GENERATING DIALOGUE ON SCIENCE AND RELIGION

FROM IDEAS TO PRACTICES

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Science and religion are the core ways most people understand and assign meaning to the world. More than 85 percent of the world is religious and most countries are trying to grow their scientific infrastructure. Nearly all developed and developing nations view investment in science as essential to education, economic development, and human well-being. This was especially clear the past few years during the COVID pandemic, as countries with more scientific funding and infrastructure were better able to care for their populations. We also saw how important it is that religious communities support rather than oppose scientific findings and public health responses. In a time of fear and uncertainty, people relied on the advances of science, but many also sought the comfort, community, and guidance of religion.

The ways that people view the relationship between science and religion impacts their feelings on medicine, technology, education, politics, social justice, and racial issues. If we hope to have productive dialogue about our deepest social problems, it is important to understand how scientific and religious mindsets influence how people approach these issues, and to build better relationships between scientific and religious communities. Scientists benefit from working in a society where there is greater trust of science, and where they are likely to find support for research and development, thriving universities and research institutes, and greater scientific innovation and creativity. Religious communities also have much to gain from trusting science, which shares a desire to seek the truth. In producing knowledge about the world, science brings believers closer to God and helps them become good stewards of the earth. At the same time, science has to recognize that it has limits and that religion can provide important ethical insights, help people cope with challenges, and offer wisdom and traditions that can benefit people’s lives.

We have spent years studying how people around the world feel about matters of science and religion, conducting thousands of surveys and in-depth interviews. For the past 10 years, we have engaged in an intensive study of what scientists in eight different regions think about religion and science. It was important to take a global perspective: For far too long, the relationship between science and religion has been mainly studied only in the West, primarily the U.S., ignoring the ways in which the science-faith relationship varies across countries. Our Religion Among Scientists in International Context (RASIC) study is the largest and most broad study ever of scientists’ attitudes toward religion. With the support of a nearly 100-person team of researchers, we surveyed over 20,000 physicists and biologists in the U.S., U.K., Italy, France, Turkey, Hong Kong, Taiwan, and India and conducted more than 600 in-depth interviews with selected survey participants. RASIC led to a number of important contributions in the social sciences, most notably two books: Secularity and Science provides a detailed examination of what scientists in these eight
nations think about religion and how such views are shaped by factors such as religious identity, scientific discipline, and organizational context; Varieties of Atheism in Science focuses on identity, meaning, and morality among different groups of atheist scientists in the U.S. and U.K.

Given the nature of our work and our commitment to public scholarship, we think it is important to widely share what we have learned. Over the past three years, we have been engaged in a dissemination effort we call Communicating Outlooks for a New Global Religion and Science Synergy (CONGRESS), which included lectures, dialogue workshops, op-eds, and podcast interviews. The main goal of CONGRESS was to draw on our study findings to create dialogue around science and religion within the global scientific community. We convened a total of six events — five were held in countries in which we collected data (the U.S., U.K., India, and Hong Kong), and we convened a sixth event in Mexico, to expand the reach of our work and explore the possibility of a study similar to RASIC in Latin American nations. As a result of the pandemic, much of this work was done online, which meant we were able to reach a much larger group of people than we could have otherwise.

Each event included a lecture where we shared the findings of our research, followed by a dialogue workshop for a strategically identified group of scientific leaders, religious leaders, and policymakers. These workshops involved two or three short presentations that motivated a series of discussion questions that were addressed in small groups and then as an entire group. Nearly 1,500 individuals attended our lectures and 109 individuals thought leaders participated in the intensive workshops. Workshop participants included representatives from the National Academy of Sciences, the National Science Foundation, the National Institutes of Health, the American Association for the Advancement of Science, and various elite universities in the U.S., as well as a number of universities outside of the U.S., including the Indian Institute of Science, Hong Kong University, Cambridge University, and the University of Oxford. We also collected pre- and post-event surveys.

Drawing on this massive data collection, our own experiences, and the response of our dialogue partners, this booklet provides five lessons and five practical guidelines for generating more constructive and productive dialogue on science and religion. It is designed to help scientific and religious communities better engage with each other to achieve shared values and goals and, in particular, to help religious communities better understand scientists and their views on religion and to help scientists understand their own community.
Lesson 1: There are more religious scientists than most people realize

One of the greatest myths of the modern era is that the rise of science will lead to the decline of religion. There is also the related widespread erroneous belief that most scientists are not at all religious. Our research suggests that some religious individuals select out of science because they believe these ideas to be true, but the reality is that there are more religious scientists than most people think. According to our survey data, in the most highly secular societies, there is a sizeable minority of religious scientists: 16 percent of French scientists and 27 percent of U.K. scientists say they view themselves as religious. In the U.S. and Hong Kong, the numbers go up: about one-third of scientists say they are religious. In Italy, Taiwan, Turkey, and India, the numbers are even higher, with more than 50 percent of scientists identifying as religious. In other words, science is not an atheist enclave.

Lesson 2: Not all atheists are hostile to religion

There is a popular misconception that all atheists are vehemently against religion, and this can contribute to skepticism—and possibly an erosion of trust—toward science in religious communities. The truth is that the most famous atheists bear little resemblance to most of the atheist scientists we met in our study. One category that we call “modernist atheists” consists of nonreligious scientists who are convinced that there is no god and have no formal or informal engagement with religion or spirituality. Some modernist atheists are fierce critics of religion, but most are indifferent or even look positively toward religion. Other atheists can be considered “culturally religious atheists,” in that their lives are characterized by recurring interactions with religious individuals or organizations, sometimes even belonging to a religious tradition without believing. We also found what we call “spiritual atheists” among scientists. They do not believe in any form of impersonal or transcendent higher power of any kind, but they do construct secular forms of spirituality.
Lesson 3: Only a minority of scientists embrace the conflict view of science and religion

There is also the widespread myth that almost all scientists believe that science and religion are fundamentally and intrinsically in conflict with one another. This view of the science-religion relationship is called the “warfare thesis.” While there are certainly tensions between science and religion, there are many scientists who do not see an absolute conflict between the two domains. Across the eight countries we studied, the proportion of scientists who embrace the conflict view never exceeded one-third. The dominant view among scientists is that the relationship between science and religion can be described as one of independence, with each referring to different aspects of reality. Most scientists do not see a war between science and religion or think that individuals have to choose between them.

Lesson 4: Religion is a missing dimension of diversity in science

The prevailing myths about scientists and religion—that most if not all scientists are not religious, are vehemently anti-religion, and view science and religion as intrinsically in conflict—contributes to a view that religious individuals are unwelcome in science. As a result, religion is a missing dimension of diversity in science, particularly in the U.S. and U.K. In Western nations, most universities and major scientific organizations are actively trying to recruit more women and non-white individuals through diversity initiatives. Research demonstrates that both women and people of color are vastly underrepresented in science, yet they are overrepresented in American Christianity, for example. We believe that addressing and improving its relationship with religious communities could help the scientific community increase the representation of women and racial minorities in its fields. These groups are unlikely to pursue science if they believe the community is hostile to their religious beliefs and values.
Lesson 5: Context matters

Our study was based on the premise that the science-religion interface varies across national, regional, and organizational contexts, and that is indeed what we found. The local context in which scientists are situated has a huge impact on the particular kinds of scientific and religious issues that are important, the connections they draw between science and religion, how they receive information about the relationship between science and religion, and how they navigate and understand religion in the workplace. The assertive secularity of France, for example, results in workplace environments in which referents to religion are stringently avoided. When religious symbols do appear, they may lead to discrimination. In India, for example, it is not uncommon to see obviously religious symbols in scientific workplaces. Patterns of immigration are also important. Because the U.S. and U.K. are situated at the core of the global infrastructure, a significant proportion of their scientists originate from other countries. The religious diversity of these environments presents different issues than we find in Italy, where scientists are overwhelmingly Italian and Catholic. In addition, the religiosity of the general population in a country shapes the nature of the public discourse surrounding science and religion. Collectively, these and other factors lead some scientists to be more receptive than others to collaboration between scientific and religious communities.

It is important then, to tailor science and religion dialogue to the particular context in which it occurs. This is what we did in our workshops, focusing on themes that were regionally significant and relevant. In the U.S., for example, we organized our lecture and workshop around the idea that scientists need to discuss religion to address racial and gender disparities in science. In Hong Kong, we focused on how and why Hong Kong and Taiwan are distinct from Western contexts in how they approach the relationship between science and religion. We believe that a tailored approach generates not only a larger audience, but also a more receptive audience, which can lead to greater impact. Consider our experience in India, for instance, where we presented data on caste discrimination, a topic intrinsically tied to religion. A comparison among participants who completed both pre- and post-event surveys shows that the proportion of individuals who agree that “caste discrimination is a problem in the scientific community” increased from 59 percent to 71 percent. Had we not tailored our program to region specific themes such as this, our event may have been less impactful.
Tip 1: It matters who is in the room

For dialogue on science and religion to be constructive and productive, we found it helps to involve thought leaders from different walks of life who share similar levels of power and status. It is important that such events be orchestrated in good faith, where the dialogue participants are equal partners. Invite scientists who will not insult religious believers or misrepresent the results or limits of science. If possible, invite religious leaders who have a science background. The dialogue workshops we led were organized around conversation rather than debate. We believe this approach helps participants find shared goals and work toward progress rather than setting them up to act as opponents or adversaries.

For our lectures, we sought large audiences of scientists, contacting our study participants in physics, biology, the social sciences, and other fields. While we also included science communicators, university leaders, faith leaders, and thought leaders in other domains, we focused primarily on scientists for a number of reasons. For one, our study focused on scientists and our goal was to disseminate our findings back to the community. More importantly, we felt these scientists, given their background and reach, would be able to engage with our material actively and deeply, and then have significant opportunities to apply the findings. From a “train the trainers” perspective, the hope is that these scientists—who represent universities, government institutions, and non-profit organizations that promote science in society—will take what they have learned and pass it along to their students, colleagues, and the public to help dispel myths and broadly impact dialogue on science and religion. As one participant representing the American Association for the Advancement of Science noted during a U.S. workshop: “One truth that we convey in our workshops for scientists is this: if you, as a scientist, are talking with students or the public, then you already are engaging with a religious public.”
Figure 1: Occupational Diversity of CONGRESS II Participants

- Professor: 37%
- Scientist: 31%
- University Administrator: 6%
- Faith Leader: 5%
- Science Communicator: 4%
- Medical Doctor: 4%
- Professional: 3%
- Student/Post-doc: 3%
- Religious Leader: 2%
- Retired: 2%
- Education (other): 1%
- Health Care (not MD): 1%
- Other: 1%

Figure 2: Demographic Diversity of CONGRESS II Participants

- Protestant: 41%
- Catholic: 26%
- Hindu: 11%
- Jewish: 6%
- Muslim: 6%
- Orthodox: 2%
- Buddhist: 2%
- Unitarian Universalist: 1%
- Mormon: 1%
- Sikh/Jain: 1%
- Other: 1%

- Caucasian, White, European: 79%
- East Asian: 6%
- Black, African, Caribbean: 6%
- South Asian: 4%
- Multi-racial: 1%
- Middle Eastern: 1%
- Indigenous: 1%
- Latin: 1%
- Other: 1%
- Pacific Islander: 0%
- Central Asian/Arab: 0%

- Male: 37%
- Female: 61%
Figure 1 illustrates the occupational diversity of our lecture audience. Approximately two-thirds of our audience were scientists or faculty members. Other significant groups included university administrators (6 percent), faith leaders (5 percent), physicians (4 percent), and science communicators (4 percent). Collectively, our audience represented hundreds of organizations in different countries. Figure 2 represents the religious, gender, and racial breakdown of those who filled out our post-event surveys.

Pursuing a broad range of scientists was important for our dissemination goals, but we also targeted more specific audiences to reach groups that were most key to our aims. Specifically, we worked to reach nonreligious scientists because, based on our research, they appear to be the least receptive to engaging in dialogue on the relationship between science and religion, yet represent an important opportunity for dialogue (especially in highly secular contexts of science). Overall, roughly a quarter of our lecture audiences were religious “nones” — they constituted one-quarter of our U.S. audience and 43 percent of our U.K. audience, the most secular scientific communities in our study — and 32 percent of scientists in our audience indicated no religion. Anyone who has been actively engaged in public events on science and religion knows that these are substantial rates of participation of nonreligious individuals—an achievement we attribute to an exhaustive contact strategy.

**Action item 1:**

Identify all individuals and organizations that may have a shared interest in your event and disseminate invitations to as many of them as possible. In our case, we contacted past participants in our study and identified relevant scientists in the cities of our events. We also advertised on social media. For dialogue, bring together leaders who can listen to one another with respect and civility, even when they disagree, and are likely to enhance dialogue by bringing informed and valued perspectives to the conversation. Asking colleagues for recommendations and connections, as well as issuing personalized invitations, can be useful approaches to securing the desired dialogue partners.

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**Tip 2: Data is important**

When presenting ideas and findings that are new or surprising, it helps to have empirical data and effective ways to share it with your audience. Some of our participants asked us if we could make our study data available, others suggested specific types of analyses they would like to see, and others simply contacted us to underscore the point we are making here. One participant in the U.S., for example, emailed us to say, “I very much appreciate the greater texture you have given to data related to people’s views on the relationship between science and religion.” A scientist from India wrote us, “I have shared the book [Secularity and Science] with a number of my colleagues, who too found it very revealing and extremely useful, particularly since it is directly data-based.” Scientists, in particular, love data—and data from one study can inform the future work of many other scientists.
Focusing on data can help take some of the emotion out of charged discussions, making them less personally threatening. An eminent geneticist who participated in our U.S. dialogue workshop said she appreciated our empirical focus because, in her words, “There are questions over the value of science. The public looks to science for information ... facts. ...When the science challenges your beliefs about who you are and your values, then you have a negative skepticism of science and science is painted broadly as ‘not good.’ Facts and information that help with decision making—but are not challenging to value systems—are safer domains.”

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Action item 2:

Use carefully designed studies and quantitative and qualitative data as the foundation of dialogue with scientists and connect your conclusions to practical implications relevant to your target audience. We have found that this requires a dual format approach in which a lecture provides sufficient opportunity to describe the data informing the dialogue. Dialogue workshops, by contrast, should be organized around structured conversation—not data presentation. Accordingly, workshop participants ideally attend both events, but short primers on your data (no more than 5 to 8 minutes long) that motivate discussion questions for dialogue can be included in workshops to allow empirical evidence to act as the starting point of any discussion. By explaining how your data provides a different understanding of the issue at hand, you can use the contrast as the basis for conversation around the practical implications of your work.
Tip 3: Dispel myths and stereotypes

We recall an interview with a French scientist who asked, “A religious scientist—is there such a person?” Most scientists are not aware that many of their colleagues are religious, and in some regional contexts there is little interaction between scientists and religious individuals. As a result, is it easy for myths and stereotypes between the two groups to flourish.

A longstanding line of research in psychology holds that, under certain conditions, contact between two groups reduces stereotypes and promotes acceptance between them. This idea materialized in our research. We found that culturally religious atheists—those who do not believe in God but have recurring interactions with religious individuals and organizations—tend to have positive or neutral views of religion rather than negative perspectives. We also found that learning about religious colleagues, especially successful ones they respect, led many atheist and agnostic scientists to eschew the conflict view of science and religion.

In our outreach events, we illustrated how certain myths, assumptions, and stereotypes are not reflected in the data and provided a place where members of scientific and religious communities could interact, share, and get to know one another. When we compared data from the pre-event and post-event surveys of lecture participants, (which does not include all event participants), it looked like we achieved more success on some measures than others. Figure 3 shows how their views of the science-religion relationship changed. Importantly, the proportion of individuals who do not think that scientists are hostile to religion increased from 59 percent to 69 percent. We also observed a decrease in the proportion of individuals who embraced the conflict view of science and religion from 15 percent to 13 percent after attending our lecture. It could be that some positions are more entrenched than others.
**Action item 3:**

When groups that hold stereotypes about each other engage with one another, perceptions of their differences can begin to shift. We recommend small-group dialogue sessions, similar to our workshops, where members of different groups can interact, uncover their true differences, listen to each other, and learn from and about one another. By getting to know members of the other group in these more intimate settings, we believe they can begin to form collaborative working relationships that can last beyond the immediate discussion and help inform dialogues moving forward.

**Tip 4: Emphasize common ground**

When two groups are at odds with one another, the tension between them is often based on an imagined member of the opposing party who is more extreme than the average group member is in reality. Political scientists refer to this as “affective polarization.” We found this phenomenon among some scientists and religious individuals we studied. For example, when describing religious individuals, U.S. scientists who participated in our projects often imagined “evangelical Christians”—who have a very strong belief in the Bible and tend to have the most public disagreements with science. When thinking of scientists, some religious Americans said they imagined vocal atheists like Richard Dawkins and Sam Harris, who often espouse anti-religious views. Yet, positions at the extremes, such as
religious fundamentalism or militant atheism, are not indicative of where most religious individuals or nonreligious scientists actually stand. Vocal groups at either end are problematic because they tend to attract the most attention in the public sphere and drive misperceptions while fueling mistrust and antagonism.

Consequently, it is important to identify and emphasize common ground in dialogue and outreach. Rather than diving right into disagreements, focus first on beliefs and goals that matter to both groups. In our lectures and workshops, we point to examples of positive interactions between nonreligious scientists and religious individuals within and beyond the scientific community. We also use interview data from our study to illustrate positions, experiences, and moral values that religious individuals and nonreligious scientists share, such as feelings of awe and wonder, a desire to do good in the world and care for the earth, and better educational opportunities for their children.

**Action item 4:**

Bridges can be built by focusing on common ground—the issues that both religious and scientific communities care about. We believe the common ground between these groups is much greater than their divides. Three areas that we recommend as starting points from our own findings and experience: better scientific educational opportunities for children, environmental care, and recognizing beauty and awe in the natural world.

**Tip 5: Sponsor or affirm trusted interlocutors**

Research has shown that people are more likely to be receptive to information they disagree with when it comes from individuals with whom they share a common identity. In her earliest work on religion among scientists at elite universities in the U.S., Elaine Howard Ecklund coined the term “boundary pioneers” to describe religious scientists who openly discuss the intersection of their faith and science. These scientists are the best ambassadors for a non-conflict view of science and religion and can greatly impact how other scientists view the relationship between the two domains, especially if they are successful and respected in their career. In our dialogue workshops, religious scientists become “trusted interlocutors” for nonreligious scientists.
When pursuing outreach opportunities in the scientific community, involving a trusted representative of the host community/organization is an especially effective way to signal the legitimacy and importance of your event. During our data collection phase, for example, we developed a board of natural science advisers in each country of our study who reviewed our study design before signing a letter encouraging their colleagues to participate. This helped their colleagues understand that the study was motivated by legitimate social scientific goals. During our dissemination phase, we partnered with centers and esteemed scientists. In India, for example, Professor Ajay K. Sood, a physicist who is serving as the fourth Principal Scientific Adviser to the Government of India, gave opening remarks at our event that brought together university scientists and members of religious communities. At our U.K. event, Professor Alister McGrath, who has doctorates in both the sciences and in theology, delivered the opening remarks.

**Action item 5:**

The reach and depth of your work will be enhanced when you involve trusted interlocutors in dialogue. It may also be useful to think of two different types of boundary pioneers to involve when engaging the scientific community on topics related to science and religion. Religious scientists, who are at a similar or higher status than the nonreligious scientists involved, are especially important to such conversations, but efforts to involve atheist scientists who actively seek collaboration or dialogue with religious communities can also be valuable. At the organizational level, invite these scientists to partner as co-hosts of events, which can be particularly effective when outreach takes place in other organizations or regions. You might also assign them formal or general participation roles in the program of your activities.

In closing, we are reminded of a conversation between Bill Moyers and famed biologist E.O. Wilson, who said he believed that if scientists and religious individuals — for example, himself and a pastor from a small country church — “sat down and talked about our deepest beliefs together, we’d come up with more agreements. Agreements on more things than disagreements. ... We could say, ‘Let’s put that aside for awhile and work together when we really have something we need to work together on.’”9 Our hope is that the strategies we describe here offer guidance for productive dialogue that is able to uncover agreements, bridge divides, and form collaborations for the common good.
Notes

2 Ecklund, Elaine Howard. 2010. *Science vs Religion: What Scientists Really Think*. Oxford University Press. Ecklund and team have published over eighty articles and five books on these topics.
3 The first book from the project, *Secularity and Science: What Scientists Around the World Really Think About Religion* (Oxford University Press, 2019), provides a detailed examination of what scientists in these eight nations think about religion and how such views are shaped by factors such as religious identity, scientific discipline, and organizational context. The second book, *Varieties of Atheism in Science* (Oxford University Press, 2021), focuses on identity, meaning, and morality among different groups of atheist scientists in the US and UK. RASIC project results also include thirty academic articles, three chapters in edited volumes, and 40 conference presentations.
4 CONGRESS project results include 33 lectures, six op-eds, and 125 mentions in various media coverage.
5 In this section we use data individuals who completed both pre-event and post-event surveys from our outreach events. Because some audience members did not complete surveys, the data represent an imperfect but valuable perspective on our participants and changes in their attitudes.
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