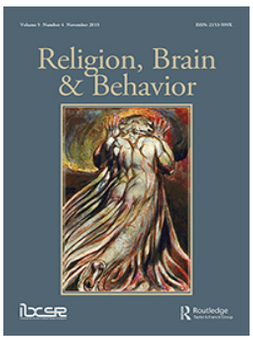

Routledge
Taylor & Francis Group

Religion, Brain & Behavior

ISSN: 2153-599X (Print) 2153-5981 (Online) Journal homepage: http://www.tandfonline.com/loi/rrbb20

What are "The Hilbert Problems" in the Study of Religion?

Joseph Bulbulia, Wesley J. Wildman, Richard Sosis & Michael L. Spezio

To cite this article: Joseph Bulbulia, Wesley J. Wildman, Richard Sosis & Michael L. Spezio (2015) What are "The Hilbert Problems" in the Study of Religion?, Religion, Brain & Behavior, 5:4, 263-265, DOI: 10.1080/2153599X.2015.1084470

To link to this article: http://dx.doi.org/10.1080/2153599X.2015.1084470

Published online: 12 Sep 2015.

Submit your article to this journal

Article views: 3

View related articles

View Crossmark data

Full Terms & Conditions of access and use can be found at
http://www.tandfonline.com/action/journalInformation?journalCode=rrbb20

Download by: [Institute for the Bio Study of Religion] **Date:** 15 September 2015, At: 23:19

Religion, Brain & Behavior, 2015
Vol. 5, No. 4, 263–265, http://dx.doi.org/10.1080/2153599X.2015.1084470

Routledge
Taylor & Francis Group

Downloaded by [Institute for the Bio Study of Religion] at 23:19 15 September 2015

EDITORIAL

What are "The Hilbert Problems" in the Study of Religion?

David Hilbert lived from 1862–1943 and is regarded as one of the greatest mathematicians of the late 19th/early 20th century. Among his pioneering contributions was the concept of a Hilbert Space, an innovation that, among other things, enabled a rigorous formulation of quantum mechanics (Boyer & Merzbach, 2011). Arguably Hilbert's most far-ranging intellectual contribution, however, is not to be found in any of his splendid mathematical proofs, methods, or innovations. It is a question, or more accurately, a list of questions.

In 1900, at the International Congress of Mathematicians in Paris, Hilbert posed ten (then) unsolved mathematical questions which he took to be the fundamental problems confronting mathematicians of Hilbert's time. Hilbert subsequently extended this list to twenty-three questions, known as "Hilbert's Problems" (Hilbert & others, 1902). Why might a list of questions be so important?

Mathematics proofs are certain in the way a tautology is certain. A proof may be simplified; the axioms on which it rests may be extended (Hilbert's Space extended geometry and algebra), yet a valid proof is a permanent intellectual achievement: if you accept its axioms the conclusions follow. Yet Hilbert appreciated that despite such super-durability, mathematical results do not automatically stack up as rungs in an intellectual ladder. To be sure, a valid proof is a kind of progress: the insight will not be revised. But how shall we assess its contribution? Where might it lead other researchers? What opportunities were lost because of resources expended along the way? Hilbert's Problems are more than a list of unsolved mathematical riddles. Hilbert understood the value of defining the questions for the future:

> Who of us would not be glad to lift the veil behind which the future lies hidden; to cast a glance at the next advances of our science and at the secrets of its development during future centuries? What particular goals will there be toward which the leading mathematical spirits of coming generations will strive? What new methods and new facts in the wide and rich field of mathematical thought will the new centuries disclose? (Hilbert & others, 1902, p. 1)

Big Questions are most effectively addressed when they command the attention of an entire community of researchers. Hilbert's insight into the benefits of identifying core questions generalizes to every social practice that calls itself an intellectual discipline—beyond mathematics, physics, and even the natural sciences. Progress in every academic discipline requires a Bigger Picture.

This special issue of *Religion, Brain & Behavior* consists of a book symposium for *Big Gods: How Religion Transformed Cooperation and Conflict* by Ara Norenzayan (2013). The issue records responses to that work from some of our field's most productive and original researchers. Readers of this issue also benefit from Norenzayan's thoughtful reply.

We maintain that Norenzayan has done for the academic study of religion what few other researchers have managed to do: he has identified a Hilbert Problem. As Norenzayan

© 2015 Taylor & Francis

notes, speculation about the functional role of Big Gods traces to antiquity (Slingerland, Henrich, & Norenzayan, 2013). The idea has been revived, with different flavors, in other recent works (Johnson & Bering, 2009; Roes & Raymond, 2003; Swanson, 1964). But Hilbert's problems were not original. The point of difference in Norenzayan's prodigious work – evidenced in the insightful commentaries in this issue – has been its capacity to ignite efficient and productive goal-directed research. The response to Norenzayan's formulation of a functional hypothesis for religion demonstrates the power of evidence-based science, informed by evolutionary theory, to productively address long-debated and fundamental questions about the human condition. (For a quantitative test of Norenzayan's model, see: Watts et al., 2015.)

As Hilbert understood, the list of Big Questions in mathematics is inevitably provisional, a point that applies to any discipline. The pursuit of core questions brings advances but it also brings new questions – we iron out a bulge in intellectual carpet only to find another pop up somewhere else. Advance occasionally leads researchers to reject initial formulations or to develop clearer hypotheses, more effective methods, or more penetrating questions. Importantly, unlike the history of mathematics, the history of science shows that emprical results are inherently provisional, revisable, and fallible – when researchers are not changing their minds we can be sure a science is stagnant. By contrast, when a field's leading figures are revising earlier positions, we know the science is vibrant. Readers of this volume will learn how Norenzayan has changed his mind, in part from the attention his peers have given to his book. This change is compelling support that Norenzayan has raised a Hilbert Problem, a mark of the field's intellectual growth.

We believe the scientific study of religion, specifically, and the academic study of religion, more generally, stands to benefit from Norenzayan's example. The disciplines that study humanity require Hilbert Problems. This demands careful attention to fundamental issues. What do we, as a community of scholars studying human beings and cultures, really want to understand better? Why is such knowledge important, and worth forsaking other questions to pursue? What methods and collaborations might lead to progressive advance? How shall we measure advances?

We expect many readers of *Religion, Brain & Behavior* have Big Questions they think ought to be more widely addressed. Following Hilbert we see the benefits of naming and publishing a list. To this end we would welcome submissions that raise and discuss Big Questions on religion, in the spirit of Hilbert. **We invite readers to submit what they take to be the most pressing Hilbert Problem in the study of religion for potential inclusion in a special *Religion, Brain & Behavior* symposium.** Submissions are subject to the following constraints:

- The question must be stated clearly. As Hilbert wrote, quoting an old adage about mathematical problems: "A mathematical theory is not to be considered complete until you have made it so clear that you can explain it to the first [person] whom you meet on the street." This point applies to empirical questions and theories.
- The question must really be fundamental. The theoretical implications of an answer must be capable of reconfiguring how scholars understand religion.
- The question must be profoundly relevant to actual religion, not mere abstractions of religion. Here we advise people to talk with scholars who have not embraced the bio-cultural study of religion. Why are they skeptical of bio-cultural approaches to religion? What would they like to understand most? Answers might take the field in directions that presently are virtually unexamined such as climate change; within-group (and not merely between-group) competition; religious diversity;

Downloaded by [Institute for the Bio Study of Religion] at 23:19 15 September 2015

path-dependent histories; the good, bad, and ugly in religious leadership; religion and peace-making; and undoubtedly others.
- A clear method for addressing the question must be described. We anticipate that most of the field's Hilbert Problems will require collaborative efforts: spell out how collaboration would have to work.
- Motivation for a question and method must be stated in fewer than 1000 words.
- Submissions are due February 15, 2016.

We recognize that the list of questions that we ultimately publish will be inherently arbitrary and limited. And we reserve the right to update our list in future issues – we'd consider that a sign of the field's health. But we hope that, with the benefit of a flourishing research community, the journal will be able to identify some decent candidate "Hilbert Problems." We also hope readers will consider *Religion, Brain & Behavior* as a vehicle for publishing research that advances understanding of such questions and that their research will receive a wide hearing. We are confident that a "Hilbert Problems" list for our field is possible. This special symposium will offer a proof of concept that Big Questions can be identified and pursued, leading to progress. We challenge readers to identify what they take to be a fundamental, tractable problem facing the academic study of religion, and to describe a plan for adressing it. And then, as a community of researchers, let us pursue these problems, revising our beliefs and goals as we advance.

Downloaded by [Institute for the Bio Study of Religion] at 23:19 15 September 2015

References

Boyer, C. B., & Merzbach, U. C. (2011). *A history of mathematics*. John Wiley & Sons.

Hilbert, D., & others. (1902). Mathematical problems. *Bulletin of the American Mathematical Society*, *8*(10), 437–479.

Johnson, D., & Bering, J. (2009). Hand of God, mind of man: Punishment and cognition in the evolution of cooperation. In J. Schloss & A. Plantinga (Eds.), *The "nature" of belief: Scientific and philosophical perspectives on the evolution of religion* (pp. 26–43). Oxford University Press.

Norenzayan, A. (2013). *Big gods: How religion transformed cooperation and conflict*. Princeton, NJ: Princton University Press.

Roes, F. L., & Raymond, M. (2003). Belief in moralizing gods. *Evolution and Human Behavior*, *24*, 126–135.

Slingerland, E., Henrich, J., & Norenzayan, A. (2013). The evolution of prosocial religions. In P. Richerson & M. Christiansen (Eds.), *Cultural evolution* (Vol. 12, pp. 335–348). Cambridge, MA: The MIT Press.

Swanson, G. E. (1964). *The birth of the gods; the origin of primitive beliefs* (p. ix, 260p.). Ann Arbor: University of Michigan Press.

Watts, J., Greenhill, S. J., Atkinson, Q. D., Currie, T. E., Bulbulia, J., & Gray, R. D. (2015). Broad supernatural punishment but not moralizing high gods precede the evolution of political complexity in Austronesia. *Proceedings of the Royal Society of London B: Biological Sciences*, *282*(1804). doi:10.1098/rspb.2014.2556

Joseph Bulbulia
Wesley J. Wildman
Richard Sosis
Michael L. Spezio