

## **Beyond Barbour: new ways of teaching the relationship between science and religion**

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Virtually every college course on science and religion starts the same way: an overview of Ian Barbour's (1998) four-fold typology on the relationship between science and religion. He categorises interactions between these contested categories as fitting into four broad typologies:

**Conflict:** Science and religion impinge on each other's truth claims in ways that are mutually exclusive, so that growth in one discipline necessarily leads to the diminishment or retreat of the other.

**Independence:** Science and religion operate in separate spheres of knowledge, such as fact and value, or measurement and meaning. Stephen Jay Gould's concept of science and religion being "Non-Overlapping Magisteria" (NOMA) is the most popular example of independence (Gould, 1999).

**Dialogue:** Science and religion have many points of overlapping interest and also methodological parallels, with neither being completely objective or subjective. As such, they can both listen to the contributions of the other in reformulating paradigms or asking new questions.

**Integration:** Science and religion have a directly overlapping relationship with each other, and evidence from one can be used to bolster or build positions in the other. Natural theology, for example, claims to be able to prove God's existence from an exploration of nature.

Despite its usefulness for introducing ideas about science and religion, Barbour's typology has been critiqued for failing to take account of the full complexity of the historical relationship (Cantor, 2001), or for simply being too abstract to apply with precision to real life situations (Southgate, 2011). Peter Harrison, in a recent example, raised questions about

the historical viability of the very categories of “science” and “religion” (2015). Neither “Science” nor “Religion” are easily recognisable categories, nor do they refer to stable and distinct institutions. Rather, the institutionalisation of these categories is an important historical development from an earlier understanding of *scientia* and *religio* as the practice of virtues. Overlooking this change leads to problematic anachronisms. Harrison compares “science” and “religion” to the ever-changing boundaries and laws of nation states, and describes the misleading content of a statement such as: “In the year 1600, Egypt went to war with Israel” when neither Egypt nor Israel existed as nation-states during the early modern period. It is, therefore, very difficult to apply historically viable typologies of relationship when the very essence of the subjects has changed so dramatically.

Regardless of the numerous critiques and their merits, it remains that Barbour’s categories are abstract, theoretical, and difficult to grasp even by undergraduate level students. What chance, then, do primary or early secondary students have of clearly understanding these concepts?

In choosing “Beyond Barbour” as a theme, first at the LASAR International Symposium hosted in Oxford in December 2016, and then as part of this book, we hoped to uncover pedagogical strategies that would help explain the complex relationship of science and religion to younger learners. The papers that follow include McLeish and Dumler-Winckler presenting alternatives to Barbour’s typologies, Manninen’s paper on better illustrating the typologies, and Paive and Easton’s surveys of how school-aged children perceive the relationship of science and religion. Our hope is that readers will be able to use these contributions to create innovative teaching materials that will help students achieve a more robust understanding.

One of the strategies presented in the conference was the brilliant session by Dr Matt Pritchard on science and magic. Through a variety of visual illusions and seemingly

impossible events (e.g. a round tin rolling down and then rolling up a ramp with no motor, magnet, or other attachment), Pritchard challenged the limits of empirical certainty and encouraged the learners to see science as an open-minded practice of discovery that is willing to observe, enquire, learn, sleuth for variables, fail, and try again. The session raised interesting questions about the nature of freewill, the reliability of memory, and the difficulty of discovering what is real. Although Pritchard did not link science to religion, he ably demonstrated that the claim to objective true knowledge by scientific positivists or scientific materialists is easily undone—a claim equally challenged by mainstream quantum physics since the 1950's, where the experimenter is inevitably part of the experiment. Although it would require some practice, the use of magic and illusion were highly engaging and helpfully illustrative of the complexities of knowledge in the sciences.

Another pedagogical strategy presented was to use biography as a way into the complexities of the science and religion relationship. Since both science and religion are practices lived out in the lives of human beings, comparative approaches to biography can reveal complexities of trying to work out these two endeavours in concrete terms. Take, for example, George John Romanes (1848-1894).

Romanes was a keen student who arrived at Cambridge on the path to ordination. He even wrote a prize winning essay on how prayer could be effective in a world ruled by physical laws, an attempt to work out integration between his commitment to science and religion. But, like Darwin his hero, he fell in love with biology. Unlike Darwin, Romanes then turned violently against religion, anonymously publishing a treatise called *A Candid Examination of Theism* (1878) in which he attempted to show how religion was irrational, untenable, and false. It was a classic “conflict” position in the Barbour typology. After university he married a devout Anglican and seems to have softened towards religion. For years, Romanes sustained what seems to be a position of independence. He did his science in

one world, and yet continued to allow and attend religious education in his home for his children and his servants. While he did not consider himself a theist in any way during this time, he still saw great value in the practice of religion. Finally, near the end of his short life, he seems to have had another dramatic change of heart, and began compiling a book called *Thoughts on Religion* (1895) that would be edited and published posthumously by Charles Gore. Romanes revisits his earlier work, *A Candid Examination of Theism*, and tries to show the flaws in reasoning in his early work, or more accurately, to show that logical scientific reasoning was not the only valid source of truth. It fails to achieve a position of integration, but could easily be seen as an example of dialogue. However, greater nuance can be added by, for example, bringing out Romanes's deep *regret* over the loss of his faith during his years of conflict and independence. He ends the *Candid Examination* lamenting over the "ruination of individual happiness" and his sense that with the "negation of God the universe to me has lost its soul of loveliness." It is a striking difference in attitude from the brash voices of the New Atheists who represent the paradigmatic examples of conflict in our age.

Synchronic examples are also possible in biography. Rather than someone who changes through distinct positions over time, as does Romanes, the example of St. George Jackson Mivart (1827-1900) shows that someone can hold various aspects of these positions at the same time towards different aspects of science and religion. John Hedley Brooke and Geoffrey Cantor write that Mivart:

... perceived 'conflict' between the Darwinians' overstated commitment to natural selection and his understanding of the human condition in which mental and moral attributes were important but could not be explained by natural selection. Likewise he used an 'independence' strategy when arguing that the Galileo affair should teach us that science is for scientists and theology for theologians. Each had its own proper domain. Yet he also conceived a form of dialogue when arguing that both science and religion are rational activities; he insisted that neither scientists nor theologians should forsake their critical faculties. Finally, much of his own research was empowered by specific integrationist strategies. Thus he perceived the world framed by the divine architect and he directed his research to elucidating archetypes. (Brooke and Cantor 1998, 276)

Biography can draw out complexities that the simple presentation of Barbour's categories miss. In addition, biography highlights the lived dynamics of science and religion, elucidating the importance of culture, language, motivation, history and environment. One finds that one cannot ask the question of the relationship between science and religion without reaching into all the spheres and disciplines of human endeavour. It is an inescapably multi- and inter-disciplinary task. As such, the questions of science and religion can contribute meaningfully to the task of crossing the oft-arbitrary divisions of classroom disciplinary boundaries, and help students to see the claims of both science and religion in proper perspective.

## References

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