

## Policy Foresight Programme

Director: Sir Crispin Tickell

James Martin Institute  
for science and  
civilization

Record of the Workshop on  
**Biodiversity:**  
**Science & Religion**

2 November 2007  
James Martin Institute  
University of Oxford



THE JAMES MARTIN  
21ST CENTURY SCHOOL  
UNIVERSITY OF OXFORD

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Biodiversity: Science & Religion

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## Synopsis

A day-long seminar was held at the James Martin Institute for Science and Civilization on *Biodiversity: Science and Religion* on 2 November 2007. The seminar was designed to bring together scientists and religious leaders to promote better understanding in both communities of the vital importance of conserving biodiversity. Biographies of the main speakers are attached.

Sir Crispin Tickell welcomed the participants and gave a brief explanation of the Policy Foresight Programme. He said that the present seminar had first been suggested by Mr Alex Kirby, following on from a seminar on the same subject in the United States in January 2007. The initiative for the US seminar had led to a public statement entitled *An Urgent Call to Action: Scientists and Evangelicals Unite to Protect Creation*, signed by leaders from both communities. The initiative for the US seminar had in turn come from Professor E O Wilson at Harvard who had written about the subject in his book *The Creation*. Professor Wilson had originally intended to attend the Oxford seminar in the course of a visit to Britain, but in the event he had been obliged to cancel the visit. Nonetheless he sent his best wishes to the Oxford seminar.

The first speaker was Professor Richard Fortey who gave an overview of convergent threats to the natural world and prospects for the future. He said that, while there were big differences between the two communities, more united than divided them. Conservation of biodiversity raised a host of other issues, ranging from climate change to human population increase. For example, some religious fundamentalists still challenged evolution by natural selection. Others sought to prohibit controls on human reproduction. Many saw science as fundamentally antireligious. For their part some scientists rejected religion all together as an impediment to understanding the natural environment, and policies to protect it.

Current pressures for globalization and respect for market forces had almost created a religious conviction in itself. Perhaps the spiritual side of humanity might eventually impose some brake upon the headlong rush for economic growth and the pursuit of goods as a good in itself. For Professor Fortey, conservation of biodiversity was a moral imperative. Other species had a right to exist and we humans had a duty not to accelerate their extinction. As a species, we had no dispensation to treat the world as a convenience store for human welfare. The average duration of a species in the fossil record was about a million years. Humans in their present form had only been around for around for a tenth of that time.

In discussion the following points were made:

- For the Abrahamic religions the end of the book of Job and the second creation story in Genesis contained passages to support arguments for biodiversity. The story of the Flood also contained a covenant between humans and the natural world.
- There were many arguments for conserving species, from the ethical to the economic to simple self-interest.
- Much effort had been put by Christians into issues of development, but development was scarcely possible without bringing in the effects of climate change and the need for conservation of biodiversity.

**Dame Jessica Rawson** then spoke about the Chinese approach to religion and biodiversity. In doing so she drew a sharp distinction between the thinking behind revealed religion and its codes of practice, whether in Christianity, Judaism or Islam, and that behind Chinese philosophy and cosmology. The Chinese had no written Bible, Qur'an or creed. Their philosophy was a combination of Taoism and Confucianism in which they sought to establish a balance between opposing forces in the universe which led to overall harmony. The fundamental aim was to accept a duality in both the natural world and the human species, and to work out the right relationship between the two. This had a number of social and political consequences: respect for ancestral traditions, for hierarchy, for central authority, and for the workings of nature, however inconvenient that might be. Authority had a mandate, whether from heaven or elsewhere, and if that mandate were abused people had the right to challenge it. To this day the government of China had some of the attributes of the former emperors; witness the use of astronomy in government choice of auspicious predictions for policy.

We should give more respect to the long and successful Chinese traditions in science and engineering. Their technical feats and mathematical skills far exceeded those of the rest of the world in their time. In their own way, the Chinese search for harmony, and their respect for nature as it is meant that they did not share our sense of responsibility for extinctions of other species or depletion of natural resources. The good of the whole was more important than damage to its parts. Just as everything we did derived from our cultural and religious traditions, so their culture was formed by their past. It was interesting that they did not distinguish between the picture of a butterfly or the real butterfly and saw both as having the intrinsic qualities of the butterfly. The dangers of each culture misunderstanding the other, the more so after the growth of market forces in China and cultivation of individual consumer wealth, were now manifested. On the whole, they understood us better than we understood them.

In discussion the following points were made:

- The Chinese government was well aware of the environmental problems facing China, in particular the destruction of biodiversity, but individual provinces and local communities were often more interested in creating wealth, and thereby increasing pollution and environmental damage.
- What could seem like cruelty to us could be harmony to the Chinese. The Chinese had a stronger sense of inevitability, and felt that some of the penalties imposed by nature could not be helped.

**Ms Claire Foster** then spoke about work enhancing respect for biodiversity within the Church of England. She admitted that some Christian concerns in this respect were relatively recent but now there was a need to make sure that the language of the Church took proper account of environmental issues. People now realized better than they had the web of interdependence between all living organisms and their physical environment. It was like a spider's web. When a few of the stands were cut, the web could still remain intact, but cut one more and the entire thing could collapse. So it was with the environment.

Christians believed that the creation was sacred. There was nothing that was not loved by God. Likewise as all things were part of creation, there was no away to which we could throw things away. Respect for the Sabbath had a strong connection with the environment. Not only was it a day of rest for humans but also for the land they tilled. It illustrated the limitations of the material world and the need for regeneration.

Current efforts to promote the environmental dimension into Church of England thinking and work had largely been successful. The initial requirement to persuade religions of all kinds that conservation was a serious issue had been met. The problem now was to maintain the momentum.

In discussion the following points were made:

- There had been discussion about whether arguments over evolution by natural selection or intelligent design should come into the environmental debate. In some respects this was an argument between science and what seemed to others a lunatic fringe, but nearly all churches now fully accepted the scientific thesis in one form or another.
- While children were already taught about the environment and biodiversity in schools (to some extent in Sunday school as well) it was necessary to ensure that this teaching survived into adulthood.
- We needed strong religious leaders to help us make the transition into new ways of running society and living our individual lives.

After lunch **Ms Camilla Toulmin** spoke about the prospects for cooperation between scientific and religious communities in working to conserve the Earth's good health, including its biodiversity. In many ways, environmentalism had almost become a new religion, and the battle for space on the political agenda was often won by being able to frame biodiversity issues in terms of economics and finance (as in the recent Stern review on the effects of climate change on the global economy). This might mean more radical change in the future than most people believed necessary. There was of course no single solution to the range of issues that conservation of biodiversity raised. The starting point for instituting changes in behaviour was to understand why current behaviour was still in place.

In discussion the following points were made:

- While work was under way to develop international institutions to look at the effects of environmental change on human behaviour (as in the International Human Dimensions Programme), it seemed unlikely that spiritual factors would be fully taken into account.
- The usefulness of trying to monetize the importance of biodiversity was often challenged. The focus should be on the value of biodiversity rather than its

economics. There could be circumstances where one argument was better than the other, but for many the economic arguments were seen as weak.

**Dr Mary Colwell** discussed the Roman Catholic approach in Britain and elsewhere and the possibility of cooperation between different religious communities. She said it was through religion that behavioural changes were likely to start. Religion provided a strong connection between the intellectual and motivational parts of our lives, and the Catholic Church had already provided some inspiring images on the need for radical thinking. If there was to be a paradigm shift of the kind she thought necessary, we needed a real leader for that purpose. How that shift might take place had been explored in a programme at Clifton Cathedral entitled 'Sound of Many Waters'. She then showed a short film by way of illustration.

In discussion the following points were made:

- People were used to hearing scientific and economic arguments for biodiversity, but they seldom heard the spiritual arguments, which were of prime importance.
- While there was a need to bring the different faiths together as in the present event, each faith should find its own way of expressing to its members the ways in which they should change their behaviour.
- All churches, including her own, needed to incorporate scientific understanding of the issues.
- While changes in behaviour might require a measure of self sacrifice, Catholics believed that the way to holiness was through self-sacrifice and self-restraint.

**Dr Fazlun Khalid** then gave the Muslim perspective. The best way to persuade people to accept deep-seated change was to fit it into their existing systems of belief. His institute, the Islamic Foundation for Ecology and Environmental Science (IFEES), served as a teaching resource to identify what Islam and the Qur'an said about caring for the environment. The Qur'an contained many laws on human dealings, but less well recognised were the embedded laws for looking after the natural environment. These laws were not codified in the same way as other aspects of Islamic law, but if all the other laws of the Qur'an were properly observed then care for the environment would follow naturally.

He said that there were four parts within the framework of Islamic ecology. Tawhid, or the unity of creation, was the idea that everything in creation was bigger than humans. Fetra, or the original state, was the idea that creation came first, and humans were made to exist within it. Mizam, or balance, was the idea that humans were the only aspect of creation that had sentience. Finally Khalifa, or stewardship, was the idea that the job of humans was to be the guardians of creation. To put all this into practical action, he spoke of Fiqh al Biah or the law of ecology: two examples from this law are the Hema, or the designation of a protected zone of nature, and the Harim which was mainly the protected zone around water. The biggest roadblock to understanding Islamic thought about the environment was the current thinking about the relationship with nature. Humans were seen as dominating nature, but Islam required the opposite view. At the moment, what allowed us to dominate the natural world was the prevailing attitude towards economics.

In discussion the following points were made:

- When asked if his arguments had much effect on Muslims in Britain, Dr Khalid replied that the Mullahs could not refute the verses of the Qur'an so if you linked the verses to caring for ecology the connotation would be received.

- He himself was working to integrate the work of the IFEES with the broader Muslim community.

**Mr Alex Kirby** summed up the main points. It was clear from those we had listened to throughout the day that religious leaders had put care for the environment firmly on their agendas and were asking their followers to make it a priority in their own lives. There was a solid shift towards creating a new language, new imagery and new thinking between science and religion. The day had brought a reassuring interaction between the two branches of wisdom.

**Sir Crispin Tickell** then asked participants if they would be willing to join in publishing a public statement on the lines attached to this record. There was a majority vote in favour. He hoped that an agreed statement could be signed by all the participants, together with those who had been invited but were not able to attend the seminar. It was then the intention to circulate the statement through appropriate public media and to policy makers.

## Participants

(Speakers denoted with an \*)

<i>The Rev'd Charlotte Banister-Parker</i>	Assistant Curate, University Church of St. Mary, Oxford Founder, Friends of Faith
<i>Mrs Mary Colwell*</i>	Natural History Unit, BBC
<i>Mr Samuel Evans</i>	Research Assistant, Policy Foresight Programme
<i>Prof Richard Fortey*</i>	Palaeontologist, British Natural History Museum
<i>Ms Claire Foster*</i>	National Adviser on Environmental Affairs, Church of England
<i>Ms Fiona Harvey</i>	Environmental Correspondent, Financial Times
<i>Dr Paul Jepson</i>	Oxford University Centre for the Environment
<i>Dr Fazlun Khalid*</i>	Director, Islamic Foundation for Ecology and Environmental Sciences
<i>Mr Alex Kirby*</i>	Journalist
<i>Ms Susan Lee</i>	Secretary, Policy Foresight Programme
<i>Prof David Macdonald</i>	Director, Wildlife Conservation Research Unit, Oxford Zoology Department
<i>The Rev'd Dr Michael Perry</i>	Environment Group, Diocese of Bath and Wells
<i>Prof Hugh Pritchard</i>	Head of Research Section, Seed Conservation Unit Royal Botanical Gardens at Kew
<i>Mr Tim Radford</i>	Science Editor, Guardian
<i>Dame Jessica Rawson*</i>	Warden, Merton College
<i>Mr David Shreeve</i>	Environmental Advisor, Archbishop's Council, Church of England
<i>Sir Crispin Tickell*</i>	Director, Policy Foresight Programme
<i>Ms Camilla Toulmin*</i>	Director, International Institute for Environment and Development
<i>Bishop Kallistos Ware</i>	Orthodox Christian Church
<i>Mr David Wasdell</i>	Director, Unit for Research into Changing Institutions

## Speaker Biographies

### **Prof Richard Fortey**

Richard Fortey FRS was until recently senior palaeontologist at the Natural History Museum and is Visiting Professor of Palaeobiology at Oxford. He is the author of 200 research papers and 6 popular books, of which *Life: an unauthorised biography* (1997) is possibly the best known. He was awarded the Michael Faraday medal of the Royal Society for furthering the public engagement with science in 2007, and has received the Lyell Medal of the Geological Society of London, the Linnean Medal for Zoology of the Linnean Society of London, and the Frink Medal of the Zoological Society. He is currently president of the Geological Society in its Bicentenary year. He lives in Henley-on-Thames, from which base he can study mycology in the Chiltern Hills.

### **Dame Jessica Rawson**

Dame Jessica Rawson is a Professor of Chinese Art and Archaeology and has been Warden of Merton College since 1994. She began her career at the British Museum working for 25 years on ancient China in the Department of Oriental Antiquities, where she was Keeper from 1987-1994.

Her principal area of research is the Zhou and Han periods, (10th century BC - 2nd century AD), and within this area she concentrates on the development of religion and belief as seen in the material record, in tombs and other remains. She has a particular interest in Chinese ritual bronzes. In addition, she studies the creation of ornaments and patterns in Chinese art of all periods. She is the author of numerous works including: *Ancient China: art & archaeology* (1980); *Chinese Ornament: the lotus and the dragon* (1984); *Chinese bronzes: art and ritual* (1987); *Western Zhou Ritual Bronzes from the Arthur M Sackler Collection* (1990) *Chinese jade from the Neolithic to the Qing* (1995); *Mysteries of Ancient China* (1996), she edited with Evelyn Rawski, *China: The Three Emperors* (2005).

In 2005 she was made a Pro-Vice-Chancellor. She is a Fellow of the British Academy, Academic Advisor to Centre for Ancient Civilization, Institute of Archaeology, Chinese Academy of Social Sciences

### **Dr Claire Foster**

Claire Foster is national adviser in science, medicine, technology and environmental issues to the Archbishops' Council of the Church of England, senior adviser at St Paul's Institute for 21st century ethics, and lay canon at St Paul's Cathedral, London. Claire's background is in theology, moral philosophy and environmental and medical ethics. She has published numerous articles, and edited and written several books, including *The ethics of medical research on humans* (CUP, 2001); *Sharing God's Planet* (CHP, 2005); *The worlds we live in* (DLT, 2005); *How many lightbulbs does it take to change a Christian* (CHP, 2007) and *Don't stop at the lights* (CHP, in press). Claire is a member of the Department of Health's Gene Therapy Advisory Committee; the Church of England's Ethical Investment Advisory Group; 10 Downing St Climate Change Group and a director of the Banking Code Standards Board. She was formerly a member of David Cameron's Quality of Life Commission; the Royal College of Paediatrics Ethics Advisory Committee; the Government's Sustainable Development Education Panel and the Royal Society's Science in Society Committee. She has her own consultancies, The Environmental Dimension ([www.environmentaldimension.org](http://www.environmentaldimension.org)) and The Ethical Dimension ([www.ethicaldimension.org](http://www.ethicaldimension.org)), working with businesses, educational establishments and Faith Groups.

### ***Ms Camilla Toulmin***

Dr Camilla Toulmin is Director of the International Institute for Environment and Development (IIED), having formerly run IIED's Drylands Programme from 1987-2002. An economist by training, her work has focused on social, economic, and environmental development in dryland Africa. This has combined field research, policy analysis, capacity building and advocacy. It has involved engaging with people at many different levels from farmers and researchers, to national governments, NGOs, donor agencies and international bodies.

As Director of IIED since February 2004, Camilla has focused on developing the institute's strategy, encouraging greater cohesion between the diverse areas of IIED's work, and strengthening communication. IIED now has five groups working on climate change, human settlements, natural resources, sustainable markets, and governance. IIED has organised major conferences in 2005 on How to make poverty history - the central role of local organisations; and in 2004 on Land and property rights in Africa. In December 2006 Mary Robinson, chair of IIED delivered the first Barbara Ward Lecture, on Climate Change and Justice.

Camilla studied Economics at Cambridge and London, before gaining her doctorate in Economics at Oxford. She is trustee of WWF (UK), the Royal African Society, ICARDA, Lead International and a member of the Franco-British Council.

### ***Mrs Mary Colwell***

She has been a producer of natural history documentaries on both tv and radio for 20 years, including 2 years in Australia. She has worked on programmes such as Natural World, Wildlife on One, Bill Oddie series, Natural History of Britain and have just completed a 6 part series for BBC 4 on amateur naturalists. She also made the environmental series that went alongside Planet Earth on BBC 4, Planet Earth - The Future. For the past 2 years she has been working closely with the Catholic Church encouraging it to put concern for the earth back into the heart of teaching and action. She gave her first lecture in Clifton Cathedral in October 2005 and since then has travelled around the country giving presentations. The Cardinal of Scotland has agreed to make environmental justice a part of his ministry and Bishop Declan Lang is now the Bishop for Environmental Justice for England and Wales.

At the end of Sept this year Clifton Cathedral launched The Sound of Many Waters - a year long exploration of our relationship to the natural world.

### ***Dr Fazlun Khalid***

Fazlun Khalid has established for himself a world wide reputation as an indefatigable advocate of environmental protection rooted in religion and traditional beliefs and is now recognised as one of fifteen leading eco theologians in the world alongside the Dalai Lama and the Pope.

As an example of his work he chaired a major gathering in Japan in 1995 and produced the Ohito Declaration for Religion, Land and Conservation which pledged all the major faiths to work together in addressing environmental problems. Subsequently as Director of Training for the Alliance of Religions and Conservation he tirelessly promoted this declaration world-wide from 1995 to 2000.

Since the mid 1980s he has devoted his energies to promoting Islamic environmentalism in both its theological and practical manifestations. His writing output has been described by an influential academic as being “among the most important, insightful, relevant and reliable” is now widely quoted by academics, students and activists in this area of concern. He also founded the Islamic Foundation for Ecology and Environmental Sciences (IFEES), which he now directs.

His work displays a sustained effort to unite people of all persuasions in dealing with a common threat and also a deep commitment to the cause of environmental justice for the poor in developing countries.

### **Mr Alex Kirby**

Alex Kirby is a former BBC journalist. Before joining the Corporation he was a Reuters stringer in Burkina Faso, and later the BBC Maghreb correspondent, based in Algiers. Between 1987 and 2005 he was environment correspondent for BBC Radio and then TV News, and latterly for the BBC News Online. From 1999 to 2005 he presented the BBC Radio 4 environment programme Costing the Earth. He has reported on biodiversity, climate change, water scarcity and other environmental pressure points across the world, from the high Arctic to Brazil, from the Galapagos archipelago to southern Africa and the Bay of Bengal. He now runs a consultancy working with universities, charities, international agencies and other non-governmental organisations to improve their media skills, both in the UK and abroad, and with UK-based Islamic groups. He also works with developing world journalists keen to specialise in reporting on the environment. He is a consultant to the United Nations Environment Programme, a trustee of ChildHope UK, and an honorary visiting fellow of Green College, University of Oxford. He preached a University sermon in Oxford in 2007, on the theme of humans' interdependence with the natural world. He lives in Sussex, where he is a trustee of his local wildlife reserve

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## Policy Foresight Programme

Director: Sir Crispin Tickell

The Policy Foresight Programme, part of the James Martin Institute for Science and Civilization at the University of Oxford, is designed to facilitate interaction between government, business, industry, the media, and academia on issues of science, technology, and the environment. The purpose is to identify leverage points in current policy that could have significant long-term benefits for civilization. Under the direction of Sir Crispin Tickell, the main activity of the Programme is to host up to six 1-day seminars a year, where around 25 people will engage in constructive debate to further integrative thinking on a particular issue. The emphasis of the seminars is to look anywhere from 10 to 50 years into the future to see what will be the major decisions we will be faced with then and what can be done now to direct policy along a resilient path. The Programme will cover all major areas of the James Martin Institute, namely: Tomorrow's People, Tomorrow's Technologies, Tomorrow's Planet, Governance of Technological Change, Technology and Inequality, and Tomorrow's Civilization.

[www.martininstitute.ox.ac.uk/jmi/networks/Policy+Foresight+Programme.htm](http://www.martininstitute.ox.ac.uk/jmi/networks/Policy+Foresight+Programme.htm)

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## James Martin Institute for Science and Civilization

Director: Professor Steve Rayner

The James Martin Institute for Science and Civilization is part of the James Martin 21<sup>st</sup> Century School. The Institute focuses on identifying what have been called the “wicked problems” (those that are persistent and intractable) of the 21st Century; the “uncomfortable knowledge” which challenges existing institutional arrangements that are ill-prepared to deal with such problems; and the pluralistic institutional arrangements that encourage emergent innovative responses known as “clumsy solutions”.

The Institute focuses these lines of inquiry in relation to four quadrants:

- Science, Technology, and Risk
- Futures
- Complex Social and Technological Systems
- Institutional and Behavioural Change

Each topic is approached in partnership with other institutes and centres at Oxford, and with an international network of collaborating organisations from academia, government, business and civic society.



## James Martin School for the 21<sup>st</sup> Century

Director: Dr Ian Goldin

It is likely that the 21st century will be an unusually challenging one in the history of mankind. The goal of the School is to develop strategies for responding to the most serious problems, some of which even have the potential to threaten the future of humanity itself. At the same time, we also seek to harness the most promising opportunities facing the world in the new century.

The James Martin 21st Century School, founded in June 2005 at the University of Oxford, is a unique collaborative research effort. The focus of the School is on stimulating Oxford's research, by giving the University's scholars the resources and space to think imaginatively about the problems and the opportunities that the future will bring.

The work must meet the best Oxford scholarly standards, must be original and additional to work done elsewhere, and is expected to have a global impact. The 21st Century School has been designed to:

- Initiate new and collaborative research and encourage members of the University to take up new areas and new styles of thinking
- Operate a research grant programme to stimulate innovative research at the Institutes
- Facilitate lectures, seminars and other teaching activities to encourage students and faculty to focus on future challenges. Workshops and other outreach will ensure ideas generated by the School inform public and private decision-making and that the School's work is informed by the global challenges facing governments and society.

The central hub of the School consists of the Director, Dr Ian Goldin, along with a small secretariat and a number of James Martin Fellows. It provides overall leadership and facilitates cross-cutting and interdisciplinary perspectives and supports the work of research Institutes. The Research Institutes, each undertake leading-edge research in their own subject area, and are typically funded for a number of years. There are currently ten Institutes, each of which is located in a department of the University: The James Martin Institute for Science and Civilization; The Environmental Change Institute; The Institute for Ageing; The Institute for Emergent Infections in Humans; The Institute for the Future of the Mind; The International Migration Institute; The e-Horizons Institute; The Oxford Future of Humanity Institute; The Programme on the Ethics of the New Biosciences; and The World Education Institute.

The School also has an affiliation with the Center for Nonproliferation Studies at the Monterey Institute of International Studies. The Center contributes its perspective on the dangers of weapons of mass destruction to the work of the School in exploring the potential consequences of emerging technologies that could shape the future of mankind.