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SECULARISM & NONRELIGION

The Social Imaginary of Science and Nonreligion: Narrating the Connection in the Anglophone West

RESEARCH ARTICLE

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ABSTRACT

Previous sociological research on science and religion, and secularity and nonreligion, has highlighted a consistent connection between science and nonreligious identities. Yet, the dynamics of this association have not been explored in depth. Building upon a growing body of work, this article adopts a relational approach to science and nonreligion to analyze narratives around science and religion emerging among nonreligious life scientists and members of the public in Canada and the UK. Across a variety of nonreligious identities, they tend to presume religion is irrational and consequently incompatible with science, idealize science, and refer to religious people as a less scientific outgroup. Upbringing, friendships, workspaces, and education all contribute to beliefs about science, (non)religion, and society. The social imaginary that to be modern is to be secular and scientific has enduring cultural power within these Western contexts, affecting daily life. Whether this is the case in other countries is a question for future research.

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INTRODUCTION

Sindy is a life scientist working in Canada. She is also an atheist. At work Sindy has seen people pray before undertaking an experiment: 'it is hard for [a] religious person to have a true scientific approach of things. Cause [...] the moment you pray for a result, you are implying the result depends on you. And on your faith. And that, I think, is like...that, I think, destroys everything.' She also gets frustrated by religious people working in her lab taking leave for religious holidays: 'I don't want special days for me. I just think that everyone should have the same rights and duties in their workplace.' This quote exemplifies the complex embeddedness of a nonreligious outlook. First, the focus of the interviewee's stance is her own lifeworld and professional identity, which she contrasts with examples from her own experience. Secondly, informing this everyday stance are more general values such as equal treatment for everybody. This value stance is closely linked with science-specific values such as neutrality and objectivity (independence of results from personal preference or intervention). The term 'destroys' implies that this link between personal experience and the value cosmos of the interviewee link for a very powerful frame of perception. Sindy's nonreligious outlook, and the way she links this with science, impacts upon her personal and professional values. This is what we are looking to explore in the present article. This article addresses the questions: how is the connection between nonreligious identity and science articulated? What are the factors contributing to the construction of this connection?

PREVIOUS RESEARCH

In the late nineteenth century, Draper (2015 [1874]) and White (2009 [1896]) popularized the idea that science and religion innately and perpetually conflict – what has become known in the history of science as the 'conflict thesis' or 'conflict narrative' (Lightman 2015). Historians of science have been puzzled and frustrated by this conflict narrative's persistence, despite a strong body of research demonstrating its historical and contemporary inaccuracy (Hardin et al. 2018). There have been and continue to be specific tensions between particular religious groups and fields of scientific research e.g. creationist organizations in the US mobilizing against evolutionary science; scholars seeking to break free from the authority of the Anglican Church in Victorian Britain. However, the history of science and religion is vast and much more complex than such specific skirmishes. Religious thought and people were also foundational to the formation of science, e.g. Sir Isaac Newton. Many religious people across the contemporary world practice and embrace science. The bulk of social scientific literature addressing the persistence of the conflict thesis despite this historical and contemporary diversity has focused upon religious populations. What about nonreligious populations? The corollary of this narrative of perennial conflict between science and religion is that science and nonreligion naturally align (Brooke 2010). Such perceptions formed a backdrop to twentieth century theories of secularization and persist amongst nonreligious activists today (Harrison 2020; LeDrew 2016). Modernity is secular and scientific in the Western imagination (Asad 2003; Jones et al. 2019).

Nonreligious biologists and physicists in the UK and the US connect their science with their nonreligiosity, and some (though not a majority) believe in an inherent conflict between science and religion (Ecklund and Johnson 2021). Some nonreligious members of the public do the same (Baker and Smith 2015; Cimino and Smith 2014; Lee 2019; Smith and Halligan 2021; Unsworth, 2020), and in Canada too (Thiessen and Wilkins-Laflamme 2020). Our findings are consistent with these from recent research (Kind 2019). In prior UK-based research, Lee analyzes nonreligious members of the public's attitudes toward science. One interviewee reflects that their assumption that to be truly scientific one ought not to be religious may not be logically or empirically justified, 'but it feels rational.' (Lee 2019: 177). Lee herself puts 'to one side questions about the role of science in non-religious people's secular or 'this-worldly' lives.' (2019: 181).

In sum, previous sociological research on science and religion, and nonreligion, has identified the phenomenon of nonreligious people within the Anglophone West connecting science and nonreligion, without analyzing the connection made in depth. Our approach gets at ways in which this connection between science and nonreligion is contextually constituted, and how it is formed by culture; upbringing; and experience. We address how and why nonreligious scientists and members of the public make the association between science and nonreligion. This matters because, as seen above in the opening quote from one of our nonreligious scientist participants, it can affect perceptions of others and everyday interactions. The social imaginary that science and nonreligion belong together to the exclusion of religion has enduring cultural power (Taylor 2004; Taylor 2007).

CURRENT APPROACH TO INVESTIGATING SCIENCE AND NONRELIGION

The current analysis draws on 123 semi-structured interviews conducted with life scientists and members of the public in Canada and the UK as part of a larger, multidisciplinary research study on science and religion, with particular focus upon evolutionary science. Previous research indicates that the conflict narrative is a Western myth (Ecklund et al. 2019). The conflict narrative

originated in Britain and has a strong presence in both these majority-Anglophone, Western countries. Both countries have substantial nonreligious populations. They are similar, with strong historical and contemporary connections. Yet, they are also distinct from each other in significant ways, e.g. in terms of population, devolved governance, constitution, and welfare system. Both countries differ from the United States, which has been the site for most social scientific research on science and religion to date. Consequently, considering data gathered in both the UK and Canada is productive for accessing the conflict narrative amongst nonreligous groups, the dynamics of its cultural significance, and providing an instructive contrast to US-focused research. Using data collected with both scientists and members of the public enables us to study the significance of the association between science and nonreligion within and beyond professional science. Analytically, we follow a relational approach to nonreligion, understanding it as simultaneously diverse and substantive, defined primarily by its difference from religion and variously involving commitment to secularism, antireligious sentiment, and absence of religion (Lee 2012; Lee 2015). This approach is used to interrogate participants' narratives about the connection between science and nonreligion. It facilitates attention to beliefs, experience, social relationships, values, power dynamics, and cultural frames in these narratives (Ammerman 2020; Beaman 2017).

The article makes a unique contribution by accessing the articulation and construction of the connection between science and nonreligion for members of the public as well as scientists, in Canada and the UK, and across a variety of nonreligious identities: atheist; agnostic; humanist; uninterested. Reflection upon the nature of science and its relation to worldviews and society might be expected from professional scientists. Including members of the public enables analysis of the presence of this connection beyond institutional science. It is striking that a range of nonreligious people associate their identification with science with being and becoming nonreligious, and vice versa. Whilst avowed opposition to religion was not a majority position amongst participants, we find that nonreligion-science linkages are culturally- and values-driven for individuals.

DATA COLLECTION

Using a combination of social media advertising and sharing invitations to participate via electronic mailing lists (including professional scientific ones), we built up a pool of participants from which to select interviewees for the research study. Each volunteer completed a prescreen survey which included questions on education level, work status, gender, ethnicity, and religiosity (or the absence thereof). This enabled purposive sampling. We were able to recruit a proportionate sample of interviewees in terms of age, gender, religiosity, perspective on science and religion, and, to an extent, race and ethnicity in line with each country's demographics.[1] It was much more difficult to recruit people without degree-level education and so extra steps were taken to boost the pools in each country (face-to-face recruitment in the UK and mailed out interview requests in Canada). Yet, the sample still skews somewhat toward more educated professionals relative to each country's demographics. Interviews were to a large extent geographically concentrated in England and Wales in the UK and the Greater Toronto Area in Canada.

Table 1. shows the total number of interviewees, broken down by country, religious status (religious or nonreligious), and science status (scientist or member of the public).[2]

We interviewed life scientists (for whom evolutionary science formed part of their work) and members of the public in each country for the study, including a mix of nonreligious and religious people. Whilst this article concentrates upon nonreligious participants, religious participants' references were also reviewed, checking for similarities and differences.

The split between religious and nonreligious interviews was roughly in keeping with the demographics for each country, though nonreligious people were slightly underrepresented in the UK sample where 53 per cent of the population identifies as nonreligious.[3] In Canada, approximately a quarter of the population identifies as nonreligious (Thiessen and Wilkins-Laflamme 2020). We went with people's self-description of how they identified in terms of nonreligion (e.g., agnostic/atheist/Humanist), or, if they did not identify with a particular label, categorized them as 'nonreligious' based upon their answers to questions about religious belief, identification, and practice in the prescreen survey and interview. Stephen Jones and Tom Kaden conducted the interviews at times and locations convenient to interviewees. The interviews were audio recorded and transcribed. They then coded the transcripts using the computer-aided qualitative data analysis program NVivo.

	RELIGIOUS SCIENTISTS	RELIGIOUS PUBLICS	NONRELIGIOUS SCIENTISTS	NONRELIGIOUS PUBLICS	TOTAL
Canada	8	30	14	11	62
UK	6	24	14	16	61
Total	14	54	28	27	123

Table 1 Number of Interviewees Broken Down by Religion and Science Status, and Country.

CODING AND ANALYSIS

The schedule for interviews comprised nonleading, open-ended questions about views and practices/experience related to: belief; religion; science in general; evolutionary science specifically, and public discourse on religion and evolution. Interviewers did not ask participants directly about the conflict narrative, or science and nonreligion. An initial coding structure was developed and agreed based upon the schedule. This was then expanded and refined in a collaborative, iterative process based upon the data. Data coded to the node 'science and religion' constitutes the basis for the analysis and discussion presented below. Matrix queries were run to sort between religious and nonreligious life scientists and publics' responses coded to 'science and religion'. The content of all these references was systematically reviewed, and themes and patterns identified.

With our approach to interviewee recruitment, there was always the risk of selection bias: recruiting people with an established interest in the topic of science and religion, despite concerted efforts to sample the uninterested too. However, this bias applies equally to religious as well as nonreligious participants. This observation serves as a reminder that findings presented are indicative rather than generalizable, with potential relevance to other contexts and situations (Small 2009).

FINDINGS AND ANALYSIS

The key themes from the analysis are presented below in order to address our research questions. All participants referenced are listed in alphabetical order by name in Table 2. Pseudonyms are used to protect anonymity.

We focus upon individuals whose narratives illustrate each theme. Their narratives represent patterns found throughout the data.

INVOKING THE CONFLICT NARRATIVE

The conflict narrative was invoked by numerous nonreligious participants. This can be seen in Lukasz's response on his views about the relationship between science and religion or belief. Lukasz is a scientist in the UK who describes himself as an atheist and says:

> 'I think dogma and science are incompatible – completely incompatible. So I think personal belief in some kind of spirituality can co-exist with science as long as it's…as long as it doesn't override, because I mean science is based on a rational logical process and proof of burden [*sic*], and I think I would mistrust anyone who would believe someone without proof of burden. And I think those two ideologies can be quite incompatible.'

Science is rational, logical, and requires proof. Dogma does not, and Lukasz would mistrust anyone who believes without the burden of proof (despite this being something everyone does daily; Haidt 2013).

Lukasz has himself researched cultural evolution and religion. On the basis of this research, he acknowledges that religion-like behaviors appear in every society. He sees their function as generating social cohesion, meaning, well-being, and satisfaction 'in people's lives who otherwise wouldn't have any.' This is a 'wonderful' purpose for Lukasz. He also talked about Christian relatives who are not dogmatic and thus demonstrate the diversity of belief that exists. The incompatibility between science and religion is far from absolute for Lukasz. He acknowledges that there is a risk of talented religious people being put off the sciences by a wider cultural narrative of science as incompatible with belief. However, Lukasz also observes that he tends to associate atheism with intellectualism, meaning that it is, for him, 'hard to see this [the absence of religious scientists] as a big loss.'

NAME	COUNTRY	SCIENTIST OR MEMBER OF THE PUBLIC (MOP)	GENDER	RELIGIOUS/NONRELIGIOUS POSITION
Bradley	Canada	MOP	male	agnostic atheist
Davis	Canada	MOP	male	agnostic Catholic
Haruka	UK	scientist	male	nonreligious
James	UK	scientist	male	atheist
Joanne	Canada	scientist	female	atheist
Kaye	UK	MOP	female	Humanist and skeptic
Lukasz	UK	scientist	male	atheist
Sindy	Canada	scientist	female	atheist
Terrell	Canada	scientist	male	agnostic/atheist
Vickie	UK	MOP	female	atheist
Vinnie	Canada	MOP	male	Buddhist atheist

Table 2 Participants Referenced.

Joanne is, like Lukasz, a scientist who describes herself as an atheist, yet based in Canada. Also like Lukasz, Joanne regards science and religion as incompatible whilst recognizing other people's need for the latter. They need 'social structures and inclusiveness and community.' However, Joanne considers herself rational and evidence-oriented. For her, there is no evidence that the world works as Christians imagine it to, and she is very surprised when she discovers a colleague is not an atheist. For Joanne, decisions about how to run society ought to be based upon 'the rationalist view'. Religion goes too far when it tries to dictate what happens in the public sphere. So again, there is a sense of ultimate incompatibility between science and religion because of beliefs and yet seeing some social value in religion, as long as it stays in its lane, as it were.

Bradley also lives in Canada. Unlike Joanne and Lukasz, he is not a scientist, but nevertheless interested in scientific developments. Bradley describes himself as an 'agnostic atheist'. He was raised Catholic and became agnostic through involvement in the debate club at his university and having to argue secular approaches to social issues such as contraception and homosexuality. He then subsequently dissociated himself from a freethinkers' group at university as he found them too hostile. Bradley also finds Richard Dawkins overly confrontational. He summarizes his view on the public debates around science and religion in this way: 'I really agree with a lot of the things you say and I hate the way you say them.' For Bradley, religion has generated a 'communication schism' and very negative consequences for society. He references Christianity's relationship to slavery and racism specifically (whilst not considering science's own historic connection to both; Seth 2014).

Similarities in these and other nonreligious interviewees' narratives suggest this is not random or simply by chance: the conflict narrative is a rhetorical resource to draw upon– in Canada and the UK and inside and outside of institutional science. In response to questions about science and religion in interviews, discussion frequently and quickly moved to the association between science and nonreligion for an array of nonreligious individuals.

In line with the plurality of nonreligion, it is not a case of crude antireligious attitudes. Yet, a perceived divide between science and religion where the former is judged as superior consistently recurs: the conflict narrative figures as an important cultural frame. A general pattern emerges in the views of atheist, atheist agnostic, Humanist, and broadly nonreligious scientists and members of the public: 1. A presumption that religion is irrational; 2. That religion is therefore incompatible with science, which is rational; 3. That religion is damaging to society because it hampers rational thinking and thereby limits scientific progress (which is presumed to be always good for society), and reinforces ignorance and prejudice. Thus, religious people become constructed as a less scientific outgroup, and science idealized, with little critical reflection on its own historic dark sides or ideologies.

HOW NONRELIGIOUS PARTICIPANTS CONNECT SCIENCE AND NONRELIGION

Given, then, that the tension between science and religion persists for nonreligious scientists and members of the public in both Canada and the UK in a way related to their personal form of nonreligion, how do they associate their nonreligion with a commitment to science? How do they articulate this connection? Answers to these questions have already been foreshadowed by preceding examples from the data. A pattern in the structure of how the association gets expressed has been established: linking science and nonreligion with rationality, evidence, and morality in contrast to belief. Sindy gets frustrated by religious colleagues at work. Lukasz is not overly concerned by the risk of religious people being put off scientific careers by its association with atheism. Joanne assumes colleagues will also be atheists. The connection between science and nonreligion plays out in participants' daily lives, in different spaces and relationships.

Kaye is a retired school teacher in the UK. She describes herself as a skeptic and active in her local Humanist group. She was briefly involved with Christianity as a teenager, though raised by nonreligious parents. Whilst at high school, Kaye aimed to be a scientist, but then studied Philosophy at college instead. Yet, studying Philosophy of Science helped her maintain her interest in science. Indeed, she has set up a local science reading group in retirement. Science and religion sometimes come up in family conversations for Kaye. For example, she recounted a family argument about the origins of the universe the Sunday before her interview. Her cousin was arguing that because what happened before the Big Bang is unknown, then it could be attributed to God. Kaye continues:

> 'My attitude to not knowing something is not, 'oh, well, it must be God then.' My attitude to not knowing something, which [I] would hope that educated people's attitude would be, my attitude to not knowing is: 'What do we need to… can we approach this in any way? Can we get evidence? How else might we think about it? How can we cast light on this? Is there a way to find out what evidence would you need?'

Again, there is an emphasis upon evidence, and a view of how educated people ought to address their own ignorance on any given topic. Kaye argues for science and nonreligion with her relatives and engages in social activities focused upon nonreligion and science, in retirement from teaching. The two are connected in her daily life.

The classroom was a key space for reflecting upon and shaping views about science, religion, and nonreligion for some nonreligious participants, both as student and teacher. Davis teaches Biology at a Catholic high school in Canada and describes himself as an agnostic Catholic. He was raised by parents who had recently converted to a conservative form of Catholicism. Davis experienced internal conflict in high school when his interest in science collided with his own conservative religious beliefs. He consequently moved away from those beliefs as he studied Biology at college. During this time: '…I'd had conversations with very deeply religious people and having grown up in that environment I tried not to be hostile most of the time, but I'd really fallen in love with the quantitative, objective side of science.' In this quote Davis connects social interactions and emotion to his commitment to science, and movement away from Catholic belief. In this way, Davis' reflections on his feelings towards science and rationality, echo Lee's (2019) work on nonreligion, where she finds participants articulate both emotional and embodied attachments towards science as well as intellectual ones, revealing the many dimensions that the science and nonreligion affinity can take, beyond a purely intellectual connection. Yet, Davis remains communally attached to Catholicism through his work, family, and old family priest. Nonreligious friends assume he is anti-evolution because he teaches at a Catholic school, whilst he describes working to challenge anti-evolution perspectives in his classroom.

James is a science professor in the UK and an atheist. He regards public acceptance and understanding of evolutionary science as important for society. Consequently, he also supports critique of religious views in the public sphere:

> '…I don't think we do a good enough job in convincing and arguing with people and I think that the viewpoint of religion is given lots of airtime and lots of exposure… and perhaps we should be working harder to argue a case there, yeah, we should perhaps be a bit more contentious than we are. I suppose the whole Dawkins thing of years ago has at least started that.'

James' perception is that the work of Dawkins and others has made it socially acceptable to question religion when it was previously taboo to do so. Yet, despite describing himself as 'the bullish type and happy to confront', reflecting on his classroom experience and how he engages with these topics therein, James says: '…I'm aware and therefore do think about what I might or might not say. I think I make it reasonably obvious to students where I stand on it [science and religion], but that doesn't mean I'll say anything, because I will try and think about those students who are there and who might be sensitive to that…'

Kaye's commitment to science and her nonreligion emerges in family arguments about science and religion and social activities. Davis' passion for science developed at school, and alongside it his agnosticism. In friendships and the classroom, he can experience tensions related to science and religion. James' atheism and commitment to evolutionary science are connected for him, in vehement opposition to religion. However, in his teaching James is conscious of the pedagogical need to avoid attacking religious views, despite his desire to do so. How nonreligious scientists and members of the public live out and experience the association between science and nonreligion needs to be viewed as a spectrum, not just in the sense that there is a diversity of positions, attitudes, identities, and beliefs, but that these can wax and wane, depending on context.

WHY NONRELIGIOUS PARTICIPANTS ASSOCIATE SCIENCE AND NONRELIGION

Why, then, do interviewees associate their nonreligion with a commitment to science? From their narratives, what factors can be discerned as contributing to their perception of a connection between science and nonreligion? Like Bradley and Davis above, many other nonreligious scientists and members of the public narrated their journeys toward interest in science, associating this journey with a questioning of religion. There is a sense in which becoming scientific goes hand in hand with becoming a nonreligious and critically thinking individual. An identification with science which excludes religious belief is formed and maintained across many different networks and social relations. Our interviewees discussed how processes of parenting in particular have influenced the formation of their nonreligious identity and how it relates to science.

Terrell is a scientist in Canada. He describes himself as agnostic with leanings to the atheist side. He divides his views into skeptic or agnostic when it comes to his scientific identity, because skepticism is demanded by it; and as atheist when it comes to his personal views. Terrell was raised Christian, and was an altar boy. He lost his faith during high school, and became what he describes as a 'douchey atheist' for a year or two. What initiated his crisis of faith was his thinking about Job and how God would ruin his life just for a bet.

Terrell's family did not read the Bible literally. His father instilled in him that the Bible is history and inconsistent. At home, religion was more about being involved in a community than being right about creation, according to Terrell. Terrell remembers an occasion when he was young where he walked out of a church service during a sermon by a very conservative preacher who chided people as sinners who would go to hell. He and his parents are opposed to missionary work, based upon their knowledge of what it has done to indigenous communities. Terrell has friends who used to be very religious (including some

coming from creationist families) but says that they too had crises of faith. He describes them as becoming 'similar to the like worst discriminating atheists that I've ever met.'

Vinnie is a Canadian member of the public who was also raised in a Christian household. Yet, his parents were Evangelical Young Earth Creationists. Vinnie says that his parents were nevertheless still interested in science. Engaging with science led Vinnie to question his faith:

> '…at the time I was very, very, very strongly of the belief that, you know, that the world was 6,000 years old or whatever it was… And that evolution was a crock. The dissonance with that though is that my family was also, we loved watching documentaries and we loved things about science. We loved learning things. My parents both had computer degrees. They didn't end up doing that in the end, but it doesn't matter, and they encouraged us to study Math and sort of read lots of science fiction books and to really explore things, and we had like six sets of encyclopedias that I would read all of the time. So there was this weird dissonance where, and it was one of the things that lead me to leave the church in the end is the, that really militant rejection of science didn't work with the fact that, you know, so that science exists and it's taught us all of these things and I live with these things every day.'

As a young adult, Vinnie (similarly to Terrell) reports that he was a strong atheist, but he says that discovering yoga and Buddhism 'softened' his atheism. For Vinnie, Buddhism is scientific:

> 'So it's one of the things I really like about Buddhism and the reason I started exploring it is that in Stephen Batchelor's book [*Buddhism without Beliefs*], he says that the Buddha said, 'don't accept anything that I say on faith alone. Do the experiment, try it for yourself and see what happens.' Because becoming an atheist, learning so much more about science, reading all these popular science books, I became to really appreciate the scientific method that really, really, really touched something very important in me, whereas… Oh I can just do this experiment from a scientific point of view. Like try it, to do it all out you can't just sort of half it if you're going to see if it'll actually help you.'

Yet, Vinnie still refrains from discussing his Buddhist practice and quest for enlightenment with his atheist friends, because he has previously received negative reactions.

Haruka was raised by an atheist father and Catholic mother, both scientists, from Asia and Europe respectively. He is a research scientist in the UK now and identifies as an atheist. He and his sibling were raised Catholic in line with their mother's wishes, with their dad not interfering. However, Haruka says his education contributed to his questioning religion. For Haruka, there was no single moment of rejecting religious teaching. Instead, he felt it to be an accumulation of knowledge and education, of growing and learning. His father subsequently joked that he had hoped that Haruka and his sibling would gradually reach an atheistic position. Haruka has struggled to understand how his mother continues to be a practicing Catholic and a scientist. He explains it for himself in terms of a strongly ingrained culture. He still struggles to accept the idea of a religious scientist in general:

> 'How can you, basically, get that level of education, and learning, but then still maybe believe in some of the, well, in all of the things, pretty much, of Catholicism, and Christianism [*sic*]? So, I guess, yeah, I'm interested of, maybe, why and how, you know, how high profile, high level scientists can still be religious.'

Haruka also sees no need for religion in society any longer: 'Society is kind of well established, we have moral values that we kind of separated from the religion. So, at this point, I think if religion, let's say, just in England, would disappear, I couldn't really see any major disaster happening, I think'.

Terrell, Vinnie, and Haruka's stories about their moves toward their current positions on science and religion indicate the distinctiveness of individuals' experiences and trajectories. For Terrell, his movement away from Christianity was very much from an ethical standpoint, whereas Vinnie and Haruka narrate a strong association between their nonreligion with their education. In all three cases, parents have played a strong role. Terrell thinks that the transition from a more 'sciencey upbringing' to being more religious is much rarer than the opposite (which he identifies his own journey as). Such a view is in keeping with emerging social scientific findings about the 'stickiness of nonreligion' (Strhan and Shillitoe, 2019; Woodhead, 2017).

Nonreligious scientists and members of the public associate their nonreligion with a commitment to science, because of a combination of their upbringing, education, values, and social relationships, and, also, because this is an available cultural frame. Epistemology, ethics, and experience all interact. Turning attention to narratives helps access the variety of ways that individuals relate to the social imaginary that to be modern is to be rational, scientific, and nonreligious, and the different modalities belief can take – including an evidentiary one.

Religious and nonreligious people in Britain and Canada alike are affected by the social imaginary that science and nonreligion naturally align, in distinct (and diverse and complex) ways. Science has cultural authority for all interviewees. Overall, interviewees consistently regarded

science as not only a credible and reliable source of knowledge, but also of public benefit. Religion, by contrast, came in for more criticism, and its public benefit was questioned by numerous nonreligious respondents.

Maintaining a strict boundary from religion that blurs into antireligious sentiment is a historic part of scientific culture which has significance within and without the bounds of institutional science (Gieryn 1999). Beliefs about the nature and value of science can be used to construct and exclude the religious as a unitary outgroup. When talking about religion and science, nonreligious interviewees across the spectrum of nonreligious identities and degree of engagement with institutional science make negative generalizations about religion and draw connections between their nonreligious identity and its formation and their scientific identity and its formation. For some, a nonreligious position is more credible than a religious one, because it is constructed as an outcome of scientific thinking.

GROUP DIFFERENCES?

Whilst similarities and patterns in nonreligious scientists and members of the public in Canada and the UK's narratives about science and religion have been identified, beyond individual differences were there also differences between groups and countries? Again, given the nature of the sample, generalizations cannot be made. For scientists, reflecting upon the nature of science and its relation to worldviews and society constitutes part of professional life. Therefore, a trend of discussing science and religion in more depth is perhaps discernible in their narratives. However, it is far more striking that nonreligious members of the public invoke a lot of the same themes: the importance of evidence and rationality (in contrast to religion); the social harm of religion, and the role of family and education in the development of scientific and nonreligious views. Science identification is value laden and potentially value driven. The social imaginary that to be modern is to be secular and scientific endures, both sides of the Atlantic.

As indicated in the introduction, Canada and the UK constitute two similar and yet distinct majority-Anglophone Western nation-states. Consequently, differences in national context could be expected. For example, survey data indicates that whilst it is very much a minority position in both countries, more people endorse creationist perspectives in Canada than the UK (Elsdon-Baker 2020). This trend is reflected in our interview data, with more nonreligious Canadians than Britons recounting some kind of direct engagement with creationism in their discussions of science and religion.

Britain, Canada, and the United States may all be viewed as part of the (majority) Anglophone West from which (as seen at the outset of this article) the cultural frame of the conflict thesis and consequent social imaginary associating science with nonreligion emerged (Taylor 2004). In the United States, nonreligious people often experience marginalization based upon their worldview, and are obliged to self-analyze and self-justify, given the Christonormativity persisting in wider society (Smith and Halligan 2021). In parts of British and Canadian society it is certainly not the norm to be nonreligious, and Christonormativity endures to an extent in both societies. Yet, in this UK and Canada-based data, nonreligious interviewees are comfortable discussing their criticisms of religion (Christianity specifically) and their own nonreligious views. They did not report facing prejudice against their nonreligious perspectives. In fact, in the UK nonreligion is the norm and religion can be a 'toxic brand' (Woodhead 2016: 258). British nonreligious member of the public Vickie comments: 'White British people tend to distrust people that are very religious, whatever religion it is.' National and local context to an extent shape engagement with the cultural frame of the conflict thesis, of which the association of science and nonreligion is part.

DISCUSSION AND CONCLUSION

In June 2022 professor of security engineering at Cambridge University Ross Anderson commented: 'It is unreasonable to expect atheists to respect the views of religious believers…'[4] This was in response to new diversity, equity, and inclusion materials released by the university. A scientist at an elite institution believes he has the right to disrespect religious people, and he felt sufficiently comfortable to express this view in the media. This is another example of the cultural hegemony of science and nonreligion. This myth can be seen to live especially within academic science departments, and data from interviews with scientists and members of the public suggest that it also has cultural power well beyond institutional science.

In contrast to the majority of prior sociological research on nonreligion, this article has not focused upon organized nonreligion or/and characterizing nonreligious populations. Rather it has focused upon a phenomenon commonly identified in such work, as well as in sociological research on science and religion: the connections between science and nonreligion, attempting to unpack what is usually taken for granted. The content of various nonreligious participants' beliefs in relation to science and (non)religion has been examined, as has how they talk about such beliefs being shaped by and shaping social practice. Nonreligious participants in Canada and the UK regard science and religion as incompatible for various reasons and equate science and nonreligion. Rejection of religion is normative rather than simplistically epistemological. Nonreligious participants are not crudely antireligious. Yet, religious people are constructed as a less scientific outgroup in their narratives. Nonreligious participants express these views at work, at home, in stories. Family, social relations,

education, and wider culture all contribute to connecting science and nonreligion, however the latter is conceived. Nonreligion can be understood in relation not only to religion, but to science too.

The modern, conceptual elision of science and nonreligion impacts the experience of religious and nonreligious populations. This is despite important analytic work excavating and deconstructing the elision (Asad 2003; Mahmood 2015), and scholarship in the history of science that challenges the accuracy of the thesis that science and religion necessarily conflict (Numbers 2009). Findings presented here indicate that the strong association of science with nonreligion means that if one is a nonreligious person in these Western contexts, one has less reflexive work and impression management to do in terms of one's personal existential culture in relation to science than if religious (whether a professional scientist or not). One can assume a certain level of fit and comfort. Woodhead (2016: 259) observes that, in the UK, 'no religion' has become the unmarked norm which does not have to justify itself in the same way minority positions do. The assumption that being nonreligious goes hand in hand with being scientific is a part of this norm with popular cultural power (Ammerman 2020: 18). This is different from in American society where nonreligious people face more prejudice and a strongly politically polarized culture in relation to science and religion exists (Edgell et al. 2016; O'Brien and Noy 2020). This serves as a reminder of the potential role of national context and that US-based findings and approaches do not necessarily map on elsewhere. Though, importantly, Ecklund et al. (2019) do find nonreligion to remain normative in scientific workplaces in the United States.

OPPORTUNITIES FOR FURTHER RESEARCH

Future research could investigate further how the social imaginary that science entails nonreligion travels across cultures and does or does not resonate in a given national context. Thomas (2017; 2018; 2020) has conducted ethnographic research with scientists at a research institute in India. Some of Thomas' atheist scientist interviewees expressed the view that religion is incompatible with science. For example, one stated: 'Believing without proof is what religion is all about. The God Hypothesis should be tested. The result will be negative… Belief, not based on evidence and proof, is not acceptable.' (Thomas 2017: 6). Here aspects of belief, evidence, and values informing an association between nonreligion and science are also apparent. Yet, Thomas' nonreligious scientist participants also discussed their comfort with 'cultural' expressions of Hinduism. Bullivant et al. (2019) find science to be a popular value for unbelievers in Brazil, China, Denmark, Japan, UK, and US. In an article using World Values Survey data to investigate religiosity and orientations toward science internationally, Chan (2018: 4) points to a 'synergistic relationship between secularity and science'. This is because countries with larger numbers of religiously unaffiliated people tended to have more positive views about science. Chan (2018) calls for more research into the variety of such dynamics.

Ecklund and colleagues researched biologists' and physicists' attitudes in relation to science and religion in France, Hong Kong, India, Italy, Turkey, the United Kingdom, and the United States using a combination of interviews and surveys. Ecklund et al. (2019) find considerable contextual variation, linked to the size of the nonreligious population, the character of the scientific infrastructure, and state-religion relations in a given country. They write: 'Scientists who are atheist or agnostic, do not identify with a religion, or do not identify as religious or spiritual are located primarily in Western countries: France, the United Kingdom, and the United States.' (Ecklund et al. 2019: 205). They find this group the most likely to purvey scientism and regard science and religion as in conflict. Ecklund et al. (2019) conclude that the conflict narrative is a Western invention.

In a paper specifically about the British context from the project, Johnson et al. (2018) go into more depth about the impact of the public trend of New Atheism (Kettell 2013). Forty-eight interviewees in the UK referenced British celebrity atheist Richard Dawkins. Some nonreligious respondents were supportive of Dawkins' antireligious stance, but most (both nonreligious and religious) were critical of his combative approach, as also emerges in our interview data. However, Dawkins was barely mentioned in other countries. This finding reinforces Thomas' point that 'One needs to see new age atheists like Dawkins in their [Western] contexts, rather than generalizing and expecting his views to be universalized. We need to seriously acknowledge this provinciality whilst studying science, belief and atheism.' (Thomas 2018: 59). Is what we have found in our interview data exclusively a Western myth? Has it travelled? If so, how?

Race and ethnicity have not been the focus of this study. However, given that the nonreligious population tends to be mostly White in Western contexts and there is a history of racism within Western nonreligious movements (Alexander 2019), the intersection of science, nonreligion, race, and religion is worth additional investigation, further provincializing the study of science, belief, and atheism, as Thomas calls for.

This article is based upon interview data: day-to-day life was not directly observed. In line with emerging lived nonreligion approaches, a lived approach to science and nonreligion is an area to expand through in depth observation (Elsdon-Baker 2020). Also, the categories 'science', 'religion', and 'nonreligion' have been used broadly in the present article. Further work might explore more specific, contextualized understandings of science, religion, and nonreligion, and, perhaps, how to employ more precise terms.

Some nonreligious respondents articulated views on the cultural evolution and function of religion familiar from within the sociology of religion, from Frazer, Tylor, and Durkheim onward. The social scientific study of religion's proximity to secularity and science can make it easy to take this alignment for granted, and not unpack the meaning and social significance of such statements. Can we as overwhelmingly secular social scientists 'objectively' analyze this relationship (Cannell 2010)? This is another, related, area for future examination.

It may well be important and necessary for religion to be kept separate from science, and to challenge aspects thereof. For example, when public health and safety are at risk, most pertinently, currently, inaccurate information and beliefs surrounding vaccinations and the pandemic (Bramadat et al. 2017; Perry et al. 2020). Scientists have expressed concern publicly about the dangers of relativizing science, not least in light of policies enacted by the Trump administration in the United States (Horgan 2020). Science and Technology Studies scholars can encounter resistance from natural scientists when highlighting how the cultural and social shape science (Sismondo 2020). When and how such boundaries ought to be drawn is beyond the scope of this study. Nonetheless, it seems worthwhile to highlight ways in which science holds strong social and cultural authority, and where there may be opportunity for further reflexivity.

The cultural elision between nonreligion and science supports a particular exclusionary account of modernity, the good, and otherness, which can be impatient and intolerant, as seen in some of the data presented here. More detailed attention to this relationship between secularity and science could aid the work of science communication practitioners, such as the American Association for the Advancement of Science engages in.[5] A relational science and nonreligion approach could also help orient more research toward the messy middle in societies (Smith and Holmwood 2013), alongside groups regarded as problematic minorities in relation to science and religion.

NOTES

1 Due to institutional ethics protections, First Nations communities were not included in the research in Canada.

2 We are very grateful to everyone who volunteered to be part of the study. All participants are anonymized and provided informed consent to participate. The project received institution ethical approval (York University Office of Research Ethics Certificate Number e2015 – 103).

3 https://www.bsa.natcen.ac.uk/media/39203/bsa-religion.pdf [Accessed October 7th, 2020].

4 https://www.insidehighered.com/news/2022/06/16/u-cambridge-has-major-free-speech-fight [Accessed August 30th, 2022].

5 https://www.aaas.org/programs/dialogue-science-ethics-and-religion/science-communication-and-engagement-religious [Accessed August 24, 2021].

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The authors have no competing interests to declare.

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