The Relationship between Science and Christianity: Understanding the Conflict Thesis in Lay Christians

Helen De Cruz

About 6400 words

Forthcoming in Global Dialogues in the Philosophy of Religion: from Religious Experience to the Afterlife, ed. Yujin Nagasawa & Mohammad Saleh Zarepour (Oxford: Oxford University Press, to appear 2023, please cite published version when available)

1. The conflict between science and religion: An academic discussion?

How should we conceive of the relationship between science and religion? We often think of this as a theoretical question, pondered in the dispassionate halls of academia. However, the way in which we conceptualize this relationship in the public sphere also impacts the working lives of scientists, as well as the lived experience of laypeople and the concrete decisions they make.

Sometimes this has implications for a matter of life and death. Take the relationship between Christianity and vaccine hesitancy in the US. In 2021, most high-income countries enjoyed a small rebound in life expectancy following the Covid-19 pandemic decline in 2020, thanks to vaccination. The United States was an exception; it saw a further decline by 0.4 years. In spite of the widespread availability of free Covid-19 vaccines, the US fell behind in its vaccination rates compared to many other industrialized nations. A closer look at the data reveals that the drop in 2021 was caused by vaccine hesitancy of mainly non-Hispanic White Americans (Master et al. 2022). Sociological research shows that Evangelical Christianity strongly correlates with vaccine hesitancy: White Evangelical Christians were most vaccine-resistant of any religious US group in the US. Moreover, they proved highly resistant to pro-vaccine communications: appealing to in-group values or pro-science messaging did not increase their intent to get vaccinated (Bokemper et al. 2021).

My aim in this paper is to put the spotlight on the following questions: how do lay Christians understand the relation between science and religion, and what can this tell us about the relationship between science and Christianity in a more academic setting? My focus will be on lay Christians in the US, in particular White Evangelicals¹. I will argue that American lay Christians, as well as American laypeople more generally, view the relationship between science and religion as one of *conflict*. By contrast, conflict is a minority view in the academic literature on science and religion, where most authors defend a harmonious relationship (such as independence, dialogue, and integration). This disconnect between the academic literature and public perception should lead us to reflect on the social role of the science and religion debate.

This chapter is structured as follows. Section 2 situates the conflict thesis in the literature on science and religion and examines its historical context. Section 3 looks at the conflict thesis among lay Christians, focusing on recent social psychological and sociological studies that show a complex and multilayered picture. On the one hand, Christians do not experience a cognitive conflict between religious and scientific explanations, and frequently combine the two. On the other hand, some Christians (particularly in the US) have a negative attitude about science, specifically about hot-button topics such as evolutionary biology and climate science. In section 4, I argue that people's attitudes to science are motivated by two kinds of concerns: epistemic concerns relating to truth, and social concerns relating to wanting to belong to a community by aligning one's beliefs to that of the community. These two kinds of concerns influence how lay White Evangelicals respond to scientific information. I discuss how political polarization and its alignment with Evangelical Christianity has resulted in the foregrounding of the conflict thesis. I then take the Deweyan stance that scientific literacy is an important good: it helps people to be informed citizens and is a key element for healthy democratic societies. I supplement this Deweyan proposal with recent insights on epistemic injustice and epistemic rights, notably by Lani Watson (2021), to show that US White Evangelicals are victims of a systematic violation of their epistemic rights. In the final section, I look at broader ramifications for the debate on religion and science.

2. Situating the conflict thesis

2.1 Conflict, independence, dialogue, and integration

¹ In older sociological literature, Black and White Protestants were lumped together, and the distinction between mainline and Evangelical Protestants was often blurred. However, more fine-grained analyses have since revealed that White Evangelicals are a distinct group in terms of political affiliation, values and other sociologically relevant categories (see Evans 2011 and Kobes Du Mez 2020 or more discussion on this).

Ian Barbour (2000) famously argued that there are four ways in which science and religion can relate: conflict, independence, dialogue, and integration. While there are other classifications and further refinements and modifications to this basic scheme, Barbour's scheme still remains highly influential. For this reason, I will situate the conflict thesis by briefly reviewing it.

The *conflict thesis* holds that science and religion are in perpetual and necessary conflict. Jeremy Coyne (2015, xi) sees this conflict as epistemological: "faith may be a gift in religion, but in science it's poison, for faith is no way to find truth." John Evans (2011), by contrast, sees the conflict as primarily moral: religious people oppose what they see as the moral agenda of scientists. The *independence model* states that science and religion explore separate domains that ask distinct questions. If each remains on its own turf, science and religion can coexist harmoniously. An example is Stephen Jay Gould's (2001) NOMA, or Non-Overlapping Magisteria, where science works on the domain of facts, and religion is concerned with values. Alister McGrath has defended a Partially Overlapping Magisteria (POMA) model where science and religion each draw on several different methodologies and approaches (e.g., McGrath & Collicutt McGrath 2007, 41). These methods and approaches have been shaped through historical factors. McGrath favors a pluralistic approach to knowing: there is not one single truth, but rather, different disciplines can shed light on the same problem. Hence it is beneficial for scientists and theologians to be in dialogue with each other. McGrath's POMA leads us to the third kind of model, dialogue. Dialogue envisages that although science and religion represent distinct ways of approaching the world, they can still learn from each other through debate and discussion. For example, Wentzel van Huyssteen (1998) argues that similarities in presuppositions, methods and concepts make a fruitful and mutually beneficial dialogue between science and religion possible. Finally, the *integration model*, favored by Barbour himself and by many authors influenced by him, envisages some form of unification of science and religion, in methods (such as natural theology), epistemology, and in metaphysical assumptions. For example, Robert John Russell (2006) takes the findings of quantum mechanics, in particular, Copenhagen interpretation, as the basis for an ontological indeterminism. Using this, he formulates a model of divine action that is non-interventionist: God can directly act in the indeterminacy of the quantum level to influence or determine the outcome of some events.

Even a brief and cursory glance at contemporary work by Christian theologians, scientists, and philosophers of religion shows that dialogue and integration are their favored models. Many

of the major authors in the field, such as Celia Deane-Drummond, Sarah Coakley, and Peter Harrison, have elaborated on how such dialogue or integration can be achieved. Major collaborative endeavors in science and religion also favor dialogue or integration. For example, the John Templeton Foundation, a major funder in philosophy and theology in the US and globally, often funds projects on the interface of science and religion that emphasize a harmonious relationship. To give a recent example of such a recent project, the Science Engaged Theology project at Saint Andrews University aims to treat "puzzles" at the intersection of theology and science. The project's lead investigators Joanna Leidenhag and John Perry draw on John Wesley's proposal that it is advantageous to incorporate multiple sources to gain theological truths. They regard "science as an authentic theological source – alongside scripture, tradition, and reason."² Finally, consider personal testimonies of working Christian scientists, such as the cell biologist Kenneth Miller (1999) and physician-geneticist Francis Collins (2006) who argue that there is no conflict whatsoever between their personal faith and the work they do as scientists.

In sum, the conflict thesis is a minority view among scientists, philosophers, and theologians who work on the interface of science and religion. The overwhelming consensus is that the conflict thesis is wrong, with the exception of a few dissenting voices such as Gregory Dawes (2016) and Hans Madueme (2021). This is a striking contrast with how laypeople conceive of the relationship between science and religion, as we will see in section 3.

2.2. The conflict thesis in a Christian context

Two books are commonly cited as the originators of the conflict thesis: John William Draper's History of the Conflict between Religion and Science (1874) and Andrew Dickson White's A History of the Warfare of Science with Theology in Christendom (1897). Both sketch historical overviews of conflict between Christianity and science. However, they are often cited without proper context: Draper and White weren't atheists or fundamentalists. Rather, they were liberal Protestants who hoped to salvage Christianity from what they considered as theological ballast that did not cohere with science. Their work was appropriated by 20th-century skeptics and atheists who used their arguments about the incompatibility of traditional theological views with science

² https://set.wp.st-andrews.ac.uk/about/what-is-science-engaged-theology/

to argue for secularization (Ungureanu, 2019). The conflict thesis thus did not grow out of a debate between atheists and believers, but rather, out of discussions between co-religionist Christians with differing opinions on what the relationship between science and religion could be.

The origins of the conflict thesis predate the 19th century; we can find clear roots in the early modern period (17th-18th century) when European Christian church leaders and theologians experienced an identity crisis. A series of seismic events had shattered the Medieval Christian consensus model that combined a strict social division of labor between church, nobility, and peasantry with a Christian-Aristotelian worldview. Centuries of inter-Christian religious warfare tore Western Europe apart. This shattered Christianity's authority as a single unified moral and spiritual block. The aftermath of the Great Plague and its resulting social mobility, as well as the democratization of knowledge through the printing press, further undermined the medieval sociopolitical order of which Christianity was an inextricable part. A host of scientific findings, specifically in geology and paleontology (e.g., fossil shark teeth found on mountains), seemed incompatible with inerrantist readings of the Bible and questioned its authority. This challenge was further enhanced by hermeneutical and historical approaches to scripture itself. Moreover, colonialism and intercontinental trade made Europeans more aware of the wide range of religious beliefs across cultures.

These societal and epistemological changes led to a shift in the concept of "religion". For Aquinas and other medieval authors, religion was a theological virtue, primarily associated with inner devotion and prayer. In Renaissance philosophy, we see a gradual shift of religion toward an inner disposition, as in Marsilio Ficino (1433–1499) who equated "Christian religion" with a disposition to live one's life oriented toward truth and goodness. In the 18th and 19th centuries, there was a further shift from religion as inner disposition and virtue toward something more external that could be studied comparatively, namely a set of beliefs and practices (Smith, 1998). Only at this point in time could "religion" be compared to "science," a term that also only gained its current meaning in the 19th century. Science used to mean intellectual virtue in the middle ages, but slowly gained the meaning of a set of disciplines concerned with the experimental study of the natural world in the 19th century (Harrison, 2015).

These new conceptualizations allowed church leaders and laypeople to compare religion and science as two bodies of ideas which made (at least prima facie) conflicting claims. Within the Anglican Church, two groups, Modernists and Traditionalists were concerned with falling church

attendance and influence in the United Kingdom (Bowler, 2001). The Modernists believed that the tide could be stemmed if Christianity were purged of "unnecessary" dogmas and if faith was made compatible with science. Traditionalists feared that a Christian theology devoid of concepts such as original sin and the Fall would not be worth the name.

For example, take the idea of the Fall. In most Christian theological traditions, the Fall is the cause of original sin, the tendency of humans to inevitably do wrong. Sin is why we need divine grace and salvation. However, there is no fixed, orthodox theological position on what the Fall is. Does it require a literal biblical reading of a single human ancestral pair that disobeyed God by eating from the fruit of the Tree of Knowledge of Good and Evil? The modern theologian Friedrich Schleiermacher (1830) argued against such a picture of the Fall in his dogmatic theology, but he did so mainly on theological rather than empirical grounds (Pedersen, 2020). Later modern theologians such as the Anglican Frederic Tennant (1902) rejected the Fall due to its lack of compatibility with evolutionary theory. Tennant believed that human evolution and deep time made the case for a historical Fall untenable. He saw the origin of sin in our evolved animal nature. Sin is a mismatch between our moral nature as human beings and our "inherited psychical constitution" which did not make a "corresponding or adaptive change, no evolutionary progress" to the same extent as our moral faculties (Tennant, 1902, 102). Like other modern theologians, Tennant perceived a conflict between interpretations of religious concepts and science, but not between Christian faith and science. Schleiermacher and Tenant were both Christian clerics, they were not people who were bent on destroying Christianity. The conflict thesis was an intra-Christian discussion.

The conflict thesis was also an important motivator for American fundamentalists, who became active in US Protestant churches in the early 20th century. The conflict between fundamentalism and modernism in the US is exemplified in the Scopes "Monkey" trial in 1925 and other high-profile court cases on the teaching of creationism vs evolution in public schools, such as Kitzmiller vs Dover (2005). As Bowler (2007, 179) has demonstrated, the popular imagination surrounding the Scopes trial has obscured its actual history. Contrary to what we might now think, there is "no evidence that the early fundamentalists were united in taking up a literal interpretation of the Bible in general and of Genesis in particular." Indeed, fundamentalists were well aware that many parts of the Bible should be read metaphorically. For example, they did not, and still largely do not, take literally such claims as the pillars of the earth, ancient theories on

reproduction (where only male seed has biologically inheritable material), and the firmament surrounding the Earth. Rather, in the early 20th century, their focus was on the perceived bad moral consequences of evolutionary theory. For example, William Jennings Bryan, who defended the fundamentalist position at the Scopes trial, argued that teaching children evolution would be a menace to morality. Only in the 1950s (when the term "creationism" became more common) did fundamentalists shift their focus to biblical literalism. While fundamentalism and Evangelical Christianity were distinct movements, the line is presently blurred, due to the influence of fundamentalism within Evangelical churches³.

In the late 19th-early 20th century, Darwinism was not the evolutionary theory as we understand it today. Early adopters of Darwin's theory, such as Thomas Huxley and Ernst Haeckel, saw evolution as progressive and teleological. Many were proponents of social Darwinism and eugenics, keen on harnessing the tools of evolution for what they perceived as the betterment of society. However, a series of disruptive events during the 20th century, especially the economic depression, the rise of fascism and Nazism, and the two World Wars dented this idea of secular progress and hence the prospects of a science-inspired modernist theology. In the wake of World War II, neo-orthodox authors such as C.S. Lewis (1952) argued that theologians or lay Christians should not readily buy into the secular progressivist picture and into modern science. These neoorthodox authors were initially not interested in science and weren't looking for an alternative scientific view of creation. Modern theologians, on their part, found it hard to make a connection with Darwinism post-modern synthesis. At this point (1950s-1970s), evolutionary theory had been stripped of its earlier teleology and progressivism. While it is still possible to combine Christian theology and evolution (as the work of authors such as Miller, 1999 and Deane-Drummond, 2009, exemplifies), it is not as straightforward as it was for an earlier author such as Tennant (see De Smedt and De Cruz, 2020, for an overview).

In the decades that followed the Scopes trial, the fundamentalist aversion for evolutionary theory broadened out into a more stringent biblical literalism. Fundamentalism in the US did not dwindle away, as the popular imagination holds, but instead rebranded itself. It merged with

⁻

³ To complicate matters further, creationists are often presented as a unified block, and, for instance, Intelligent Design as a repackaged creationism but different creationist movements are distinct, compete with each other, and have differing opinions on the age of the earth, which parts of science to reject, etc. Moreover, although White evangelicals share sociological characteristics, they are also a diverse group. Evangelicalism is more a marketplace of ideas than as a well-defined movement. For a detailed analysis of these movements, see Huskinson (2020).

Evangelicalism, with a strong focus on conservative values, masculinity, and white nationalism. This mix gained a steady suit of followers among non-denominational White Christians over the next decades up until today (Kobes Du Mez 2020). The 1960s saw the rise of Young Earth and Old Earth creationism, and later Intelligent Design, as ways to promote the teaching of Christianity (in some form) in public schools (Huskinson 2020). In order to adopt a Young Earth or Old Earth creationist view, proponents had to reject many mainstream scientific ideas. As a direct consequence, US Christians, notably in Evangelical denominations, became more hostile to mainstream science, as we will explore in the next section.

In this short overview, I have provided some context for the conflict thesis and its origins. Though we tend to think of prominent atheists such as Jeremy Coyne, Richard Dawkins, and Sam Harris as exemplars of the conflict thesis, it originates in a long-standing deep disagreement between different theological factions *within* Christian churches.

3. How Christian laypeople view the relationship between religion and science

In their everyday lives, people effortlessly combine religious and scientific explanations. This fact struck anthropologists such as Edward Evans-Pritchard (1937/1965) who studied Azande witchcraft beliefs. Evans-Pritchard noted that the Azande (who live in Central Africa) were well aware that termites are the physical cause for the collapse of a wooden house. Nevertheless, they still appealed to supernatural explanations (witchcraft) to explain why *that* particular house collapsed at *that* particular moment when a certain person was within its walls. Cross-cultural anthropological research has since revealed that people in a wide range of cultural settings use both religious and non-religious explanations, and combinations of these. They don't see these as conflicting but as complementary (Legare et al. 2012). Someone who recovers from advanced cancer might regard this as a miracle, *and also* a direct result of the skill of her physicians. Religious people live in a world suffused with science. Many of our everyday actions, such as switching on your computer, boarding a plane, and getting a health checkup require some minimal degree of trust in science.

Some research has focused on how scientists perceive the relationship between science and religion. Elaine Ecklund (e.g., 2010) surveyed scientists in the United States and found that they

are less religious than the general population, and show a higher attrition of religion. However, the majority of scientists in her sample think science and religion are compatible.

For the lay public at large, surveying attitudes on science and religion has been difficult. Some studies (e.g., McPhetres & Zuckerman, 2018) have found a negative relationship, where higher trust in science yields lower religiosity, and vice versa but others have found no such effect (see e.g., Evans, 2011). A lot depends on how the questions are asked and their overall framing. Moreover, as Jonathan Hill (2014) has demonstrated, there's a gap between lay and professional understanding of science and religion. For example, when US participants are asked a single question, namely whether God created humans in their present form, as much as 40% of participants agrees, but when they get a complete list of the Young Earth Creationist package deal (such as: Adam and Eve were historical figures who are ancestors of all of humanity, the Earth was created in six 24-hour periods, biological evolution is false), agreement drops to 8%. To make an analogy with political views, though many people identify with political parties, they rarely hold well-defined internally consistent political positions that neatly overlap with those of the party they vote for (see e.g., Kinder & Kalmoe, 2017). In many cases, the elites within political or lobby groups hold more polarized positions than the public. We also see this in the creationist movement. Evangelists reject evolutionary theory, but they do not fund creationist organizations. As Huskinson (2020) has demonstrated, fewer and bigger organizations such as Answers in Genesis are competing for dwindling resources, with average White Evangelicals (and other religious people in the US) preferring to put their charitable donations into helping the poor or people in war-torn areas over funding creationist theme parks and museums. Many religious people do not hold a coherent detailed view of divine action. This allows them to selectively take from science what is useful (its many applications, including air travel, most of medicine, cell phone technology) while rejecting specific hot-button issues such as evolutionary theory and climate science.

McPhetres and Zuckerman (2018) found that religious believers in the US have lower interest in science and lower knowledge of science as gauged by science questionnaires. The effect remains even when taking away contested items on the surveys, keeping only such items as "An electron is smaller than an atom, T/F". In a follow-up study, McPhetres et al (2021) sought to replicate their findings with a more global sample, but findings did not replicate in many other countries, including Sweden, South Africa, and Brazil. Similarly, while studies of US participants

show a negative correlation between analytic thinking and religiosity, this does not generalize across countries (Gervais et al. 2018).

The perception of conflict between science and religion results in stereotype threat among American Christians. Kimberley Rios and colleagues (2015, 2021) investigated possible causes for the robust finding that scientists show lower religious beliefs compared to the general US demographic. They found that a perceived conflict between science and Christianity led to stereotype threat, that is, when Christians are primed to think about their identity, they do worse on science surveys. This effect is particularly strong for Christians who believe that science is incompatible with their faith.

Also important is the relationship between political conservatism and White Evangelical Christianity. The latter have been a reliable voting block for Republican candidates for many decades (Kobes Du Mez 2020). Religious conservatives in the US distrust science more than the general population, as documented by Gauchat (2012). In 1974, US conservatives had, relatively speaking, the highest level of trust in science compared to liberals and independents, but this plummeted in the decades that followed, leading to the lowest level in 2012. What is more, conservatism and religiosity correlate strongly. Gauchat (2012) found that when teasing these two factors apart, church attendance (an excellent measure for religiosity) predicts distrust in science independently from conservatism. White Evangelical Christians compared to other religious denominations (e.g., mainline protestants, Jews, Muslims) show a lower acceptance of evolutionary theory, climate science, and recently also the science involved in the development of Covid-19 vaccines (see e.g., Pew forum 2015, 2021). The public debate in the US on science and religion has been shaped by Evangelical leaders. As Michael Evans (2016) points out, the American public debate is currently dominated by a vocal conservative Christian minority, sidelining more moderate voices⁴. Overall, this polarization by prominent voices gives the impression that science and religion are on a hostile footing.

4. The problem of scientific literacy among Evangelical Christians: A problem of epistemic justice?

_

⁴ We can see a similar tendency in other debates, for example the opinion on abortion by prominent Roman Catholics such as judges on the Supreme Court is out of step with American Roman Catholics, the majority of whom support legal abortion in all or most cases (Pew Forum, 2020).

When laypeople decide to trust or reject scientific testimony, such as the efficacy and safety of vaccines or the reality of climate change, they cannot check the veracity of these reports for themselves. Instead, they rely on cues of speaker or message reliability. According to Neil Levy (2019, 2022), people are mainly led by epistemic considerations when deciding to trust science. We look for cues of benevolence (is the testifier favorably disposed toward us?) and competence (is the testifier knowledgeable about what she's saying?). In this view, White Evangelicals are unlucky, because political polarization has made scientists appear less benevolent toward them. The politicization of scientific issues and the vocal public discourse mean that they cannot defer to trustworthy sources (mainstream science). So instead they turn to merchants of doubt, such as climate denialists. Moreover, because of their low trust in scientists, they are also more vulnerable to pseudoscience, as the recent uptake of anti-vax discourse among Evangelicals indicates. Other authors (e.g., Evans, 2011) disagree with this epistemic picture. They see the conflict as not epistemic but as moral. In Evans' view, lay Christians in the US think that scientists have a moral agenda that runs counter to Christian conservative values.

I have argued (De Cruz, 2020) that laypeople mediate their acceptance of scientific testimony through both epistemic and non-epistemic factors. People want to avoid false beliefs and hold true beliefs when gauging scientific testimony, but they are *also* guided by non-epistemic factors, such as moral and social considerations. For example, people want to be seen as teamplayers and as reasonable, dependable collaborators. For this reason, they'll sometimes defer to what the group says against their better judgment. When information is opaque and hard to check for oneself as well as ideologically polarized, factors such as belonging to a group can win out over epistemic factors. Moreover, laypeople who are (per definition) not experts do not have very clear and well-fleshed out positions on a range of issues, which also explains why their answers on questionnaires will differ depending on the framing of the questions in any given poll. A respondent who might pick "theistic evolution" when available could revert to "creationism" when presented with a binary choice between creationism and evolution to explain the evolution of species (Catto et al., 2019).

Because of the wide chasm between laypeople and experts, we might think that the lay Christians are inevitably influenced by whoever happens to be the loudest voice in their community. In the US this has led to a lower scientific literacy among White Evangelicals. However, the pragmatist philosopher John Dewey (1927) argued that it is important for people, regardless of their background, to have a reasonable degree of scientific literacy. Dewey defended this position against political commentator Walter Lippmann (1922), who argued that because of the widening chasm in knowledge between experts and the general public, decision making needs to be delegated to elites and technocrats. By contrast, Dewey (1927) thought the general public needs a democratic say informed by science, and the only way to accomplish this is by educating the citizenry, through accessible journalism, the public education system, and other outreach efforts by scientists. Moreover, Dewey thought that scientific literacy is an important good that allows people to realize their full potential (Flowers & De Cruz, 2020).

Because Evangelicals have embraced (for historical reasons explained in detail in Kobes Du Mez, 2020) an image of strident masculinity and nationalism, it may seem strange to consider them as victims. Think of the images of White Christian families posing with semi-automatic rifles in front of their Christmas tree, defending Christmas--hardly an image of oppression. Nevertheless, the lack of scientific literacy among White Evangelicals constitutes a violation of their epistemic rights. Being advantaged in many respects (e.g., political representation, economic power) does not preclude disadvantages in other areas. I draw on Lani Watson's (2021, 3) definition of epistemic rights, as "a complex entitlement that provides justification for the performance and prohibition of actions and omissions concerning epistemic goods," such as forming true beliefs, being guarded from false beliefs, and gaining understanding of how science works. We have these rights by virtue of being epistemic agents. Epistemic rights violations are a form of epistemic injustice, which occurs when someone is wronged, specifically in their capacity as a knower. We need access to epistemic goods to make sound decisions, both in our personal lives (e.g., getting vaccinated against deadly diseases, climate-based decisions on transportation choices or dietary choices), and as citizens electing representatives and thus indirectly influencing policies that have a large impact on us all. If we suppose, as Levy (2022) does, that scientific literacy is partly a matter of epistemic luck, it would seem that scientifically accurate information is at least partly due to being part of the right demographic, namely being well-educated, well-off, politically progressive or liberal. This is a problem: people of all political persuasions and demographics have epistemic rights, and therefore ought to have access to good scientific information.

One might object that White Evangelicals aren't subject to epistemic rights violations because this sort of information is widely available. A wide range of educational websites and programs give basic facts, for example, about evolution and diseases. However, distrust makes access to these sources difficult. This is a result of an increasing political polarization where the religious right, in concert with conservative politicians, have promoted an anti-science discourse. As I argued (De Cruz, 2020), the solutions to low partisan trust in science are to improve scientific literacy already at the level of K-12 education, to enlist benevolent testifiers (e.g., people who self-identify as Evangelical Christians, and who are supportive of science), and to improve the epistemic landscape by actively countering disinformation and science denialism. This could bring less hostility toward science, and thus temper the conflict view of the relationship between science and religion.

5. Why the views of laypeople matter

In this paper I have shown a striking disconnect between the views of laypeople on the one hand and professional philosophers and theologians who work on the relationship between science and religion on the other. Academics tend to think that science and religion are not in conflict (even if they are not religious themselves, see Ecklund 2010), but lay Christians in the US perceive this relationship as one of conflict. It is important to note that this American context cannot be extrapolated globally, as the public's views on the relationship between science and religion differ between countries. At the same time, US media have a large influence on the rest of the world, and US organizations that promulgate creationist and other anti-scientific ideas are also globally active (see Huskinson 2020). American creationist ideas (including Young Earth, Old Earth, and Intelligent Design) are an export product, which is gaining a foothold in several European countries and in Asian countries (such as South Korea), not only among Christians but even among e.g., Muslims in Turkey (see Blancke et al., 2014). For this reason, the American context should not be underestimated either due to its global influence.

What does this mean concretely for philosophers and theologians who work on the interface between science of religion? It means that careful research showing that religion and science are not in conflict (historically, conceptually, metaphysically, epistemically) is valuable work. Many of us (I suspect many readers of this chapter) are already doing this. But more can be done to try to address the disconnect between lay and academic views more directly, for example by acquainting lay Christians with the history of science and religion, and to improve basic science

literacy. Outreach efforts such as Biologos⁵ already make an effort, but more can be done because benevolent testifiers cannot by themselves compensate for a sullied epistemic landscape. As we have seen, the current general distrust of science by White Evangelicals is due to historical reasons and the present media favoring conservative Christian voices while sidelining more moderate ones. Since scientific literacy is key for a citizenry to help decide future courses of action, with existential threats such as pandemics and especially climate change hanging over us, we urgently need to improve the epistemic landscape.

References

Barbour, I. (2000). When Science Meets Religion: Enemies, Strangers, or Partners? New York: HarperCollins.

Blancke, S., Hjermitslev, H.H., & Kjærgaard, P.C. (2014). Creationism in Europe. Baltimore: Johns Hopkins University Press.

Bokemper, S. E., Gerber, A. S., Omer, S. B., & Huber, G. A. (2021). Persuading US White evangelicals to vaccinate for COVID-19: Testing message effectiveness in fall 2020 and spring 2021. Proceedings of the National Academy of Sciences USA, 118(49), e2114762118.

Bowler, P. J. (2001). *Reconciling science and religion. The debate in early-twentieth-century Britain.* Chicago: University of Chicago Press.

Bowler, P. J. (2007). *Monkey trials and gorilla sermons. Evolution and Christianity from Darwin to Intelligent Design*. Cambridge, MA: Harvard University Press.

Catto, R. A., Jones, S., Kaden, T., & Elsdon-Baker, F. (2019). Diversification and internationalization in the sociological study of science and religion. *Sociology Compass*, *13*(8), e12721.

14

⁵ The Biologos Foundation is a Christian outreach and advocacy group that seeks to a cquaint Christians with biological evolution.

Collins, F. (2006). *The Language of God: A scientist presents evidence for belief.* New York: Free Press.

Coyne, J. (2015). Faith vs. Fact: Why Science and Religion are Incompatible. New York: Viking.

Dawes, G. (2016). *Galileo and the conflict between religion and science*. London & New York: Routledge.

Deane-Drummond, C. (2009). *Christ and evolution. Wonder and wisdom.* Fortress Press: Minneapolis, MN.

Draper, J. (1874). History of the conflict between science and religion. New York: Appleton.

De Cruz, H. (2020). Believing to belong: Addressing the novice-expert problem in polarized scientific communication. *Social epistemology*, *34*(5), 440-452.

Dewey, J. (1927). The public and its problems. New York: Holt.

Ecklund, E. H. (2010). *Science vs religion: What scientists really think*. Oxford: Oxford University Press.

Evans, J. H. (2011). Epistemological and moral conflict between religion and science. *Journal* for the Scientific Study of Religion, 50(4), 707-727.

Evans, M. S. (2016). Seeking good debate: Religion, science, and conflict in American public life. Oakland, CA: University of California Press.

Evans-Pritchard, E. E. (1937/1965). Witchcraft, oracles and magic among the Azande. Oxford: Clarendon Press.

Flowers, J. & De Cruz, H. (2020). A pragmatist philosopher's view of the US response to the coronavirus pandemic. *The Conversation*,

https://the conversation.com/a-pragmatist-philosophers-view-of-the-us-response-to-the-coronavirus-pandemic-138760

Gauchat, G. (2012). Politicization of science in the public sphere: A study of public trust in the United States, 1974 to 2010. *American Sociological Review*, 77(2), 167-187.

Gervais, W. M., van Elk, M., Xygalatas, D., McKay, R. T., Aveyard, M., Buchtel, et al. (2018). Analytic atheism: a cross-culturally weak and fickle phenomenon? *Judgment and Decision Making*, 13, 268-274.

Gould, Stephen J. (2001). Nonoverlapping Magisteria, in R.T. Pennock (ed.) *Intelligent Design Creationism and Its Critics* (pp. 737-749). Cambridge, Ma.: MIT Press.

Harrison, P. (2015). The territories of science and religion. Chicago: University of Chicago Press.

Hill, J. (2014). National study of religion and human origins. Grand Rapids, MI: BioLogos Foundation.

Huskinson, B.L. (2020). American creationism, creation science, and intelligent design in the evangelical market. Cham: Springer/Palgrave McMillan.

Kinder, D.R., & Kalmoe, N.P. (2017). *Neither liberal nor conservative: Ideological innocence in the American public*. Chicago, IL: University of Chicago Press.

Kobes du Mez, K. (2020). Jesus and John Wayne. How white Evangelicals corrupted a faith and fractured a nation. New York City: W.W. Norton.

Legare, C. H., Evans, E. M., Rosengren, K. S., & Harris, P. L.(2012). The coexistence of natural and supernatural explanations across cultures and development. Child Development, 83, 779–93.

Lewis, C.S. (1952). Mere Christianity. London: Geoffrey Bles.

Levy, N. (2019). Due deference to denialism: Explaining ordinary people's rejection of established scientific findings. *Synthese*, 196, 313-327.

Levy, N. (2022). Bad beliefs: Why they happen to good people. Oxford: Oxford University Press.

Lippmann W. (1922). Public opinion. New York: Harcourt.

Madueme, H. (2021). The theological problem with evolution. Zygon: Journal of Religion and Science, 56(2), 481-499

McPhetres, J., & Zuckerman, M. (2018). Religiosity predicts negative attitudes towards science and lower levels of science literacy. *PloS One*, *13*(11), e0207125.

McPhetres, J., Jong, J., & Zuckerman, M. (2021). Religious Americans have less positive attitudes toward science, but this does not extend to other cultures. *Social Psychological and Personality Science*, *12*(4), 528-536.

Masters, R. K., Aron, L. Y., & Woolf, S. (2022). Changes in life expectancy between 2019 and 2021: United States and 19 peer countries. *medRxiv* preprint, available at: https://www.medrxiv.org/content/10.1101/2022.04.05.22273393v3

McGrath, A. & Collicutt McGrath, J. (2007). *The Dawkins delusion? Atheist fundamentalism and the denial of the divine*. London: SPCK.

Miller, K.R. (1999). Finding Darwin's God: A scientist's search for common ground between God and evolution. New York: Harper.

Pedersen, D. (2020). Schleiermacher's theology of sin and nature. London: Routledge.

Pew Forum (2015). Religion and Views on Climate and Energy Issues. Retrieved at: https://www.pewresearch.org/science/2015/10/22/religion-and-views-on-climate-and-energy-issues/

Pew Forum (2020). Eight key findings about Catholics and abortion https://www.pewresearch.org/fact-tank/2020/10/20/8-key-findings-about-catholics-and-abortion/

Pew Forum (2021). White evangelical Protestants less likely to have been vaccinated for COVID-19 than other religious groups. https://www.pewresearch.org/ps_2021-09-15_covid19-restrictions a-01/

Rios, K., Cheng, Z. H., Totton, R. R., & Shariff, A. F. (2015). Negative stereotypes cause Christians to underperform in and disidentify with science. *Social Psychological and Personality Science*, 6(8), 959-967.

Rios, K. (2021). Examining Christians' reactions to reminders of religion—science conflict: Stereotype threat versus disengagement. Personality and Social Psychology Bulletin, 47(3), 441-454.

Russell, R.J. (2006). Quantum physics and the theology of non-interventionist objective divine action. In: P. Clayton (Ed.), *The Oxford handbook of religion and science* (pp. 579-595). Oxford: Oxford University Press.

Schleiermacher, F. (1830 [2016]). *Christian faith* (N. Tice, C. L. Kelsey., E. Lawler, Trans). Louisville: Westminster John Knox Press.

Smith, J. Z. (1998). Religion, religions, religious. In: M. C. Taylor (Ed.) *Critical Terms for Religious Studies* (pp. 269-284). Chicago: University of Chicago Press.

Tennant, F. R. (1902). The origin and propagation of sin. Cambridge: Cambridge University.

van Huyssteen, J.W. (1998). Duet or duel? Theology and science in a postmodern world. London: SCM Press.

Ungureanu, J. (2019). Science, religion, and the Protestant tradition: Retracing the origins of conflict. Pittsburgh: University of Pittsburgh Press.

Watson, L. (2021). *The right to know: Epistemic rights and why we need them.* London: Routledge.

White, A. D. (1897). A history of the warfare of science with theology in Christendom. New York: Appleton.