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Journal of Beliefs & Values
Studies in Religion & Education

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/cjbv20

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To cite this article: Jeff Astley (2023) Data and debate in science and faith: exploring and extending Ecklund's research programme, Journal of Beliefs & Values, 44:2, 243-253, DOI: 10.1080/13617672.2022.2099682

To link to this article: https://doi.org/10.1080/13617672.2022.2099682

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Published online: 18 Jul 2022.

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JOURNAL OF BELIEFS & VALUES
2023, VOL. 44, NO. 2, 243–253
https://doi.org/10.1080/13617672.2022.2099682

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Data and debate in science and faith: exploring and extending Ecklund's research programme

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ABSTRACT

In the context of the distinction between normative and descriptive approaches to the relationship between science and religion, this article discusses the recent work of the sociologist Elaine Ecklund. It reviews four of her published outputs, summarising her data concerning the views of religious people and professional scientists, including their positions on the relationship between science and religion and on cognate issues, and discusses her attempt to show the relevance of these data in a particular formational context. It seeks to evaluate and extend her work from a multidisciplinary perspective.

KEYWORDS

Science and faith; science and religion; atheism; secularity; conflict

Introduction

Discussions of the relationship between science and religion are mostly concerned with *normative* philosophical, theological and ethical issues concerning what beliefs and values we should hold. But social scientists, historians and others with an interest in more *descriptive* matters have also got a contribution to make, specifically about what it is that professional scientists on the one hand, and religious individuals on the other, actually think (or thought) about these topics, as well as how they view one another's commitments (cf. Bernal 1969, especially vol. 4; Brooke 1991; Brown, Murphy, and Malony 1998; Boyer 2001; Clarke 2009, ch. 16; Jeeves and Brown 2009; Turner 2010, ch. 13; Southgate 2011, chs 3 and 7; Brooke and Numbers 2011; Paloutzian and Park 2013, part III; Hood, Hill, and Spilka 2018, ch. 3). Those engaged in the disciplines of 'practical theology' and 'empirical theology' expressly recognise the importance of the complementarity – and, indeed, intertwinement – of empirical description and theological normativity in their own work (see Francis 2004; Van der Ven 2004).

Elaine Howard Ecklund, professor of sociology and director of the Religion and Public Life Program at Rice University in Houston, Texas has recently published four books based on her empirical studies at the interface between religion and science, undertaken with funding from the Templeton World Charity Foundation and the Templeton Religion Trust (Ecklund and Scheitle 2018; Ecklund et al. 2019; Ecklund 2020; Ecklund and Johnson 2021). The purpose of this article is to offer:

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(1) an overview of the data gathered and analysed in these texts, together with some key areas of Ecklund's discussion that are pertinent to the debates between science and religion and its communication. (Her earlier research in this field, Ecklund 2010, and the more tangential study reported in Lincoln and Ecklund 2016, are not examined here);
(2) a critical appraisal of elements of this research and its practical application, together with an indication of how some of these may be developed theologically, psychologically and educationally.

Religious people

In 2018 Ecklund joined with Christopher P. Scheitle, another sociologist of religion in public life, to publish *Religion vs. Science: What Religious People Really Think* (Ecklund and Scheitle 2018). They sought to tell there 'the real story of the relationship between science and religion in American culture', presenting data from a five-year, mixed-methods project that utilised participant observation (of 248 congregations), document analysis, 319 qualitative semi-structured interviews and an independent, nationally-representative general population survey of 10,241 adults.

Three appendices give full details of the sampling and research methods employed in this study (Ecklund and Scheitle 2018, 147–200). In addition to a few demographic questions, the interview guide contained questions on religious identity, belief and practices as well as canvassing the interviewees' views on: science and scientists; the science and faith relationship (including science's view of miracles); and certain specific scientific issues and their impact on the subjects' faith. These issues included evolution, creationism and intelligent design (ID), embryonic stem cell research and IVF, and the environment and climate change. Additionally, the interviews sought information about the extent and effect of talk about science or science and faith within the congregations and by the religious leaders of the people questioned (who were overwhelmingly Christians).

The population survey instrument asked in more detail about the general public's religiosity (including frequency of prayer, views about the Bible, religious experiences, and beliefs about God, God's relation to the world and the theology of religions); their religious affiliation and identity, and their 'strictness of interpretation' of their own religion; as well as the respondents' occupation (specifically whether this was a 'scientific occupation') and their politics. It also included questions about their familiarity with the names Richard Dawkins and Francis Collins, the morality of various technologies and actions related to human reproduction, and their views on human origins and the teaching of alternatives to evolution in schools.

As in all the books discussed here, the authors are keen to debunk the 'myths' and stereotypes that they regard as being endemic in this area, arguing in particular that 'religious Americans . . . are not nearly the scientifically ignorant, uninterested, or hostile population that they are often made out to be' (2). Rather, they found, most are 'interested in and appreciate science', and are not hostile to environmentalism or technological progress. They care not only about 'maintaining an active role for God in the world' (138) but also about the earth on which they live. A strong majority of every

religious group see religion and science as either in collaboration with or independent of one another (17), and less than 15% of Christians believe that 'overall, modern science does more harm than good' (23).

The book concludes with a plea for scientists and religious individuals to achieve a better understanding by listening to and learning from one another, and for the dialogue with science to be focused on Christian evangelicals (who make up between 20% and 40% of the US population). This is because 'evangelical Protestants are much more likely than other groups to view scientists as hostile to religion' (some 36%) and around twice as likely as Catholics and mainstream Protestants 'to view the religion and science relationship as one of conflict' (16, 41, 144), although they are not themselves any more hostile to science than other groups (23).

In studies such as this, the interest – and sometimes 'the devil' – often lies in the detail. It was interesting to see that only 28% of evangelical Protestants believe that young-earth creationism is the human origin narrative that alone is 'definitely true' (77); that the proportion of all religious adherents who believe that the climate is changing, at least partly through human action, hovers around the 70–80% mark (105); and that 'political conservatism and a lack of trust in the scientific community are much stronger direct predictors of climate-change denial than is religious identity' (8).

Although this is a remarkably thorough and useful investigation, some caveats should be noted. First, for readers outside America, it must be emphasised that it is a survey of a society that is still highly religious. Thus, the survey sample contains over 73% who self-identified as Christian with circa 2% Jewish and 0.3% Muslim. (Muslims are bundled into the category 'Non-Western Religions', but this is merely a shorthand that the authors recognise is 'by no means ideal' (159–160).) Only 15% declare themselves to be agnostic, atheist or 'not religious' (158). The UK population, for example, would be very different.

Second, in my view some of the theological questions included in the survey are rather simplistically conceived (192–193). These include a forced choice question about the existence and nature of God that has options that incorporate the extent and strength of believing/doubting which rather muddies the water, and a question about God's involvement with the world that uses items (with responses sought on a Likert 5-point scale of strongly agree to strongly disagree) that feature the somewhat ambiguous language of God's being 'concerned with', 'removed from' and 'directly involved in' creation.

Third, the survey question about human origins (195–196), where six options are assessed against a Likert 5-point scale of 'definitely true' to 'definitely false', unhelpfully mixes elements of the age of the earth and of humans with language about God's action (creating, guiding, intervening – this last category, surprisingly, is not included within the ID option). Other issues that could be raised here include the use of the language of creation without expressly adding the relationship of 'sustaining' or 'preserving' as a concomitant or component (often designated 'continuous creation'); a lack of clarification of the term 'intervention'; the unexplained use, as an apparently exclusive category, of what I assume to be general providential 'guidance' (cf. the use of 'concern' in an earlier question); and the specification of 'an Intelligent Force' but not of 'God' within the ID option. This last factor might account, to some extent, for ID's apparently low take up among evangelicals, by comparison with (young-earth) creationism.

I should admit, however, that some of these are fairly murky distinctions that are difficult enough to tease out at the theoretical, let alone the empirical, level (cf. Astley 2010, 155–168). Nevertheless, it is important that theological conceptualisations and many of theology's hard-won differentiations should be honoured, and not blurred or ignored, and that our assumptions about people's interpretation of theologically-loaded language should not short-circuit our investigations. Theology can inform social-scientific study in such areas.

In most of the areas that this book addresses, however, the authors bring welcome illumination and not a little warmth, by empathetically listening to and giving voice to the ordinary religious population and its 'ordinary theology' on these topics (see Astley 2002; Astley and Francis 2013). The study will surely help social scientists to understand this group better, and should assist religious leaders, at least in the US, to encourage their congregations to engage in the important 'science versus religion' debate with more confidence and intelligence.

Professional scientists

Secularity and Science: What Scientists Around the World Really Think About Religion, authored by Elaine Ecklund together with six colleagues (Ecklund et al. 2019), complements an earlier study by Ecklund (2010) on the religiosity of natural and social scientists at 'top US universities'. It shifts the focus of description maintained in Ecklund and Scheitle (2018) from 'religious people' to scientists, while greatly widening the field of view by means of a cross-national survey of scientists ('senior and junior' biologists and physicists) in France, Hong Kong, India, Italy, Taiwan, Turkey and the UK, as well as the United States. This survey produced more than 9,000 responses, and was supplemented by in-depth interviews with more than 600 of these respondents. The end product is an intriguing insight into the differences and commonalities between scientists working in these different cultures and polities with respect to their religious identity; the role of religion in their workplace, lifestyle and private life; and their views about the science/religion relationship (Ecklund et al. 2019, 194–198, 202). As with the previous publication, this book includes a very comprehensive account of the research process itself (219–279).

Just how secular are the world's scientists, then? Chapters 3 to 9 deal with each different location, with an overview and summary of all the data and some reflections on them in chapters 2 and 10.

The authors found much 'soft secularism' among scientists in the USA, using this term to label support for a secular government and for religion's separation from science, coupled with an absence of any active hostility to religion (6). I expected that scientists working in US universities would be less religious than the general population, but I had not envisaged that only 36% of US scientists would say that they believed in the existence of a personal God or some higher power: a markedly different figure from the 92% of believers within the general US population that other surveys report (31). In the United Kingdom, although it was 'one of the most secular countries we studied' (54), 63% of the general population have a belief in God/a higher power, with only 18% declaring themselves atheist. However, 43% of UK scientists were atheists (with proportionally more biologists than physicists) and only 23% are theists, although the scientists surveyed seemed 'remarkably friendly to the value of religion' (6, 63, cf. 68–70).

France, which understands secularism in terms of freedom *from* religion, is more assertively secular. Fifty-one percent of their scientists are atheist (cf. 22% of the general population), but even so a third of them identified themselves with some religion (86–87). By contrast, Christianity (Roman Catholicism) is much more pervasive in Italy, at least in terms of cultural identity, and this is reflected in its scientists' lower antagonism to religion (112, 119, 123). In (nominally secular) Turkey, scientists were 'nearly as religious' (here predominantly Muslim) as the general population on several measures, yet many 'may not personally consider themselves religious' (7, 131–134).

Uniquely, India is a country where the scientists are *more* religiously affiliated (94%, 79% are Hindu) than is the general population, although they are rather reticent about making explicit claims about religion; only 11% of Indian scientists are self-declared atheists (7, 148, 152–153). In both Taiwan and Hong Kong scientists are as religious, or more religious, than the general population (173–179) – although, in fact, the great majority of both scientists and the general population are religiously unaffiliated in Hong Kong (8, 69, 174).

On the basis of their overall data, the authors make four 'big claims' (8–10, 199–202). Claim (1) is that across the world 'there are more religious scientists than we might think': with scientists with some form of religious affiliation making up from a third of scientists in France, Hong Kong, the US and UK, to over a half in India, Italy, Taiwan and Turkey.

Claim (2) is that scientists in general, including some atheist scientists, 'see spirituality in science'.

Claim (3): With reference to the standard positions espoused within the science and religion debate, the *conflict perspective* should be considered as 'a largely Christian-centric concept', even 'an invention of the West' (9, 192). Most scientists in most countries regard the relationship between the two to be one of *independence* (separate and non-overlapping 'spheres of enquiry and authority' referring to 'different aspects of reality'). Only in the US, UK and France does support for the view that 'science and religion are inherently in conflict' approach a third of scientists. Thus, the conflict theory is espoused by 29% in the US, the figure being significantly higher for male than female scientists, whereas 51% adopt the independence theory, and only 12% of scientists (17% of the physicists and 10% of the biologists) embrace a *collaborative perspective* of the relationship, believing that 'religion and science can collaborate' and that 'each can be used to help support the other' (34–36).

Finally (Claim (4)), 'religion is not kept out of the scientific workplace'; indeed, religion often explicitly 'comes up' there in numerous ways both for religious and non-religious scientists.

What about the situation in Britain? In the UK (62–68, 70–77) both 'New Atheists' (e.g. Richard Dawkins and Christopher Hitchens) and religious fundamentalists are said to 'receive a disproportionate amount of media attention'. Here, 35% of scientists adopt a conflict view of science/religion, 47% an independence view and 12% a collaborative view. Fifty-five percent agreed with the claim that 'scholars in my discipline have a negative attitude toward religion', and most UK scientists avoid interaction related to religion. However, most also thought that Richard Dawkins' position does not convey the limits of scientific enquiry and is too polemical.

In France (85–102) only 7% of scientists accept the collaborative view of the science/religion debate (cf. 57% endorsing independence and 27% conflict – in this latter case, these are mainly non-religious scientists). Talk of religion is largely taboo in the French scientific workplace. In Italy (107–117) only 25% of scientists are atheists and 52% are religious (with only 46% of the male but 61% of the female scientists being religious, and – more surprisingly – proportionately more religious biologists than physicists). Only 22% of Italian scientists embrace the conflict thesis, whereas 15% see science and religion as collaborative (again with more biologists than physicists) and 58% see them as independent. In Turkey (129–137), an even larger proportion (59%) of scientists say they are religious and less than 10% are self-declared atheists. Here, the figures for the independence/collaborative/conflict understandings of the science and religion relationship are 34%/32%/26%, respectively. In this country, many now consider the politicisation of Islam to be the biggest threat to their science (143–144).

In officially-secular India (146, 148, 152–158, 166–167) the boundaries between science and religion are more fluid and overlapping, and therefore harder to disentangle. Although the nation 'reflects a unique model of openness to religion', the independence of science and religion is embraced by some 44% of scientists, while 29% prefer a view of collaboration and a low 20% the view of conflict.

Chinese views were only sampled in Hong Kong and Taiwan (171–186). Both are, in principle, societies that have religious freedom. Atheism is embraced by only 11% of Taiwanese scientists, but by 26% of those working in Hong Kong. Only 18% and 10% of scientists in Hong Kong and Taiwan, respectively, adopt the conflict view in the science and religion debate (10% is the lowest figure of all the regions studied); with comparative figures for the collaborative view being 23% and 21%, and for the independence perspective 44% and 63% (which is higher than anywhere else). For many scientists in these particular states, 'religion is more a philosophy than theology' and the researchers found a distinct lack of concern about sharing religious views in the scientific workplace.

Hence, as these and other related data from this project clearly show, the science and secularity boundary disputes, and possibilities for cooperation, can be very different across different countries and cultures. It is therefore risky to attempt generalisations. The authors nonetheless conclude their enlightening and original comparative study with some overall hypotheses and brief and tentative reflections about why the statistics about what scientists 'really think' about religion, as well as about the relationships between science and religion, are what they are in these disparate contexts.

Many of these reflections are broadly psychological and testable, which suggests the importance of complementing and extending sociological studies in this field with more psychological perspectives, so as to enable a more complete and empirically enriched descriptive study of what subjects are like, and particularly *why*. Empirical psychology, especially social psychology, can also inform purely sociological research.

Atheist scientists

I was surprised to read in the first of these books that across their studies ('including surveying more than 14,000 scientists' and 'interviewing nearly 900' over ten years) the authors could 'count on two hands the number of atheist scientists . . . who have the same attitude to religious people as Richard Dawkins or Sam Harris' (Ecklund and Scheitle

2018, 56). More recently, Ecklund and Johnson have once again collaborated in various additional explorations, using data from their research project discussed in the previous section but now supplemented by some other sources, resulting in another book: *Varieties of Atheism in Science* (2021). In this new, shorter text, the authors concentrated on *atheist scientists* in the US and the UK. Their original survey had identified 1,293 of these (614 in the UK) and the project had interviewed 81 of them. Their further analysis both revealed that 'there are varieties of atheism among scientist' and confirmed that 'not all scientists see conflict between science and religion' (Ecklund and Johnson 2021, 5, 11–12, 36, 161).

The narrow view of atheism of the New Atheists, this study claims, is unrepresentative even of the more extreme scientific atheists, whom they classify as *modernist atheists* (Chapter 3). Some of these vigorously assert that Richard Dawkins is too dogmatic – a fundamentalist scientist who misrepresents the limitations of scientific enquiry (e.g. 56–57). Modernist atheists constitute nearly three quarters of the UK sample of scientific atheists. They do not believe in God nor are they 'spiritual', and they rarely interact with religious individuals or consume 'religious culture'. Over 60% of them accept that the relationship between science and religion is one of conflict and, while many think that religion may harm science and society, some are indifferent to religion or even appreciative of it.

Two other categories of atheist scientist are identified. The *culturally religious atheists* (21% of the UK sample) maintain 'sustained patterns of interaction with religious individuals and organizations', e.g. by sending their children to religious schools, following a religion to the extent of occasionally praying or attending its religious services, or marrying a religious person (59–75). The *spiritual atheists* (6% of the UK sample) don't follow any religion but consider themselves to be spiritual persons 'interested in the sacred and the supernatural'; they frequently emphasise elements of awe within science and the moral implications of science and scientific work (82–93, 160–161).

In the UK, the culturally religious scientific atheists are more likely to endorse an independence relationship between science and religion rather than the conflict thesis, but only to a small extent, while the spiritual atheists do so by a much larger margin of 81% to 12% (Elaine Ecklund and David Johnson, Zoom lecture, 10 November 2021; cf. 180 n. 19). Although this particular book does not provide a full quantitative breakdown of the differing views of scientists in different disciplines, it confirms that 'atheists are much more likely to be biologists than physicists', which concurs with my own experience as both a student and a university teacher (34–35; cf. 43 and Ecklund et al. 2019, 64).

Culturally, religious scientific atheists may 'follow religion' (itself, surely, a rather ambiguous or, at least, vague phrase) for reasons similar to those Christian non-realists who find public worship spiritually fulfilling (cf. Ecklund and Johnson 2021, 68), as did Don Cupitt in the 1980s and early 1990s. But the authors suggest that they may also do so in order to 'cultivate and signify cultural capital' and to enhance their social status (69–72). While this last factor may be influential in the USA, I cannot think it has much weight in the UK. (A reference to one such scientist being the chair of governors of a 'CFE [sic] controlled primary school' perhaps indicates that the American authors are not that familiar with the British scene, or at any rate with the niceties of the Anglican Church's involvement in 'religious schooling' in England.)

The authors also claim that, while exposure to science contributes to scientists becoming atheist, it is less influential than many assume. Thus, 60% of atheist scientists in the UK reported that science had 'no effect on their religiosity' (19).

Scientism was raised indirectly in the interviews by means of questions about the interviewees' understanding of the definition of science and the limits of scientific explanation (162). Of those interviewed, a majority rejected scientism. But the authors distinguish 'different dimensions of scientism' (108–119, also referred to as 'forms' of scientism): the most general being 'that nothing is beyond science'. What the authors call 'epistemic scientism' seems to conflate the denial of any reality 'outside of the natural, material world' (better designated as 'ontological scientism'?) and the rather different belief that 'the only reality *that we can know* is the reality that science can reveal' (my italics). The study also recognises (a) a 'soft form of scientism' along the lines of (as one UK scientist put it) 'there are some things that are really big [she might have added "or small"] and really hard and we don't have the tools' to explain them – at least, currently; and (b) a more fundamental limitation on the breadth of science's power to explain that is a function of our limited cognitive powers as humans (reminiscent of Kant's *Critique of Pure Reason*, or arising from evolutionary accounts of the development of our cognition?). (Both (a) and (b), of course, are also 'epistemic': that is, related to knowing.) A final 'type of scientism' is mentioned in the book, in the guise of the extreme contention that 'science can answer questions related to meaning, values, and ethics', although this does not seem to have been endorsed by any of the scientific atheists interviewed here. (It is a position that would require a sophisticated, and inevitably contentious, philosophical argument about the nature and origins of human valuing.)

We may say that the majority of those interviewed 'believe *in*' science, but only in the sense that they embrace 'science advocacy not scientism': 'most atheist scientists', Ecklund and Johnson write, 'eschew the hubris of scientism' (147, cf. 118). This is unlike, one could add, Richard Dawkins (see 56; cf. McGrath and McGrath 2007, ch. 2; Haught 2008, 17, 30; Ward 2008, ch. 1). But the authors also say that atheist scientists 'share many of the same feelings and values' as persons of faith (147). It is this claim that may prove to be one of the best foundations for actual dialogue between atheist scientists and religious communities (see below).

Researchers in and commentators on either scientific or religious beliefs and values should be grateful for these three very readable publications and the extensive social-scientific investigation on which they are based. They represent a major step forward in providing descriptive sociological data to accompany, contextualise and illustrate the perennial normative debates that take place in the borderlands of science and religion, and within practical and empirical theology.

I have argued, however, that the research considered here would benefit from supplementation by contributions from the disciplines of both theology and psychology. We need always be open to the value of a thoroughly multidisciplinary approach to our research questions.

Education and communication

Having harvested and explored these data, however, what – if anything – can we do with them?

While more theoretical theological and philosophical discussions may quite properly ignore the empirical facts about people's actual beliefs and values, educators both *about* and *into* religion (and other religious communicators, such as preachers and apologists) need to be aware of the empirical context and background against which such abstract debates are played out. Empirical facts can greatly impact the effectiveness, and should on that account influence the content and form, of their practices – and therefore of their deliberations also. Ignorance about what people already think and believe is not the best basis for understanding how their views may need to be changed, and in what ways this may best be achieved.

It is from this perspective that we should consider Elaine Ecklund's fourth book, her single-authored, *Why Science and Faith Need Each Other: Eight Shared Values that Move us Beyond Fear* (Ecklund 2020). This is of a very different genre from the other publications considered in this article. Here Ecklund is writing as a Christian for Christians, in an attempt to bridge the gap between the worlds of science and faith for a more general audience of 'congregants' and 'pastors'. She does this, specifically, by drawing on the interviews undertaken for the above research, together with 'new data from [top] Christian scientists . . . who are also involved in church communities' and other qualitative data gathered from 'a large and diverse group of Christians' across the United States, so as to introduce her readers to certain *exemplars*. These are scientists and Christians who 'share their experiences with integrating science and faith' (by reconciling them as systems of ideas or in more personal ways), or who work with religious colleagues who accept such a reconciliation, or who have 'found ways to communicate or relate to other scientists' (Ecklund 2020, 19–20).

The book comprises eleven brief chapters, each of which ends with questions to aid further discussion, and concludes with four pages of (rather demanding) further reading and 13 pages of endnotes that include (in my view, unnecessary) details of the anonymised respondents and the date of each interview. There is no index. It is well written, in a much more chatty, concrete style than this author's technical reports, incorporating personal anecdotes that should serve to draw the reader into the discussion.

Unfortunately, the statistics and interview quotations here are entirely taken from American subjects, which rather limits the book's usefulness elsewhere. The textual apparatus (although not the actual text) also seems to suggest a readership of ministers and educators rather than ordinary churchgoers.

Having said that, Ecklund's approach to bridging the gap between description and normative debate is original and admirable. It involves viewing science and faith not just as a set of ideas but as groups of *people who share common virtues* (cf. Astley 2001, 22–28, 31–32). She claims that the eight virtues she discusses are 'key virtues of Christianity' and that four of them (curiosity, doubt, humility and creativity) are also 'crucial to the scientific process', while the others (healing, awe, shalom and gratitude) 'reveal how science and faith come together in redemptive practices' (21).

Although the arguments for some of these claims are sometimes rather tendentious, I believe that the book offers many good insights into an imaginative way of presenting and developing the science/religion dialogue in an interesting and non-technical manner. In this regard, one may describe this volume as itself something of an 'exemplar' of bridge-building across the gap between sociological facts and normative claims – a model

of one approach to resolving the suspicions felt by many religious believers about scientific expertise and the scientific enterprise. A similar evaluation may be appropriately applied to Professor Ecklund herself.

As a Christian theologian and educationalist, I greatly welcome this focus on the affective dimension of both Christianity and Christian learning. But I would add that, while science and religion may share common human virtues in their practices and processes, the beliefs that they presuppose and engender will also have to be addressed at some stage. So there is also some additional work that needs to be done before Christians can more fully *understand* and intellectually *resolve* the doubts and questions that arise within the debates over science and religion. And this will require some educational work of a more critical and cognitive nature (cf. Astley 1994, chs 5, 6, 7 and 9; 2000, chs 1 and 2; 2002, chs 1, 2 and 5).

Here, therefore, the multidimensional approach must also be widened, in this case to include the disciplines of the philosophy (and, perhaps, the psychology) of education and learning.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributor

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