



International Research Network for the Study of Science & Belief in Society

First Annual Conference, 4-6 July, 2019

Edgbaston Park Hotel, University of Birmingham, UK

Any amendments and the full conference programme can be found online at:

<https://www.scienceandbeliefinsociety.org/about/engage/events/annual-conference-2019/>

Abstracts

Examining the links between gender and religion and support for science and technology across the globe

Amy Adamczyk, City University of New York, USA

Views about science differ substantially across the world. While in some countries residents see science and technology as making our lives better and providing opportunities for the next generation, others view science as changing life too quickly and making people too dependent on science over religion. Religious belief and affiliation have a role in shaping these views. However, relatively little research attention has been given to understanding how religion affects attitudes about science in different nations, especially those with lower levels of economic development and across a wide range of countries with different dominant religions (Islam, Buddhism, Christianity) and levels of religious belief. Additionally, some studies have suggested that men and women view the promise of science and technology differently, with women being less supportive. In this study I investigate the role of the dominant religious context, as well as personal religious beliefs and gender, for shaping how people across the world view science and technology. Since women tend to report higher levels of religious belief and engagement than men, I look at the interplay between religion and gender, as well as how the dominant religion and overall levels of religious belief shape views about science and moderate the influence of personal religious beliefs. Data from the World Values Survey and mixed modeling techniques are used to examine individual and country-level religions effects on individuals' attitudes. Additionally, by drawing on new cross-national measures culled from google searches, I am able to provide a more nuanced and sophisticated analysis about the relationship between religion and interest in science and technology across the world.

Improving Evolution Advocacy: Translating Vaccine Interventions to the Evolution Wars





International Research Network for the Study of Science & Belief in Society

Tom Aechtner, University of Queensland, Australia

When considering the persuasive characteristics and prospective influences of antievolutionist mass media, uncertainties remain concerning how to reciprocally promote evolutionary theory to skeptical audiences. This study aims to improve evolution advocacy by translating some of the most successful methods of science endorsement to Evolution Wars contexts. In particular, strategies used to address vaccine hesitations and increase immunization uptakes are reviewed and interpreted for those seeking to enhance pro-evolution communications. What results are three recommendation categories described as: General Guiding Principles, Proximate Interventions, and Auxiliary Interventions.

Religious Intolerance and the Secularization of Science: The Argument towards Deep Equality and Sacred Cosmopolitan Science.

Zaheeda P. Alibhai, Ottawa University, Canada

To speak of a sacred cosmopolitan science is first to go back in time to recognize science, religion and secularism as an intricate web of complex narratives from a multitude of religious, social, cultural and philosophical contexts and perspectives. The definitions of science, religion, culture and secularism in Europe and North America, have been traditionally understood and carefully defined, crafted and demarcated to serve a particular idea of a “secular” and “modern” society. It is widely believed that science and religion are, and always have been in conflict and that as a result, they occupy polarized positions. The assumption is that these are their natural ways of being, ways that emerged organically as a necessary condition for society’s progress into modernity. From this perspective, secularism and science supposedly transcends religion. As western liberal societies become more religiously and culturally diverse, modern science continues to reflect a “closed” form of secularism. This paper explores the historical, epistemic and religious threads that animate the role that secularism has played and continues to play between the separation of science and religion. This is in sharp contrast to other worldviews and belief systems that struggle to integrate their “way of being” into a structure that has been defined by a particular religious history. In the case of non-Judeo-Christian religious beliefs and knowledge systems, science and secularism collude to create techniques of governance and regulation that exclude the possibility of other truths, ways of being and modes of navigating the world. Drawing primarily on the spiritual and intellectual heritage of Islamic civilization, and using Lori Beaman’s conceptual model “deep equality” I argue for a more open and cosmopolitan understanding





International Research Network for the Study of Science & Belief in Society

of science and critically reflect on how to integrate a plurality of worldviews and Indigenous knowledge systems derived from what Seyyed Hossein Nasr terms “*sacred science*.”

Biology and Faith Instruction for American Christian High School Students

Kathryn Applegate, BioLogos, USA

In the U.S., Evangelical Protestants like science but distrust scientists (Ecklund and Scheitle, 2017), and they are more than twice as likely as other religious groups to turn to a religious source or authority if they had a question about science (Ecklund, 2014). Evolution remains at the epicenter of the perceived conflict between science and faith in America; half of Protestants still believe “God created humans in their present form within the last 10,000 years” (Gallup, 2017). Yet acceptance of evolution appears to be on the rise: according to a new Pew survey, 62% of white evangelical Protestants took the position that humans have evolved over time when given the option that God had a role in the process (Pew 2018). This and other research suggest that Christians reject evolution to the extent that it is associated with an atheistic viewpoint (Whitehead, 2018). What can science teachers do to change these deep cultural associations? Christian school teachers and homeschool parents find themselves on the horns of a dilemma: curricula from Christian publishers are often weak on science (particularly in biology, promoting either Young-Earth Creationism or Intelligent Design), while secular curricula do not address how modern science can fit with biblical faith. For 10 years BioLogos has been producing books, articles, and videos by trusted Christian voices, and many educators use them. But many more do not have the time or wide-ranging expertise to find, evaluate, and choose from the large number of resources available on science/faith topics. *BioLogos INTEGRATE* is our first response to the numerous requests we have received for expertly vetted information and quality resources in a user-friendly, modular teachers’ guide. In this talk we will survey relevant literature and examine how *BioLogos INTEGRATE* and other resources can help Christian students reduce perceived conflict between science and faith.

Religious students' definitions of evolution predict their acceptance.

Liz Barnes, Arizona State University, USA

Religiosity negatively predicts evolution acceptance in the United States. However, no researchers have explored how the negative relationship between religiosity and evolution acceptance may be moderated by misconceptions about the bounded nature of science. It may be that the misconception





International Research Network for the Study of Science & Belief in Society

that evolution is atheistic, rather than agnostic, moderates the relationship between student religiosity and their evolution acceptance. We addressed this gap in the literature with two studies. In the first study, we surveyed 1,081 students in 10 biology courses at a university in the southwest United States. We collected student religiosity and evolution acceptance and students were asked to write about the religious ideas that one would have to reject if that person were to accept evolution. We found that almost 5 in 10 students inaccurately indicated that a person cannot believe in a God and accept evolution. Both religious and non-religious students held the misconception but it was only negatively related to evolution acceptance among the more religious students; the least religious students were predicted to score high on evolution acceptance regardless of whether they had the misconception, but highly religious students who had the misconception were predicted to have significantly lower evolution acceptance scores than other highly religious students. To explore whether these results were generalizable, we conducted a second study and collected data from 1,767 students in 12 college biology courses across the United States. We found that almost 6 in 10 students chose an atheistic definition of evolution over a more accurate agnostic definition of evolution. Further, among the most religious students, those who chose the agnostic definition of evolution were more accepting of evolution, more comfortable learning evolution, and perceived less conflict between their personal religious beliefs and evolution. These results imply that instructors can impact evolution acceptance by teaching the *bounded* nature of science.

The Epistemic Insight Initiative

Berry Billingsley, Canterbury Christ Church University, UK

Epistemic insight refers to knowledge about knowledge, and particularly knowledge about disciplines and how they interact. The EI (Epistemic Insight) Initiative aims to find strategies that can be used in schools to develop students' expressed curiosity about Big Questions, counter uncritical scientism and help students to access a range of ways to think about how science and religion relate, including positive views of the relationship. This means addressing some pressures and barriers in education which are widely recognised such as that the teaching of epistemology tends to be fragmented, compartmentalised and disjointed in schools with a risk that developing students' epistemic insight in relation to cross-discipline and multidisciplinary questions is likely to be neglected. Exploring questions that bridge disciplines and subjects in school and discussing them epistemologically gives students opportunities to examine their own and other people's stances on the nature of science in real world contexts and multidisciplinary arenas. Appreciating the value of expressed curiosity as a stimulus for enquiry and how and why real life questions are shaped and





International Research Network for the Study of Science & Belief in Society

reframed when we construct an enquiry in science - is an essential epistemic insight to reduce uncritical scientism.

See www.EpistemicInsight.com

Evolution in Catholic seminaries in Brazil

Marcio Antonio Campos, Gazeta do Povo, Brazil

Despite the increasing media coverage of papal speeches and acts, the local authority – i.e. the parish priest – retains its place as the reference of doctrine and morals in the mind of the faithful. The Catholic stance towards evolution has never been hostile, but the growing presence of Protestantism in Brazil has brought to public attention the controversies involving evolution, creationism and Intelligent Design. A 2011 survey in Catholic seminaries carried by the author identified a few trends regarding science and religion issues: most seminarians believed in a peaceful coexistence between science and faith, and seminarians who claim to know the Theory of Evolution very well are more likely to say the theory is fully compatible with Catholic doctrine, although most seminarians still saw evolution with suspicion when paired with Catholic teaching. Eight years later, a new survey, more focused in evolution issues, wants to evaluate how this scenario has changed and whether the future priests are prepared to discuss evolution with the faithful.

Psychological Perspective on Science and (Ir)Religion

Geoffrey Cantor, University of Leeds, UK

While the notion of social identity has been used to account for the way people – including members of both intellectual elites and the wider public – have constructed their understanding of the relationship between science and religion, the potential role of psychology has been largely overlooked. Yet there is much evidence that people’s personalities influence their attitudes to both science and religion. The present paper will focus on one specific mental condition: Asperger’s Syndrome (AS) or High Functioning Autism. The current literature, including the work of Simon Baron-Cohen and his associates, makes strong links between AS and being attracted to science; many with AS pursue careers in STEM subjects. Researchers working on the psychology of religion have likewise argued that those with AS are very likely to eschew traditional religions and instead turn to science and scientism as a replacement for religion. In such cases the systematic knowledge provided by science would appear to offer emotional support to people with AS, by enabling them to control their





International Research Network for the Study of Science & Belief in Society

non-human environment (while having minimal contact with other humans). This literature linking AS with both science and irreligion will be reviewed and supplemented by contemporary and historical examples.

After reviewing the current literature, attention will be directed to the following questions: Can a psychological approach be extended beyond those with AS? Also, if we were to take psychological perspectives seriously, how does this affect our understanding of the relation between science and religion, and especially our understanding of the conflict thesis?

Understanding Knowledge outside academic disciplines in traditional societies: The holistic approach to the study of religion and science

Adam Chepkwony, Kabianga University, Kenya

Religion and Science debate has been a preserve of discussion in western scholarship in the last decade recording significant growth in the social scientific scholarship. Scholars of African cultures and societies have only recently engaged in this debate. In discussing the relationship between science and religion in African, scholars have addressed Western concerns. Few studies have been done to assess the perception of the situation in African in this regard. Scholars who have discussed religion and science issues in Africa have advanced the debate as perceived by western scholars and in the context of western history. This approaches may not reflect the realities of religion and science in traditional societies like Africa.

In a research study done in the summers of 2015/ 2016 in Oxford, under Scholarship and Christianity in Oxford and supported by the Templeton Religion Trust, my findings suggests that the perception of religion and science in Africa is different. It may be argued that the perception of the relationship science and religion in Africa does not match the four science and religion models suggested by Ian Barbour.

The purpose of this paper is to probe the usefulness of using the four models and other approaches currently adopted in studying religion and science in modern scholarship. The questions to be answered here are, are these methods fruitful in pursuing religion and science issues in African scholarship considering the cultural situation? If not, what would be the useful approaches to study religion and science from a traditional perspective considering their cultural beliefs and worldviews?





International Research Network for the Study of Science & Belief in Society

Religion, Social Connectedness, and Xenophobic Responses to Ebola

Roxie Chuang, University of California, USA

The present study examined the role of religiosity in xenophobic responses to the threat of Ebola. Religious communities often offer members strong social ties and increased social support, which may help members cope with psychological and physical stress (George et al., 2002; Rogers, 1996; Seybold & Hill, 2001). A nationally representative sample of 1000 Americans completed our survey. Overall, the more vulnerable to Ebola people felt, the more they exhibited xenophobic responses, but this relationship was moderated by religiosity. Those with higher religiosity exhibited weaker xenophobic reactions than those with lower religiosity. Furthermore, social connectedness measured by collectivism explained the moderating role of religion, suggesting that higher collectivism fostered by religion served as a psychological buffer. We conclude that religion as a social system may offer resources for its members to cope with psychological and physical threats. A person responding to contagious diseases with disproportionate fear and xenophobia is a widespread phenomenon that is likely to continue in the future. This research shows that in response to contagious disease threats, people exhibit psychological defensiveness and xenophobic tendencies; but people of different social groups and beliefs, such as religiosity, react to increased threats differently. Future research should consider other types of threats, and how this knowledge could be used to reduce ineffective forms of psychological defensiveness. The current research highlights the benefit of religion as a psychological buffer.

The Divide between Atheist Elites and Laypeople on Science and Politics

Richard Cimino, State University of New York at Old Westbury, USA

A long-standing debate in atheist and secular humanist circles has been whether organized secularists should embrace a broader political agenda or steer clear of such commitments. The latter camp argues that atheism does not include a set of socio-political markers that sets it off from other movements; it is mainly a science and reason-based philosophy challenging belief in the supernatural that can be adapted to a wide range of political orientations. We find this view increasingly reflected among both atheist and secular humanist leaders and publications, especially in the “new atheist” movement, which has drawn a high proportion of atheists interested in science. In this paper, we will examine the role of science in the continuing political divisions in secularism in increasingly polarized American society. We will employ textual analysis of secularist publications and web sites as well as use a survey we conducted among 3,000 members of a prominent atheist organization to understand the





International Research Network for the Study of Science & Belief in Society

relationship between science and politics in American secularism and the prospects for greater unity in this diffuse movement.

Key moments in history and science: a fossil hunter's story

Marianne Cutler, Association for Science Education, UK

Key moments in history and science: a fossil hunter's story is a 'Big Questions in Classrooms' project funded by the Templeton World Charity Foundation. The project aims to show that children (aged 9-11 years) develop a deeper, sustained awareness and understanding of the big ideas of science (specifically on evolution) and of the nature of scientific enquiry when they are presented in an immersive learning experience that draws on evidence, critical thinking skills and philosophical perspectives from across disciplines. The project also aims to show how primary teachers develop greater confidence and understanding of the range of effective pedagogies to develop children's enquiry processes, skills and understanding of the nature of science when they are given professional development opportunities that include different disciplinary approaches and philosophical perspectives.

Through this project children, and their teachers, are given opportunities to explore how scientific knowledge is different to other forms of knowledge, and how together different forms of knowledge contribute to deeper and broader understanding. They consider similarities and differences between scientific knowledge, cultural and historical knowledge, and beliefs. Aspects of the process of enquiry, such as the questions addressed, the evidence available and how it is interpreted will be considered. Through the teaching resources and professional development, children and their teachers will have opportunities to reflect on:

- the value of thinking about different forms of evidence;
- evidence may be interpreted in different ways and is sometimes influenced by assumptions and expectations;
- the differences between scientific knowledge and the knowledge that derives from studying historical events, cultural practices and beliefs;
- recognition that in this and other situations there may be no single answer to a question;
- reflection on the importance of reasoning and the need for challenge to ideas through argumentation.





International Research Network for the Study of Science & Belief in Society

The Founder of Intelligent Design: Understanding Robert Boyle's Apologetic

Ted Davis, Messiah College, USA

Boyle's passion for apologetics was already evident in his early twenties, when he was profoundly impressed by reading defenses of Christianity by the Huguenot author Philippe de Mornay and others. His primary motive was to persuade wayward Christians, including members of his immediate family, to live more piously and to devote themselves to charitable works. After he accepted the mechanical philosophy, he integrated it fully into his program to prove the truth of Christianity, especially against those sceptics who used the new science to justify their godlessness. The clockwork universe required a Creator, made genuine biblical miracles easier to identify, enhanced human dominion over the creation, and drove pagan notions of nature to the periphery of natural philosophy. Key attitudes, motivations, and ideas found in Boyle remain central to modern proponents of "Intelligent Design."

Exploring the limits of dogmatism: religion, science and environment in turkey

Cagdas Dedeoglu, University of Toronto, Canada

This study assumes that the scholarship on science and religion might also help deal with the anthropocentric attitudes toward nature. Therefore, it seeks to unpack the relationship between religion and science by asking whether dogmatism at individual level causes a lack of environmental attitude. It also seeks to understand whether this relationship is affected by the political ideology of individuals. In this respect, the current work surveys three bodies of literature. Firstly, it draws on the religion and nature scholarship, which emerged after Lynn White Jr.'s critique of Christianity's anti-ecological essence. Secondly, it pays attention to the analytical works assessing environmental behavior and attitudes to find common routes of examination. Lastly, it benefits from the literature on political behavior to explore religious and environmental identities concerning political ideology in the case of Turkey. Therefore, it presents two hypotheses: (1) In Turkey, dogmatism correlates with anti-environmental attitude. (2) There are no significant differences among the voters of AKP and CHP in the environmental aspect.

In order to test these hypotheses, this study will employ the Wave 6 World Value Survey data on Turkey. Some parametric tests will implicate on data such as t-test, ANOVA and stepwise regression models. The study does not treat the problem a religious one as Lynn White Jr. did, but a problem of dogmatism. So, it applies two questions to be related to dogmatism: "Whenever science and religion





International Research Network for the Study of Science & Belief in Society

conflict, religion is always right" (Q153) and "The only acceptable religion is my religion" (Q154). Moreover, it uses the data obtained from the question of "protecting the environment vs. economic growth" (Q81). Finally, it implements the data about political party preference (V228) to assess its relationship to religion and environment dimensions.

'For the Study of': A particular agenda regarding religion and science?

Willem Drees, Tilberg University, the Netherlands

Is it significant that the name of the *International Network for the Study of Science and Belief in Society* has explicitly 'for the study of' in the name? It might be merely a smart 'political' move in a secularized academic context, where engagement with religious convictions is most easily accepted if beliefs are treated as objects of study, rather than as convictions that academics might argue for. The phrase 'the study of' might also signal that those who took the initiative professionally stand for a particular agenda for research on religion in its relation to the natural sciences, one which focuses on social and historical dimensions, rather than for research involving scientific insights and theological convictions as substantial claims, that scientists and theologians might advocate and argue about. The main body of literature on religion and science, represented by esteemed authors such as Ian Barbour, Arthur Peacocke, and John Polkinghorne, but also by opponents such as Richard Dawkins, is of the latter kind, and tends to pass by social-scientific studies of science and religion. (Historical studies have been received more positively, even though there the same difference in agenda might surface.) In my contribution, I intend to consider differences on the agenda of research regarding religion and science as a reflection of fundamental tensions within the humanities as self-engaging knowledge. I also will consider the potential for 'philosophy of religion' as a mediating discipline. However, this might work for some positions more easily than for others, and thus be considered a biased mediator.

Changing Science vs Religion to Science & Religion? An analysis of potential mental health treatment collaborations in Ghana

Vivian Afi Dzokoto, Virginia Commonwealth University, USA

This presentation interrogates the idea that the mental health treatment gap in Low and Middle Income Countries (LAMICs) can be reduced by harnessing and enhancing the skills of existing informal mental health service providers. The geographic focus of the interrogation will be the West African country of Ghana. There, religious (largely Christian and Muslim) counsellors and traditional religious healers provide informal mental health services. Formal sector mental health professionals include





International Research Network for the Study of Science & Belief in Society

psychiatrists, psychologists, psychiatric nurses, and community mental health workers. I argue that a collaborative initiative between the two groups will be effective only in contexts in which the scientific and religious ontologies of mental illness align, and may be counter-productive in areas where they are at odds. This position is informed by ethnographic fieldwork with traditional healers and interview and survey data from religious lay counsellors in southern Ghana. The presentation will explore the continuities and discontinuities between biomedical and prevailing religious informal service provider (1) training and practice qualification requirements; (2) explanatory models of mental illness; (3) conceptualizations of treatment of mental illness (as healing versus curing); and (4) notions of potency and power in the Ghanaian biomedical and religious mental health treatment communities. The implications of these similarities and differences for referral recommendations, treatment trajectories, and medication adherence will be explored.

Boundaries and Horizons: Exploring the potential and future directions of research on science and belief in society

Professor Elaine Ecklund, Rice University, USA

To follow

National and international comparative perspectives on the study of science, religion and belief in society

Bankole Falade, Stellenbosch University, South Africa

South Africa, Nigeria, Ghana and Zimbabwe share a common heritage, colonial rule, which introduced the notion of one God, to replace African religious beliefs and divination systems and its many gods. Colonial rule also sought to replace African health beliefs with Western medical practices, informed by the scientific method.

More than a century later, the theoretical model of replacement appears to be a misnomer as one God and the scientific method, although widely accepted, coexists rather than replace Africa's many gods and health beliefs.

Using survey data on Nigeria, Ghana, South Africa and Zimbabwe and interviews conducted in Nigeria and South Africa, I present comparative perspectives of science, religion and health beliefs on the continent.





International Research Network for the Study of Science & Belief in Society

When asked the question when “science and religion conflict, religion is always right”, 90% of respondents in Ghana agree with 1.4% choosing the Don’t Know option. Comparative figures for Nigeria were 88.6% and 4%; South Africa 84% and 9.8% and Zimbabwe 71% and 10% respectively. To situate within a world context we compare with countries outside Africa. When asked the question “how important is God in your life”, 98.5% chose above 7 points with 85% picking the maximum 10 points in Ghana. Comparative figures were Zimbabwe 97% and 81%; Nigeria 90.6% and 64% and South Africa 75% and 41% respectively.

Interviews in South Africa and Nigeria however indicated that choosing either science or religion is not always an outright rejection of the other. The relationships were classified as those informed by cognitive dissonance, often expressed in hierarchical associations, and those influenced by cognitive polyphasia, a complementary and transformative coexistence.

The OARS Project: Cross-disciplinary Research and Professional Development of Argumentation in Science and Religious Education

Nigel Fancourt and Liam Guilfoyle, University of Oxford, UK

Argumentation involves the coordination of evidence and reasons to support claims. It can be for the purpose of justifying claims in the epistemic sense or for the purpose of persuading others to believe in the claims (Jiménez-Aleixandre & Erduran 2007). Argumentation could therefore be thought of as the method of constructing answers to questions in a discipline. It has been suggested that such understanding is crucial in the development of a critically literate, informed-citizenry (Joshi 2016). However, different disciplines have different standards and criteria for constructing and evaluating arguments (Goldman et al. 2016). There is a growing need to generate a cross-disciplinary understanding of the teaching and learning of argumentation in school (Erduran et al. forthcoming); to be able to discern the different types of arguments as well as synthesise arguments from a range of sources. This is pertinent when thinking about the Big Questions, to which different disciplines can contribute – particularly Religious Education (RE) and Science. How, then, can teachers and pupils be supported in understanding the content and process of justifying scientific and religious claims? The Oxford Argumentation in Religion and Science (OARS) project seeks to address this question. The OARS project funded by the Templeton World Charity Foundation has begun to identify the opportunities for argumentation within and across the curricula of RE and Science. The project brings teachers of Science and RE together in an innovative collaboration over two years to identify and build on the current understandings and practices of teaching argumentation in the classrooms of both subjects.





International Research Network for the Study of Science & Belief in Society

Through this collaboration, including teacher educators and researchers, the project will develop, test, and compile exemplary strategies for the teaching and learning of argumentation. This paper will describe the OARS project, and its progress to date, to contribute to the wider discussion on the teaching of Big Questions and key ideas to school students.

The last Church of Humanity: Understanding Unbelief in Brazil

Miguel Farias, Coventry University, UK

This talk is part of the large ongoing project 'Understanding Unbelief', where we have surveyed and interviewed thousands of atheists and agnostics across various countries. Here I will focus on the extraordinary case of Brazil, where we find the last active Church of Humanity in the world, which was originally founded by August Comte in France. In addition to a summary of the results of the survey and interview with these positivists and other Brazilian unbelievers, I will show photographic and video material. I will discuss the implications of these findings for the generally harmonious perception of the relationship between science and religion in Brazilians unbelievers and believers, which has been significantly shaped by August Comte's ideas and those of another Frenchman, A. Kardec, the creator of French Spiritism.

Evolution and Evangelicals in Brazil: The ABC2 Surveys

Tiago Garros, Independent Scholar, Brazil

Brazilian evangelicalism has seen unprecedented growth over the last decades, departing from being a minoritarian group with almost no influence in public life in the 80s to becoming a strong political force that can actually swing an election in present times. With this impressive rise in numbers, sensible questions to this group have been brought to the spotlight, and issues that relate to science and religion have become a major area of concern. Experience seems to show that the conflict myth is still prevalent and the idea of choosing between the Bible and mainstream science seems to be the usual teaching in evangelical circles. In this context, the Brazilian Association of Christians in Science (ABC2), officially established in 2016, stands as the only initiative focusing on evangelicals that aims at promoting respectful dialogue between the fields, sponsoring events that openly discuss contentious issues for typical evangelicals, like evolution, for example. As a way of "mapping the terrain" and to confirm or deny the aforementioned impressions, ABC2 has conducted surveys to assess the views of the audience it reaches. This paper, therefore, will analyze some results of these surveys, specifically the questions related to evolution. They show that 80.3% of 330 surveyed individuals believe that God





International Research Network for the Study of Science & Belief in Society

was directly involved in the origin of human beings through miracle, and 34.8% hold a young-Earth creationist view. Using a Likert-scale, results show that Individuals tend to be sure that humans did NOT evolve from non-human life forms and that God did NOT create the world in six 24-hour days, showing a prevalence of Old-Earth Creation view. The results show similarities to surveys conducted in the USA, and the reasons for that will be briefly analyzed. We will conclude with suggestions for possible intervention strategies, as to foster better relations of evangelical Christianity with evolution.

The question of Science and Religion in decolonial terms: contributions to reflect upon educational praxis

Emmanuel Ginestra, Universidad Nacional de San Luis (UNSL), Argentina

(delivered in absentia by Lorena Andrade Barbosa Machado)

Starting from the hegemony of the European Illustrated-positivist episteme, Reason in general and Science in particular, appeared as overcoming the religious experiences and reflections, considering them as backward looking or mythical. These reflections, which are based on an asymmetrical conceptualization of impervious knowledge, shaped the academic organization at all educational levels, whose didactic transposition model suggests the *Conflict*, sheltered by a *whig* literature in the scientific field; and apologetics, in religious territories.

From the Decolonial perspective, this view on science and religion made possible the configuration of scientific educational policies that denied an epistemic place to beliefs, especially those of indigenous peoples and groups, from a supposed "zero point" (Castro Gómez, 2005), disembodied, without social conditioning, by which scientists would not be interested in religious experiences. Likewise, certain religious groups tried to construct the idea of a closed "believing culture" self-absorbed in a soteriological cultic project of "the chosen".

This paper intends to contribute to the decolonization of these prevailing perspectives in our societies, recovering the intercultural critical dialogical reason. The proposed horizon seeks the effective development of a transmodern pluri-verse (Dussel, 2004) of religious and scientific communities that try to detach themselves from the binding model of socially legitimized knowledge.

Between Seeing and Non-seeing:

Contestations of Rationalism, Scientific Temper and Belief

Meera Gopakumar, Jawaharlal Nehru University, India





International Research Network for the Study of Science & Belief in Society

Studies on Rationalist groups and their interventions in the society in India has received less academic attention compared to enquiries on religions and associated ritualistic practices. The rationalist groups in India have made significant interventions in different regions focussing on what they consider perils of religious dogmatism and its socio-political manifestations. Broadly, their activities stressed on countering religious fanaticism by promoting secularism, addressing superstitions and the increasing presence of Godmen and the inculcation of scientific temper as an underlying necessity. Kerala, the southernmost state in India, with its claims of higher HDI, education status and paritable health sector, has had a long history of Communist movement and anti-caste movements, with a relatively early history of the presence of rationalists since the 1920s. This paper attempts to study the Kerala Yukthivadi Sangham (KYS) or the Kerala Rationalist Association formed in 1969, one of the most prominent rationalist movements in India specifically focussing on its most important campaign against the 'Makarajyothiss'(1980). Makarajyothiss refers to the popular belief of the appearance of a divine light at the end of the annual pilgrimage to Sabarimala, an important place of Hindu worship in India that became controversial this year on the issue of women's entry. The rationalists sought to expose the sham of divinity behind the appearance of this light and came in direct clash with the Devaswom Board (the temple regulatory authority of the state). The paper seeks to explore the role of the rationalist group, its ideological orientations and more importantly the manner in which it sought to link science and scientific temper in this process of social engagement. In doing so it attempts at engaging with the socio political geographies and contingencies that shaped rationalist thought in opposition to religion and belief coming in direct contestations with state practices.

The Paradoxical Nature of Developing Scientific Literacy when you are a Pre-Service Primary Teacher.

Hannah Griffin-James, University of the West of Scotland, UK

Aims

To explore the paradoxical position pre-service primary teachers are in when developing their scientific literacy when training to be a Primary Teacher.

Methods

A case study approach was used to investigate how pre-service primary teachers negotiate a socio-scientific issue about a child with a rare blood disorder using case-based reasoning. Twenty-eight pre-service primary teachers studying a module, Science in Society as part of their teacher education





International Research Network for the Study of Science & Belief in Society

programme were observed during class time. Seventeen of the twenty-eight students took part in a semi-structured interview which was analysed using thematic analysis.

Main Findings

The module was designed to support pre-service primary teachers development as scientifically literate citizens. However, I found that the pre-service primary teachers were overtly aware of their developing professional identity.

Findings suggest the conflict between professional identity and citizen centre around how the pre-service primary teachers perceive knowledge. For example, as a professional primary teacher in the making, they perceive science knowledge as legitimized fact; and used scientific knowledge as claims when constructing an argument. As a citizen developing their scientifically literacy, they perceived scientific knowledge as evidence to support a claim; and selected scientific evidence to support their argument. The same epistemology was applied to religion, meaning that as a professional primary teacher in the making religion was perceived as legitimized fact, and consequently was not discussed. As a citizen who holds their own religious beliefs, they acknowledge the intricacies and personal nature of religion.

Conclusions

The pre-service primary teachers were experiencing ontological tensions between their previous experience of science and religion, and their treatment in the module. Pre-service primary teachers need affordances for discussion when developing their Scientific Literacy alongside their professional teaching identity, as pre-service primary teachers experience an epistemic shift in their perception of knowledges when they explore different perspectives of a socio-scientific issue.

Arguing in Secondary Science and Religious Education: Analysing Research and Curricula for Cross-disciplinary Opportunities in Argumentation

Liam Guilfoyle, University of Oxford, UK

Argumentation is, simply stated, the coordination of evidence and reasons to support claims (Toulmin 2003). Argumentation is thus an important part of understanding any subject or discipline and how the discipline operates (Sandoval & Millwood 2007); it involves higher order thinking skills and is necessary for developing informed citizenship (Sandahl 2015). This paper explores the extent and nature of the opportunities for argumentation in science and religious education (RE) in England in curricula documents and literature. Through the comparison of such opportunities, the scope for and benefits of cross-disciplinary argumentation research are elucidated. A preliminary analysis of the literature and curricula of both science and religious education suggests some interesting contrasting





International Research Network for the Study of Science & Belief in Society

features. Argumentation has been extensively researched in science education (Erduran et al. 2015), providing significant structure and guidance for teaching in science, while there is a dearth of such research in RE. However, curriculum documents for RE in England provide much more fertile ground for teaching and learning of argumentation, with notably more explicit references to constructing and delivering arguments, than in the science curriculum. We propose that there are three notable benefits to advancing cross-disciplinary research of argumentation in RE and science. These are in 1) a cross-fertilisation, where either subject can learn from the strengths of the other; 2) overlap, where pupils require the skills to tackle issues that may draw upon arguments from both subject areas, and 3) the beginning of a coherent view of argumentation across the curriculum, which could extend much further to history, literature, math, etc. This research forms part of a project, which will be outlined in this paper, that seeks to advance this agenda of cross-disciplinary work: The Oxford Argumentation in Religion and Science (OARS) Project funded by the Templeton World Charity Foundation.

Science as Religion? Ways of Life and Worldviews in Stem Cell Research Laboratories

Silke Gülker, Universität Leipzig, Germany

In the last decades, authors have discussed in how far science can become a basis for movements and worldviews with religious characteristics. For example, the new atheism has been analyzed from this perspective or the organized scientism in the German Democratic Republic. Movements like those follow clear political agendas and try to popularize them.

In my presentation, I will not talk about political movements but about the daily work in stem cell research laboratories. Based on two ethnographic case studies, one conducted in the United States and one in Germany, I will ask in how far this daily work and the researcher's worldviews show any religious characteristics. In line with ideas of Ludwik Fleck, similarities between collective life in the observed research laboratories and religious communities can be identified. Furthermore, some of the researchers do express scientific worldviews. However, there is a broad spectrum of ways of life and of worldviews within the two laboratories. The researcher's position on this spectrum mainly depends on their socialization.

A Dynamics of religious actors and radicalization in state prisons: Muslim American chaplaincy in California prisons

Angelina Gutierrez and Juliana Moonette Manrique, Saint Scholastica's College, Manilla, Philippines





International Research Network for the Study of Science & Belief in Society

A nation with approximately 2.3 million inmates (2013), the USA prison system holds the highest rate of incarceration in the developed world; meaning, 1 in 110 adults of USA residents is in jail. The 5,000 plus correctional facilities employ professional chaplains to meet the inmates' constitutional right to free exercise of religion. Muslims comprise 15% of the total inmates' population. Due to concerns about religious extremism in prisons, which could be a breeding ground for home-grown terrorists, chaplains and prison administrators have been tasked to screen carefully religious activities among inmates.

The purpose of this paper was to explore the situation of Muslim American chaplains in Northern California as they manage public policies and media narratives on religion vis-à-vis radicalization behind prison bars. The 3 research problems answered in the study are:

- 1) What is the sociopolitical context of Muslim American chaplaincy?
- 2) How do they mediate their religious roles with Muslim inmates and public actors regarding national securitization?
- 3) What are the implications of this case study on religion vis-à-vis radicalization in state prisons?

As a case study, the investigation used qualitative procedures using a semi-structured interview questionnaire that was emailed to 23 chaplains of the California Department of Corrections and Rehabilitation facilities and California Muslim Chaplain associations. The sources of research data were collected from the following: a) responses to the survey questionnaire; b) related studies; and c) YouTube social media documentations of the California Muslim chaplains' conferences.

Qualitative meta-analysis of the research data presented an impressionistic landscape of the contributions and threats faced by Muslim American chaplains in their public management of religion, as peacemakers and as arbiters in the international issues of radicalization and securitization. The semantics of terms such as extremism, radicalization, and religious pluralism are oftentimes more complex and more problematic. Certainly, this study calls for further exploration. As educators who advocate the faith values of justice and peace, we look forward to the scholarly output of the science and belief network in advancing the sphere of human dignity and security, social justice and international peace.





International Research Network for the Study of Science & Belief in Society

Religion, Heritage and Science: Some popular mis-readings of the past in South Asia

S. Irfan Habib, New Delhi, India

One common factor rampant in South Asia, since the past few decades, is the over dependence of our political elite on the past. It happens in history and culture, most often, surprisingly it is fashionable in the readings of the history of science as well. There are some valid reasons to question the orientalist/colonial reconstructions and interpretations, but imagining science and scientific theories which did not exist, stretches this engagement to ridiculous proportions. It had been quite common among some Islamic scholars to perceive something they call "Islamic science", with state support and legitimacy. However, we see a patently revivalist streak being promoted in India, patronised by the state, which emphasizes the need to rewrite history and particularly history of science. It claims to unravel a new "nationalist" historiography of science which, as they say, has been ignored by most of the liberal, Marxist and other schools of history writing all these years.

One common feature of self-perception between Hinduism and Islam is their highly misplaced view of their past greatness. Hinduism, particularly in its present avatar called Hindutva, assumes that modern science and its inventions and theories have deep linkages with the ancient Hindu past. Such claims have been common in the historiography of the lay persons, who nostalgically talk of the great strides our ancestors made, which is all sadly lost and forgotten. And most of the time these linkages are traced back to the religious classics and not to any of the scientific texts or individuals.

This paper will attempt to engage with some of these issues, which have been espoused even by responsible people, merely as rhetoric to claim false sense of achievement in the past.

The Common Sense of Science: speaking about science and religion at the BBC

Alexander Hall, University of Birmingham, UK

In 1948 the mathematician and historian Jacob Bronowski gave a series of five radio lectures on the growth of science and its creative ideas in relation to society and the arts. In *The Common Sense of Science* Bronowski used the history of western science to outline a rationalist and humanist vision of contemporary society. Building on the scientific humanism first introduced on the BBC by his peer and mentor the biologist Julian Huxley, the series presented a progressive narrative of science and focused on the role of science in society, rather than imparting specific scientific knowledge like most other science broadcast content in the period.





International Research Network for the Study of Science & Belief in Society

In contrast, in 1951's *Science and the Christian Man* the Cambridge Regius Professor of Divinity, Canon Charles E. Raven, presented a different role for science in society as he outlined his vision for "living out the Christian faith in an age of science." By analysing these two radio series, alongside other relevant broadcasts from the period, this paper will explore the various relationships between science and religion communicated via the BBC in the post-war period. Whether Bronowski's separate spheres approach, or Raven's Church of England accommodationist stance, I argue that the shadow of conflict and wider debates about the direction post-war society should take contributed to a brief window for these broadcasts that were conciliatory in tone and more philosophical, open and reflexive than pre-war content.

Rethinking Science-Religion Conflict Narratives

Professor Peter Harrison, University of Queensland, Australia

For several decades now, historians of science have contested the idea that science and religion are inherently opposed to each other and that this opposition has repeatedly played itself out in history. In spite of their efforts, in public discourse the conflict motif seems as prevalent and powerful as ever. In this lecture I explore the origins and persistence of the conflict thesis, setting out different versions of conflict narratives and suggesting ways in which they have shaped and reinforced particular self-understandings or group identities. The social function of these narratives, I suggest, goes some way towards explaining why they remain stubbornly impervious to historical evidence against them.

Science Skepticism in the United States: Is there a "War on Science"?

Jonathan Hill, Calvin College, USA

Is there a general skepticism toward science among the U.S. public? And, if so, what are the cognitive and cultural drivers of this skepticism? Scientists and educators frequently portray science itself as under siege from political, industrial, and religious interests – a so-called "War on Science". If this is the case, we should expect substantial overlap in the populations that are skeptical of specific contentious scientific issues such as human evolution, climate change, and vaccine safety. Alternatively, these might be isolated issues driven by unique cognitive or cultural factors with little to no overlap in the general public. Using a representative probability sample, I examine the structure and drivers of scientific skepticism in the American public. While there is some correlation between issues, it is far less than might be expected under the "War on Science" thesis. Sixty-two percent of the American





International Research Network for the Study of Science & Belief in Society

population express skepticism toward at least one of three main issues: evolutionary science, vaccine safety, and climate change. However, only 5 percent express skepticism toward all three. Multivariate analysis also concludes that the cultural and cognitive drivers of each issue are substantially different. Skepticism toward evolutionary science is primarily driven by religious identity and practice, skepticism toward climate change is primarily driven by political identity, and skepticism toward vaccine safety is primarily driven by low scientific literacy and cognitive reflexivity. Overall, there appears to be less evidence for an organized “War on Science” and more evidence for a set of localized battles.

A new religion? Personality cults in Central Asia seen through the lens of museums

Katarzyna Jarosz, International University of Logistics, Poland

My research is focused on cults of personality as one of the key elements of shaping or re-establishing national identity, as seen through the lens of monuments, memorials and historical and archaeological museums in Central Asia. Museums are often considered neutral spaces in which past events are objectively collected and presented. However, museums do not only represent history, they usually enter into a discourse with visitors and promote a certain vision of history according to political needs. Personality cults are frequently authorised and accepted by people as they work to establish their cultural identities, particularly after long periods of colonisation, in order to provide a sense of legitimacy for a new rule and to create a sense of tradition with the most visible components of a new order. One of the obvious things that can be done is to deify the present or former leader.

I asked the research question what the strategies and techniques of creating, keeping and forgetting the cult of personality are, and why the cults of personality emerge, in what way they are being kept, forgotten or erased from the collective memory.

My research was twofold: Firstly, drawing on official sources, interviews, journalism, and political science literature, I examined what elements of the urban landscape, notably museums, memorials and monuments, are of significance for the cult of personality. Secondly, during the field work, 13 objects – museums, memorials and monuments – (their collections, spatial organisation, their history) are were analysed.

The research demonstrated that cult of personality has several characteristics typical of a religious cult. The rediscovery of national heroes has deep symbolic meaning for the contemporary power.





International Research Network for the Study of Science & Belief in Society

The deified person is a symbolic reflection of a historical or mythical hero. The leader becomes the essence and the embodiment of a nation.

Alternative medicine vs. biomedicine: Evaluation of efficacy of CAM methods and practices

Danijela Jerotijevic, University of Comenius, Slovakia

Complementary and alternative medicine (CAM; usually defined in opposition to biomedicine or orthodox medicine) is used by part of population (the percentage differs from country to country), exclusively or, more often, in addition to biomedical procedures. The causes of using alternative medicine may vary - from disappointment in biomedicine, to preference of alternative medicine as a part of an alternative worldview in a broader context. While biomedicine is evidence-based, there is no scientific proof of effectiveness on many of alternative methods and practices. However, it seems that is not a „problem“ for CAM users. Due to this fact, they used to be described as „irrational“ (by doctors, but also media), uneducated, or that they simply do not understand scientific reasoning. In my presentation I will analyse evaluation of efficacy of alternative therapies (from an emic perspective) and explain why it may be problematic to use biomedicine as a norm in discourse about alternative medicine. Users of alternative medicine usually highlight that CAM focuses on *healing* – „broader psychological process of repairing the affective, social, and spiritual dimensions of ill health or illness“ (Waldram, 2000), in opposition to *curing* in biomedicine which aim is a removal of pathology. Their expectations for both approaches differ and it does not necessary mean that they have poor understanding of science. Using empirical data from Slovakia, I will focus on possible psychological and social mechanisms which are in the background of CAM users' choices and beliefs.

The Cultural Meanings of Science: Understanding Science Identification Using the Sociology of (Non)religion

Stephen Jones, University of Birmingham, UK

Due to its underlying normative concerns, the public understanding of science has predominantly focused on people's knowledge of, or trust in, science. Less attention has been paid to the *meanings* publics attach to science and to the ways science forms part of a comprehensive philosophy and moral outlook. While this is understandable given the discipline's interest in bridging gaps between publics and producers of scientific knowledge, this leaves unanswered questions about how science is envisaged in different contexts, how it forms part of a national or cultural identity, and how it fits into cultural politics and conflict. Based on 123 interviews and 16 focus groups conducted with mixed





International Research Network for the Study of Science & Belief in Society

religious and non-religious publics and life scientists in the UK and Canada, this paper utilizes approaches common in the sociology of religion and nonreligion (where personal meaning and worldview are the primary point of concern). Using this data, I delineate varieties of science identification and how these forms of identification intersect with class, gender and cultural and political orientation. I focus in particular on how science is envisaged by nonreligious individuals who have been neglected in science studies. I tentatively map out 'practical', 'moral', 'civilisational' and 'existential' forms of identification and highlight how these forms of identification are grounded in people's moral/cultural formation rather than knowledge.

Narratives of change of opinion on science and religion of British and Canadian life scientists and publics

Tom Kaden, Universität Bayreuth, Germany

With establishing a following as one of their main objectives (Evans 2015), an important element in the narratives of public science and religion advocates are testimonials of individuals who became convinced of the advocates' stance, and consequently converted to their view. These stories are presented as tokens of the validity of their views, and are often at the core of the groups' and individuals' public output. But to what extent can these publicized conversion stories be said to represent the experiences of the public these organizations are trying to reach? Does "conversion" to their views happen? If so, do the public representatives of science and religion stances play a significant role in these changes? Using interview data from the large-scale, multinational and multidisciplinary research project 'Science and Religion: Exploring the Spectrum' (2014-2017), we identify three trajectories of stances on science and religion. While the large majority of our interviewees reported stability or irrelevance of their views, there was a significant subset of people who articulated a change of view on science and religion. Within this latter group, the majority viewed this change as dependent on a biographical change that was not directly concerned with science and religion. But there are a number of cases where change in stance was specifically motivated and articulated along the lines of positions on the relationship between science and religion. In these cases, changing views on how science and religion relate are at the core of the respondents' story, and other religious and social changes are presented by them as an effect of this change. Our results shed new light on the complex relationship between public discourse on science and religion and the views of members of the general public, and lead us to conclude that the current criticism of the epistemological conflict narrative is overall sound when applied to the question of stance change.





International Research Network for the Study of Science & Belief in Society

The “socio-psychology of error” in the study of science and religion

Zara Thoko Kamwendo,
University of Edinburgh, UK

In this paper I explore the possible avenues for using the concept of the ‘socio-psychology of error’ in the analysis of the relationship between science and religion broadly construed. Sociologist of science David Bloor used the notion of the ‘sociology of error’ to exemplify the kind of scholarship he wanted to avoid through setting out the tenets of the Strong Programme in the Sociology of Scientific Knowledge (SSK). Briefly, sociologies of error relegate and confine sociological explanation to deviations from some kind of norm. In the history and sociology of science, the norm is understood as knowledge that through historical consensus has been deemed correct. Crucially, in these kinds of sociologies, the norm in question is left without causal explanation on the assumption that such explanation is unnecessary.

Drawing on this work, I introduce the use of the socio-psychology of error as an analytical tool for studying the boundaries between science and religion. I explain what I mean by the socio-psychology of error and how I have used it to shed light on the relationship between behavioural economics and rational, neo-classical economics. I then use popularisations of New Atheism as an example of where the socio-psychology of error can be found. My aim is to show that the concept is a rich resource for highlighting discursive boundaries drawn between scientific and religious belief in a variety of contexts.

Science, Religion, Censorship, and the Sanctity of the Soul on the Silver Screen

David Kirby, University of Manchester, UK

Christian organizations played a central role in the creation and administration of film censorship organizations in the US including Hollywood’s official censorship body the “Hays Office” and the Catholic Church’s Legion of Decency. Before 1968, these movie censor boards dictated which aspects of science they considered appropriate and which scientific subjects they considered indecent, immoral or blasphemous. This paper uses material from the archives of these organizations to investigate how filmmakers tried to craft stories about science and how religious groups attempted to control these scientific narratives through censorship. I show how the censors’ recommendations often reflected general anxieties over science’s incursion into the spiritual realm. They were worried





International Research Network for the Study of Science & Belief in Society

about fictional scientific experiments whose goals were to prove that God exists, learn God's secrets, or find out what happens after death. In addition, I examine how movie censors evaluated the theological implications of scientific research in these cinematic stories including any attempts by fictional scientists to manipulate, explain the nature of, or disprove the existence of the human soul. I show that censors' feared any demonstration of a success with these types of scientific interventions—even in fictional settings—because they legitimated a perception that scientists were capable of manipulating or understanding the human soul and, thus, that the soul had a materiality. Anxiety over the materiality of the soul was reflected in the Legion of Decency's rigid censure of any cinematic plots involving transmigration of souls. I also argue that censors' reactions to fictional stories involving brain transplants represent some of the earliest religious responses to the notion of "brain death." Films to be discussed include *Man With Two Lives* (1942), *The Uninvited* (1944), *Bewitched* (1945) and *Donovan's Brain* (1953).

The effects of liberal and scientific education on religious attitudes and beliefs

Jordan LaBouff, University of Maine, USA

The relationship between science and religion, particularly in the context of education in the United States, is complex and multifaceted. Many social scientific studies demonstrate that education is associated with more open and accepting attitudes towards other worldviews. However, the relationship between increased scientific education and religious beliefs and biases remains unclear. This study investigates growth and change in the religious beliefs and interreligious attitudes of students ($N \sim 400$) across their first year of undergraduate education. We will compare the development of these beliefs and attitudes between science majors and humanities majors, as well as between students at a private, religiously-affiliated university and a public university. This project will help investigate the role of scientific education in the development of religious attitudes and beliefs. Further, it will help uncover the role of scientific education delivered in a culturally Christian compared to a culturally a-religious educational environment in development of religious and interreligious attitudes. Initial analyses suggest expected differences in religious beliefs and biases across religious and non-religious contexts. Further, science majors were more likely to express more negative attitudes towards religion and religious groups than humanities majors. Data are presently being collected for a third timepoint, which will allow comparisons for changes in participant attitudes across their first 18-months of university and their acculturation into their academic disciplines. Results will help clarify the role of liberal education, and scientific education, on religious attitudes and beliefs.





International Research Network for the Study of Science & Belief in Society

Sacred Science, Secular Faith: Evolution as Religious Myth

Stephen LeDrew, Memorial University of Newfoundland, Canada

The atheist movement—or at least the version of it that has dominated secularist organizations since the rise of the New Atheism—mirrors the Christian fundamentalism it maligns in several respects. It is a program for social transformation grounded in a utopian ideology: evolutionism (a virtually borderless conception of evolution by natural selection as a theoretical framework for understanding not just nature, but also human psychology, society, and culture). This ideology merges the language and concepts associated with evolutionary theory with the myths of progress associated with the Enlightenment, offering a vision of a united world where all cultures erode with the gradual universal acceptance of a scientific worldview, which happens to place western European civilization at the end point of a teleological process of social evolution. This line of thinking is promoted by a certain school of public intellectuals who seek to defend the hierarchical structure of the western liberal-capitalist world by situating them within an evolutionistic narrative of the perfection of society (a point that is achieved through submission to scientific authority). In the case of the atheist movement, this myth of progress is accompanied by more functional dimensions of religion, including the construction and maintenance of social bonds through rituals, and other collective practices of meaning-making. This paper raises the question of whether and to what extent these pseudo-scientific myths, and the communities that have coalesced around them and the thinkers and organizations that promote them, can be understood and defined as ‘religious’ in nature. In so doing, it advocates for an expanded conception of religion that incorporates some ostensibly secular forms of belief and practice.

The Coexistence of Natural and Supernatural Explanations across Cultures and Development

Dr Cristine Legare, the University of Texas at Austin, USA

In both lay and scientific writing, natural explanations (potentially knowable and empirically verifiable phenomena of the physical world) and supernatural explanations (phenomena that violate or operate outside of, or distinct from, the natural world) are often conceptualized in contradictory or incompatible terms. My research has demonstrated that this common assumption is psychologically inaccurate. I propose instead that the same individuals frequently use both natural and supernatural explanations to interpret the very same events. To support this hypothesis, my colleagues and I reviewed converging developmental data on the coexistence of natural and supernatural explanations from diverse cultural contexts in three areas of biological thought: the origin of species, the acquisition





International Research Network for the Study of Science & Belief in Society

of illnesses, and the causes of death (Legare, Evans, Rosengren, & Harris, 2012; Legare & Visala, 2011; Legare & Gelman, 2008). We identified multiple predictable and universal ways in which both kinds of explanations coexist in individual minds at proximate and ultimate levels of analysis. For example, synthetic thinking (i.e., combining two kinds of explanations without integration), integrative thinking (i.e., integrating two kinds of explanations by distinguishing proximate and ultimate causes), and target-dependent thinking (i.e., two kinds of explanations remain distinct and are used to explain different aspects of an event, depending on contextual information) all illustrate different kinds of explanatory coexistence. We also discovered that supernatural explanations often increase, rather than decrease, with age. Reasoning about supernatural phenomena, in short, seems to be an integral and enduring aspect of human cognition, not a transient or ephemeral element of childhood cognition.

Darwin, the Darwinians, and the Problem with Atheism

Bernie Lightman, York University, Canada

Darwin, Huxley, Spencer, Tyndall and other Victorian scientific naturalists were routinely charged with being atheists. This was an intentional strategy on the part of those who feared that they were spreading materialistic, anti-theistic views based on modern scientific theories. By associating Darwin and the Darwinians with atheism, their opponents were questioning their respectability and therefore their claims to be considered part of the intellectual elite. Any claims that Darwin and the Darwinians made to have cultural, or even scientific, authority could be countered by adhering the label “atheists” to them. Huxley’s response to the charge of atheism was to invent the term “agnosticism,” in order to distinguish his brand of unbelief from that of the disreputable lower-class atheist. He also rejected the notion that modern science led inevitably to atheism. This paper will examine both the attacks on Darwin and the Darwinians by notable Victorian intellectuals and the response of Darwin, Huxley, and their allies to those attacks. Particular attention will be paid to the cultural meaning of “atheism” in the second half of the nineteenth century, and whether or not it was associated with science. This will require a rigorous analysis of the periodical literature in order to go beyond the realm of the Victorian intellectual.

When Missionary’s Astronomy Encountered Chinese Traditional Astrology in Qing Dynasty in China

Liuyan Liu, Beijing Normal University, China





International Research Network for the Study of Science & Belief in Society

Western missionaries played quite important roles in the Chinese calendar reform during the late Ming and the early Qing Dynasty, which promoted the communication between the East and the West in science, culture and as well as religion. In 1644, German Jesuit missionary - Johann Adam Schall von Bell(1592-1666) was appointed as the head of the Imperial Bureau of Astronomy by Emperor Shunzhi, and he was asked to reform the Chinese calendar system. Normally there are two parts of the traditional Chinese calendar: one part is dates arrangement in a year which are based on astronomical calculation, the other part is annotations arrangement following the dates, which lists favorable and unfavorable days with advice on what to do on each of them according to traditional Chinese astrology. Schall not only translated a lot of Western science works in mathematics and astronomy to reform the astronomical calculation part in Chinese calendar, but he also tried to translate traditional Western astrology work *Astrological Practice* (天文实用) to replace the traditional Chinese astrology so as to change the annotations arrangement in the new calendar. And this move caused great controversy within the court. The phenomenon is so interested to me. I want to figure out why his attitudes towards Chinese astrology and Western astrology were so different. Why did he think traditional Chinese astrology was a kind of superstition while the traditional Western astrology was more rational? The reasons seem quite complicated. Because it involved the conflicts not only between the West and the East sciences but also between different religious believes. In my opinion, Schall's attitudes probably affected by both the European learning tradition and the Roman Catholic Church's view on different astrology.

The inadequate toolbox: Science, religious identity, and responses to climate change

David Long, Morehead State University, USA

Recent reports from the Intergovernmental Panel on Climate Change have painted an increasingly dire picture of humankind's future. Models of atmospheric carbon dioxide levels, primed by anthropogenic means, continue to outpace more moderate predictions of just a few years ago. Gross climatic changes that in other circumstances may have taken aeons now unfold around us in on a timescale that increasingly fits within the framework of a human lifetime. Our technology and dominant economic ideology have outstripped the carrying capacity of the environment within which it was created.

While some countries such as Germany have taken strong steps to mitigate their CO₂ output by switching overwhelmingly to renewable energy sources, most of the largest global economies have not. The United States continues its notoriety as a leader in CO₂ production due to energy choices





International Research Network for the Study of Science & Belief in Society

and a large population. At the same time, the United States' population is arguably in one of the poorer positions to take significant action regarding climate change due to internal social discord. Views on what action to take in response to climate change has become increasingly aligned, as a set of co-related factors, to your religion's position within established political ideologies. In this frame, Christian 'creation care' makes academic sense as a reasonable project for Christians, but is largely not followed in practice—demonstrable in both Protestant groups and Roman Catholics. Recent work on the salience of cultural contingency (O'Brien and Noy, 2015; Long, *in press*) in explaining these intra-group variations points out that past the descriptive project common to much survey research, qualitative differences will need to be carefully identified to further move the normative project of addressing climate change. To take up these ideas, models of discourse change such as the Overton Window will be addressed in relation to the practical challenges of religious education, science education, and science communication as possible pathways to move the U.S. toward climate action.

Religion and integral social development: Faith-based education's advocacy in Southeast Asian Philippines

Juliana Manrique and Angelina Gutiérrez, Saint Scholastica's College, Philippines

With a history of nearly 500 years of Catholicism and with the unique religious demographics of 93% Christians, 5% Muslim and ranked as the world's third largest Catholic population, the Philippines enjoys religious freedom where diverse church leaders and members carry out their beliefs in the public sphere.

In a country, however, where 45% of the population lives on less than US\$2. per day, the 'preferential option for the poor' (John Paul II, 1991), as a praxis of faith-based educational institutions is a trajectory through which religion interacts with economic science to advance social development and economic justice.

This study explored the following research questions:

1. How does faith-based education promote economic justice and the integral human development of marginalized members of society?
2. What are the correlations of the 'preferential option for the poor' praxis, religious economics and social justice?





International Research Network for the Study of Science & Belief in Society

3. What are the challenges of religious-based institutes in addressing structural and social inequalities?

Using the qualitative research design of a case study, this investigation gathered data from 183 participants through multi-site ethnographic survey interviews. Data findings were interpreted through discourse and phenomenological analysis. This research encourages the public sectors to explore how religion could be a social capital in safeguarding economic justice, human dignity and the common good. As a contextualized study from the distant global south, it hopes to contribute to the global north discussions and questions of the Birmingham conference on how the spectrum of religion and science could address contemporary society

Science teachers' views and stereotypes of the dialogue between religion, scientists and scientific research

Nasser Mansour, University of Exeter, UK

Despite a growing consensus regarding the value of Inquiry-Based Learning IBL on students' learning and engagement in the science classroom, the implementation of such practices continues to be a challenge. If science teachers are to use IBL to develop students' inquiry practices and encourage them to think and act as scientists, a better understanding of factors that influence their attitudes towards scientific research and scientists' practices is very much needed. Within this context there is a need to re-examine the science teachers' views of scientists and the cultural factors that might have an impact on teachers' views and pedagogical practices. A diverse group of Egyptian science teachers took part in a quantitative-qualitative study using a questionnaire and in-depth interviews to explore their views of scientists and scientific research, and to understand how they negotiated their views of scientists and scientific research in the classroom, and how these views informed their practices of using inquiry in the classroom. The findings highlighted how the teachers' cultural beliefs and views of scientists and scientific research had constructed idiosyncratic pedagogical views and practices. The study suggested implications for further research and argued for teacher professional development based on partnerships with scientists.

The Formative Aspirations of Science and Religion: Intersections, Parallels and Divergences

Will Mason-Wilkes, University of Birmingham, UK





International Research Network for the Study of Science & Belief in Society

The sociology of scientific knowledge and STS have convincingly shown that scientific knowledge is socially situated and defined. Similar foundational work in sociology of religion has shown that religious belief is also the product of social groupings (e.g. Durkheim 1912, Berger and Luckman 1967). This work highlights the problems with attempts to demarcate science and religion on epistemological grounds.

I will argue, however, that it is possible to demarcate science and religion. Borrowing from Wittgenstein, I conceptualise science and religion as distinct 'forms of life'. A form of life is a social grouping which is made identifiable and distinct from other groupings through the 'formative aspirations' of its members. Formative aspirations are those norms and values, modes of behaviour or 'ways of going on' which members of the group in principle aspire to uphold or carry out (even though doing so is not always possible in practice). Drawing on Collins and Evans' concept of Elective Modernism, I will lay out the formative aspirations of science, and contrast these with a set of aspirations which I argue characterise the religious form of life. I will show that there are aspirations which are shared by both science and religion and aspirations which are specific to each which do not contrast markedly. However, I will argue that science and religion are characterised by a sub-set of aspirations which directly contrast.

This approach to defining science and religion avoids philosophically problematic epistemological demarcations whilst retaining important sociological insights about the nature of science and religion.

Faith and thought? Negotiating science and scripture at the Victoria Institute, 1865-1932

Stuart Mathieson, Queens University Belfast, Ireland

By the mid-nineteenth century, works by scientists such as Charles Lyell, Alfred Russel Wallace, and Charles Darwin had threatened traditional conceptions of the natural world, drawn heavily from scripture and from the natural theology of William Paley. Much attention has been paid to debates within the scientific community about evolution, human origins, and the age of the earth. Yet much of this has focused on the rapidly professionalising domain of the natural sciences. Debates within other fields, particularly those of well-educated amateurs, have received rather less attention. This paper attempts to remedy that situation, by examining the nineteenth century's leading anti-evolutionary organisation. Established in 1865, the Victoria Institute had as its prime objective the defence of 'the great truths revealed in Holy Scripture' from 'the opposition of science, falsely so





International Research Network for the Study of Science & Belief in Society

called.' Bringing together professional scientists, clergymen, and gentlemen amateurs, the Victoria Institute aimed to investigate the latest developments in science from a religious perspective.

Initially, this resulted in attempts to buttress religious belief against scientific discoveries; later, it developed into a forum where scientists of faith could discuss their beliefs with a sympathetic audience. Using the Victoria Institute as a prism, this paper charts the relationship between religious belief, science, and society in Victorian and Edwardian Britain, and offers a perspective on scientific developments from an underexplored viewpoint.

The failure of environmental implicit religion

Caroline McCalman, Independent Scholar, UK

Starting from the basis that environmentalism functions in our society as a form of implicit religion, this paper outlines key findings from Caroline's recent PhD thesis. This paper will outline the discursive mechanisms which are at work within society to create a pervading sense of Eco-Guilt, and then break down that Eco-Guilt to its constitutive discourses. Caroline will show how, contrary to the accepted understanding of eco-guilt and its outcomes, her analysis shows that participants experienced feelings of agential paralysis which reduced (instead of increased) the likelihood of ecological reparative behaviours. The discursive analysis will also highlight the remaining Christianity at work in modern environmentalism.

Understanding negative perceptions of evolution amongst British Muslims

Glen Moran, University of Birmingham, UK

In recent years a significant amount of attention has been paid to British Muslim perceptions of evolution. This has predominantly taken the form of sensationalist newspaper headlines written in response to alleged incidents of Muslim rejection of evolution. Examples include statements by Richard Dawkins and media coverage of comments by geneticist Steve Jones or the publication of Harun Yahya's Atlas of Creation. Unfortunately this has not been restricted to the media. Similar narratives are also found in academic literatures, with examples of unsubstantiated reports that a rise in "Islamic Creationism" has taken place. Yet, recent research has shown that Muslims report holding a diverse range of views regarding evolution. This paper will draw on my recent qualitative research into Muslim perceptions of evolution in order to explore the contextual factors that might result in individual Muslims adopting certain stances on evolution. It will specifically focus on those participants





International Research Network for the Study of Science & Belief in Society

that *did* reject evolution in order to assess the extent to which this rejection is the result of scriptural and/or theological arguments. It will also explore other factors such as socio-religious identities.

Can community conversations facilitate safe dialogical spaces for church groups and public health?

Mercy Nahmo Murire, Rhodes University, South Africa

(delivered in absentia by Bankole Falade)

Background: Stigma has been identified as a primary barrier to effective HIV prevention and the provision of care and support to people with AIDS. Much has been written about the need to involve communities in efforts to reduce HIV/AIDS stigma. However, little is known about the psycho-social pathways between participation and stigma reduction or the most appropriate strategies for ensuring such participation.

Aims: Using the social capital and the notion of an 'AIDS competent community', this study explore on how churches tackle HIV/AIDS stigma. It explores three issues: i) the extent to which church groups perpetuate or reduce stigma, ii) possible differences between the role played by three church groupings in relation to stigma and iii) how 'community conversations' can be used as an approach to develop more effective responses to stigma amongst church members.

Methods: A total of 54 in-depth interviews and 24 community conversations (3 sets of community conversations with 8 church groups) were conducted involving a total of 198 participants.

Findings: The findings point to a need for social spaces and dialogue to discuss public health issues within church groups. The study also noted that when organisations implement their projects people lack a sense of ownership to the projects since it's not community initiated. When implementers eventually move out of the community the project cease to function unlike when they are given the sense of entitlement.

Discussion: From the findings it may be necessary to provide critical spaces of dialogue to communities which in turn provides them with a sense of ownership. Community conversations encourage ownership and responsibility for change and draws on local capacities and resources – allowing communities to identify the social capital evident within their localities.

Nationalisms at the root of the science-and-religion disputes. The Spanish case.





International Research Network for the Study of Science & Belief in Society

Jaume Navarro, University of the Basque Country, Spain

“Science” and “Religion” have been two major elements in the building of modern nation-states. While contemporary historiography of science has studied the interactions between nation building and the construction of modern scientific and technological institutions, “science-and-religion” is still largely based on a supposed universal historiography in which global notions of “science” and of “religion” are seldom challenged. From this point of view, the introduction of nationalisms in the history of “science-and-religion” may help better understand the origin of certain myths at a local level.

In this paper I shall explore the appropriation of Draper’s book in the Spanish Restoration (1874-1931). The translation of *History of the Conflict* into Spanish was a major cultural event. With a preface by Nicolás Salmerón, a former prime minister in the short-lived First Spanish Republic, the publication of the book triggered a very heated public discussion, but one that was mostly philosophical and political about the role of science in the shaping of a national identity. This episode adds to the increasing scholarship on the way historiographical myths were appropriated for local political purposes. Draper’s book came in handy for Salmerón and other anti-monarchic leaders in their representation of traditional Spain as enemy of science and *therefore* of social progress. On the official side, the Royal Academy of Moral and Political Sciences, set up a competition to choose the best essay against Draper, thus indirectly reinforcing the thesis of a conflict. Interestingly, the major actors in these arguments were mostly statesmen, clerics and philosophers, rather than scientists, which helps us see the role of the thesis of an overall conflict as a political tool.

Atheism and Tactics to Save Public Science

Alan Nixon, Western Sydney University, Australia

There are many current examples of the need to promote and protect science in the public sphere. Public conversations have been occurring around climate change, evolution, vaccines, GMOs, and medicine (Baker 2012; Evans and Evans 2008; Evans and Evans 2010; Evans 2016; Noy and O’Brien 2016). These conversations have left many irreligious people feeling that the place of scientific views is less certain, leading to conversations within irreligious circles about the best tactics to enhance the voice of science.





International Research Network for the Study of Science & Belief in Society

Some of the irreligious believe that they need to be more confrontational with anti-science views in the public domain. Particularly, those who identify with 'new atheism' do not think that people should be given a pass on 'irrational' beliefs and therefore become involved in suppressing anti-science and religious voices. On the other side, 'accommodationists' fear confrontational tactics could backfire by fusing science and atheism in public perceptions. In a world still largely consisting of religious people, they feel it is necessary to make allies in order to achieve the goal of promoting science. They recognise the battlefield for science as not around religious truth-claims, but the survival of the scientific method, where many of the religious can join them. For both parties the gains of science could be at stake.

In interviews with Australian Atheists and English language online data, I found that when focused on science, it is seen as possible to use both tactics at appropriate times. Confrontation, accommodation and a mix of the two become valid. Individual atheists were also less confrontational with the religious than is portrayed by public new atheist figures. While atheists often do perceive a conflict between science and religion, this paper will show that this is not a one sided debate. Confrontation is not always viewed as the best tactic to promote science.

Science as a Moral Authority? A Multilevel Analysis of International Perspectives on Science

Shiri Noy, Denison University, USA; and Timothy O'Brien, University of Wisconsin-Milwaukee

Recent scholarship has highlighted the ways in which science may be viewed as incompatible with tradition, and in particular traditional values espoused in religion. In this research, views of conflict between science and religion are rooted in moral, rather than epistemological, understandings. In particular, science is sometimes seen as a threat not only to tradition and traditional values, but to basic understandings of right and wrong. We cross-national World Values Survey data to examine how individuals' religiosity and education as well as country-level investment in science are related to perceptions of science as a threat to individuals' morality. This investigation highlights the importance of considering how macro-level factors together with individual characteristics may affect individuals' perceptions of science as a moral authority.

Domain differences in belief disagreements among Indonesian children and adults from Muslim and Christian backgrounds

Melanie Nyhof, North Western College, USA





International Research Network for the Study of Science & Belief in Society

In pluralistic societies disagreements of belief are bound to occur and can be intense, especially when they involve beliefs about ultimate reality. Developmental research indicates that by middle childhood children understand that people can have differing views about the existence of extraordinary beings (Harris, Pasquini, Duke, Asscher, & Pons, 2006), acknowledge that religious beliefs fall somewhere between facts and opinions (Heiphetz, Spelke, Harris, & Banaji, 2013), and are tolerant of differing metaphysical beliefs and those holding such beliefs (Wainryb, Shaw, Langley, Cottam, & Lewis, 2004). However, that finding contrasts with the lack of tolerance for differing beliefs evident in interactions on social media. Conflicts of religious beliefs are particularly salient in Indonesia, a Muslim-majority country with substantial minority religious populations. How do children and adults in Indonesia understand belief conflicts? Do they view conflicts of belief as differing by domain? Are there differences in understanding of belief disagreements between those from majority and minority religious groups? The present research addresses these questions. In Study 1, child and adult participants from Muslim and Christian backgrounds in Indonesia heard stories about characters with differing beliefs about religion, fact, opinion, and morality, such as disagreements about the best fruit and the existence of God, dinosaurs, and germs. Children were asked questions about which character they agreed with and if both characters could be right, as well as who they would choose as a friend. In Study 2, young adults from Muslim and Christian backgrounds in Indonesia participated in semi-structured interviews about belief disagreements concerning religion, science, opinion, and morality, such as belief in God and alien life. They also responded to questions about religious beliefs and practices. The results of these two studies extend knowledge of the development of understanding of belief disagreement to a non-Western culture and examine cross-religious differences.

Illusions of actuality: The power of scientific belief on postwar American television

Ingrid Ockert, Science History Institute, USA

We often assume that audiences learn about science through factual presentations; what happens when they learn science through science fiction? On the television screen, science fiction and science fact are often enfolded into each other. As David Kirby has explained in his work, television shows and movies allow audiences to virtually witness science within a laboratory, regardless of actual scientific accuracy. As a historian of science, I've studied the creation of the science educational television in the United States. Early producers of this medium played more loosely with these categories than might be supposed. Some science educational programs presented factual materials within a subtly fictional setting with characters. They borrowed the tropes of outer space imagery to excite their audiences and catch their attention. Similarly, science fiction programs have drawn inspiration from





International Research Network for the Study of Science & Belief in Society

real, solid scientific facts to create real world frameworks for their fantastical stories. In this talk, I focus on the history of the creation and reception of a postwar science fiction television show, *Star Trek: The Original Series*. While the show was never meant to be educational, the producers of *Star Trek* deliberately intended the series to be based in reality. They collaborated with professional from the space industry to create a series that took science seriously. Fascinatingly, as I've learned through studying fan correspondence, viewers of the series held firm, established beliefs about what real space science "looked like" and frequently took it upon themselves to correct the show's scriptwriters. What does it mean when audiences take it upon themselves to differentiate between science fiction and science fact? What can we learn about how television shapes belief and unbelief?

Science and the Question of Divine Action: A Leading Source of Perceptions of Conflict between Science and Religion

Clinton Ohlers, University of Hong Kong, Hong Kong

This paper proposes a historical perspective that suggests fruitful avenues for historical and sociological research to resolve the question of why the idea of inherent conflict between science and religion remains "the idea that won't die." Leading recent historical treatments provide the starting point for reexamination of seminal texts in the history of science and religion in order to better understand the relationship of natural philosophy and modern science to questions of divine action. Historical insights are then applied to the work of leading contemporary scholars who maintain both a robust conception of divine action and an active engagement with science, such as Robert Russell, Alvin Plantinga, Lydia Jaeger, Andrew Torrance, Craig Keener, and Elaine Ecklund, as well as recent open discussions between scientists, theologians, and philosophers. These findings suggest that the apparent conflict between science and religion in the past and the present has been located primarily not in historical social contexts or in discrete scientific discoveries that pressed on received religious doctrines, but rather in longstanding and continuing unresolved tensions between the scientific study of natural causes in a physical universe and beliefs about divine action within that universe. Accepting that is the case, this study points to avenues for future scholarly research in multiple academic disciplines.

Public Health: An Emerging Locus of Science/Religion Interaction

Doug Oman, UC Berkeley, USA





International Research Network for the Study of Science & Belief in Society

Virtually all people desire good health, a longstanding concern of both science and religion, and recurring topic of science/religion interaction. In the past two decades, many clinical health fields such as medicine and psychotherapy have directed greatly increased attention to religious and spiritual (R/S) factors in health (e.g., Koenig et al, 2001). Only recently, however, have parallel increases occurred in public health, a field dedicated to understanding the sources of the health of entire populations.

We review public health as a locus of science/religion interaction, comparing it with clinical fields. Lagging by about 20 years, scholarly/scientific books on public health now include two volumes focused on religious/spiritual factors (Idler, 2014; Oman, 2018). Yet Public Health displays all of Barbour's classic modes of interaction (conflict, independence, dialogue, integration). In the past decade, international health organizations (e.g., WHO) have developed greater awareness of religious communities as potential allies, but such communities sometimes feel excessively instrumentalized. Surveys indicate that US public health students learn little about R/S factors in their training, and desire more knowledge. Public health school leaders (deans) are open to addressing R/S factors, but seek guidance and materials. Empirical evidence indicates that R/S factors among individuals show largely favorable relations with health, but R/S factors show mixed (favorable/unfavorable) associations with population health and its predictors. Such contrasting patterning (population versus individual) poses interpretive challenges for public health, and arguably for religious traditions and scholars of religion, beyond interpretive challenges faced in clinical fields – and interpretations arguably benefit from historicized understandings of religion. Public Health merits scholarly attention as a dynamic emerging site for science/religion interaction.

What distinctive contribution does Religious Education make to the development of epistemic literacy in relation to Big Questions in religion and science?

Jo Pearce and Alexis Stones, Institute of Education, UCL, UK

We define epistemic literacy in terms of capabilities that allow one to appreciate and recognise the distinct forms, frameworks and systems of knowledge, method, language and data that pertain to particular disciplines. If students and teachers are to avoid epistemological misconceptions and develop insights into specific knowledge forms presented in Religious Education (RE), they must be given opportunities to develop epistemic literacy to support navigation of the challenging and epistemologically complex questions that exist in the interfaces between subject disciplines. Our research focuses on the territory that lies between religious and scientific knowledge and aims to lay





International Research Network for the Study of Science & Belief in Society

the groundwork to 1) support the development of teachers' and students' abilities to understand that perceived conflict across disciplines is reduced through understanding their epistemological differences and 2) for epistemic literacy to be considered as a viable aim for RE that will strengthen the case for the importance of the subject in a rigorous and meaningful education. We will share the findings and recommendations from our recent analysis of students' perceptions of the relationships between religion and science that formed the foundations of our proposal for a two-year project funded by the Templeton World Charity Foundation. The literature review and the plans we have for the qualitative research design, methods and dissemination will also be discussed.

Between science and religion: A case-based study about evolution teaching in Colombia

Gonzalo Peñaloza, Unidad de Monterrey, Mexico

(delivered in absentia by Hesley Machado Silva)

The relationship between religion and science has been widely discussed from many different perspectives. However, it is not clear if the theoretical interactions proposed occur in everyday practice nor how subjects adopt them in specific situations. In this context, biological evolution has been a point of divergence between science and religion, because, in some cases, challenges some central religious dogmas. This study analyses Colombian biology teacher's conceptions about the relationship between science and religion, and the evolution teaching. Research was based on a multiple case study composed by four teachers of secondary schools (two Catholics, one Evangelical, and one Agnostic), and it used semi-structured interviews (nature conceptions, situations related with science and religion), classroom recordings and focus group to data collection. Data was analysed using the Worldview Theory, a socio-cultural perspective, and Ricoeur's hermeneutical approach. It was found that conceptions of the relationship between religion and science are constructed by each subject appealing to their cultural context, their pedagogical beliefs, their ethical assumptions, their political positions, and religious beliefs. All interviewed teachers referred that the science-religion relationship was expressed in their teaching practices. Both catholic teachers tend to teach evolution without limitations, while the evangelical and the agnostic teachers talk about evolution with important restrictions. The evangelical teacher's practice was explained by the force and scope that religious beliefs have in her worldview, whereas the agnostic teacher's constraints in talking about evolution was related with ethical issues as he does not want to affect students' religious beliefs. This could be explained by Colombian socio-cultural context in which religion has been shown as cornerstone of any ethics. Finally, the study proposes that teachers' nature conceptions show ontological, epistemological and axiological assumptions that in turn are related with their religious



International Research Network for the Study of Science & Belief in Society

background. In this sense, we suggest that the exploration of conceptions of nature can be an effective methodological tool to research the relationships between religion and science.

Religion in social media discourse: understanding how users position themselves and their beliefs

Stephen Pihlaja, Newman University, UK

This presentation focuses on the application of applied linguistic tools to inter-religious dialogue on social media, focusing on how close analysis of communication can be used to describe and analyse how specific presentations of religious belief and practice emerge in interaction. I present a case study of responses to one Evangelical Christian Facebook preacher, Joshua Feuerstein, by a Muslim YouTuber and an atheist YouTuber, using a corpus of 67 video pages from 18 months of interaction (including 6 hours and 47 minutes of talk and 60,888 comments). The analysis focuses on how the users present their own and others' beliefs in the context of "debates" about faith, including issues such as creationism. Using discourse analysis of user talk, and the responses in the comment sections, I trace the development of positioning within the context of particular video pages and posts to understand how users present both their own and the beliefs of others. I then extend the analysis to a longitudinal study of the users, using elements of Discourse-centred Online Ethnography to investigate how positionings and storylines develop over time, and in the ongoing interaction of particular users. My analysis shows how interaction around issues faith and belief is affected on social media platforms, and how religious users are compelled to respond to a broader social context. At the same time, the positions and storylines they employ often reflect a belief in the rightness or wrongness of their own religious claims rather than empathy towards users who hold different belief.

Brain Science in-between Worldviews: Elective Affinities between Neuroscience and Religion

Anneke Pons De-Witt, University of Leuven, Belgium

While religion and science have been perceived as opposing spheres for a long time, the postmodern critique of positivist scientific analyses of religion has recently initiated research on how religious and spiritual groups use scientific findings to legitimate their worldviews (e.g. Lewis, 2011). This paper aims to add a cultural approach to this debate by looking into the alignments between religion and science. It argues that selective and in fact opposing elective affinities exist between particular religious and spiritual worldviews and scientific discourses.





International Research Network for the Study of Science & Belief in Society

This argument is empirically researched by two case studies in which the question is asked how the fundamentalist religious Dutch Biblebelt on the one hand, and mindfulness spirituality on the other relate to neuroscience. Both groups use neuroscientific insights on brain plasticity to prove their specific standpoints, respectively on new media or on health benefits of meditation practices. However, both cultural groups use neuroscience in a very different and even opposing way. While the Dutch Biblebelt selectively focusses on studies that prove the deterministic influence of the environment on passive humans, mindfulness practitioners mostly refer to studies that foreground human agency to change their health condition. In both cases, the selected scientific paradigms perfectly fit with their own worldview, i.e. the emphasis on human sinfulness and weakness in the Dutch Biblebelt, and the individualist emphasis on human agency in mindfulness.

These case studies demonstrate, in short, that approaching both religion and scientific paradigms as cultural phenomena leaves more room to observe the complex interactions between both. Studying the former in terms of cultural elective affinities is helpful to clarify why religious groups are critical of particular scientific discourses while embracing others.

The Spirituality of Science: development of a new construct and scale

Jesse Preston, University of Warwick, UK

This project proposes to investigate *Spirituality of Science*— a transcendent experience of meaning, truth, and awe derived from scientific ideas, theories, and the scientific process—and the development of a Spirituality of Science (SoS) scale. Drawing a parallel with “spiritual transcendence” (Piedmont, 1999), two validation studies (N = 1000) examined convergent and discriminant validity for the newly developed *Spirituality of Science (SoS)* scale. Two studies with a U.S. sample measured the SoS scale and convergent and discriminant validity with *Interest in Science* (Johnson et al., 2016), *Belief in Science* (Farias et al., 2013), *General Religiosity* (Ritter & Preston, 2011), and *Spirituality* (Piedmont, 1999). Study 1 also measured associations with *Need for Cognitive Closure* (Webster & Kruglanski, 1994); *Intellectual Humility* (Davis et al., 2010), and *Awe* (Shiota, Keltner & Mossman, 2007). Study 2 measured perceptions of *Meaning in Life* (MLQ; Steger et al., 2006), *Perceived Stress Scale* (Cohen et al., 1983), and *Satisfaction with Life Scale* (SWL; Diener, Emmons, Larsen, & Griffin, 1985). As expected, SoS correlated with Interest in Science, Belief in Science, and Spirituality, but not Religiosity. However, principal components analysis found that items from the three science scales each loaded as distinct factors. Furthermore, the SoS scale showed key divergent validity with related variables: SoS was positively correlated with measures of *Awe*, and *Meaning in*





International Research Network for the Study of Science & Belief in Society

Life, where *Belief in Science* had no correlation with these variables. Religious belief arguably provides essential order and meaning (Steger & Frazier, 2005) that buffers against stress and anxiety. But we conclude that science can provide many of the same psychological functions as religion: awe, transcendence, and meaning. In the words of Carl Sagan: “Science is not only compatible with spirituality; it is a profound source of spirituality” (1995).

Explaining the link between religiosity and well-being: Social support versus optimism

Michael E Price, Brunel University, UK

A large body of research indicates a positive link between religiosity and well-being: people who are more religious tend to experience better mental and physical health. This correlation has been demonstrated mainly among U.S. samples, but cross-cultural studies suggest that it exists in other nations as well. The most widely-accepted explanation for this link is that religious people tend to have relatively good access to social support, by virtue of their attendance at religious gatherings. Social support in general is a strong positive predictor of well-being. From this perspective, therefore, there is nothing unique about religiosity per se that explains its link with well-being; it is simply the case that social support enhances well-being, and also tends to be relatively accessible to religious people. Data we have collected, however, suggest that the link between religiosity and well-being is best explained not by social support, but by the fact that religious belief tends to promote an optimistic outlook. Optimism, like social support, is strongly associated with increased well-being. Our results suggest a positive link between religious (and/or ‘spiritual’) belief and optimism that remains significant, even after controlling for the effects of religious social support on optimism. The positive link between religious/spiritual belief and optimism seems to exist because people who self-identify as religious and/or spiritual tend to believe (a) that events in their lives are purposefully influenced by some kind of higher power (i.e. they engage in ‘transcendent teleological thinking’ [TTT]), and (b) that the ultimate goal of this influence is to promote their own best interests over the long-term. We will present results from two studies using U.S. samples, indicating that people who experience higher religious/spiritual belief and TTT also experience higher optimism and well-being, independently of how often they participate in religious gatherings.

Moving from Complexity to Global Histories of Science and Religion

Sarah Qidwai, University of Toronto, Canada





International Research Network for the Study of Science & Belief in Society

Historians of science and religion have moved away from the conflict thesis and have embraced complexity as the historical methodology. This thesis adopts an approach that refuses to break down the relationship between the categories of science and religion into simple narratives of conflict, harmony, or independence, but rather requires an empirical analysis in each historical context.

This paper explores the historiographical themes in the field of science and religion and points to the complexity thesis as a starting point. Since most of the scholarship in the field has largely rested on Judeo-Christian perspectives on the topic, I argue that we need a more global and comparative approach in the field, and only then can we begin to draw some mid-level conclusions on the topic of science and religion. This paper examines the issues at hand by presenting a case-study from British India. More importantly this presentation poses two broader questions: Is how we reflect on the relationship of Science and Religion based on a specific understanding of Religion? How do we discuss multiple, non-European faiths and their intersection with science?

Jesuit Sciences and the Scientisation of Religion: A Study of the Science and Religion Movement in India

Dhruv Raina, Jawaharlal Nehru University, New Delhi, India

In the 1990s group of Jesuit seminarians established the Indian Institute of Science and Religion in Pune, India. The Institute functions as a veritable network of researchers interested in the dialogue between diverse religions and faiths on the one hand and the contemporary sciences on the other. Among the founders was a Jesuit historian of science. This paper mixes an ethnography of this network as a movement with a close reading of the discussions of some of the scientific theories taken up by the institute at the Conferences organized. This paper elaborates upon the conclusions of an earlier study in arguing that the focus of the movement is responding to and trailing the consequences of the developments at the frontiers of science and technology on the religious life. In this dialogue then, it is science that is in the driver's seat, setting the terms of the dialogue over the past century.

Revivalism, science, and new Hindu beliefs in the context of globalization in India

Badri Rao, Kettering University, USA

Of all the changes that globalization has engendered in India, the most ominous, if somewhat comical, ones pertain to religious beliefs and practices. There are three major trends in the new belief systems. First, die-hard Hindus have either appropriated scientific insights and inventions as ancient Hindu





International Research Network for the Study of Science & Belief in Society

contributions or discredited modern science. Pointing to Ganesha, the Hindu god with an elephant's head, Prime Minister Modi asserts that Hindu seers knew plastic surgery long before it was invented in the West. The hundred Kauravas in the Mahabharata were 'test tube babies,' according to some scientists. Others have dismissed the theories of Darwin, Einstein, and Newton. Second, new, pseudoscientific beliefs and superstitions, ostensibly beneficial, have proliferated. Thus, babies delivered at an 'auspicious' time through needless cesarean operations apparently enjoy lifelong success. Third, one sees the surging popularity of New Age Hindu gurus – many with dubious antecedents – pedaling spurious therapies and 'stress-relief' techniques.

Drawing on empirical research on new beliefs, I offer three arguments. First, increased precarity, unemployment, and the agrarian crisis in the wake of predatory globalization have aggravated insecurity, immiseration, and instability. Barring the educated and the tech-savvy, globalization has marginalized the majority and left them resentful. Disempowered Hindus find it comforting to believe in an imaginary past studded with scientific achievements. Second, the advent of globalized modernity in India has introduced hyper-consumerism, pathological individualism, atomism, and ego-focality. Irrational beliefs bordering on magical thinking salve the psychic angst caused by social dislocation and dwindling opportunities. Third, India is passing through a tempestuous phase. The eclipse of Nehruvian socialism and secularism, the rise of subaltern castes, and the shrill emphasis on Hindu nationalism have all created ideological disorientation. Albeit phony, obscurantist beliefs and rituals glorifying Hindu greatness offer relief to the blighted. Investing in human development and security can reverse this trend and lead to a saner, empowering belief system.

Lakatos and the millennium

Hauke Riesch, Brunel University, UK

With contemporary environmental crisis, particularly climate change, often being written about using apocalyptic language, as noted by several environmental sociologists, this talk will take a Science and Technology Studies influenced look at how the apocalyptic can be theorised as a narrative device that spans both scientific and religious accounts of the world. I will depart from Festinger's study of an apocalyptic UFO cult and outline its broader influence on the development of millennial studies as a historical and sociological discipline. I will take inspiration from millennial studies' use of Festinger's social psychology of knowledge and explore other related sociologies and social psychologies of knowledge as a new way of understanding the dynamics of apocalyptic belief. In particular, I will re-interpret the philosophical work of Imre Lakatos on the rationality of scientific beliefs as a social





International Research Network for the Study of Science & Belief in Society

psychology of knowledge, which in combination with social identity and social representation theory will lead me to attempt a Science and Technology Studies inspired sociology of the apocalyptic. I will argue that a Lakatos-inspired account adds to apocalyptic theory the observations that several social groups and identities can compete for dominance at the same time, where the “reasonable” voices could be conceived of another rival group that has (temporarily) lost dominance on account of the movement’s theoretical and (apparent) empirical progressiveness. I will conclude by applying this account back to the environmental crisis.

Categorising Catholics: Methodological insights into the study of religious attitudes towards evolution

James Riley, University of Birmingham, UK

To follow

Stereotypes about the Science of Religion

Kimberly Rios, Ohio University, USA

Although previous research has examined negative stereotypes about religious believers in scientific disciplines (Rios, Cheng, Totton, & Shariff, 2015) and discrimination experienced by religious believers in the workplace (Scheitle & Corcoran, 2018), no studies to date have investigated whether the science of religion itself is also subjected to negative stereotypes. Using psychology as the focal discipline, we hypothesized that the psychology of religion – relative to other subfields – would be seen as less rigorous and “mainstream.” To test this hypothesis, we recruited 346 students and professors from the Society of Personality and Social Psychology email listserv to complete an online survey. Participants were randomly assigned to answer questions about one of five subfields of social/personality psychology: psychology of religion, political psychology, psychology of gender, attitudes and persuasion, and judgment and decision-making. They first completed Likert-scale measures of whether their assigned area was a part of mainstream social/personality psychology, whether researchers in their assigned area produce rigorous science, and whether research in their assigned area should be published in top journals. They then selected from a drop-down menu the top five adjectives they associated with researchers in their assigned area. Results indicated that relative to all four other subfields, participants rated psychology of religion as less mainstream, less rigorous, and less worthy of being published in top journals. Additionally, the top five adjectives participants associated with psychology of religion researchers were “religious,” “compassionate,” “contemplative,” “motivated,” and “subjective.” Of note, psychology of religion was the only subfield





International Research Network for the Study of Science & Belief in Society

for which “intelligent” did *not* make the top five. Implications for how the science of religion (and other identity-related fields) is perceived by both academics and the general public, and why it is important to examine such perceptions, are discussed.

Science and Religion in Latin America: enemies or allies? A literature review.

Reynaldo Rivera and Patricia Rodriguez Aguirre, Universidad Austral, Argentina

Some recent studies about the relationship between science and religion show there may be a conflict, independence, dialogue or integration between them (Barbour, 2004).

However, there is a gap in the analysis of scholarly perspective of the issue in Latin American countries. In order to start filling that gap our study presents a systematic map and classification of relevant Latin American studies on science and religion, based on a mixed-methods design.

In the first stage, applying an open source software that explore three key online databases (Google Scholar, Scopus and Scielo), we will conduct a systematic literature review (Booth, Papaioannou, & Sutton, 2012; Cronin, Ryan, & Coughlan, 2008) as a non-biased method to explore scientific sense of the relationship between science and religion. That procedure will allow us to identify and select bibliography based on citations metrics, and to focus a broad research topic. Afterwards, and oriented by previous stage, we will conduct semi-structured interviews to a rational sample of key Latin American scholars on the field.

The literature review will include sources in a range of years around two relevant recent events that may have influenced the public perception about the science – religion relationship: Darwin's Bicentennial celebration in 2009 and the debate generated by the publication of Michael Denton's book questioning the evolution theory.

This research will facilitate further studies on the field, particularly in Latin American countries, providing a first map of scientists' perspectives and a classification of the key literature published in Spanish on the issue of the relationships between science and religion.

Preliminary analysis of the relationship between science and religion in Mexico: the case of biological evolution

Juan Manuel Rodriguez-Caso, Universidad Nacional de Autónoma de México, Mexico





International Research Network for the Study of Science & Belief in Society

When one speaks of biological evolution in Mexico, it is assumed that there is a conflict between worldviews, the one provided by science and the one given by religion. A good part of that vision is due to the historical account that has emphasized that position, with the archetypal example of Darwin's ideas, and how from the moment of the arrival of his proposal to Mexico a permanent conflict was established. That account overlooks the fact that it was not only Darwin's ideas that arrived in Mexico, but there are references to J.B. Lamarck, H. Spencer, E. Haeckel, among others, and in each case, the reception did not imply a conflict as such. Another recurring situation is the oversimplification of what "religion" or "Catholicism" means, implying that it is a restraint on scientific practice, since the only way to practice it is when it is done "without any kind of belief". The latter is an anachronistic statement, since "science" and "religion" are understood as invariable concepts. In a preliminary way, I propose: on the one hand, to consider how historical reconstructions have fostered conflict without paying more attention to the complexity of the situation in Mexico in the 19th century and beyond, and that this account has been established as the "official history" for biologists. On the other hand, to consider the place that science has had and has in Mexico, as a counterweight (or as a balance) to the dominant religious vision, Catholicism; and in this sense, what has been the role that the advance of Protestant groups has played in the promotion of creationist/antievolutionist visions (particularly from the United States). All the above, in order to present a general panorama that will allow a deeper analysis of the relations between science and religion in Mexico.

Trajectories of (non)belief and "boundary work" in the scientific community. The case of Polish and Ukrainian natural scientists

Maria Roginska, University of Krakow, Poland

The paper contributes to the discussion on the secularizing impact of science in modern societies. The starting point of the research is sociological data that shows lower religiosity of scientific communities in comparison to the general population in different countries. This might indicate that science does exert a secularizing force on modern ideologies. The explanatory hypotheses of this phenomenon are, however, ambiguous and predominantly concern Western countries. Based on the 100 in-depth interviews with physicists and biologists from, significantly under-investigated in this respect, Central and Eastern Europe (Poland and Ukraine), it demonstrates the crucial role of cultural and historical context in the formulation of the (un)faith of the scientists. The scientific knowledge and participation in science as a social institution is more complementary than decisive in these processes, moreover, these factors play different roles in biographical trajectories of the Polish and Ukrainian natural





International Research Network for the Study of Science & Belief in Society

scientists. The paper shows besides that not only historical factors but also cultural differences (e.g. “boundary work” between nature and supernatural and respectively science and religion) play a crucial role in establishing the legitimized strategies of dealing with religious beliefs in the two countries. The data suggests generally that influence of science on religion is not of universal nature but is strongly mediated culturally. It is worth therefore regarding not one but multiple formulas of this impact.

Spiritual Skepticism

Bastiaan Rutjens, University of Amsterdam, Netherlands

What makes people skeptical about science? Recent work on the ideological antecedents of science skepticism points to its heterogeneous nature. Whereas political ideology is reliably associated with climate science skepticism, religiosity has been found to be a more robust correlate of various other manifestations of science skepticism. However, most of what we now know about skepticism is based on data collected in the United States. I will present recent work which aimed to address the generalizability of this knowledge, by replicating and extending earlier work on the heterogeneity of science skepticism among a Western-European community sample. The results indicate that various key findings hold up: Mirroring North-American patterns, climate science skepticism is primarily associated with political conservatism, and scientific literacy does not contribute to skepticism, except about genetic modification. However, the current data reveal one crucial difference: Religiosity does not meaningfully contribute to most manifestations of science skepticism, except on the topic of evolution. Instead, *spirituality* is found to be the most consistent predictor of science skepticism (i.e., about vaccination and genetic modification), as well as of low general faith in science. Spirituality also indirectly impacts on willingness to support science, through low faith in science. These findings have important implications for understanding and overcoming science skepticism, as well as for the generalizability of previous results.

A.R. Wallace and the ‘Theory of Spiritualism’: When Human Evolution Gets Wacky

Efram Sera-Shriar, Science Museum Group, UK

After witnessing some extraordinary events during a séance at his home in the summer of 1865, the co-discoverer of evolution by natural selection Alfred Russel Wallace (1823-1913) became a fervent believer in the spirit hypothesis – the idea that the phenomena produced by mediums at séances are caused by disembodied spirits. In the decades that followed, Wallace championed the value of





International Research Network for the Study of Science & Belief in Society

spiritualism for science; epitomised by his ‘theory of spiritualism,’ which attempted to align his belief in spirits with his scientific naturalism. The result was an evolutionary theory that attempted to harmonise science and religion by showing how naturalistic and spiritualistic mechanisms shape humans both in life and the afterlife. This paper will examine Wallace’s writings on spiritualism and science from his popular book, *Miracles and Modern Spiritualism* (1875). For Wallace non-directional evolutionary processes, guided by natural selection may have accounted for human diversity when studying the living, but upon death a different evolutionary process began that was directional and progressive. He called this mechanism ‘progression of the fittest,’ and it was a new form of human developmentalism that attempted to reconcile his evolutionary ideas with his spiritualist ones. This merger of ideas firmly posits Wallace’s work on spiritualism in larger discussions on the epistemic limits of science and religion. Although many mid-century scientific naturalists were attempting to displace religion and remove it from scientific studies, Wallace’s position differed, and he saw the two bodies as being compatible so long as they were employed through a spiritualist framework. Thus, Wallace’s spirit investigations complicate our historical understanding of the relationship between science and religion, exposing the fluidity of the boundaries.

The Devil’s Advocate Revisited: (non)religious differences in reactions to reading Dawkins

Carissa Sharp, University of Birmingham and Carola Leicht, University of Kent, UK

How do people react to secular arguments made by public figures? This has been the focus of several recent studies. In their “The Devil’s Advocate” paper, Shariff, Cohen, and Norenzayan (2008) found that participants who read a passage by Richard Dawkins arguing against the existence of God were subsequently less religious than participants who read a control passage, on both explicit and implicit measures. However, in a related study, Scheitle and Ecklund (2017) found that learning about Dawkins and his views did not influence people’s perceptions of the science-religion relationship, while people who learned about Francis Collins, who has a collaborative view of the science-religion relationship, were significantly less likely to endorse a conflict viewpoint afterwards. In the present study, we aimed to extend this line of research by presenting participants with one of two passages by Dawkins – one of which is more confrontational and anti-religion than the other – to investigate whether the style of secular arguments affected people’s responses to them. We also investigated the extent to which participants’ own (non)religious identities – religious, atheist, or non-religious (but not atheist) – moderated people’s reactions to the passages. We found that people’s reactions to Dawkins depended on both the style of passage as well as their own (non)religious identities.



International Research Network for the Study of Science & Belief in Society

Exploring science and religion in childhood

Rachael Shillitoe, University of Birmingham, UK

Drawing on data gathered from a project investigating what it means to grow up nonreligious in contemporary Britain, this paper explores processes of nonreligious transmission in childhood and in particular, nonreligious children's perspectives of evolutionary science and religion. It will draw on ethnographic data gathered from three primary schools in contrasting areas of the UK and examine how children learn about different beliefs and worldviews across both home and school. It will examine the nature and varieties of children's beliefs and explore the ways in which children negotiate, construct, and reconstruct forms of religion and secularity in relation to science, and how this is shaped by the actions of adults in relation to them across spaces of both school and home.

The findings from this project demonstrate that there are different processes through which non-religious transmission in childhood occurs. In the context of family life, forms of transmission range from active non-religious socialization to implicit and banal expressions of non-religion. Coupled with this, we show the importance of the place of religion in British schools in shaping non-religious identities. This context of religion in schools, we argue, allows the largely unremarked processes of non-religious socialization in the home to become marked, explicit and known through the binary constructions of religious and non-religious identities in Religious Education, particularly through lessons on the origins of the world and the Big Bang Theory. Through everyday school life we observe more explicit forms of nonreligious socialization occurring in which children come to articulate their non-religious beliefs and identities. Crucially, by exploring science and religion in childhood and how children learn, encounter and understand different beliefs and worldviews can help our understanding of the nature and diversity of religious and scientific belief across the lifespan.

God and Evolution: perceptions of biology teachers in three Latin American countries

Hesley Machado Silva, University Center of Formiga/MG, Brazil

Despite being one pillar of the science, evolution theory finds religious resistance on a world scale. This paper attempts to locate places in evolutionary theory where one could accommodate a divine presence without changing scientific principles, and to suggest such spaces as didactic opportunities for the insertion of consilience between religion and the sciences in biology classes. It may be possible for a teacher to demonstrate that although we know much about the origin of the universe, life and





International Research Network for the Study of Science & Belief in Society

man, confirmed by scientific evidence, many things have not been clarified and some aspects of mankind's relationship to nature may never be fully. There are gaps in the knowledge about what existed before and about the moment of the primordial explosion that originated the universe. The same can be said about the origin of life, as little is known of what may have happened. Indeed, scientists work in the field of hypotheses, being very difficult to have a definitive scientific theory for both events. Furthermore, the emergence of human consciousness is also unclear, is not known at what point of human's ancestral trajectory it occurred or how. Teachers should not present the divine figure in science and biology classes, however, since science cannot answer these great questions of humanity, there is room for teachers and students to fill such gaps by accommodating their beliefs in such unknown areas and so avoiding the direct conflict between faith and science. In demonstrating this, the teacher can find a conciliation between believers and non-believers, who will have different perspectives, without denying or deprecating beliefs.

Nineteenth Century Positivist Roots of the Relations between Science and Religion in Latin American

Ignacio Silva, Austral Universidad, Argentina

The Ian Ramsey Centre for Science and Religion at Oxford conducted an informal online survey in 2011, in which self-selected Latin American academics were asked their opinions on a diversity of matters relating to the academic situation of science and religion in Latin America. A common trait in the explanation of the perceived conflict between science and religion in the region was the influence of nineteenth century French positivism. I will argue in this paper that the influence of Comte's positivism, understood in terms of the three-stage development of humanity towards the positive and ordered society, offers an important difference between the predominant narratives in the English-speaking world and those present in Latin America on the conflict between science and religion. I will argue, in particular, that nineteenth century Latin American positivists rejected religious discourses not because of an intrinsic opposition between scientific theories and theological doctrines – as one would find in the works of Huxley, Draper, or White – but because of the alleged regression that religion and superstition represented for society, and the progress that science would bring to it.

I will offer testimonies from influential Latin American personae who held to the positivist discourse, and who helped rooting it in Latin American. For example, Argentine political theorist and diplomat Juan Bautista Alberdi claimed in 1852 that a progressive positive society could “let the clerics educate themselves”, but it should “not entrust them to educate our lawyers and statesmen, our businessmen, sailors, and soldiers”. This sort of expression was aligned with others of the like Gabino Barreda, a





International Research Network for the Study of Science & Belief in Society

prominent Mexican physician and philosopher, would assert: in 1851, with a clear positivist key, he claimed that “science, progressing and growing like a weak child, first tried to augment its strength... until slowly, as it grew stronger, would enter into combat with preoccupations and superstition”.

My argument will, thus, hold that nineteenth century positivism in Latin America shapes the contemporary perceived relations between science and religion today, thus distinguishing it in its ideological roots to English-speaking conflict models.

Simple, complex metaphors: trying to narrate a new history of science and religion

Nick Spencer, Theos, UK

The dismantling of the Draper/ White warfare metaphor for the historical interaction of science and religion is pretty much complete in academic circles. But, as a recent book on the subject rightly says, such “revisionist accounts have scarcely made a dent on leading public intellectuals.” Drawing on experiences of working with the BBC on a new three-part Radio 4 series on the history of science and religion, which moves beyond the Draper/ White warfare metaphor by drawing on forty years of revisionist academic research, the author examines the challenges of capturing the newly-nuanced understanding of the relationship, best-known in John Hedley Brooke’s idea of complexity, without losing the narrative clarity and simplicity that is necessary for popular communication, and is essential if such revisionist accounts are to make a dent on intellectuals and the wider public. He situates this discussion in the wider analysis of the role of metaphors in framing, deepening but also constricting our conceptualisation of reality, and explores the ways in which the relationship between science and religion can be comprehended through metaphors that pay due attention to the need for simplicity, for complexity, and for plasticity.

The Science/Religion distinction, human cognition and the function of belief

Konrad Talmont-Kaminski, University of Finance and Management, Poland

The various scientific disciplines and traditions as well as the many religions that have had adherents around the world vary greatly among themselves. What sense is there, therefore, in making a principled distinction between Science and Religion? I will argue that the distinction can be traced to the difference between the relationship between the function of beliefs and their truth – the point being that religions are ideologies, i.e. belief systems whose function is to motivate prosocial behaviour but which is not tied to their accuracy. Many of the differences in the institutional make up of religions as opposed to the sciences can be better understood in the context of Mercier and





International Research Network for the Study of Science & Belief in Society

Sperber's theory of the argumentative role of reasoning – with religions fostering source vigilance over content vigilance, thereby making possible belief traditions disconnected from outside evidence, and the sciences fostering the opposite approach.

Of course, real life examples are never straight forward, with no tradition presenting a clear cut case due to the exigencies of its situation and the specifics of human cognition. The picture is further complicated by the importance of practice, as opposed to belief, to both Religion and Science.

Being Orthodox and Greek: Scientists and theologians in 19th and early 20th century Greece

Kostas Tampakis, National Hellenic Research Foundation, Greece

Scholarship discussing the historical relationship between science and faith has tended to gravitate towards spaces where universities have a long and distinguished history, and where theology has been an academic discipline for at least as long. However, faith and science have also interacted in national and cultural spaces where both the natural sciences and theology itself were newcomers. The modern Greek State is such an example. Emerging during the 1830s as a sovereign state after four centuries of Ottoman occupation, it nevertheless strived to acquire all the trappings of a modernistic state, including a University, an Observatory and a Polytechnic School. In this era of nationalism and triumphant modernity, the relationship between the newly funded School of Theology within the University, and the existing Orthodox tradition, not to mention the newly appointed as autocephalous Church of Greece was far from clear. What is more, the Greek national identity was itself in a flux, torn between modernity, Orthodoxy and Greek classical heritage.

This paper aims to show how theologians and scientists alike created a cultural and intellectual identity for themselves by appropriating similar nationalistic and ideological norms. It also aims to describe the various points of contact and sources of friction among the two novel communities, which had to negotiate a role for themselves in a turbulent and shifting national and international contact. Finally, the paper will bring to the fore the international dimensions of the process, by emphasizing how both natural sciences and theology depended, as narratives and practices, to international and transnational norms and ideals for their establishment in Greece.

Autobiographies of Science and Religion: Scientists, Beliefs and Autobiographies

Renny Thomas, Jesus & Mary College, India





International Research Network for the Study of Science & Belief in Society

This paper attempts to argue for a close reading of autobiographies of scientists to study science and religion. Though we see biographers of scientists talk about the religious life of scientists, one doesn't see much discussion on religion and beliefs when renowned scientists write their autobiographies. I argue that a close reading of autobiographies of scientists will give us new insights in understanding the question of science and religion. Many scientists for example talk about ethics and morality, without using the *word* religion or belief. Anthropologists and historians of science, I argue will find autobiographies an important source of explanation. It will invite us to ask the reasons why many scientists don't write about religion or the lack thereof in their autobiographies. What does it say about the contemporary debates on science and religion, is it because of Conflict (Gingras) or Territories (Harrison)? In this paper, I engage with the autobiographical writings of three distinguished Indian scientists to study science and religion in India. These Indian scientists discuss their religious beliefs and talk in detail about their favourite deities and pilgrimage places in their autobiographies. However, my intention is not to argue that Indian scientists are different from the western ones, and they write about their religion because India is metaphysical or spiritual in nature. Instead, I use these examples to re-read autobiographies of western scientists as well to understand the alternative language or code they use to describe religion and belief. I ask if there can be a conversation between ethnography and autobiography when we study science(s) and religions(s), especially if we are studying the autobiographies of scientists who were part of the ethnographic fieldwork and with whom the ethnographer had various conversations. I have interviewed the scientists who wrote these autobiographies as part of my fieldwork. This paper in that sense is an invitation to think of the possibilities of an *autobiographical turn* in science and religion studies.

Faithful Translations: Religion and the Encounter with Western Science in Colonial India

Rajive Tiwari, Belmont Abbey College, USA

Modern science, as developed in the West, arrived at Indian shores riding the waves of imperial endeavor. This was also accompanied by an increase in Christian missionary effort. The native encounter with modern science occurred within the framework of imperial and Christian expansion but also in the context of a pre-existing understanding of nature imprinted in the public imagination as a rich tradition of indigenous scholarship and Hindu mythology. In the network that mediated Western science's diffusion, colonial education system and the Hindi-language popular press functioned as crucial nodes.





International Research Network for the Study of Science & Belief in Society

By way of exploring popular reception of European science, science-related Hindi articles from nineteenth-century newspapers and popular magazines were investigated. This public discourse doesn't indicate a wholesale rejection or acceptance of Western science. It, in fact, displays a nuanced response to science expressed with mutually reinforcing undercurrents of nationalism, a desire for modernity and a concern for religious reform. The new knowledge was at times seen as being compatible with the Hindu tradition and at other times as a Christian assault on the traditional way of life. The dialectics of power playing out on the colonial substrate was mirrored by the dialectics of knowledge in its superstructure. In responding to this new body of knowledge, people were not simply responding to a particular epistemology and ontology but to an entire system of power. Thus, the meaning of this science was constructed not in a vacuum but in the framework of various political and religious considerations. The talk will present excerpts of these writings on science and discuss their contextual nature.

Radical Artisans, Divine Design, and Evolution in Britain, 1819–36

Jonathan R Topham, University of Leeds, UK

Adrian Desmond's studies of the British debates on transmutation in the 1820s and 1830s, and in particular of the role in those debates of radical artisans, permanently altered scholarly understanding of "the politics of evolution". However, a closer look at radical publications from that period suggest that Desmond's dichotomous picture, of radical artisanal supporters of transmutation pitted against conservative gentlemanly supporters of design theology, needs heavy qualification. This paper explores the topic afresh, drawing on evidence from the popular press of the era, and especially the *Poor Man's Guardian* (1831–35), which regularly carried editorials, verses and other writings that blended reformist politics with design theology. Recovery of this tradition of radical design theology can help us better understand both the religious condition of the British working class of the 1830s and the complex nature of religious alignments in the emerging debates over species.

Religious Reactions to Synthetic Biology

Chris Toumey, University of South Carolina, USA

There is a pattern of chronic problems in religious reactions to new technologies. One problem is especially troubling, namely, the inability of almost all religious organizations to comprehend a new technology and pass judgement on it in real time. We might contrast that with religious reactions to scientific issues; for example, almost any religious organization can know the general parameters of





International Research Network for the Study of Science & Belief in Society

the creation-evolution controversy, and can take a position based on its own beliefs and teachings. This problem became evident in religious reactions to nanotechnology, and it arises again in religious reactions to synthetic biology. One might assume that the ability to design and produce changes to genomes, including the human genome, would generate intense religious interest, but in fact religious reactions to this genomic technology are rare. This presentation describes those few religious reactions and considers them as another case of the problem of religious organizations being unable to quickly comprehend a new technology.

The 'Scientific' Interpretation of the Bible and the Victorian Conflict between Science and Religion.

James Ungureanu, University of Queensland, Australia

Paper Abstract: From the beginning of Christianity, the death and resurrection of Jesus formed the heart of the apostles' message. While many eighteenth-century thinkers began challenging the notion of Jesus' bodily resurrection, it was not until the nineteenth century when naturalistic theories of the resurrection flourished. It was in Victorian Britain, influenced by German historical-critical scholarship, where a flood of "Lives of Jesus" appeared, inaugurating the so-called "First Quest for the Historical Jesus." Historians of science and religion have given little attention to how this scholarship affected the relationship between science and religion in the second-half of the nineteenth century. However, many of the so-called "founders" of the "conflict thesis" were influenced by this literature. Indeed, in his *A History of the Warfare of Science with Theology in Christendom* (1896), Andrew Dickson White spent a significant amount of pages discussing biblical scholarship. In fact, his longest and final chapter in his two-volume masterpiece traced the development of the "scientific interpretation" of the Bible. In this paper I argue that developments in biblical criticism had a direct impact on how not only White but other alleged "founders" of the "conflict thesis" constructed their historical narratives. While I will focus mostly on White as representative, I will also highlight how biblical criticism, including historical Jesus studies, had a dramatic impact on John William Draper and his notorious *History of the Conflict between Religion and Science* (1874). By examining more carefully how biblical criticism played a significant role in the thought of White, Draper, and others, this paper hopes to relocate the origins, development, and meaning of the science-religion debate at the end of the nineteenth century

"Importing creationism" and teaching "alien rubbish"? Surveying Public Attitudes to Science among British Muslims

Amy Unsworth, University of Kent, UK





International Research Network for the Study of Science & Belief in Society

There has been a tendency in the West, both historically and in the present day, to cast Islam as a particularly backward and unintellectual religion in need of scientific enlightenment. Furthermore, in recent years, the convergence of a number of factors including changes in governmental education policy, changes in Britain's religious landscape, and incidents of creationist and anti-creationist activism, led to a visibilisation of creationism in the British media, with significant blame placed upon Muslims for the reported "rise in creationism". In this presentation I will analyse data from a unique national survey dataset, enabling the first detailed quantitative analysis of British Muslim attitudes to science in general, and evolutionary theory in particular. I will discuss how education and religiosity relate to evolution acceptance or rejection among Muslims, and examine whether "celebrity scientists" (Fahy 2015) or "celebrity creationists" may be influential in changing peoples' views of evolution. I will also consider the limitations of survey data and make suggestions for improvements.

Negotiating the boundary between science and religion in modern rational institutions

Pia Vuolanto, University of Tampere, Finland

Philosophical anthropologist Charles Taylor famously argued that both scientific rationality and religious expressiveness are part of the structure of the modern self. Yet the divide between these two modes of perception is increasingly pronounced in the modern globalized world, particularly in Northern Europe. On the one hand, secular polities and state structures restrict religious experiences to a highly personalized space. Such modern institutions as courts, parliaments, corporations, hospitals, universities, and schools operate as prime sites of secular scientific rationality. On the other hand, New Age movements, urban religious and spirituality groups, as well as migrants' religiosity are pushing religion back into the highly visible domain of urban spaces. However, there is still little understanding of how this divide affects people's daily lives. With an attempt to increase our understanding of a particular form of urban religiosity, our paper ethnographically explores how individuals, who identify themselves as belonging to a certain religious or spiritual tradition, negotiate their religious identities and faith, as well as position themselves while working (or studying) in secular spaces such as universities and health clinics. Our argument draws on long-term multi-sited ethnography, including interviews with health practitioners, researchers and students from Lutheran, Orthodox, Muslim and anthroposophy backgrounds in Finland and Sweden. Most our interlocutors reside in a large urban center, where they settled in as result of international or internal migration. Combining insights from anthropology of religion, neoinstitutionalist approach in sociology of religion, science and technology studies, and transnational anthropology, the paper investigates various strategies that boundary individuals use to negotiate the science-religion interface.





International Research Network for the Study of Science & Belief in Society

Higher-Dimensional Dreams, and the Fashioning of A “More Scientific” Supernatural

Christopher White, Vassar College, USA

In the last 50 years, the religious landscape in Europe and America has shifted dramatically. Self-reported levels of religious affiliation and practice have declined rapidly, even if belief in spiritual realities (such as angels) either remained the same or increased. How do we make sense of the fact that in this period people were practicing religion less while believing more in spiritual things? How did those who rejected institutions that anchored supernatural worldviews for millennia continue to speak confidently about the existence of unseen heavenly landscapes, guardian angels, or other supernatural realities? Out of what raw materials did they develop new ways of imagining these things? In this paper I argue that many people developed new, enchanted worldviews by using secular, scientific ideas, including especially the idea that the universe has higher, invisible dimensions. While this idea was developed initially by nineteenth-century physicists and mathematicians, it did not take long for non-scientists to use this notion to talk about spiritual realities in ways that made them seem more scientific. In this paper I examine how this process worked by looking at the life, prophetic dreams and higher-dimensional theories of the British aeronautical engineer and speculative thinker, J. W. Dunne. Dunne heard spiritual voices, had revelatory dreams, and even glimpsed the future—and he used scientific ideas related to higher dimensions to understand these phenomena and make them seem more plausible and reasonable. His life, and the pop culture of dream interpretation that he inspired in England and America, demonstrates that scientific ideas have not just fostered secularity and religious decline; they also have been deployed to help people believe in the existence of unseen, heavenly realms and recover an imaginative sense for the supernatural.

Perspectives from the shipwrecked: Terror management dynamics undergirding religious orientation and belief in science

Ron Wright, Southern Nazarene University, USA

Recent social science research on the relationship between beliefs in science and religion has focused on the manner in which cultural identity, belonging, and ethical motivations may be at work in the differences found between these beliefs (Hill, 2014; Elsdon-Baker, 2018). In addition, research with a UK and Canadian population found that there was some uncertainty about the ability of evolutionary science to explain the origins of humanity and human consciousness across both religious and non-





International Research Network for the Study of Science & Belief in Society

religious respondents (Elsdon-Baker, Leicht, Mason-Wilkes, Preece, & Piggott, 2017). The movement towards conceptualizing these differences in terms of cultural identity, belonging, and ethical motivations, as well as the uncertainty of respondents about the capability of evolutionary science to explain aspects of human uniqueness opens the possibility for Terror Management Theory (TMT) to contribute to an understanding of these dynamics. Within TMT, cultural worldview, attachment, and self-esteem (roughly mapping onto cultural identity, belonging, and ethical motivations respectively) are posited as important means for maintaining security and reducing anxiety (e.g. when confronting alternative worldviews), within a “tripartite security system” aimed at keeping death anxiety to a minimum (Hart, Shaver, Goldenberg, 2005). A central existential tension for humans, according to TMT, is the manner in which humans inhabit mortal bodies yet experience the “self” in a symbolic fashion (Becker, 1973). Research within TMT suggests that there is a discomfort associated with reminders of animality and/or the body and that this is one of the primary dynamics with which religious worldviews assist in ameliorating (Goldenberg, Morris, & Boyd, 2019; Vail, Soenke, & Waggoner, 2019). Preliminary findings from two correlational studies and one experimental study will address how a TMT focus on religious orientations, worldview defense, and the existential problem of animal continuity/body might contribute to an understanding of the differences in belief in science and religion.

Missionary work, and the making of Islam as a “scientific religion” in late nineteenth Century

Istanbul

M Alper Yalcinkaya, Ohio Wesleyan University, USA

An important contribution of studies on “science and religion” is their emphasis on the shifting boundaries around these two categories, but while the existing literature provides a sound basis, more empirical research is needed to study how academic and non-academic discourses on “science and religion” contribute to the very making of these categories, not only in Europe and North America, but around the world.

In this talk I will focus on the late nineteenth century Istanbul, and discuss how the arguments of Protestant missionaries in the Ottoman Empire informed Muslim Ottomans’ representations of Islam. Protestant missionaries in this period were not only more educated in the sciences but saw scientific education as a potential tool to be used in conversion efforts. Moreover, they depicted Islam as a “religion” comparable to Christianity, yet ultimately inferior due, among many reasons, to its aversion to rationality and scientific thought. Focusing on the works and statements of three American





International Research Network for the Study of Science & Belief in Society

missionaries and the responses of their Muslim readers, I will illustrate how Muslim Ottomans criticized but also appropriated the ideas of the missionaries. While making a case for the harmony between Islam and science, and representing Christianity as the inherently irrational religion, Muslim Ottomans effectively engaged in a project of religion-making, and constructed out of many different elements a particular version of Islam. The “science and religion” debate in which Muslim Ottoman intellectuals participated in the late nineteenth century emerged partly as a response to missionaries, and it was not only about showing that Islam was a “scientific religion,” but involved the very construction of Islam as a “world religion.”

Modernity and the Formative Buddhist-Science Discourse: The Case of Venerable Taixu

Dong Zhao, Beijing Foreign Studies University, China

The scientific study of Buddhism in Euro-American academic circles is largely based on Western philosophy and scientific standpoints, or non-Buddhist standards. With modernization of Chinese Buddhism comes the need to re-examine the relationship between Buddhism and science in the lens of traditional Chinese Buddhism. Ven. Taixu (1890-1947), justly credited with initiating “Humanistic Buddhism,” began to think about the relationship between Buddhism and science earlier in the Chinese Buddhist community, and his insights still have relevance today. The dissemination of modern science in China was a major project of Chinese modernity in the late 19th and early 20th centuries. Buddhists played an active role in the appropriation of science in China as they sought to relate their tradition to science in such a way that Buddhism would still have a place in the modern Chinese state. Taixu is an indispensable case in examining the modern Buddhist engagements with science during the 1890s through the 1940s, the formative moment of their encounter. To respond to science and scientism that denounced Buddhism as “methods of deception”, Taixu sought to show that the Buddhist tradition was compatible with science and in fact could remedy the latter’s deficiencies, both epistemic and ethical. In the process, he used scientific ideas and terms to help articulate a distinct discourse of Chinese Buddhist modernism. His Buddhist paradigms in the encounter between modern science and Buddhism made him a pioneer in an evolving dialogue between the two domains. Reorienting research on a period when the discourses of both science and Buddhist modernism were taking shape in China to reveal patterns and tactics that still inform the tradition today, the paper’s originality lies in its historicizing and particularizing the two discourses that have sometimes been deemed as ahistorical monoliths.

