Science and/or Religion: a 21st Century Debate **Open Access**
Editorial

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Science and Religion: Issues and Trends

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In August 2015 the Sigmund Freud Private University in Vienna, in association with the International Society for Science and Religion, hosted an International Congress on Science and/or Religion: a 21st Century Debate. It was a large and successful congress, and one of the most international and multi-faith meetings to have been held in this field. During the three days of the event 116 papers and posters were presented by participants from 32 countries. The following papers are selected from the many that were presented at that congress.

The relationship between science and religion is one of the hot topics of our time. The 'and/or' of the title of his special issue sums it up well. Some see science and religion as alternatives; some think they can work together harmoniously. That is the crucial debate. You find people who think they are incompatible on both sides, i.e. people who are for science and against religion, and also people who are for religion and against religion. Those two positions seem to be as radically opposed as they can possibly be, though things may not be so simple. As Liam Fraser argues, they may have more in common than first meets the eye. Fundamentalist creationism and the new atheism seem, in a strange and surprising way, to be two sides of the same coin.

Others, who we may call the compatibilists, believe that there can be consonance between science and religion. Many date the present wave of such compatibilist thinking to Ian Barbour's *Issues in Science and Religion*, published half a century ago in 1966, and which has set the agenda for work on the interface of science and religion ever science. One of the outstanding figures in that tradition has been the Irish Catholic philosopher, Ernan McMullin. Amerigo Barzaghi and Josep Corcó contribute an appreciation of his work on reconciling one particular point of controversy, the religious assumption that humans were to be expected and the prevailing scientific assumption that they could not be.

For a long time physics has been the science that has dominated constructive work on the interface of science and religion. Indeed, for a long time the field was dominated by work on the interface of physics and theology, a field in which John Polkinghorne has been a dominant figure. One problem with work in that area is that the rate of scientific advance seems to have slowed down in the years since World War II, compared to the heady advances of the earlier decades of the twentieth century. However, one of the most intriguing advances of very recent years has been the discovery of the Higgs boson. It is a discovery that has religious significance, as Lorns-Olaf Stahlberg explores in this special issue.

In many ways the reconciliation of physics and theology has been remarkably fruitful. A more difficult issue has been the relation between mind and matter. Some, though not all, scientists and scientistic philosophers have been reductionist about the relationship, wanting to 'reduce' mind to matter. The issues here are too subtle and complex to explore properly in this introduction. However, much work in this area has been looking for an effective challenge to the strong reductionist position that claims that mind is completely explicable in terms of matter, and is therefore, in some sense, not 'real' or has no causal significance. That creates problems with 'soul', religious experience and much else.

One key way of responding to that challenge has been the concept of 'emergence'. On the one hand, that allows that matter has a certain primacy and is the seed from which mind arises. However, it also claims that mind, once is has developed, is a real phenomenon that operates according to its own principles, and

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cannot be completely explained in terms of physical processes. The philosopher, Philip Clayton, who gave the opening address at the Congress from which these papers arise, has been a key figure in developing the principle of emergence and discussing its theological significance.

There are two papers on mind and emergence in this special issue. Vincent Smiles explores how emergence is handled by the attractive and influential philosopher, Michael Polayni, best known for his concept of tacit, personal knowing. Mikael and Joanna Leidenhag examine the role of emergence in the Pentecostalist theologian Amos Yong, a welcome contribution given that Pentecostalism has been rather neglected in work on the interface of science and religion, despite being one of the world's fastest growing religious movements.

Another way of challenging reductionism is to dispute the assumption that causal influences are all bottom-up. Andreas Losch explores the concept of downward-causation which, in a different way, challenges strong reductionism. If there are top-down causal processes as well as bottom-up ones then high-level phenomena cannot be explained entirely in terms of lower level processes.

One of the most significant changes in work on science and religion in the last 50 years has been that human nature has taken an increasingly important place in the agenda. Fifty years ago it was hardly visible at all; now it is one of the most important growth areas, and probably the place where there are still many interesting and promising issues that have not yet been explored at all.

Ivan Colagè and Lluis Oviedo explore the question of what is distinctive about humans. It is a question that is currently the focus of enormous interest in a wide range of disciplines. There are many debates, both about how different humans are from other species, and how best to formulate those differences. Colagè and Oviedo advocate a multi-disciplinary approach. Scientifically, they propose a way of integrating brain and culture, and they then relate that to the theological concept of *imago Dei*.

Another neglected question concerns time and the experience of time. General relativity theory radically transformed our scientific understanding of time, but left us with the puzzle that it did not sit easily with the human experience of the arrow of time. There are also theological puzzles, such as how to relate the eternity of God to the temporal nature of human life without opening up too sharp a disjunction between God and creation. Carolyn Love proposed a 'genetic-event' model of temporality to address these issues.

Another gap in the science and religion discussion that has only recently begun to be remedied is there has been almost no contact between literature on science and religion and that on the scientific study of religion. However, there is now beginning to be discussion of the theological significance of the scientific study of religion. The latter has its own issues. It requires an emancipated but rigorous empiricism that is able to study religious experience as well as religious behaviour and cognition. Similar issues arise on other areas of psychology. Walter Renner proposes an approach to this issue in terms of 'self-evident experience'.

Finally, there are many core concepts in theology that lend themselves to being revisited in terms of contemporary science. One of these, discussed by Adam Świeżyński, is the idea of 'miracle'. It is now often assumed that miracles are events that contravene the laws of nature, but that way of thinking about miracles probably only goes back a few centuries to the period when the concept of 'laws of nature' firmed up. Świeżyński argues for a systems approach to miracles in which there is a place for both scientific and cultural considerations.

The ten papers in this special issue provide a good sample of the range of issues that are currently being discussed on the interface of science and theology. It is a vigorous and developing field, as these papers show, and one in which there are many cutting-edge developments.