

TRUSTING IN SCIENCE AND RELIGION: PARALLELS AND CONTRASTS

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ABSTRACT: Science relies on trust both in its public reception and in the collaborative collection of evidence, as it is impossible for anyone to verify everything independently. Might the presence of trust in scientific practice help show that trust in religious matters is also rational? Or might scientific practices rather undermine testimony as a source of religious knowledge? Parallels and contrasts between scientific and religious knowledge are common in the literature, despite the plurality of sciences and religions that exist making such comparisons difficult. In this article, I will analyse science-based arguments for and against the reliability of religious testimony. I begin with Mary Midgley’s argument against scientism, and use it to develop a parallel between religious and scientific trust. I then consider two arguments from science against religious trust: the argument from the superiority of science, and the argument from cultural evolution. I argue that utilization of work in social epistemology is helpful for understanding the parallels between scientific and religious trust in a nuanced manner, and that relating specific scientific and religious practices might be more useful than general-level critiques of religious rationality.

KEYWORDS: religious trust, epistemology of testimony, social epistemology, science and religion

Introduction

Recent decades of philosophical work and the public discussion of the COVID-19 pandemic have created a boon of interest in the topic of rational trust. Against traditional oppositions of faith and reason, this highlights the possibility that science itself – and science communication in particular – requires faith, defined as trust in others. Melo-Martin and Intemann (2018) even write of scientists “fighting against doubt,” while Thomas Grundmann (2021) argues that the Enlightenment went too far

in emphasizing the equality of knowers. In philosophy, social epistemology studies the conditions of trust and doubt in others, and the proper role of epistemic authority in our knowledge. But what implications – positive or negative – might the role of trust in science have for understanding the conditions for the reliability of religious testimony? And how might social epistemology help evaluate the parallels and contrasts between religious and scientific epistemic practices?

The purpose of this article is to provide an initial exploration of the relationship between religious and scientific trust. It is meant both to highlight the potential of the parallels between science and religion to undermine simplistic oppositions between faith and reason, but also to help identify places where further research is needed. The issues are complicated, because there are multiple different accounts of what trust and faith mean in a religious context, even within any one religious tradition, such as Christianity (my own tradition). Likewise, there are many different sciences and diverse understandings of scientific practice in the philosophy of science. But this need not prevent finding parallels in some generally present practices, such as believing things based on testimony.

Epistemic authority in the modes of testimony, like tradition, holy books and so on, clearly plays a role in much religious thought. The general rationality of reliance on others is required for most of our everyday beliefs as well. This was already used to ground claims about religious trust by Augustine of Hippo, who, in his *De Vera Religioni* (On True Religion) and in his *De Utilitate Credendi* (On the Profit of Believing), spent a great deal of effort in defending the importance of authority (*auctoritas*) for beliefs, in distinction from beliefs gained directly through our own reasoning (*ratione*). He argues, for example, that we rely on testimony even to know such basic facts as who our parents are – and thus it would not be reasonable to fully dismiss *auctoritas* (Augustine, *De Utilitate Credendi*, 26; Augustine 1887, p. 360.). The nature of trusting testimony in this way deserves more attention also in contemporary philosophy of religion.

This article will proceed to provide such analysis by first formulating an argument for parallels between trust in scientific and religious contexts, following the example of Mary Midgley, and refining the argument further utilizing contemporary work in social epistemology. I will then consider two potential objections which claim that something about science undermines trusting in religious testimony. It could be that scientific social processes are set up to foster reliability in a way that religious epistemic authority does not, for example. Although I will argue that these objections ultimately fail, I will also suggest that examples from scientific practice might help illustrate ways in which religious testimony can fail to be reliable. This may, when crucial differences between scientific and religious practice are taken into account, prove useful for further research on the conditions of rational trust.

Parallels of Trust Between Science and Religion

Popular level comparisons of science and religion often present religion as based primarily on faith, including the element of trust in testimony, whereas science is

supposed to be more about rational reflection of empirical evidence. Yet arguably scientific practice itself relies on testimony in a way that parallels religious practice in many ways. This does not mean that the parallel with science is necessarily exact, or that it serves by itself to ground trust in some particular religious tradition. Yet recognizing the importance of this kind of “faith” for science might help avoid overly simplistic oppositions between science and religion, as well as crude forms of scientism, understood as the belief that only scientific ways of knowing are reliable (cf. Peels, 2021).

Philosopher Mary Midgley called attention to the necessity of some kind of faith for science in her book *Science and Salvation* (1992). In the book, Midgley’s goal is to criticize the elevation of science to the status of a secular religion or ultimate source of truth. In a way that anticipates later critiques of scientism, she argued that the notion of science as the only path to understanding, or as the solution to all of humankind’s problems, is a type of myth guiding modern discourse – but it is ultimately a fantasy that we should let go of.

Midgley insisted that rather than being sufficient on its own, science continually depends on the existence of epistemic and cultural practices that are broader than science itself. Science also requires certain prescientific propositional beliefs and trusting attitudes. Thus, it is not true that “disbelief, as such, is then always preferable to belief, distrust to trust, skepticism to acceptance” (Midgley, 1992, p. 107). As she elaborates:

Science cannot stand alone. We cannot believe its propositions without first believing in a great many other startling things, such as the existence of the external world, the reliability of our senses, memory and informants, and the validity of logic. If we do believe in these things, we already have a world far wider than that of science. (Midgley, 1992, p. 108)¹

Midgley does not use the importance of trust for science to argue for the rationality of trust in general. Rather, her argument for trusting others follows William James’s pragmatist philosophy. Her starting point is that both trusting and not trusting others incurs risk. But taking the risk to trust is pragmatically justified due to the access to knowledge and social benefits that it allows. According to James’s oft-cited principle, our epistemology should ideally not only protect us from false beliefs (minimize our errors), but also enable us to acquire the maximum amount of possible true beliefs. (James, 1897, pp. 17–20, 94n2) As Linda Zagzebski (2012) has argued further, it seems working together with others fulfils these goals better than an “epistemic egoism” which would imply only trusting in ourselves. Although trusting in others can lead to error, working together will also allow the perspectives of others to correct our own blind spots, and allow access to truths they have spent time and effort learning. Most of our knowledge comes from others in this way.

¹ Midgley’s argument against scientism is further elaborated on by Rik Peels in in “Fundamental Argument against Scientism” (Peels, 2021) though he does not discuss science’s reliance on testimony.

Although Midgley's argument for the necessity of trust therefore does not appeal to science, she clearly also thinks that scientific practice fundamentally requires affirming our basic trust in testimony. As noted in the previous quotation, the scientist must believe in the "reliability of our [...] informants" to keep the scientific process going. If she is correct about this, this means that it would be contradictory for someone to practice science (or value science) while thinking that knowledge cannot in general be gained through testimony and trust in others.

But how, then, does science require trusting in "our informants"? I have already mentioned the importance of trust for science communication. As Aku Visala points out

Most people hold scientific beliefs, such as 'current biological species are a product of a long evolutionary history' and 'the universe is expanding'. However, apart from teachers and researchers, most people have very little reflectively accessible evidence for these beliefs if they are challenged. People acquire these beliefs on the basis of social learning, not through carefully assessing the evidence. (Visala, 2020, p. 218)

As seen recently with respect to the COVID-19 pandemic and climate change, if people were required to personally verify all information given by scientists, then this would make it extremely difficult if not impossible for science to have much impact on public policy or get funding for research.

But being able to learn truths through science communication is not just relevant for nonscientists. All scientists initially acquire their beliefs about the existence, methods, and usefulness of science through this kind of testimony, and they continue to acquire their knowledge of much of science in the same manner. Each scientist is a layperson in questions outside their own field, lacking the necessary qualifications or time required to evaluate their results. Moreover, although scientific training is typically built to give students access to scientific evidence and arguments themselves, and the ideal is to retest and rethink ideas, it is not possible to personally verify all background beliefs and results even from one's own field, let alone adjacent fields. Collaborative research projects and scientific arguments also typically require such a large amount of data that no one person will have the necessary expertise in all relevant fields (Andersen & Wagenknecht, 2013; De Ridder, 2014; Wagenknecht, 2016). For example, an evolutionary biologist need not personally have observed all fossils or performed radiometric dating to utilize such results as part of their argument.

It is thus understandable that trust is widely thought to be indispensable for science. However, the precise nature and extent of scientists' trust in each other is disputed. In discussions of the epistemology of testimony generally, we can distinguish between *reductive* and *non-reductive* accounts of testimony (Fricker, 1995). Reductive accounts hold that trusting others requires first having positive reasons to trust in them. Applied to science, one might claim that scientists' trust in each other is based on past evidence of scientists' reliability, or the reliability of the kind of methods and processes of peer review that science involves (e.g. Fricker, 2002; Douven & Cuypers, 2009). Against

reductive accounts, non-reductionists typically argue that always needing to have evidence before trusting would lead to a vicious circularity (Baker & Clark, 2018). Applied to science, one could argue each scientists' own evidence base is far too narrow to determine the reliability of these things without any reliance on testimony. One must trust in order to gain evidence that can then be used to evaluate trustworthiness.

However, there are also mediating positions. For instance, perhaps our self-knowledge justifies trusting in those that we perceive as relevantly similar to ourselves (Zagzebski, 2012), thus granting an epistemic justification for a basic attitude of trust in some, but not others. Moreover, even on the non-reductionist account, it seems that scientists gain testimonial and other evidence in their training, which then enables rational judgments about who can be recognized as reliable peers and scientific experts. Also, this evidence does not always increase scientists' trust in each other's testimony. De Ridder (2022) argues that knowledge of the failures of peer review in fact undermines scientists' trust in each other to some extent (following the discussion begun by Ioannidis, 2005). However, De Ridder concludes that scientists will still be justified in at least trusting other scientists to "only testify of claims that are backed by evidence gathered in accordance with prevailing methodological standards" (De Ridder, 2022, p. 11).

Although the specifics differ, these accounts do grant the kind of parallels between ordinary trust in others and scientific trust that Midgley wrote about. Understanding science and getting scientific practice going seems to rely on testimony – that much seems simply unavoidable. Thus, we might conclude that science and religion both admit the indispensability and basic usefulness of socially transmitted knowledge. Midgley's point is to argue against scientism, rather than for religion, though. On this understanding, then, the centrality of testimony and trust for science is not yet thought to establish trust in particular scientific or religious authorities. Rather, the implication would be at most that epistemic egoism (Zagzebski, 2012) is probably not the correct attitude to take regarding religious matters either. This opens the door for the possibility that the testimony of religious authorities and scriptures can in principle be a relevant and rational reason for belief, if such trust is not defeated by additional reasons.

However, scientific practice itself is sometimes seen as providing defeaters for the reliability of religious testimonial practices. The core of the problem is that science is supposed to foster high epistemic standards that should make scientific testimony more reliable than just any testimony. Scientific theories are not considered proven just based on an authority's word, but on the meticulous testing and examination of hypotheses in relation to the relevant evidence. So, maybe something about scientific epistemic standards might undercut reliance on non-scientific testimony in general, or religious testimony in particular. I will turn to consider this in the next section.

Scientific Practice as Critique of Religion

In this section, I will consider two main arguments, both drawing on scientific practice, for the conclusion that religious testimony is in some way unreliable. The first one is based on the way science allegedly shows the superiority of non-testimonial reasons in comparison with testimony. The second one is based on the way scientific practices might protect science-based testimony from cultural evolutionary forces, which allegedly undermine the reliability of religious testimony. Although I think the conclusions of these arguments are in the end too far reaching, I will nevertheless argue in the next section that parallels with science might be legitimately used to criticize some specific religious practices.

The Argument from the Superiority of Scientific Practice

Testimony is not always reliable: people can make sincere errors (such as falsely remembering or misinterpreting their observations) and even intentionally mislead other. One does not need to observe human behavior very long to see how false rumors and conspiracy theories, fake news, myths, and libels can spread through social transmission (McBrayer, 2020). Researchers often lament the poor state of popular-level knowledge and how difficult it can be to correct. For example, scholars have long since debunked the myth that the Medieval Church taught a flat Earth, and that the Church opposed Christopher Columbus's voyage for this reason. Yet the myth persists in popular imagination, and even gets repeated by scholars in other fields (Russell, 1991; Hannam, 2023).

One might thus argue that the unreliability of testimony is precisely the reason why we need science – and that the scientific process itself thus demonstrates the lesser epistemic status of religious beliefs grounded in testimony. As Petteri Nieminen and colleagues have recently put this point, referencing the example of testimony in medicine, “From the viewpoint of science, testimonials lack statistical power and cannot be generalized to be valid for large populations nor to construct viable theories without lots of additional research” (Nieminen et al., 2021, p. 459). In evidence-based medicine, patient testimonials, case reports and even expert testimony are regarded as far inferior to good statistical, randomized trials using proper scientific methodology (e.g. Sutter, 2006). Thus, instead of relying on testimonials uncritically, scientific inquiry in the field of medicine seeks to test and validate its conclusions statistically. In contrast to this, Nieminen and colleagues list examples of religious beliefs based on testimony, such as Christians' belief in Jesus's resurrection and Mormons' belief in the revelations to Joseph Smith, and argue that these should not be regarded as rational by scientifically minded people: “For a scientist, none of the above examples would be adequate as proof, because without other documentation they would still be regarded as hearsay” (Nieminen et al., 2021, p. 455). They also point out that the testimony of researchers about the conclusions of their research can at least in principle be reproduced and fact checked by other researchers, in contrast to many cases of

religious testimony. They conclude that religious reliance on testimony represents a comparatively unreliable “experiential” mode of rationality.

To be charitable, I will assume that Nieminen and colleagues do not mean to dismiss testimony as a source of knowledge in general. Rather, I will take their point to be simply that beliefs based on scientific processes have a much higher epistemic status than beliefs based on religious testimony. Scientists’ testimony about their own research results is more reliable, because there are processes in place to continually fact check this testimony, whereas religious testimony concerns matters that are even in principle beyond empirical verification. This, among other factors, means that we have much more reason to trust scientific results, as compared to religious beliefs.²

I will make four replies to this argument. First (1), assuming that Nieminen and colleagues do not mean to argue against the reliability of testimony in general, their argument does not yet seem to undermine the parallel between scientific and religious trust previously argued. It seems that granting the general usefulness of testimony would be required, as scientific researchers must also rely on testimony to know about the widespread use of processes like peer review. They must also rely on testimony to know the extent to which science is about phenomena that can be empirically verified. Likewise, statistical methods simply represent the gathering of a large amount of testimonial evidence about people’s behavior, symptoms, test results, and so on. Yet if testimonial evidence has no epistemic value on its own (e.g., to inform us about what kind of symptoms patients and their doctors have observed), then it seems a collection of testimonial evidence will also have difficulty in creating reliable conclusions. This does not mean that the vetting of low-value epistemic sources cannot provide more epistemic value – but at least some value has to be there at the start (cf. Hietanen et al., 2020, pp. 532–533). Moreover, as our confidence that a proper statistical study has been conducted need not itself be based on a statistical study, but can be based on testimony, it is not clear why normal testimony should always be considered less certain than statistical studies.

Second (2), as long as the general usefulness of testimony is admitted, it seems difficult to make the empirical verifiability of claims a necessary condition of trusting others. It seems that we routinely believe others about many things that we ourselves are not in a position to verify. For example, we trust others to inform us about their mental states and past events that they have experienced. Lacking telepathic capabilities and time machines, such claims are beyond direct verification, although they can certainly be corroborated by other evidence. It is true that our inability to check claims can create a kind of epistemic risk (Koskinen, 2018) that a clever liar might utilize to get us to believe false things. Thus, we might think that knowledge that has been verified by multiple witnesses who were in a position to contradict false claims is more reliable. Moreover, setting in place processes that fact check claims can help mitigate the epistemic risk. Yet, this is not necessarily the only way to mitigate the risk, and there might be reason to trust testimony even if it goes beyond what we ourselves and other can check, or even if it is given by only one person. For example, I do not

² Nieminen and colleagues also argue that even more academic religious reasoning typically displays confirmation bias, a claim critically analyzed by Kojonen (2022).

need to have a detective constantly shadow my wife to mitigate the epistemic risk that she might secretly be a secret agent; I can just trust her.

Third (3), building on the previous, it seems the kind of factors and evidential ranking cited by Nieminen and colleagues serve only to highlight how some factors might make some testimony more reliable in particular circumstances. For example, it seems that a collection of testimonial evidence corroborating each other will in many situations be of more value than just an individual testimony, and testimony from reliable sources who are in a position to know what they are talking about is better than rumors. However, the criteria appropriate for one case need not be universally necessary. As Wagenknecht notes:

[It is] important to be domain-specific. After all, what applies to interactions between children or friends in non-professional everyday life need not apply to the professional interaction between scientists.
(Wagenknecht, 2016, p. 131)

This also works *vice versa*: what applies to science need not apply universally. For example, in medicine (the example utilized by Nieminen and colleagues), statistical studies are often required to generate reliable results, but this is because human biology is highly complex, which means that individual people are often not able to reliably infer the causes of their health. For example, one person's experience of getting lung cancer after habitually smoking for many years, and another person's experience of life-long smoking without getting cancer does not yet tell us much. Because so many things affect a person's health, a much broader study collecting lots of evidence was required to enable the present firm scientific conclusion that smoking does cause cancer. Yet the complexity of many issues does not mean that testimony is therefore not able to provide us reliable knowledge about many other things.³ For example, it can reliably tell us about the existence of such in-depth studies and meta-analyses of the effects of smoking and inform us of the efforts of many tobacco companies to discredit public belief in this scientific research (Oreskes & Conway, 2010). If ordinary testimony about such matters could not provide us knowledge, then how could we have any certainty in our scientific beliefs either? It seems clear that reliable knowledge cannot be built out of just statistical studies all the way down. Likewise, completely ordinary testimony can plausibly establish, say, that someone seems to have had a religious experience resulting in drastic changes to their life.⁴

Fourth (4), the use of reliability-increasing factors like intersubjectivity is not limited to scientific practice. Many such factors were already known beforehand, and these topics have also been long discussed in religious epistemology. My point here is not that these examples necessarily suffice to establish the reliability of Christian

³ Cf. McBrayer's (2020) distinction between "big" and "small" questions.

⁴ It is worth noting that, as Peels (2021, pp. 175-177) points out, it is not clear that intersubjectivity is always more certain than just personally known or introspective knowledge. Instead, the possibility of intersubjective knowledge arguably depends on being able to introspectively know that "I am aware of reliable-seeming people agreeing on such and such". If such introspective knowledge is unreliable, then so will such intersubjective beliefs.

testimony – just that the boundary between the use of testimony in “science” and “religion” does not seem as clear as the argument from the superiority of science seems to assume. For example, in Christian apologetics, much is often made of the multiple witnesses to Jesus’s resurrection, their capacity to really know that Jesus died and really rose from the dead, and the way the claim that many witnesses existed could have been falsified (e.g. Loke, 2020). There have even been attempts to utilize the best scientific knowledge of the day to help identify miracles (Duffy, 2008), even though divine action is outside what is usually understood as science (though cf. Donahue, 2024). A person’s observed character and motives have been thought to impact the reliability of the testimony of Christians to outsiders, as when John Chrysostom (*Homily 12 on Matthew*, 5; Chrysostom 1888, p. 5) complains that people will not believe Christians are preparing for the future life when they see Christians spending all their efforts on acquiring material possessions. Similar graded evaluations of testimony can also be seen within Christian theology itself. For instance, the testimony of ecumenical Church councils, and of what Christians have believed “everywhere, always, and by all” (the Vincentian canon) has traditionally been seen as especially weighty (though cf. Pelikan, 1971). Likewise, prominent theological figures have seen faith based only on testimony as inferior to faith that also includes a reflective, reasoned understanding (Baker-Hytch, 2018; Cross, 2018).

Thus, it seems that the argument from the superiority of science is not sufficient to undermine the case for the necessity and potential usefulness of testimony in religious matters. Scientific norms might help criticize particular features of some religious social belief forming processes, such as situations in which confirmation bias reigns. However, care should be taken in developing general-level criteria for the rationality of trusting testimony, as this plausibly varies in different contexts. Scientific objectivity plausibly involves the recognition and management of epistemic risks (Koskinen, 2018), and restricting all rationality by the criteria of one discipline involves plenty of such dangers. For example, an overly narrow view of what counts as evidence might lead to the dismissal of qualitative research, and difficult-to-measure features of reality in favor of relying only on quantitative methods. This would be a form of scientific imperialism (Mäki et al., 2018), with potentially undesirable consequences. For instance, probably every scientist and scholar working at a modern university can recognize how management strategies focusing purely on measurable metrics, like the *quantity* of publications, might be problematic if it means neglecting less measurable values like the *quality* of publications (see also Ioannides, 2005). As some other examples, Altanian (2024) has argued that in discussion of genocides, emphasis on official sources has led to the epistemic injustice of devaluing victim testimony, while Dormandy and Grimley (2024) argue that scientific “gatekeeping”, while necessary, can itself exemplify motivated reasoning and lead to ignoring valuable non-mainstream perspectives.

The Debunking Argument from Cultural Evolution

As noted, sometimes tales spread socially for reasons quite independent from their truth value. As Russell (1991) notes in relation to the myth of the flat Earth, much of the force of the myth comes down to Washington Irving's fictional tale *A History of the Life and Voyages of Christopher Columbus* (1828), which opposed Columbus and flat Earthers. Irving's well-written prose made much more money and provided more entertainment than the comparatively dry work of historians, which contributed to the greater influence of Irving's work. The popularity of fake news likewise owes much to persuasively crafted propaganda and cognitive biases, rather than truthfulness (McBrayer, 2020; Levy, 2021).

Normally, when we think we can explain widespread belief in some testimony as resulting from factors that are not sensitive to truthfulness, as in the case of the myth of the Flat Earth, we do not think people's repetition of that testimony has epistemic force. In the study of cultural evolution, it has similarly been noted that it is not only the truthfulness of ideas, but also factors like social usefulness and cognitive biases that influence their cultural success. In other words, cultural evolution does not necessarily "select" beliefs for their truth value. This means that one might potentially undercut the reliability of some testimonially transmitted beliefs by studying the underlying selection effects, and discovering they are not sensitive to the truth.

Philosopher Taylor Davis (2020) has tried to build a debunking argument for religious beliefs based on just such considerations. According to Davis, the cultural transmission and survival of religious beliefs can be plausibly explained entirely as the result of selective effects that have no relation to truth. Prominently, the "big gods" account claims that beliefs about gods have helped enforce prosocial moral behaviors, and that this helps explain the cultural stability of such beliefs (Narenzayan et al., 2013). The plausibility of such explanations, Davis argues, distinguishes religion from science, because the cultural transmission of science is set up in a way that depends on truth value, meaning that the prevalence of scientific beliefs cannot be explained purely as the result of their prosocial effects. The knowledge that their testimonially based beliefs are not truth sensitive then acts as an undercutting defeater for the reliability of religious belief based on testimony.

Davis's argument is a reworking of the much-discussed evolutionary debunking argument of John Wilkins and Paul Griffiths (2013). These have traditionally focused on purported features of evolved human cognition that make religious belief "natural" in the sense of being cognitively intuitive. It is then argued that insofar as religious beliefs can be explained as being generated by such factors, this undermines or debunks the rationality of religious belief. Many different theistic responses have been given to such arguments, with continuing discussion (e.g. Launonen, 2021; Kvandal, 2023). Davis develops this further by focusing on cultural evolution, which he uses to contrast the relative reliability of scientific and religious testimonial practices.

Beliefs having prosocial benefits is not in itself sufficient for a debunking argument, and Davis acknowledges that usefulness also influences the popularity of scientific beliefs. However, Davis argues that in science, but not in religion, the selective value of beliefs is linked to their truth value. This is because "scientific norms and methods

ensure that false scientific theories are eventually rejected.” (Davis, 2020, p. 206) The effectiveness of scientific norms is revealed, Davis argues, by two factors: (1) the improvement of scientific accuracy over time, and (2) the convergence of scientific beliefs around the world, even in otherwise very different cultural contexts. In contrast, Davis’s central evidence against the truth sensitiveness of religious beliefs is their divergence across cultures. The assumption is that since people in different cultural have equivalent reasoning capacities, it is to be expected that rationally based beliefs should converge across cultures. In contrast, religious diversity might show that similar truth-seeking processes are not the primary driving force in religious belief. Launonen and Visala (2023, p. 194) formalize Davis’s argument as follows:

1. Cross-cultural divergence is good evidence that beliefs in a given domain have been favored by cultural selection in virtue of other factors except their truth sensitivity.
2. There is cross-cultural divergence regarding religious beliefs such as karma and big gods.
3. There is good evidence that religious beliefs about karma and big gods have been favored by cultural selection in virtue of other factors except their truth sensitivity. (From 1–2)
4. Religious beliefs about karma and big gods have been favored by cultural selection in virtue of their ability to produce prosocial behavior.
5. Beliefs that are favored by cultural selection in virtue of other factors than their truth sensitivity are not justified (unless one has independent evidence of their truth).
6. Therefore, religious beliefs in karma and big gods are not justified (unless one has independent evidence of their truth). (From 3–5)

As the formulation by Launonen and Visala makes clear, Davis does not intend his argument to debunk all religious belief – he allows that some minority (theistic philosophers of religion, for example) might have reflective reasons for religious belief. He points out, however, that most religious beliefs are acquired through “cultural inheritance, or social learning” (Davis, 2020, p. 205) – in other words, testimony. Thus, if cultural evolution undercuts the reliability of religious testimony, then this would undermine most religious beliefs.

I will present four counterarguments to Davis. First (1), it seems there is quite a leap from prosocial benefits playing a large role in the emergence and sustainability of belief in “big gods,” to religious beliefs being fully explained by such factors. The veracity of big gods theory continues to be debated (Whitehouse et al., 2023), but the theory does not in any case even claim to provide a full explanation for monotheism and other more specific religious beliefs, practices, ideas, and texts. For example, it would not explain the specific content of the Bible or the Qur’an, or the specific way Christianity and Islam developed historically. Moreover, big gods theory has been developed within a methodological naturalist framework, bypassing evaluation of the

possibility of conjoining it with theistic explanations (cf. Finnegan et al., 2023).⁵ Thus, it seems that a fair bit more work would be required to show that such theories really show that only non-truth sensitive factors are required to explain the emergence and sustainability of religious testimony. Instead, given the fact that many religious believers seek to be reflective and value the truth, it seems at least intuitively plausible that religious belief systems with some truth sensitivity and some capacity of forming supportive arguments might in fact have a selective advantage in comparison to other forms of religion. This may not be fatal to Davis's argument, since it does not necessarily depend as much on big gods theory as on religious diversity. However, it does certainly affect the force of premises 3, 4, and 5.

Second, (2), given that Davis's purpose is not to argue against the reliability of testimony in general, it seems cultural divergence and cultural convergence can hardly be the sole criteria for deciding whether some testimonial tradition is trustworthy or not. It even seems that Davis's own argument could not get off the ground if these were the only relevant criteria. This is because the only way we can know about cultural divergence and cultural convergence is through testimony. And this knowledge will have to spread through social learning, rather than being discovered independently by separate cultures. Thus, it seems the defender of Davis's debunking argument will themselves have to allow for a more permissive understanding of testimony-based belief, rather than requiring that the reliability of useful beliefs must always be confirmed by cross-cultural convergence. And such an account will also be needed for scientific practice and the public communication of science, as pointed out above. This means that, as Launonen and Visala (2022, section 6) argue against Davis, the criteria for expert scientific beliefs should not be generalized to all testimonial beliefs. Rather, one needs to consider the possibility that, just like scientific beliefs can be rationally acquired from scientific experts, religious beliefs can also be acquired rationally from religious experts. As Visala points out,

Religious beliefs are often acquired via social learning. Sometimes, they are not even clearly understood. In both these senses, they do not differ from everyday scientific beliefs. Furthermore, both can be justified because there are experts who, arguably, have access to relevant evidences and arguments. In the case of religion, these experts are often theologians and philosophers, sometimes scientists. (Visala, 2018, p. 218)

Visala admits that scientific beliefs typically have reflective reasons that can be queried from the experts, but he sees this as a convergence between science and religion: similarly, most people who hold religious beliefs have access to religious experts who can present evidence and arguments for the religious view. But in both cases, laypersons will not usually need to be able to provide independent evidence themselves before accepting beliefs (relevant for premise 5).

Social epistemologists (e.g. Zagzebski, 2012), and psychologists (e.g. Mercier, 2020) do not necessarily agree on what sort of factors influence (or should influence) trusting

⁵ On methodological naturalism, see Donahue (2024).

and doubting testimony. But it seems that cultural convergence will not typically be required for trust. The independent agreement of many witnesses does often make testimony more credible, and disagreement among experts may at least sometimes reduce confidence. When experts, or communities of experts disagree, this can be a difficult situation for laypersons, although it can be quite difficult to determine just who are “epistemic peers” (Bogardus, 2013). Nevertheless, many have argued forcefully that laypersons can in many cases have reason to trust one group of experts over the other (Goldman, 2002, chapter 7; Zagzebski, 2012; Ballantyne, 2022). For example, one might have some particular view of the significance of disagreement, even though this is disagreed on. All this means that premise 5 will have to be amended to allow for a more permissive understanding of when testimony is trustworthy.

Third (3), disregard for truth is only one explanation for cultural divergence (against premise 1). There are also many other, epistemically legitimate reasons why certain types of knowledge might be tied to a particular culture or social group. For instance, knowledge of the precise location of Westminster Abbey will be more common in London than elsewhere, and it is possible to understand the social divergence of religious beliefs as being truth sensitive in the same way (Baker-Hytch, 2018). Davis argues that “assuming that Christian beliefs are true, we should observe that people in Europe and people in the Philippines converged upon Christian beliefs in a manner that was independent of cultural contact” (Davis, 2020, p. 206). However, the prediction that Christian beliefs should spread in a way that is independent of geographical locations and social networks seems incongruent with Christian theology. The religion claims to be based on special, rather than just general revelation, God typically working through the Church to spread the message of Jesus (Visala, 2020). All major religions have their own ways of explaining religious diversity, and often in ways that do not require arguing that the other religion does not get anything right, or that its testimonial processes are fully unreliable. Likewise, cultural convergence might sometimes be explained as the result of common human biases, rather than as the result of independent reasoning.

Fourth (4), Davis seems to be exaggerating the convergence of scientific beliefs and downplaying the convergence of religious beliefs. As Launonen and Visala (2022, section 6) point out, the definition of “science” should include not only the “hard” sciences like physics and chemistry, but also “soft” sciences like psychology, sociology, and history. There is certainly merit in calling attention to features that might make the natural sciences special, but the criteria used should not exclude other sciences, as otherwise our knowledge will be much too limited. Although there is some disagreement even in the hard sciences, there is certainly more in the soft sciences. Yet this does not mean that the methods used in these fields are not truth sensitive. Likewise, the disagreement of philosophers and theologians does not mean that these disciplines (in the various ways they are practiced) are not truth sensitive. Nor are particular features of some natural sciences, like the ability to make scientifically testable predictions, necessary conditions for truth sensitiveness, given the validity of these other disciplines. Thus, one would need to take a broader look at fields beyond the natural sciences before formulating one’s general criteria for reliable testimony.

Launonen and Visala (2022, section 6) also point to examples of convergence on religious matters. They mention particularly the emergence of similar theistic beliefs and theistic arguments in many different cultures, which would be expected based on the doctrine of general revelation (cf. Brown, 2012; Clark & Winslett, 2023), as well as the way non-Christian scholars commonly agree with some historical facts that Christian apologists use to argue for Jesus' resurrection (cf. Loke, 2020). This is not the place to assess the extent of agreement on these issues. However, while admitting that there is far more diversity in religious beliefs than in the natural sciences, such seeming convergence in religious beliefs would need to be analyzed to develop Davis's argument.

Although this is not pointed out by Launonen and Visala, examples of convergence might also be found within a religious tradition. As Thomas Kelly (2011) points out, it is clearly true that the billions of religious believers in the world have not arrived at their beliefs completely independently, because these beliefs are indeed socially transmitted. Yet Kelly argues that some sort of convergence across generations might still be required to explain the persistence of such beliefs over time. If something about people's traditional religious beliefs had not resonated with their own experience and reflection at least to some extent, then such beliefs would more likely be replaced by other belief systems over time, even if part of that stability might also be explained by the lack of religious freedom. Similarly, Kelly points out, the belief that $2+2=4$ is typically acquired socially from authority figures (with social incentives for repeating the right answers), but the fact that it strikes people as true is important for explaining why this belief persists. Insofar as this plausibly applies to religious belief, then even socially connected, persistent religious beliefs might be considered somewhat "convergent" or partly "independent" testimony.

In summary, factors like disagreement and independent convergence can certainly impact the force of testimony. It is also plausible that religious diversity indeed calls for reflection of the reasons for trusting one religious tradition rather than another (Baker-Hytch, 2018). Nevertheless, it seems the cultural evolutionary debunking argument is yet incomplete, requiring more work on the nature of testimonial beliefs, and alternative ways of understanding the diversity and convergence of beliefs. Existing theories do not yet prove that religions always only make use of "existing cognitive by-products" (Talmont-Kaminski, 2013) rather than being truth sensitive regarding many testimonially transmitted religious beliefs.

Thus, it seems that both the argument from the superiority of scientific practice, and the argument from cultural evolution fail to debunk the rationality of trusting in religious testimony in general. However, this does not yet mean that scientific norms and practices might not help develop critique of particular religious social belief forming processes. Even though norms like "being able to accurately predict events" (Davis, 2020, p. 204) are not universal for truth-seeking practices, I will argue in the next section that examples from science might indeed be helpful in other ways.

Learning from Scientific Norms and Practice

The subtext of the critiques I have been analysing is that scientific collaborative processes have some sort of safeguards and norms that help ensure the reliability of such processes, and that similar norms are not present in religious practices. Although this seems difficult to develop into a general critique of religious rationality, this does not mean specific religious practices might not be more vulnerable to critique. As has been argued in the field of science engaged theology (e.g. Perry and Leidenhag, 2023), it is often more useful to compare specific scientific and religious ideas and practices, rather than the more nebulous and broad categories of “science” and “religion.” The examples here are given in the same spirit and are meant to point the way to more useful parallels between scientific and religious trust, in a way that goes beyond apologetic and counter-apologetic purposes.

The point is not to argue that scientific norms always apply to religious beliefs. As I have already noted, there is no one unified way in which epistemic authority and testimony function in all cases (Ludwig & Ruphy, 2021), and there is great diversity in what has been called “science” and “religion”. Nevertheless, connections are also to be expected, since many of our current scientific norms can be traced back to a religious context, owing much to Medieval Universities, in which theology was considered the highest of the sciences. Moreover, these norms and their effects are more closely studied in the humanities, rather than in the natural sciences (Peels, 2018). A general principle that might apply in many cases is that we should maximize our true beliefs, and minimize our false beliefs, as mentioned previously. But we can often point to legitimate reasons that can explain how this means different things in different contexts. For example, in the context of the public communication of science, focusing on debate between scientific positions might lead to confusion about what most scientists think, but in a teaching setting this might be the most fruitful way of developing student’s own critical thinking skills (Melo-Martin & Intemann, 2018; Grundmann, 2021). Some features of our world are better studied through chemical experiments, some better through statistical studies or qualitative interviews, some best through philosophical exploration. As the old Aristotelian principle states, our methods of gaining knowledge about something should be adapted to the nature of that object – and one can also apply this to theology (Abraham, 2017, p. 1).

The differences between some religious and scientific pursuits might thus create reasonable differences in the kind of epistemic norms one should adopt. For example, many scientific fields focus on phenomena that are repeatable in the present day, and seek primarily advancing knowledge, rather than retaining previously gained understanding (although this is also important). In contrast, the Christian theology of the churches traditionally seeks to reliably preserve and better understand a divine revelation that has already been given and takes previous interpreters of that revelation (such as ecumenical councils) as part of its evidence base in deciding how to interpret theological statements. For those who accept the assumption of divine revelation, this would justify epistemic norms that are more conservative than scientific ones, although different theologians might emphasize goals in a different way, and this need not prevent progress in theology (Peels, 2020). For example, some

theologians might value communicating and understanding religious beliefs that resonate with the modern era, over preserving traditional beliefs (Vainio, 2010), and Protestants might be more worried about the potential errors of religious authorities than Orthodox or Catholic thinkers (Zagzebski, 2012; cf. Collins & Walls, 2017).

With those caveats, I will now present two examples of how parallels with science might illustrate problems that can also be seen in religious practices. First (1), in scientific research it is seen as problematic when the results are based on a too narrow evidence base. As noted, scientists seek to be conscious of the way confirmation bias can distort our thinking, causing us to overemphasize the evidence that seems to corroborate our own position. This is also relevant for the way we gather evidence. For example, psychological studies that are focused on people who are WEIRD (Western, Educated, Industrialized, Rich, and Democratic) may not always be reliable for people who lack these characteristics (cf. Kanazawa, 2020).

Similarly, Katherine Dormandy (2018) has pointed out two ways in which religious traditions might lose reliability through possessing an overly narrow evidence base. This can occur, she argues, due to two main factors. These are (A) *narrowness of education*, when religious training focuses only on traditional views, while ignoring knowledge from other fields and possible counterarguments. Psychological tendencies of groupthink affect religious believers and experts, just as they also affect all other people, including scientists. Unreliability can also occur due to (B) *cognitive recalcitrance*, resulting when religious authorities are too resistant to change, even improvements. This can occur if theologians are not sufficiently interested in evidence and live in a social context where they meet no significant challenges to their views. There may also be significant social and cognitive pressures in place that incentivize keeping to the same beliefs. Dormandy argues that tackling such epistemic risks would be helped by theological engagement with marginalized religious believers, such as Jewish perspectives in a majority-Christian community. As she summarizes:

The viewpoints of religiously marginalized people are epistemically important for the ability that they confer to see beyond many of the unquestioned beliefs, concepts, and values originating in mainstream religious thought. Religious authorities make important contributions to the epistemic aims of religious communities, but precisely because of their social position, they are subject to epistemic limitations. In other words, religious insight is not distributed along exactly the same dimensions as religious authority. Because there are religiously important insights to be had by non-authorities, different members of the religious community – including and especially its marginalized – have different pieces of the epistemic puzzle. Heeding them may help make the authoritative belief system authoritative in more than name. (Dormandy, 2018, section 5).

Dormandy's point is thus not to argue that religious epistemic authority is necessarily unreliable, or that epistemic egoism is preferable in religious matters. Rather, she

argues simply that some religious social practices may be improved by engaging more with alternative perspectives.

Second (2), the history of science shows how censorship can have a deleterious effect on the reliability of science. Many examples involve political guidance, including the forceful suppression of opinions. For example, when the Soviet Union mandated the teaching of Lysenkoism in biology, dismissing, imprisoning, or executing dissenters, this gave incentive for scientists to support a false view, leading to disastrous consequences for not only the progress of Soviet biology, but also agriculture and human life (Borinskaya et al., 2019). However, academics in democratic societies can also censor and discriminate against each other for non-scientific reasons, and factors like power imbalances, currents of academic fashion, and even benevolent motives can cause scholars to self-censor themselves (Clark et al., 2023).

Likewise, we can find situations in which the lack of religious freedom seems to negatively impact religious testimonial practices. For example, Christian theologians might argue that those Church councils whose theology emerged as the consensus of geographically diverse bishops are more authoritative than those in which political authorities forced a smaller number of bishops to come to some conclusion.⁶ This would be because it is important for reliable theological decisions to be theologically, rather than politically motivated. Societies in which people are not free to disagree with religious ideas likewise seem to create some doubt about the extent to which people living in these societies affirm religious beliefs sincerely, and the extent to which even sincerely held theological opinions might have changed if counterarguments had been allowed. Thus, it will reduce the strength of the religious testimony originating from such societies (cf. Kelly, 2011), and creates epistemic risks due to reduced opportunities for error correction. Religious freedom thus seems to have substantial epistemic benefits in addition to its other grounding (cf. Wilken, 2019). I do not mean, though, that testimony necessarily loses all force when there is any social incentive or censorship. For example, in Germany, defending Nazism is presently illegal, but this does not eliminate the value of German testimony on the moral evils of Nazism.⁷

These two examples are just a start, meant to illustrate the possibility for more nuanced, constructive comparisons of scientific and religious epistemic practices. In both cases, scientific practices provide some value as a point of comparison, even though I would not regard scientific examples as necessary for making the points. Although illustrations from everyday life could be used to argue similar points, the examples from science have their own benefits in providing detailed case studies of the results of certain testimonial practices. However, while developing critiques of religious practices based on the example of science, care should be taken not to present the criteria of one discipline as necessarily universal, and to note that there are usually many ways of mitigating epistemic risks. Moreover, we should take care to ensure that

⁶ Even when the emperor took an active role, however, this does not mean that political reasons are the main reason for that council's decision. For one detailed example, see Andriollo(2021).

⁷ The issue of when censorship might be justified despite the general value of free speech is complex. See Howard (2024).

our critique should not be self-undercutting, so that the criteria used to identify reliable testimony do not also undercut science itself.

Conclusion

What, then, might we learn about trust as a parallel between science and religion? Midgley's basic argument against scientism still seems solid: science itself relies on trust and testimony in many ways, and this should chasten views seeking to portray science and religious faith as wholly different from each other. The centrality of testimony and social collaboration for human knowledge is clear even without the example of science. Yet the continual prevalence of simplistic contrasts between science and religion shows that Midgley's reminder may still be needed. Although most scholars, including the ones discussed in this paper, would surely not deny the centrality of trust and testimony for science, I have argued that keeping this insight in mind does undermine at least these examples of science-based arguments against the usefulness of religious testimony. Important philosophical work is currently being done to understand the nature of epistemic authority, trusting testimony, and disagreement, and this work needs to be taken much more into account when discussing the relationship of science and religion.

Yet the example of science itself also does not establish that a particular social epistemic practice used in religion is rational, or well-functioning. In the future, as we move beyond opposition of science and religion, it might be more fruitful to focus analysis on particular examples of religious and scientific epistemic practices, in the spirit of science-engaged theology. Such parallels might help better understand the conditions for the failure and success of testimonial knowledge in various situations. Thus, religious communities might also learn from good and successful scientific epistemic practices – and the failure of such practices – without requiring that the practices of the natural sciences, for example, are the best in all cases.

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