lennon, “Man alive,” *Sunday Times*, 6 May 1973, 38.

⁵⁷ *The Ascent of Man*. “The Harvest of the Seasons.” Directed by Adrian Malone. Written by Jacob Bronowski. BBC/Time Life, 12 May 1973: 26:49 – 27:03.

⁵⁸ Mary Crozier, “Television,” *The Tablet*, 2 June 1973, 13.

⁵⁹ Here, as with other sectors of the press, we see highlighted the challenges for historians studying the reception of television in the period; often not considered high-brow enough, or considered too ephemeral to bother covering (why review a programme that, unlike a book or theatre performance, the reader can no longer access).

⁶⁰ “Plenty of time to grow up,” *Sunday Times*, 22 July 1973, 52-53.

⁶¹ “What the Ascent of Man Conveyed to Viewers,” An Audience Research Report, May 1974, T62/1/1, BBC-WA; “The Ascent of Man: A Personal View by J. Bronowski: 1,” BBC Audience Research Report, 25 May 1973, BBC-WA; and “The Ascent of Man: A Personal View by J. Bronowski: 7,” BBC Audience Research Report, 10 July 1973, BBC-WA.

⁶² See respectively John Rowan, “Letters – ‘The Ascent of Man’,” *The Listener*, 16 August 1973; John Russell, “Letters – ‘The Ascent of Man’,” *The Listener*, 21 June 1973; and Bronowski’s response to these criticisms: Jacob Bronowski, “Letters – ‘The Ascent of Man’,” *The Listener*, 23 August 1973.

⁶³ Roy Wagner, “Television Productions: The Ascent of Man,” *American Anthropologist* 79 (1977): 993-994.

⁶⁴ “Best-Sellers,” *Sunday Times*, 28 September 1975.

⁶⁵ In this period, as the up-front costs of making television were increasing, co-production agreements were becoming increasingly common at the BBC. By comparison 1973’s *The Life Game*, a two part documentary on evolution, was a co-production between 8 different broadcasters, while another big budget co-production, 1979’s *Life on Earth* was estimated to have cost approximately £1 million. See T62/1/1, BBC-WA; T63/69/1, BBC-WA; and Jean Seaton, *Pinkoes and Traitors: The BBC and the Nation, 1974–1987* (London: Profile Books, 2015), 126-128.

⁶⁶ Seaton, *Pinkoes and Traitors*, 122. For more on the earlier development of genres in scientific documentary see Boon, *Films of Fact*, Chapter 7.

⁶⁷ See Derek Bouse, *Wildlife Films* (Philadelphia: University of Pennsylvania Press, 2011), Chapter 1; and Aldridge and Dingwall, “Teleology on Television?,” 442-443.

⁶⁸ “Life on Earth – Outline Proposal,” BBC Proposal, 24 August 1972, T41/520/1, BBC-WA.

⁶⁹ *Nova*. “Fusion: the Energy of Promise.” Directed and written by Stuart Harris and Mick Jackson. PBS, May 19, 1974.

⁷⁰ For more on more recent religious portrayals of science see Will Mason-Wilkes, “Science as Religion? Science Communication and Elective Modernism,” PhD dissertation, Cardiff University, 2018, ORCA, <http://orca.cf.ac.uk/id/eprint/109735>: chapter 6.