Peter Harrison's Territories of Science and Religion*: A Symposium*

with Peter C. Kjærgaard, "Why We Should Care about Evolution and Natural History"; Kaspar von Greyerz, "Early Modern Protestant Virtuosos and Scientists: Some Comments"; Nathan J. Ristuccia, "Peter Harrison, Ludwig Wittgenstein, and the Problem of Pre-Modern Religion"; Michael Fuller, "Into Terra Incognita: Charting beyond Peter Harrison's The Territories of Science and Religion*"; and Peter Harrison, "The Modern Invention of 'Science-and-Religion': What Follows?"*

WHY WE SHOULD CARE ABOUT EVOLUTION AND NATURAL HISTORY

by Peter C. Kjærgaard

Abstract. Historians play it safe. Complex issues are dissected while analytical distance keeps stakeholders at bay. But the relevance of historical research may be lost in caution and failure to engage with a wider audience. We can't afford that. We have too much to offer and too much at stake. We need to take the discussion of science and religion beyond our own professional circles. Peter Harrison's *The Territories of Science and Religion* gives us an opportunity to do so. We can use his book to understand why people consistently get the relation wrong. However, we need to take the next step ourselves, involve historians in the common academic goal, across disciplines, to make sense of the world around us and make that combined knowledge truly useful. Evolution and natural history might help to that effect.

Keywords: anthropology; biology; creationism; evolution; history; human origins; interdisciplinarity; natural history; religion; science

It's Complicated

What is the relevance of discussing science and religion? Why should anyone care outside the circles of professional historians? Well, for starters a number of different groups have made it their business, perhaps not as much to care, but to use it as a platform for pushing rather specific agendas. Creationists in every shape and form are arming themselves against an

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evolutionary framework for understanding the natural world and in the process often take an antiscientific stance. Adherents of the so-called new atheism are strongly demarcating science from religion while taking a naturalistic and secular view of the world. In these discussions nuances often fade into the background. If we want to understand why this issue is so important to certain groups, it is necessary to dig deeper. In his formidable book, *The Territories of Science and Religion*, Peter Harrison does that and gives one long argument for taking the question of science and religion seriously, for understanding it, and for going beyond the current debates.

For an account spanning more than two millennia you would not think it possible but to skirt the issue. But Harrison manages to balance a detailed analysis revealing an exceptional knowledge of the finer points in a complex mosaic of people, arguments, and sources, with a sweeping narrative that binds everything elegantly together in a fairly simple conclusion: science and religion as we use and understand them are fairly new inventions and serve completely different purposes today than just a few hundred years ago, not to say a thousand years or more. Their meanings change over time and so do whatever relevant interaction, overlap, differences, and similarities that can be identified. Science and religion are not natural kinds. They are not universal categories. We cannot, therefore, write the history of them, not in a classical sense at least. And yet, in his own way, this is exactly what Harrison does. By delicately breaking the concepts up, putting them in their historical context, and showing them as the conceptual chameleons they are, constantly changing to match their surroundings, their intellectual and practical context, he creates a narrative that makes sense and works across millennia.

Hanging on to the metaphor of chameleons for a bit, they do more than change color. They do it for a reason, with a specific purpose. They need to survive and procreate. They hunt and they mate. They battle among themselves for space, sex, and food. They go after their prey, relentlessly. They steal a spot in the sun, fight their enemies, and sometimes they are prey for other predators. You can say pretty much the same when describing science and religion. Harrison uses a different metaphor. He compares science and religion to territories, geographically different and changing over time. His perspective is political, not evolutionary. And it makes a difference. There is more relatively peaceful geography and less struggle for existence in his narrative.

The Territories of Science and Religion is a great achievement. It packs a complicated history into roughly 200 pages, so enjoyable to read you never really feel how much you actually learn in the process. The book should be on every reading list in science and religion courses. It will, no doubt, be one of the standard references for students and scholars for many years

to come. That is why it is also important to take a closer look at what you get and what you do not get from Harrison.

My reading of the book changed significantly depending on which perspective I had. Usually that is not a big deal. But in this case it was, as it demonstrates one of Harrison's most important points: that significance, meaning, and truth are in the eye of the reader. I read *The Territories of Science and Religion* as someone who has written a textbook for university students covering more than eight hundred years of university history (Fink et al. 2007); as an author and editor of a large national contextual history of science (Kjærgaard 2006; Kragh et al. 2008); as someone who has worked on evolutionary history (e.g., Kjærgaard 2011, 2012, 2014, 2015; Andersen et al. 2013; Egeland et al. 2014; Veldhuis, Kjærgaard, and Maslin 2014; Carroll et al. 2015; van Wyhe and Kjærgaard 2015; Nielsen et al. 2016), including religious responses to evolution (Gregersen and Kjærgaard 2009) and creationism (Kjærgaard 2008, 2010; Blancke et al. 2013; Blancke, Hjermitslev, and Kjærgaard 2014); and as director of a national museum for natural history. Curiously, the book and its message were different depending on perspective. Details, narrative, the big picture, and relevance all changed if I looked at it from the relatively safe confines of professional historian circles to which Harrison himself belongs, a slightly less safe, but academically related evolutionary historical angle, or from the position of a museum with a huge responsibility for communicating complex science and engaging the public in the most successful and high-impact fashion.

As an historian in the generation accommodating the changes in intellectual history led by Quentin Skinner among others in the 1970s and of the complexity thesis in the history of science and religion promoted, notably, by John Brooke, Geoffrey Cantor, and Peter Bowler in the 1990s, Harrison stands on firm ground. We need to understand concepts not as universal entities, but instead in their specific context as expressions of intentional claims to deal with practical and concrete issues at a specific time and place, rather than general unit ideas transgressing them. The relation between science and religion reflects this as a complex issue with no simple conflict, independence, dialogue, or integration. Here are no simple stories cutting through centuries clarifying, reconciling, or forever dividing. It makes no sense, because, historically, it made no sense. Science and religion come in all shades and colors. They and their relationship meant different things to different people. Harrison takes this seriously as an historian. We have to. Speaking as someone with experience trying to pack this into an accessible narrative spanning several centuries myself, I know this is not an easy task. Harrison has done a terrific job in a sensitive, context-dependent reading of the conceptual changes of science and religion, and how that completely throws off our forced use of both

concepts on cherished historical examples. They simply won't work, Harrison argues. And he's right.

But it brings back the question of relevance and who Harrison is talking to—or, perhaps, should be talking to.

Making History Matter

It is safe being an historian. If you do your job well, really well, like Harrison does, very few people could object to anything. You would have to be an expert to do so and you would have to enter an expert discussion. There would always be matters of debate in the academic specialist world. Nuances, tiny points, preferences of specifics, historical characters, references, and perspectives. Sometimes such issues seem so important that other considerations fade away. Sometimes they can be a matter of whether an article or a book manuscript get accepted, or a grant proposal supported. Sometimes, when the going gets really tough, it can define an academic career. Yet, all this remain within the relatively safe confines of academic discourse.

Harrison makes his point so convincingly, builds such a strong case, and supports it so well that you want him to get more out of it than refining an already refined discussion. You want his points to matter, to have an impact, and to move beyond academic circles; certainly, at least, beyond professional historical circles.

But taking this step is as rare as it is difficult. Usually, when it happens, it takes the form of popular history, popular science, or it enters as one side in an antagonistic contemporary debate. This is the easy way out. The genuinely demanding path is to engage in an integrated partnership with other academic disciplines, using multiple platforms to ensure the success of a combined attempt to reach a consensus-based stand for the most qualified foundation for public and political discussions. Or, put differently, within each academic discipline we work steadily towards what we believe are the best possible answers to the most pressing and important questions in nature, culture, and society. Together and united we can do more and do better. In order to succeed, however, we have to take the important step and engage positively with our next-door academic neighbors.

Sometimes, participation and relevance make it hard for historians. Can you be actively engaged in contemporary concerns and still remain unbiased, impartial, and hovering above concerns of interest groups? How much distance do you need to have in order to write objectively? These are standard questions; pretty straightforward material in undergraduate historical method courses. Standard answers are harder, though. Harrison writes for a purpose. He wants us to see things differently. He wants us to use the conclusions of his conceptual archaeology to change our perspectives on contemporary issues. As he puts it himself, "there's something not

quite right with how we presently think about the relationship between science and religion" (Harrison 2015, 6). He wants to cure our "historical amnesia," using myth busting as one of his main tools to "help us reconfigure the relationship between the entities that we now call 'science' and 'religion'" (Harrison 2015, 19). The antagonistic relation between science and religion has effectively been proven to be far too simplistic by historians of science and religion. But we cannot keep this knowledge within professional circles. It has now been more than a decade since Steven Shapin warned of the dangers of hyperprofessionalism in the history of science and in many other academic disciplines. He pointed to a crisis in readership growing partly from what he called a pathological professionalism, highly valued by historians and others, but with severe symptoms of self-referentiality, self-absorption, and a narrowing of intellectual focus preventing insights and conclusions from mattering to more than a tiny group of specialists (Shapin 2005).

Harrison is well aware of this and argues that we need to break down the narrative of a generally negative relation between science and religion, not for the sport of it, but because "it continues to exercise a tenacious hold on the popular imagination and still informs many nonspecialist accounts of science and its history" (Harrison 2015, 24) and even "present-day assumptions about the future of science and religion" (Harrison 2015, 143). There is indeed value in this work, but there may be limits to what can be done from Harrison's perspective, almost, yet not quite, refraining from discussing the implications of Christopher Hitchens's *God Is Not Great: The Case against Religion* and Sam Harris's essay "Science Must Destroy Religion" (Harris 2007; Hitchens 2007). Harrison does not want to engage in this discussion. He wants to understand and explain why it has taken this aggressive form. And here we are down to the simple, main message of the book: Science and religion are not natural kinds, and should not be treated as such. Historical analysis helps document this fact. The question is, what will it matter?: "So while this historical analysis may not make science-religion conflict go away, it should be clear why it has emerged at this particular time and place" (Harrison 2015, 194).

Harrison delivers. He explains and documents the historical contingency of the construction and changing meanings of science and religion. He does that better than most. But it leaves the rest of us with the question: where do we go from here? What do we do about this? How can this contribute, perhaps just ever so little, to a positive change? How can we, to use one of the concepts under scrutiny in Harrison's narrative, make progress?

How Territorial Can You Be?

Harrison makes a smart move to explain what is going on in the way we go wrong about science and religion. By invoking his metaphor of territories

he makes us see how change in concepts of nations and cultural identity share similarities in the ways science and religion have changed their meaning over time (Harrison 2015, 2–3). Territories add chronology to the discussion. Earlier attempts to describe science and religion as different realms or spheres with incompatible knowledge, truth, or authority claims succumbed to the classic pitfall of treating the two as natural kinds. They are not and have never been. They never will be, despite what adherents might think or argue. They will always be linked to a specific context at a specific time and place. There is no way around it. Science and religion are bound and defined by history. Harrison is absolutely correct. So far so good.

But where does that leave history? Harrison manages to carve out a privileged spot for historians, an intellectual panopticon that somehow escapes the territorial character that befalls both science and religion. This qualifies historical interpretations and disqualifies others in a surprising way. For instance, it drives Harrison to state that the "only legitimate explanation of religion is the kind of explanation that historians offer—that is, a history of its appearance as a category" (Harrison 2015, 196). This is taking the point very far indeed; a step too far, especially because it is not even necessary. After almost 200 pages of painstakingly detailed conceptual history of science and religion covering more than 2,000 years, Harrison has already won his reader over. We have learned, through evidence and careful argumentation leading to sound conclusions, that history does indeed provide us with important insights that are not relative, not constructed in a way that would leave room for just any other interpretation, conclusions not easily dismissed. Above all, history provides us useful knowledge to help us understand the world around us.

Historians have a shared ambition with everyone working in the sciences: to understand the world around us and to provide useful knowledge to that end. Detaching history from understanding and useful knowledge does not bring us any good. In fact, the powerful message provided by all the amassed evidence in Harrison's book is that history too is a useful academic discipline for contemporary society. We should embrace that as a valid defense of a host of related disciplines in a world of science policy where the humanities and social sciences struggle for funding while science, technology, and medicine are faring a lot better.

We want to know how the world works. We want to know how both culture and nature work. Our own species is a highly cultured one. From an evolutionary perspective, our recent history—say, the past 100,000 years and accelerating for the last 15,000 years with the invention of large-scale agriculture and domestication—has been shaped by our culture in a way that does not compare to other species, not even chimpanzees and killer whales. But this does not take away the fact that we are indeed also biological creatures, that our history is the product of a natural and

cultural evolution. Our very recent history, the one Harrison is able to track from a conceptual perspective, is no different. But it yields different sources not available when we go further back in time. We can't track the words people used 20,000 or 50,000 years ago, but we can track their behavior. What we do in evolutionary history is to combine everything we know to make the most fine-grained pattern with as much detail from as many different sources as possible. The many lines of evidence help us make even better conclusions. When the evidence converges we have more reason to believe we are on the right track. This is the power of integrated, interdisciplinary research. This is the way we are going in academia. More and more studies have multidisciplinary authorships. One area that is beginning to take off is the combination of genetic history and traditional history (Russell 2003; Smail 2005, 2008; Chakrabarty 2009; Russell 2011, 2014; Shryock and Smail 2011; Brooke and Larsen 2014 ; Thomas 2014). Again, all of us engaged in this will say that we are indeed making progress. The ambition remains the same, as does everyone's academic integrity. But the results are getting better. We are simply providing better results and reaching better conclusions.

Two things follow from this with respect to Harrison's book. First, it is out of place, a traditional, but misguided territorial claim to dismiss anyone but historians from making legitimate explanations of religion. Harrison argues that we cannot *in principle* offer a naturalistic explanation of religion, just as we cannot offer a single explanation of the geological and chemical processes that lead to the natural formation of jade. But the very important point for the latter is, that we *can* give very exact naturalistic explanations of how jade is formed. Different processes lead to nephrite and jadeite. We understand those processes perfectly well. Jade is a cultural term. Not a scientific term. There is no ambiguity in the scientific description of nephrite and jadeite. Taking Harrison's analogy seriously, one would say that, from a conceptual history point of view, religion is a cultural term. It is defined by its context. But the cognitive capabilities providing the biological basis for employing, interpreting, and changing such cultural terms and putting them into practice are independent of their specific cultural context. As human beings we operate within the biological constraints given to us through our evolutionary history. We can study and understand that history through many different channels.

Like any other behavioral trait, religious behavior is also the result of hundreds of thousands, possibly millions of years of adaption. It did not develop for us to be religious. It evolved for our ancestors to adapt to specific conditions at a specific time and place in our deep history. Traits could be by-products of other behavioral traits more significant at a given time and place, and after multiple generations' vestigial traits, perhaps through different ancestral species, they could earn a function, for example in new, more complex social and cultural contexts, following larger brains

and group sizes in the *Homo* lineage. The point is that the trade historian, the art historian, and the historian of science could still be engaged in a meaningful discussion of jade as a cultural term, while the mineralogists would enter a different discussion of the chemical composition of different minerals. The discussions of the cultural term and the scientific terms do not exclude each other. They are equally valid and on their different terms they all contribute something useful that will increase our understanding of these materials that have a cultural and a natural history. The same goes for religion and behavioral traits that are shared across populations and species. Hence, it is unnecessary for Harrison to draw a line privileging history and discarding naturalistic explanations of the origin of religion (Harrison 2015, 4 and 196). There is no need for this. In fact, there is a lot to gain from combining the natural and cultural history of religion.

On the other hand, he is perfectly correct that "religion cannot serve as an explanation for anything" (Harrison 2015, 196). We can indeed look to specific contexts in which religion has been used to justify specific means to an end. There are plenty of those examples. But it does not follow from these that religion as a natural kind produces goods or evils, sound morals or dangerous behavior. People do, and they respond to a cultural context and a biological framework we share with our evolutionary cousins. We can trace violence, for instance, in the paleoanthropological record, in hunter-gatherer communities and in chimpanzees (Wrangham and Peterson 1996; Wrangham and Glowacki 2012; Lahr et al. 2016). We are a violent species and have violent evolutionary relatives. But we are also a species with a peaceful and loving nature, a trait we share with the bonobos, that can be guided and controlled through cultural and social structures that work to the benefit of smaller as well as larger groups and would therefore be selected for as population sizes grew (Hare, Wobber, and Wrangham 2012). Religion is not a good or an evil. It is a by-product of an evolutionary history. It is used for multiple purposes, interpreted in multiple ways, and made to justify multiple actions. But it also leads to the second point: religion can never serve to explain itself. We can explain religion from an historical point of view as Harrison does, and from a number of other academic perspectives as well. Together, again with multiple lines of evidence, we will get a good understanding of what religion is and what it does. Harrison has made progress. We know more because of his book. And we will make progress combining his insights with conclusions from other fields. And that leads to the inevitable conclusion: we are on the same team. Harrison employs his metaphor of territories in such a way that it seems he is not part of it, that he does not belong. But he does. As an historian he does not belong to the territory of religion. He is in with the rest of us in the academic world, trying to make sense of it all.

Evolution and Natural History

And with that, we are back at the beginning, the very first question of relevance and why anyone should care about science and religion. Today it is difficult to speak of the relation between science and religion without speaking of evolution. More than a century of creationist propaganda has made its mark on the discussion. All kinds of media have happily embraced the constructed argument of a balanced view, a treasured journalistic principle that is easily distorted when it is not taken into consideration what is actually on the balance. You would never in all seriousness counter a physicist with a layperson having a different opinion on gravity, nor would you call in a flat-earth believer to challenge an earth scientist. And yet this is routinely done in contexts of climate change and evolution. Somehow, it has become legitimate to counter scientific facts and evidence with opinion for these two topics in public debates. This is a major problem, not just for anyone working within climate and evolutionary sciences, but for all academics: that people who know what they are talking about, people who base their arguments on evidence and testing hypotheses against that evidence, that their conclusions are discarded as matters of opinion or ranked at the same level as people expressing opinions about related topics without the possibility or the ability to back it up with evidence.

All antievolutionists operate within a religious context. Outside a religious context it doesn't make any sense. A substantial number of polls in many different countries on people's opinion of evolution are made with reference to an antagonistic relation between evolution and creation, science and religion; often with an emphasis on human evolution. This has come to be a standard perspective not only on science and religion, but also on evolution; and not only in the United States, but also in the rest of the world (Numbers 2006; Blancke et al. 2013, 2014). This has had the effect in public debates that evolution is often seen as a relevant topic because of its relevance to the discussion of science and religion. This is a problem. Evolution is a fact, just as gravity is. It is observable and observed in the fossil record and in living nature, in laboratories all over the planet. Thousands upon thousands of scientists and medical doctors use it and rely on it in their everyday work. The theory of evolution is the entire theoretical complex describing all the intricacies of this process. And yet, the approach and the conclusions drawn from evolutionary studies are regularly questioned by multiple religious antievolution interest groups and by journalists who want a good story, a narrative people can relate to. Many of us working within evolutionary sciences and on the history of science and religion meet this on a daily basis and get it as a standard spiel in interviews for the media. It turns up in public lectures as questions from the audience and sometimes it even enters the classroom at university level. We have to live with that and we have to deal with it.

This not just an academic problem. It is a problem, yes, but it can also be turned into something useful as it holds a great potential for engaging people outside professional circles. Dealt with properly we can use the means available to us and begin to take charge of it in the public sphere, not as a matter of controversy, but as a hook to communicate what we know about the natural world and our own place in it (Spiegel et al. 2006; MacFadden et al. 2007; Scott 2007; MacFadden 2008; MacGregor 2009; Evans et al. 2010; Homchick 2010; Kjærgaard 2010; Harcourt-Smith 2012; Strager and Kjærgaard 2013). We can also use it to make people interested in the powerful conclusions Harrison makes: that the well-known categories of science and religion, so comfortably easy to recognize and accept as universal entities, are, historically speaking, nothing of the sort. They are not the natural kinds people routinely assume, but concepts that derive their meaning from their use in specific contexts. From that perspective it is surprising that Harrison put so little emphasis on evolution. It is not ignored entirely, but it plays a rather limited role in his narrative. Speaking as a director of a natural history museum, I would say that he could and should get more traction out of this. He could pull in the punters by offering them something familiar and then give them something utterly different; present a common simple dichotomy and give them complexity.

Would I do this in a museum context? Possibly. We could apply Harrison's points to a more complex narrative of scientific discovery and natural history from ancient Greece through the scientific revolution. And we might even address antievolution as a cultural response to specific political, educational, moral, and religious trends over the past century or so. It might pique the interest in understanding evolution, climate change, biodiversity, and so on if it is related to a familiar theme. Some museums take it to the public galleries; others leave it to the educational programs. It can be useful to demonstrate the point that science is indeed culture and plays an important part in cultural history. But science is more than that and this is the most important point: science represents the most qualified understanding of the natural world and processes of life available. We work separately within academic disciplines, but we also work—and increasingly so—together, across disciplines towards a common goal of understanding specific problems that cannot be answered from within a single disciplinary perspective.

A final point relates to Harrison's fine study of natural history as a concept and a scientific pursuit. Using Google's enormous repository of digitized books, he documents that the use of "natural history" as a concept has been in decline since the nineteenth century, while modern specialist disciplines such as "biology" and "geology" have increased. Harrison reads this as a sign that a generalist's perspective on the natural world has been devalued to the benefit of professional disciplinary scientific expertise. This would be a natural consequence of an increasing specialization of the sciences in

Figure 1. Relative frequency of "natural history museum," "geological museum," and "zoological museum" in English books 1800–2000, based on Google Books Ngram Viewer.

the nineteenth century and is a well-documented fact (Kjærgaard 2002). The conclusion Harrison draws by comparing the relative frequency of "natural history" and "biology" in English books during the period 1800–2000 is that biology was taken to be the scientific discipline, while natural history was reserved for amateurs, parson, and women. We have to be careful here, though, and not make the mistake of assuming that biology and natural history too are natural kinds. Both concepts have changed their meaning quite radically over the past couple of centuries and continue to do so. As natural history compared to biology has declined, we see the opposite pattern when it comes to natural history museums compared to geological museums and zoological museums. In the second half of the nineteenth century, the geological museum followed the professionalization and specialization trend, but then natural history museums caught the public imagination and, while specialist museums were in decline, generalist natural history museums presented a continuous incline that continues into the twenty-first century. The point is, natural history has not disappeared. It has moved from the disciplinary nomenclature at universities to public institutions. But thinking that this is all they have been and all they are would be making a serious mistake.

Natural history museums are research institutions. They were in the nineteenth century and are far more so in the twenty-first century. Today all major natural history museums are institutional homes for the kind of hypothesis- and problem-driven interdisciplinary research that sets the agenda for taking on some of the major challenges we face in contemporary society, such as climate change and loss of biodiversity. Moreover, the natural history collections are far from dusty old repositories of curiosities collected by enthusiasts through centuries. They are huge research infrastructures providing the data and the evidence we use to make fine-grained maps of changes in the natural world, climate models, and biodiversity simulations. Together they form the

world's largest databank of the natural world, a resource that has been used to make a very high proportion of the major breakthroughs in the specialist disciplines Harrison argues replace natural history, and are being used even more today with the advent of genomics and big data (Suarez and Tsutsui 2004; Sunderland, Klitz, and Yoshihara 2012; Bradley et al. 2014; Cook et al. 2014; Tewksbury et al. 2014; Page et al. 2015; Barrows et al. 2016; McLean et al. 2016). This is an important point. Natural history has not disappeared. In fact, quite the opposite. Natural history collections have never contributed so much to cutting edge scientific research as today and there have never been so many visitors to natural history museums as there are now. The Natural History Museum of Denmark is part of group of twelve major natural history museums in Europe and North America. Together we share about half a billion natural history specimens, which is somewhere between ten and twenty percent of the world's collections. The scientific output from these institutions has increased significantly in the twenty-first century. But equally important, so has the interest in natural history measured by visitor numbers, participation in educational programs, and citizen science projects. During the past year alone we have witnessed an increase in visitor numbers in most of the museums ranging between ten and fifty percent.

Now why is this important? It feeds directly into who cares about science and religion, who cares about what we know about the natural world, and how we as human beings make sense of it. Natural history museums are embraced by a public that wants to know what we know about life, the universe, and everything. And they come in increasing numbers to our institutions. In other words, we have a perfect platform for communicating and engaging all members of the public in questions of nature and our place in the world. It is science, nature, and culture combined. But more than that, it is part of the territory to which Harrison belongs. We are in it together and we can, not just do more, but do better, if we take that seriously.

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