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To cite this article: David Rohr , Wesley J. Wildman , Richard Sosis , Joseph Bulbulia , Uffe Schjoedt , Joel Daniels & Christopher Kavanagh (2020) Reflections on the scientific study of religion after the first decade of *Religion, Brain & Behavior* , Religion, Brain & Behavior, 10:4, 359-364, DOI: [10.1080/2153599X.2020.1831799](https://doi.org/10.1080/2153599X.2020.1831799)

To link to this article: <https://doi.org/10.1080/2153599X.2020.1831799>



Published online: 23 Oct 2020.



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EDITORIAL



Reflections on the scientific study of religion after the first decade of *Religion, Brain & Behavior*

A decade ago, *Religion, Brain & Behavior* (RBB) was still a dream in the minds of its founding editors, neuroscientist Patrick McNamara, anthropologist Richard Sosis, and philosopher of religion Wesley J. Wildman. No journal dedicated to the cognitive, evolutionary, and neurological study of religion existed at the time, and the editorial team had considerable difficulty finding a publisher who would buy into the idea (Sosis [forthcoming](#)). Eventually, Taylor and Francis agreed to publish RBB, and the first issue came out in April 2011, adorned then as today with William Blake’s “Web of Religion,” a painting that captures “the restless, promethean nature of religion,” in the words of RBB’s first editorial (McNamara et al., 2011). Today, out of 594 religious studies journals, RBB has the second highest CiteScore, a metric that ranks journals by the number of citations articles receive on average each year. With my curiosity piqued by this dramatic ascendancy, I asked to interview the current editors—Sosis, Wildman, philosopher and religious studies scholar Joseph Bulbulia, neuroscientist Uffe Schjoedt, and assistant editors Joel Daniels and Christopher Kavanaugh—about RBB and the scientific study of religion more generally.

As the inside of every issue of RBB states, the journal’s aim is to “provide a vehicle for the advancement of current biological approaches to understanding religion at every level from brain to behavior.” Accordingly, the journal welcomes contributions spawned by a vast host of scientific disciplines from cognitive neuroscience, genetics, and physiology to evolutionary anthropology, archaeology, and epidemiology. Given the journal’s scientific focus and the typically contentious relationship between scientific and humanistic scholars of religion, I was pleasantly surprised to learn that the editors shared a deep appreciation and respect for the humanities study of religion. As Sosis explained,

As an outsider, when I look at what religious studies has accomplished, I’m sort of in awe. I read this stuff and I generally find that the humanities scholars within religious studies are extremely well read and fairly careful in their arguments. The reality is there’s some sloppy science and there’s some sloppy humanities research. But there’s *really* good work going on that, frankly, those on the science side of the aisle ought to pay attention to. In my ideal world, we’re open about engaging with all this work.

Bulbulia echoed Sosis’s sentiment, noting that “some of the very best scholars I’ve ever come across, some of the very smartest people I’ve encountered in academia, are in religious studies. They master all these ancient languages, which I find difficult to fathom.”

Sadly, this kind of appreciation across the sciences-humanities divide is uncommon. Wildman described the nature and development of this divide at some length:

Religious studies is already a highly multidisciplinary activity. There are all sorts of disciplines, especially humanities and qualitative social sciences, involved. The interdisciplinary work that’s done at that level is amazing, but in the last three or four decades the cognitive sciences, neurosciences, computational sciences all started studying religion. And it’s natural to want to put all of these voices in conversation, but in practice it’s quite complicated. For one thing the scientific approaches tend to be a little bit reductive. They use simplistic definitions that humanities scholars like me find annoying at times; but at the same time, it’s possible for humanities scholars to stubbornly refuse to look at new information when it comes from a source that they have trouble digesting. In the 10 years since RBB was born, there’ve been quite a few efforts to try to join scientific and humanities approaches within religious studies. That’s sometimes produced hardening of positions with scientific people blowing off the humanities people as not worth talking to and humanities people blowing off the scientific people as reductionistic and ignorant. And the end result is that things have gotten worse,

I think. But fortunately there are a few places where the humanities and the sciences combine readily and RBB is one of those places. And we're proud of that and it's important to us. We hope that that way of thinking and working is going to extend its reach over time.

Since the scientific study of religion is still relatively young, I was curious to learn from RBB's editors what they saw as the most important developments in the field over the last decade. Collectively, they painted a portrait of a field gradually reaching maturity, learning how to render hypotheses more easily testable and replicable, creating vast databases custom-built for answering previously intractable questions, establishing massively interdisciplinary international research teams, using cutting-edge brain-imaging and computer simulation technologies to address age-old questions, and slowly beginning to fulfill early religion scholars' dream of a truly scientific study of human religion.

In response to my question about the most important developments, Wildman emphasized two:

The first is the growing awareness of the need to be very precise in the way we develop hypotheses and test them. Now there's pre-publication of hypotheses. There are open science approaches to data sets and to analyses, so that it's possible for people to replicate everything from beginning to end in well-designed studies. That's critical. Otherwise we don't make any progress, we just go round and round in circles. The second thing that's happened in the last 10 years is the flowering of computational social simulation related to religion. Policy simulation and social simulation is older, but the application to religion is something that's just happened recently. And it's a game changer, I think, because it's allowing us to use artificial complex systems to study real world complex systems such as religion.

Schjoedt gave a different answer focused on new methods for investigating religious experience:

I see a renewed interest in religious experience, this time from a cognitive angle. The field is now flourishing with both exploratory and hypothesis-driven studies that use neurocognitive models to understand how religious experience works. In fact, many RBB papers have combined exploratory approaches with hypothesis-driven research to study the phenomenon in more or less controlled settings. This is a completely new way of exploring religious experience, which has yielded many interesting new insights.

With zero hesitation, Sosis answered that the phylogenetic work of scholars such as Joseph Watts has revolutionized the field. Watts and his colleagues built a historical and cultural database of 116 Austronesian cultures, named Pulutu, which provides answers for each culture to hundreds of questions from whether people believe in gods that punish evildoers to whether human sacrifice is practiced. Because these island cultures are intimately related culturally and linguistically, the research team was able to use phylogenetic methods similar to those employed in evolutionary biology to plausibly trace the spread of culture from one island to another. With that evolutionary lineage in place, the database can be used to ask questions like whether social stratification preceded the emergence of big, punishing gods or vice versa and whether Christianity's spread was caused by its egalitarian social doctrines.

Bulbulia also mentioned Watts' work on the Pulutu database and the neuro-imaging studies of religious experience undertaken by fellow editor, Uffe Schjoedt:

Joseph Watts and Uffe Schjoedt are examples of relatively recent hires who were doing utterly and totally original work, even better than William James and Emile Durkheim, in my view. Uffe was showing that prayer was not one thing. James in his *Varieties of Religious Experience* also sought to illustrate prayer's variety; and now Uffe was observing that variety by neuroimaging the brains of praying people, showing how prayer worked fundamentally differently even among people in a homogenous, narrow society. And Watts was rebuilding a Pacific database systematically in a way that Durkheim could never have dreamed of.

In addition to citing these specific studies, Bulbulia highlighted the growth of interdisciplinary and international research teams:

In the 1980s and 90s the scientific study of religion meant sociology, mostly, a little bit of psychology. And now it's a no-holds-barred enterprise where you have collaborative teams of experts from a range of sub-fields coming together to do work that no one could have dreamed of doing alone 20 or 30 years ago. So there

was a shift from being a singular pursuit of a philosopher in an armchair, or maybe a small experimental lab, to a collaborative enterprise that often involves teams working across oceans and time zones with diverse expertise coming to play in answering a well-defined question for which there's both data and some need to conceptually reason about it.

Having reviewed advances made in the preceding decade, I was also curious to hear what developments in the scientific study of religion the editors hoped to see in the coming decade. Sosis highlighted a need to get back to behavioral ecology basics:

I'd love to see further analysis of demographic issues regarding religion. This is sort of getting back to basics. Traditional behavioral ecology models were all looking at energy decisions and mating and reproductive decisions. And really we need to get back to some of those issues, because basic questions about the adaptive consequences of religion are still unknown. We all recognize that religious groups are out-reproducing non-religious groups, however you want to define that. Obviously, you have exceptions, you have celibate religious communities. But by and large there does seem to be a relationship between religion and reproductive output. So answering why that is and answering the consequences of that: Do you find the traditional life history tradeoffs between quantity and quality? Are the larger family sizes that are evident in religious communities negatively impacting child success? Those are big questions that I'd like to see answered. Thankfully, there are scholars like John Shaver who are beginning to pursue this work.

Schjoedt said he wanted to see more studies about how culture overrides the brain's normal sensory functions:

It is still not clear how culturally transmitted information can overwrite sensory experience, e.g. in hypnotic hallucinations, placebo and religious experience. Rigorous hypnosis and placebo research has improved our understanding, and predictive processing provides a useful theoretical framework. But the idea behind predictive processing is that prior experience affects our perception by changing our brain's 'most likely' model of the world, so the fact that verbal information can produce hallucination-like experiences is still a puzzle. What enables a normal functioning predictive brain to see or hear a supernatural presence for the first time?

While Sosis and Schjoedt emphasized particular research problems, Bulbulia and Wildman were focused on collecting new kinds of data and developing new techniques for resolving conflicts in the interpretation of data. In particular, Bulbulia said he thinks the development of national scale longitudinal databases will soon revolutionize the field. Collecting data on the same people over years and even decades makes it possible to examine how unpredictable world events such as the COVID-19 pandemic affect people's religious beliefs and practices. Rather than emphasizing the data itself, Wildman is hoping for better methods of resolving seemingly intractable disagreements surrounding the interpretation of data. He hopes that advances in computer simulation will help resolve such conflicts of interpretation:

It's possible that empirically backed interpretations are perspectively related, and if you just take a different stance, a different point of view, a different slice through the dataset, you see that they're complimentary rather than contradictory perspectives. But in order to clearly demonstrate that you need to have a complex enough simulation that you can manifest inside that simulation the same perspectival reality you think might be going on in the real world. If you create the synthesis in the artificial system, in the simulation, then you've got a very powerful reason to think that the problem causing the conflict of interpretations is actually a perspectival difference. And that is a major advance in the field.

Finally, RBB's assistant editor for social media Christopher Kavanaugh hopes to see an increased effort to replicate key findings as well as more research on religions that emphasize practice over belief:

I'm hoping to see further implementation of the methodological reforms and revision of analytical standards needed to address the replication crisis, along with more independent teams working to cross-validate prominent findings and existing theoretical models. Given my personal research interests, I'd also like to see more work done in regions where orthopraxic religion is dominant (for instance, across a lot of Central and East Asia).

Since RBB's inauguration in 2011, a total of thirty-five issues have been published, and I wondered whether the editors had any favorites out of those thirty-five. As it turns out, the editors picked a variety of different issues, which they valued for quite different reasons. Sosis picked Volume 2, Issue 3, which contains a symposium on the final book of religious studies luminary, Robert Bellah:

If I had to pick one issue, it would be the last issue of 2012. In that issue, we published a book symposium—RBB's very first symposium, actually—on Robert Bellah's *Religion in Human Evolution*, containing commentaries with a response from Bellah. It was truly an honor to have him participate in the symposium. It's one of the last things he ever published, as he passed away in February of 2013. I was stunned that he agreed to participate when I invited him. Frankly, every email I wrote him was a terrifying experience. He was truly gracious throughout the process but I was in awe of a scholar of such prominence, hence my terror.

Less sentimental, but more revealing about the amount of hard work that goes into each issue, was Wildman's reason for choosing Volume 9, Issue 4:

RBB did a special themed issue on the work of Iain McGilchrist. That was something that I edited with Sarah Coakley, and we worked very hard with Professor McGilchrist and with commentators to produce an informative issue. That issue has gotten a lot of traction. It's one of our biggest and brightest issues in terms of popular reach. Plus, it's open access so everyone can look at it, thanks to the John Templeton Foundation's sponsorship. The content isn't my favorite, necessarily, but working with Sarah was a true joy. And the production gauntlet was so complicated in this case and so drawn out, it was incredibly satisfying eventually seeing it in print. It's good in the sense that after you've done a ten-mile swim and you collapse on the beach, you're not going to drown. You made it back to solid land and you just need to sit down. It's good in that sense: the swim is over.

Schjoedt selected Volume 7, Issue 4, a seminal issue on "Hilbert Problems in the Scientific Study of Religion." (The phrase "Hilbert Problems" refers to the list of twenty-three unsolved mathematical problems that David Hilbert published in 1900, thereby greatly stimulating the development of twentieth-century mathematics.) Schjoedt explained his choice, saying,

That issue has a lot of cutting-edge theory, and each contribution provides fascinating research questions for future research. In 2027, I will be thrilled to look back on this issue and compare it with what was actually achieved over the last decade.

Bulbulia chose Volume 8, Issue 4, which he views as something of a watershed moment in the development of the scientific study of religion. He explained his choice at length:

My favorite is the issue including Kim Sterelny's 'Religion Re-explained' target article. Kim is among the world's top philosophers of biology and a pioneer in cultural evolution. When I first met Kim in 2000, he was strongly dismissive of religion as human folly. Several months later, Pascal Boyer's *Religion Explained* was published, which advocated an error-propagation theory of religion. Pascal's view was that religion is commonplace because our brains are attracted to the familiar-made-strange, and religion is just a bunch of strange ideas. In his target article, however, Kim presents a thoroughly functional evolutionary model of religion, noting 'perhaps with the exception of Justin Barrett, cognitive anthropologists no longer think of this cognitive by-product model as a near-complete explanation of religion' (p. 411). However, rather than embracing the new consensus and offering an incremental contribution, Kim outlines a radically different cultural evolutionary approach to religion that places its origins at about 100 kya—an order of magnitude outside the Holocene-centric focus of cultural evolutionary scholars at that time. I think history will judge Kim's article to be one of the most important theoretical contributions to the naturalistic study of religion of our era. However, the respectfully critical commentaries in this issue, including one from Justin Barrett, point to significant gaps, which Kim graciously acknowledges in his response. Indeed, every commentary is excellent, with authors such as Barrett, Joe Henrich, Maciej Chudek, Susan Birch, Ian Hansen, Ryan McKay, Rita McNamara, Eleanor Power, Paul Seabright, Benjamin Purzycki, Jeff Schloss, John Shaver, Dan Sperber, and Aiyana Willard responding to Kim's ideas. I get a little emotional when I think about this issue because it demonstrated how far the naturalistic study of religion had traveled in only 18 years. The issue showcases the benefits of a collaborative, evidence-based approach to religion, grounded in the scientific virtue of fallibilism. Kim changed his mind about religion, but he was not alone. We all had. Debates persisted. Anyone who picked up the issue could see how much still needed to be done, and how vital critical thinking will be for addressing the

challenges ahead. Finally, the issue demonstrates the importance of RBB as a vehicle of creating conversations that accelerate intellectual progress.

Finally, assistant editor Joel Daniels echoed Wildman's and Bulbulia's choices, highlighting the role that RBB's target articles and book symposia play in fostering rich interdisciplinary conversations:

To me, RBB shines in its special issues and book symposia, in which diverse viewpoints are brought to bear upon a pressing topic in the scientific study of religion. A great example is the discussions of Iain McGilchrist's controversial views on hemispheric specialization in the brain, which included responses from medical school faculty specializing in neuroimaging, neuroscientists working in psychology, and scholars whose home disciplines are philosophy and theology. Another example is Kim Sterelny's target article, 'Religion Re-Explained,' on the evolution of religion, which received probing interrogation from no fewer than nine top scholars in the field. The former issue shows the promise (and peril) of interdisciplinary conversation; the latter shows the depth of intradisciplinary conversation that is hosted by RBB. Both are important to the broader field.

Since the occasion for these interviews was RBB's #2 CiteScore ranking among religious studies journals, I was also interested to hear what that ranking meant to the editors. I discovered both divergence of opinion about the significance of the ranking itself and consensus regarding some of the causes of the journal's success. Regarding the ranking by CiteScore, Wildman commented that,

There are many hundreds of religion journals that are tracked by CiteScore and a young journal usually is pretty low on that list. To see that we're at number two out of nearly 600 journals is a really gratifying surprise.

Bulbulia, in contrast, was less enthused:

It's not that big a deal. Not really. I'm not into pissing contests. I feel like if people use the journal and they get something out of it, that's great. If one person changes their mind—you know, if Joseph Watts reads this and then creates Pulotu—that's the real effect. We tend to do well on those indices, but I think that they're more harmful than they are good. On the other hand, we need to be competing at the very top end of those metrics, because that's how people get grants. You can't just ignore that. You don't want to fate your PhD students to oblivion because they're publishing in the journal. So, in that respect, it's great that people can publish without any sense that it's a weird, poorly respected journal. That does make me feel good, but I don't care about the rating myself.

Despite these divergent opinions about the ranking's significance, there was considerable agreement about the sources of the journal's success, namely, its commitment to bridging the gap between the sciences and the humanities and the exceptional dedication of the editorial staff to helping contributors produce the highest quality articles. As Sosis pointed out, the effort to bridge the humanities and the sciences starts with the breadth of expertise on the editorial board itself:

Our aim was to cover the field, myself in anthropology, Wesley in theology and religious studies, Joseph in philosophy but also he has branched out into psychology, and then Uffe with the neuroscience. So the aim was to really be complementary on one hand, but also be comprehensive on the other.

Wildman similarly attributed the journal's success to its bridging of the science and humanities divide:

There's also, I think, a joy at seeing a journal outlet that tries to keep humanities and scientific voices connected. It just seems sensible to a lot of people. Despite the fact that there are noisy people on the wings of this issue, most people are in the middle, like in politics, and most of those people see that it's very sensible to try and keep forms of wisdom related to religion together. I think part of the interest in RBB has to do with that, the connection across the humanities and the sciences.

According to the editors, the other source of the journal's success is, well, the editors. To begin with, all four editors emphasized that the acumen and dedication of long-time assistant editor, Joel Daniels, has been essential to RBB's success. And both Bulbulia and Wildman highlighted the untiring diligence of their fellow head editors as crucial to RBB's ascendancy. In Bulbulia's words,

Rich will sit down with someone who's not writing in English as their first language, and he'll take a month to work through their article with them. And he's not even on it. He's the kind of person that really cares about quality. And similarly for Wesley—he'll agonize over what might seem to be small and trivial issues, but they have a real personal impact on people. He cares about that and we get it right—or we try our best to get it right. And people know that, and I think they appreciate that and they send things to the journal because we combine integrity, but also with a kind of humanity.

Wildman had similarly high praise for his fellow editors:

I think authors love working with RBB because the editing is good. I think I'm the weakest of the editors, frankly, but you should see what some of these editors do. They rerun the calculations, they send out massively detailed and incredibly helpful responses. And in the process they inspire authors. Authors really believe that these editors want this work to be published and they want it to be brilliant and they want it to be influential. That's an incredibly encouraging message. It's so much better than the default rejections or acceptances or proforma notices that you get from most journals. That dedication on the part of the editors has made all the difference.

Whatever the true sources of RBB's success, the journal has played a crucial role in the development of the scientific study of religion, establishing a center of gravity around which the field could coalesce and providing a forum for critical and constructive interdisciplinary dialogue about the biological, evolutionary, and cultural bases of human religion. Here's hoping that RBB's next decade will be as extraordinarily fruitful as its first.

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