Lisa Sideris's Consecrating Science

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REACTING TO CONSECRATING SCIENCE: WHAT MIGHT AMATEURS DO?

by Sarah E. Fredericks

In Consecrating Science: Wonder, Knowledge, and the Natural World, Lisa H. Sideris makes a compelling case that a new cosmology movement advocates for a new, universal, creation story grounded in the sciences. She fears the new story reinforces elite power structures and anthropocentrism and thus environmental degradation. Alternatively, she promotes genuine wonder which occurs in experiences of the natural world. As Sideris focuses on the likely logical outcome of the assumptions and arguments of the new cosmologies, she does not investigate whether and how people react to these new myths. I suggest that methods of documentary studies, applied to popular book reviews on Amazon and Goodreads, shed light on the ramifications of the new cosmologies among the general public. While many reviewers exhibit attitudes and behaviors that would concern Sideris, responses are far from univocal. Using this case as a guide, I suggest that attention to the experience of laypeople could contribute productively to religion and science research in general.

Keywords: Amazon.com; anthropocentrism; Consecrating Science; documentary theology; environment; new cosmology; popular book reviews; Lisa H. Sideris

In Consecrating Science: Wonder, Knowledge, and the Natural World, Lisa H. Sideris makes a compelling case that there is a new cosmological movement which advocates for a new creation story relevant for all people which draws upon the science of Big Bang cosmology, evolutionary theory, and other

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disciplines. This cosmology, Sideris argues, can "warp" our sense of wonder as its proponents focus more on being in awe of science than the experience and reality of the natural world (Sideris 2017, 3). She claims this prioritization leads "evolutionary evangelists" (Sideris 2017, 78, 108, 145, 156) to promote ideas which undermine nonanthropocentric environmental values contrary to the stated goals of their projects. Sideris briefly advocates a different wonder, not about scientific knowledge, but about the natural world that one encounters. Fostering these experiences and this wonder, she suggests, would lead to nonanthropocentric environmental values that would better ground environmental thought and action.

Sideris's analysis examines texts, particularly arguments made by intellectual leaders as is characteristic of most religion and science literature. These methodological choices reflect her disciplinary training and interlocutor's priorities and enable her to make compelling claims about the limits of new cosmologies to achieve their own stated goals, but they also constrain her critical and constructive work. Specifically, as Sideris focuses on the likely logical outcome of the assumptions and arguments of the new cosmologies, she does not investigate whether and how people react to these new myths. Do people attracted to these myths read them as a certain, universal story whose consecration of science overshadows experience of the environment and leads to anthropocentrism as Sideris fears? Answering such a question requires extending Sideris's work. Specifically, we need to examine practices as well as ideas, amateurs as well as leaders, and the actual as well as intended or logical effects of arguments and new stories.

I suggest that methods of documentary studies, which examine not only what a document says, but how it acts and functions on its own can stretch the modes of textual analysis Sideris uses while allowing her to investigate a broader range of questions. I apply this method to popular book reviews of new cosmologies texts on websites such as Amazon and Goodreads to show that Sideris's concerns about the possible ramifications of the new cosmologies are borne out by popular reviews, but are also significantly complicated by the evidence given the diversity of reviews. Finally, I will reflect on how attention to the experience of laypeople and religious practice in general could also contribute productively to religion and science.

Consecrating Science

Sideris argues that there is a "new cosmology," a "constellation of movements" that lifts up science and scientists as most worthy of wonder, a move that eclipses the natural world (Sideris 2017, 1). Sideris carefully notes that different branches of the new cosmology movement advocate different myths—the Epic of Evolution, Universe Story, Great Story, and

so on (Sideris 2017, 22), but each advocates a story based in contemporary science that can, they argue, inspire all people and, they imply, function as "sacred scripture" (Sideris 2017, 22). Sideris focuses on the work of Brian Swimme, Mary Evelyn Tucker, John Grim, Loyal Rue, Ursula Goodenough, Connie Barlow, and Michael Dowd as well as the scientists E. O. Wilson and Richard Dawkins and theologians Pierre Teilhard de Chardin and Thomas Berry, whose work and lives the new cosmologists frequently draw upon.

While Sideris convincingly argues that these authors share enough features in common to be considered a movement (which I will discuss below), she is also careful to note their different sources, rhetoric, and aims. For example, Rue and Goodenough are most significantly influenced by E. O. Wilson's work, whether the call for a "science-based mythology" (Sideris 2017, 83) or his notion of consilience, which they use as support for the power of the Epic of Evolution (Sideris 2017, 93). Compared to other new cosmologists, Tucker, Grim, and Swimme emphasize religion, especially the ideas of Berry and Teilhard de Chardin, over scientific details (Sideris 2017, 117). They also stress the importance of a unified global ethic and story in the face of pluralism and environmental degradation (Sideris 2017, 126). Dowd and Barlow's work draws on a unification of "Dawkins's promotion of reality and scientific wonder" with Thomas "Berry's call for a new, functional story" (Sideris 2017, 147). They, especially Barlow, emphasize childhood education and ritual more than the others (Sideris 2017, 147-48, 154). Goodenough is more open to mystery than the other new cosmologists, claims Sideris, because she wonders at mystery, not just scientific puzzles (Sideris 2017, 103–04). Having recognized these differences between the new cosmologists we can turn to their similarities, according to Sideris.

They often state that their main aim is to inspire ecological consciousness and ethics in the midst of anthropogenic environmental degradation but turn their audience's gaze toward the human rather than the natural world. They evoke wonder, though it is usually a serial wonder at the unknown. Sideris finds that, like theological arguments for a "God of the gaps," this approach collapses when one learns about that which one wondered at (Sideris 2017, 16, 26-27, 29, 149, 155, 170-71). Under this rubric, human ingenuity and knowledge, especially that of the scientist, become valorized as do scientists themselves. Wonder about nature itself is overshadowed (Sideris 2017, 90, 95-97, 108, 112, 125, 131, 156, 160). Specifically, Sideris finds that new cosmologists valorize expert, abstract knowledge such as that of big bang cosmology, evolution, and molecular biology (Sideris 2017, 108, 148). This knowledge is not accessible without significant training, a fact new cosmologists use to valorize those who have the knowledge (Sideris 2017, 160) and to encourage others to take it on faith, conditions that further cede authority to the science and often scientists who have complicated, if not derogatory, relationships with religion and experiencing the natural world, for example, Dawkins and Wilson (Sideris 2017, 91–92, 103–07, 109, 126–30, 148, 154).

Sideris fears this constellation of tendencies does or will promote anthropocentric visions of and ethics for the environment, ultimately encouraging hubris and human domination rather than care for the natural world in and of itself. According to Sideris, the triumphant, certain, vision of human knowledge that characterizes the new cosmologists' vision of science and scientists coupled with its anthropocentric tendencies is the same sort of attitude that helped lead to and still exacerbates environmental degradation. Thus, she asks how it can inspire an environmental ethic.

The ways that new cosmologists promote their stories heighten Sideris's arguments about the consecration of science and her concerns about the new cosmology movement. Their evangelical commitment to their story is primarily expressed in arguments for and educational initiatives about the new cosmology (Sideris 2017, 125–26, 146). Sometimes new cosmologists, especially Dowd and Barlow, are interested in educating children to ensure that they are exposed to the new cosmology before being corrupted by other stories (Sideris 2017, 154-55, 164). Others, especially Rue and Goodenough, stress college education as a way to spread the word (Sideris 2017, 83-85, 98, 110-12, 126, 147-48), as well as adult religious education and other forums for adults. Sideris is concerned that pedagogical reflection on such educational programs and the education itself focus on debating the version of the story that should be told and "not whether the story should be told as a grand, unifying narrative" (Sideris 2017, 112). This concern is exacerbated by her reading of the new cosmologies as tending to universal claims supposedly open to people of all religions (indeed, they often stress that their ideas are endorsed by representatives of many traditions) while simultaneously critiquing traditional religions. In other words, Sideris worries that the new cosmologies are not actually open to critique. Furthermore, she fears that this certainty only reinforces a vision of human power and domination that can have drastic environmental consequences (Sideris 2017, 164–68).

In contrast, Sideris advocates experiences of the natural world (possibly coupled with but not supplanted by science). Here, the experience of the natural world is an ongoing mystery in which its otherness is understandable to some degree, but never completely. She often describes this position as one of a naturalist, rather than a computational or lab scientist who may reify a certain kind of abstract investigation. She promotes a democratized, lived connection to nature, of laity rather than one only held by experts.

To make her positive argument, Sideris draws heavily on the writings, methods, and modes of wonder of Annie Dillard, Rachel Carson, and Loren Eiseley. She "propose[s] that wonder's investment in the world as a phenomenally sensuous *experience* is indispensable" (Sideris 2017, 175). Sideris finds Carson and Eiseley helpful role models for and guides to such

wonder because they were creative scientists but did not "see science as arbiter of all meaning" (Sideris 2017, 175). Rather, both were naturalists as they emphasized the experience the natural world in concrete ways over "abstract meanings" (Sideris 2017, 178). In their creative, poetic, and narrative writings (Sideris 2017, 178), they drew on their own "prior ethical and affective relationship with nature" as they hoped to instill such relationships in others, rather than looking to an idealized story of science to lead to an ethic and then care for nature as new cosmologists do (Sideris 2017, 180).

Direct experiences with nature, which inspired much of Carson's and Eiseley's writings, and which they encourage their readers to have, enable people to experience the radical other, the mystery of the natural world. Sideris posits that this type of experience can enable "genuine wonder" which does not presume that one knows all about the other, but rather enables it to be mysterious on its own, in itself. Sideris contrasts genuine wonder with confidence in knowledge borne by "scientific habits of mind which lead to a freeze-framing of the world around us" (Sideris 2017, 26). Instead she advocates a "'compatibalist' account of wonder, where a wondering response endures in the presence of scientific interrogation without making knowledge into an idol of sorts" (Sideris 2017, 173). Genuine wonder then is related to ignorance, not willful ignorance but that which recognizes that our abstractions are not reality, that solving one question "undoes solutions to others," and that is open to recognizing the limits of our knowledge and indeed the capacities to know (Sideris 2017, 188–89, 191). These "modest habits of mind" can enable a direct experience with nature to ground "moral and aesthetic responses to the natural world" which can in turn enable us to consider which investigations should be pursued and which should be set aside (Sideris 2017, 26, 195). Sideris is influenced by Carson's claims in *Silent Spring* and elsewhere that "human intoxication with power is revealed to be a dangerous delusion" which can harm the environment including but not limited to humans (Sideris 2017, 189). Humility, openness and public participation in engaging with the natural world and determining policy is thus, Sideris claims, a strikingly different model given by Carson than the absolute authority of scientific experts given or assumed by new cosmology advocates.

With this summary of Sideris's work in hand, we can now move to analyzing her methods. Throughout her argument for the existence of a new cosmological movement, critical analysis of it, and move toward a constructive response, Sideris consistently employs similar methodologies and strategies. She focuses her attention on engaging, even charismatic, authors who wrote evocatively for popular audiences and who have been influential in religion and science, whether she is looking at the sources of the new cosmology (Dawkins and Wilson), its proponents, or scientists who represent alternatives to the new cosmology (Carson and Eiseley).

Sideris examines their biographies and particularly their texts to understand their stated and implied ideals as well as their assumptions about wonder, the value of nature, and human capacities for knowledge. Like the new cosmologists who assume that changing stories and ideas will change action, Sideris also presumes that ideas can directly and influentially shape action, though she is fearful about at least some of these ideas. She also turns to direct experience to counter an extreme focus on abstract ideas she sees in the new cosmologists. Yet in her positive arguments about wonder she keeps most of her analysis to the abstract level of ideas as she draws out theories of wonder from the writings of Carson, Eisley, and others to argue for the possibilities and particularly the limits of human knowledge. In other words, she maintains that direct experience of the natural world is important, but primarily does so through secondhand descriptions of nature and a few paragraphs about research into the importance of nature experience for children's valuing and understanding of nature (Sideris 2017, 197-99).

This focus on texts, ideas, and leaders of movements makes sense for several reasons. First and foremost, it is the focus of her interlocutors—they are, after all, promoting written or cinematic narratives. Within the narratives, the new cosmologists focus on connecting facts about the world in poetic stories. Thus, to engage with them on their own terms, Sideris must also emphasize texts, stories, and ideas.

Second, studying texts and particularly the theological, philosophical, and ethical ideas they contain is the way Sideris was trained. Indeed, these are the methods most prominent in the studies of religion and science. This field, as often exemplified in this journal, focuses on how ideas relate and on arguments about how disciplines do and should interact. Key religious texts and major religious or scientific figures are the prominent interlocutors and subjects of these studies. When the field does look to the practice of religion it has often examined the beliefs of famous scientists. Thus, Sideris's work, which focuses on texts and arguments of proponents of a new cosmology rather than practices or the lived experience of followers of new cosmology movements, aligns fairly well with trends in religion and science research even as she moves beyond historical trends with her study of a new religious movement, that of consecrated science.

Sideris does mention aspects of the ritual or practical dimension of consecrated science. She recognizes that the new cosmologists do not just think; they also engage in activities that aim to spread their messages: writing papers, having conferences, giving lectures, designing undergraduate or K-12 curricula. Dowd and Barlow explicitly name these activities as those of environmental evangelism (Sideris 2017, 146), a term that highlights the religious nature of activities that may otherwise just be considered academic affairs. Sideris also notes that telling stories is a type of performance, and briefly mentions Barlow's work to develop rituals, songs, and the like

around the new story. These observations could open the door to ritual analysis of the new cosmology movement, though Sideris does not use the language or methods of ritual analysis in her work (Sideris 2017, 139, 148, 152).

Sideris's focus on ideas and leaders is also manifest in the fact that she emphasizes what the leaders of this consecrated science aim to do and to a much lesser degree how they do it. We do not see much if anything about how their target audiences respond. Yes, she mentions that there are audiences for screenings of Journey of the Universe, which says something, but we know little to nothing about how these events are framed, let alone what participants are thinking. Do they recognize the many concerns Sideris has about the new cosmologies? Do teachers or discussion leaders beyond the movement's leaders inject a critical lens into such events? Given Sideris's concerns to avoid elitism and a restricted view of knowledge, it would make sense for her to consider the experiences of lay participants in consecrated science. They may, after all, have ways of resolving the tensions (between new stories and existing religion, between abstract scientific knowledge and firsthand experience of the natural world, etc.) that would be instructive. Laity does not always take ideas as their advocates intend. Considering what people are actually doing with the new cosmology should also be particularly salient for Sideris because she is not just concerned with the intellectual limits of the arguments made by new cosmologists. She opposes them because of her concern that they will lead to bad consequences for humans and the natural world. Thus, focusing on logical arguments alone is insufficient to fully address all of the questions raised by *Consecrating Science*.

However, exploring these questions would easily push Sideris well beyond the boundaries of her training and the methods used by many of her interlocutors into the realm of ethnography and other social and behavioral sciences. As someone not a social scientist, but rather someone who was trained, like Sideris, in religious studies, theology, ethics, religion and science, and philosophy of science, I recognize the limits of my own training and what I can suggest to her. I do not want to advocate that she or I or many other colleagues in religion and science ditch our disciplinary methods. But I do want to invite us to expand our methods outward in productive ways. In particular, I suggest that methods of documentary theology could help address questions raised by *Consecrating Science* while still capitalizing on methods of textual analysis familiar to Sideris and most religion and science scholars.

STUDYING TEXTS AS DOCUMENTS

Documentary theology is a method of doing theology suggested by Rachel Muers and Rhiannon Grant. It draws on methods developed in the social

sciences to analyze "texts as documents" to investigate "how [they] work apart from, or beyond [their] being read as [texts]" (Muers and Grant 2018, 617). Muers and Grant presume that "documents, whether anyone is intentionally reading or invoking them, form social and political subjects, confer responsibility, and determine social relations; and they do this not so much by their semantic content as by the nature of the social acts they inscribe" (Muers and Grant 2018, 617). For instance, the U.S. Constitution or Bible may reproduce power structures when used as a touchstone in political arguments whether or not their details are actually read or considered. Documents may inspire people to buy a product, support a cause, venerate the document, or distribute them to others. Despite these many influences of documents beyond their arguments or content, Muers and Grant suggest that "outside the study of how scriptural texts are received and used there is, however, relatively little interest within theology or religious studies in how documents work—in how they configure and disrupt patterns of relationship and structures of power, and how they form, deform, or transform lives; or in the implicit or explicit theologies of their production and use" (Muers and Grant 2018, 618). I would add to this list the implicit or explicit ethics of their production and use. Drawing on speech act theory and the work of scholars such as Bruno Latour, they argue that "thinking about how documents are 'texts that do things'" can bolster our understanding of religious practice, particularly "sources of power, authority, and agency" (Muers and Grant 2018, 618).

Using this method, one does not just, or even primarily, look at the arguments in a document, but rather at the effect the document has on people's actions and other cultural products. Often, this type of investigation can reveal new information about the document unavailable by studying its contents or arguments. For example, Muers and Grant maintain that the process of developing the "Foundations of a True Social Order" helped transform the way that Quakers developed social thought at the end of the First World War (Muers and Grant 2018, 626). Later, the document inspired much Quaker social justice work, though they argue that its details were rarely formally written about. Documentary analysis pushes scholars to ask different sorts of questions such as: How do texts exert influence on peoples' emotions and actions? Is their actual content or intent important in these processes? This method suggests that texts can have many influences, some not intended, that may or may not align with the main ideas of the text. These influences of the text cannot be seen if one only examines the text itself. I suggest that this method can be particularly helpful in thinking through the influence of documents about new cosmologies.

I think that in some ways Sideris is already using something like the method of documentary theology. After all, she notes ways in which the authors and proponents of the Universe Story, the Epic of Evolution, and so on advocate for these stories and use various rhetorical and educational strategies. She talks to some degree about how the texts were written. And yet her focus returns again and again to the content of their argument over and above the processes by which the documents were coauthored or the ways they shape their recipients. Thus, documentary analysis is a reasonable step for Sideris to take, were she to expand her project.

But what exactly would such expansion look like? One could approach documentary analysis through a variety of methods including interviews, surveys, and participant observation. For instance, one could conduct an ethnographic study of people exposed to such texts—in college classrooms, children's education, adult religious education, or conferences, or people who see the films or read the books on their own. Such a study could investigate many questions including: Do the documents shape their lives? What authority do they understand the documents to have and implicitly give the documents? Do they actually engage with the ideas of the texts—if so, which ones? Do they use the text as a symbol? But, as I have mentioned before, I am not sure that such a request is a fair one for scholars like Sideris and myself who are not ethnographers or sociologists. We can request or hope that others take up this research, even encourage it in students, but I am not sure we can mandate it of scholars like us.

One can also conduct documentary analysis by examining documents surrounding the document in question such as reports written by curriculum committees about why a curriculum was adopted, the notes students take, and the papers they write in classes where the new cosmologies are discussed. Newsletters, blog posts, and other informal writings about the texts containing the new cosmologies may also be informative. Analyzing these types of texts could help us ascertain how the document works aside from the content of its ideas. Specifically, examining such documents could help us assess whether Sideris's concerns are being realized among the audience for the new cosmologies or whether recipients prioritize nonanthropocentric values, resolve tensions about the place of religion in the cosmologies, or otherwise challenge the trends of the leaders of the new cosmology movement. Examining such literature may enable those of us used to textual studies to draw on our strengths and yet also consider the lay perspective and the life of the documents in question beyond their content.

Yet I recognize that obtaining access to many of these secondary texts may be prohibitively difficult. Indeed, it may require so much time and so many contacts in communities that one may be so far down the road to ethnography that one might as well do that. That is, except for the fact that we live in the internet age. We happen to have an amazing source of popular responses to books—Amazon and Goodreads book reviews. These large data sets allow us to assess the impact of the new cosmologies on people who are actually engaging with the books but are not necessarily leaders of the movement. Indeed, researchers have begun to study popular book reviews, particularly on Amazon, recognizing that they can be rich sources

of popular opinion (Reagle 2015, 37–47; Allington 2016, 258; Kousha and Thelwall 2016). For instance, Paul C. Gutjahr's research on Amazon reviews of the Left Behind series indicates that evangelical Christians may come to see popular novels as sacred texts, an indication that reviews can shed significant light on the popular consecration of ideas and texts (Gutjahr 2002). What else might be revealed about the impact of new cosmologies if we examine reviews?

DOCUMENTARY ANALYSIS OF REVIEWS OF NEW COSMOLOGIES

On October 19–21, 2018, amateur book and film reviews about new cosmology books and a film were collected from widely popular sites of reviews including Amazon.com, Goodreads.com, and IMDb.com.¹ These sites are free and easily accessible to the public. One does not need an account to read reviews. Reviewers intended for their writing to help others learn about the books or film in question. Thus, many ethical concerns about using internet materials are bypassed with these sources.

In my analysis below, I look for broad patterns in reviews as well as the range of their perspectives to understand how the texts affect the public. I take the reviews at face value, rather than as the work of trolls, satirists, or the competition hoping to undercut an author's sales. Certainly, reviews may be written for a variety of reasons but the reviews I studied seemed to be genuine comments made by readers of these new cosmologies rather than the over-the-top humor of most satiric reviews (Filatova 2012). This, combined with the clear trends in reviews as discussed below, indicates that popular reviews can tell us something significant about the influence of new cosmology media on its followers, or at least those who write reviews. (For a longer discussion of the trustworthiness of internet comments and the ethics of using them as a research source see Fredericks 2014, 66–67).

This study will, of course, be limited by the fact that only computer-literate people with time to post and who value communication about texts write reviews. Reviews will not give us a sense of the overall impact or scale of the new cosmology movement; rather, this research will give us a sense of the types of influence the new cosmologies have on those who are significantly exposed to them and interested enough to report their reactions to the texts. While the sample is of a self-selecting group, it will include some of those most affected by the texts, exactly those we want to study in order to evaluate if Sideris's fears are manifest in the audience of the new cosmologists.

My analysis examined reviews of Michael Dowd's *Thank God for Evolution, The Sacred Depths of Nature* by Ursula Goodenough, *The Universe Story* by Brian Thomas Swimme and Thomas Berry, and *Journey of the Universe*, both book and film by Swimme and Mary Evelyn Tucker, because these books and this film had a substantial number of reviews (at

least 50 across the platforms, up to 194) and were written by authors at the heart of Sideris's argument (Swimme and Berry 1992; Goodenough 1994; Dowd 2009; Kennard and Northcutt 2011; Swimme and Tucker 2011). Reviews ranged from a few words to three pages of single-spaced text. Tables 1 and 2 summarize the number of ratings of these texts. Additionally, there were 21 user reviews of *Journey of the Universe* on IMDb.com. Almost all of these written reviews are accompanied by a ranking from 10 stars (high) to 1 star (low). Seventeen reviews are 10 stars, 2 are 9 stars, one is 7 stars, and one did not have a star ranking. On Goodreads, we see that many more individuals (at least 169 and up to 272) rated a book or film using a 1 to 5 star ranking than gave a textual review. For instance, Goodenough's *The Sacred Depths of Nature* has 39 reviews but 283 rankings. As rankings and reviews are both overwhelmingly positive, the large number of rankings provides suggests that the general themes found in the written reviews are likely shared by more readers.

Overall, the reviews and rankings were overwhelmingly positive. Taking 4- and 5-star reviews as positive, 3 stars as neutral, and 2- and 1-star reviews as negative, only one text, Dowd's, had less than 70 percent positive. Swimme's *The Universe Story* had the next lowest positive ranking with 73% positive and 13 percent negative. The rest had over 83 percent positive rankings. Many reasons for the widespread positive reaction to these new cosmologies may exist. The texts may be overwhelmingly influential, resonant, and inspiring. The positive nature of the reviews may also arise from the fact that when texts are written for a popular audience, readers are likely already sympathetic to the text. Indeed, 80 percent of all Amazon book reviews are positive (Reagle 2015, 65; Kousha and Thelwall 2016, 569). Unless an author is highly controversial (e.g., Dawkins), potential readers who fundamentally disagree with the author are probably less likely to read and review the author's work.

I began my analysis of the written reviews by coding according to particular traits that concern Sideris, including (1) sacralizing of the texts or consecrating science as signaled by tone, word choice, and content of the reviews; (2) the form of knowledge valued by the author; (3) anthropocentrism as signaled by a focus on human achievement, science, and scientists over the natural world, a focus on abstract science, or on explicitly valuing humans over the natural world; and (4) if the reviewers reported engaged with the natural world before, during, or after reading. I also looked for actions that the reviewers described taking in response to the new cosmologies; signals of religious affiliation; and whether the text was confirming, supplementing, or changing previously held beliefs of the reader. Additionally, I coded reviews as positive or negative along with justifications for these categorizations. After reading some reviews, I expanded my categories to track whether reviewers were affiliated with the new cosmology movement by working for or with its major proponents

 Table 1. Reviews and rankings of new cosmologies books

						Per	Percent rank per number of stars	per nun	ber of st	ars
Author	Title	Website	# of reviews	# of rankings	# of reviews # of rankings Average ranking 5 Stars 4 Stars 3 Stars 2 Stars 1 Star	5 Stars	4 Stars	3 Stars	2 Stars	1 Star
Dowd	Thank God for Evolution	Amazon	139	139	3.9	61	8	10	10	11
	,	Goodreads	55	312	3.57	26	29	24	13	9
Goodenough	The Sacred Depths of Nature	Amazon	49	49	4.2	74	10	9	4	9
)	1	Goodreads	39	283	3.86	31	33	25	∞	_
Swimme & Tucker	Journey of Universe (book)	Amazon	98	98	4.7	90	5	7	7	_
		Goodreads	29	301	3.93	33	37	19	ς	_
Swimme	The Universe Story	Amazon	29	29	4	69	4	14	10	8
		Goodreads	21	190	4.24	53	27	12	2	4

Note: Data from Amazon.com and Goodreads.com.

Website		Number of reviews	Average rating	Percent five stars		Percent three stars	Percent two stars	Percent one star
Amazon		78	3.5	45	14	14	8	19
Amazon	Video DVD	56	4.7	86	11	0	3	0

Table 2. Amazon reviews of Journey of the Universe film

or had previous contact with the movement such as reading its books or attending lectures. I then applied these new categories to all reviews.

In the analysis below, I will treat negative and positive reviews separately while focusing on the positive. I do so because Sideris is interested in how readers will be influenced by the new cosmologies and I presume that readers who write positive reviews will be more influenced than those who are negative reviewers. Focusing on the positive reviews also gives more weight to the largest category of reviews. It is helpful, however, to begin with the negative in order to avoid overselling the influence of the new cosmologies.

Reviews that were wholly or partly negative fell into several categories across all texts: First, many negative reviewers focused on the writing or presentation style's perceived flaws. Most commonly, the books were deemed (1) too long, difficult, or boring;² (2) too short³ or shallow⁴ or inaccurate about scientific ideas;⁵ (3) not any better than alternatives as Carl Sagan's *Cosmos*;⁶ or (4) too poetic for a book about science.⁷

The blend of science and religion found in the new cosmologies was the most criticized part of these texts' content. An insufficient emphasis on science was problematic for many reviewers: "Too quasi-spiritual and pseudo-philosophical and not scientific enough," "Short on science, heavy on 'woo." Robert L. Bartz claimed that Goodenough "toys around with 'beliefs' as a crutch for what can't be explained by science." Other critiques in this vein, especially about Dowd's text, were unwilling to consider that there is anything beneficial about religion; science should win the war, so Dowd's attempt to harmonize them is wrong. Conversely, some reviewers were also concerned that the texts were not religious or Christian enough, or did not engage with enough versions of Christianity or enough religions. Others critiqued the new cosmologies for having religious or historical mistakes, a complaint most often seen with respect to Dowd's text, the text most clearly associated with Christianity.

A few reviewers more directly addressed themes related to Sideris's concerns. For instance, compared to reviewers of other texts, reviewers of *Journey of the Universe* critiqued it from turning to environmental ethics and advocacy at the end. ¹⁶ "I hate it when a documentary turns into a

lecture on how humans are evil and killing the planet and everything. I didn't come here to be scolded."17 "Degenerates into the modern-day propaganda we now hear every day about how humans are destroying the Earth. Nothing more than a resurrection of and the worship of Gaia."18 The texts that "essentially proselytize about how humans are destroying our ecological system" do not seem persuasive for people that are not already on board or were looking for another kind of book. 19 For example, a reviewer who uses the designation "The Professor" stated that he or she "did not buy a book on Darwinism to get a pep talk about . . . global warming, the ecology movement, and such," though they stated that "I am concerned about these topics as well."20 These readers remind us that not all readers are swayed by the anthropocentric tendencies of the new cosmologists. Some readers are already so wary of environmentalism that the anthropocentric environmental tendencies of these texts are too radically environmental for them. Others, as described above, are so unconvinced of the mythopoetic nature of the new cosmologies that they are unlikely to follow any of the texts' environmental recommendations, let alone those that worry Sideris (though the reviewers may of course still be anthropocentrists). Sideris is unlikely to find these conclusions' reasoning reassuring given her environmental aims.

Once in a while, positive reviewers do critique the texts for being anthropocentric.²¹ Others critique the authors for being hypocritical about their environmental agenda as they are less than perfect environmentalists.²² This group of reviewers, while a small proportion, is important because it demonstrates that readers do not all blindly follow the implicit or explicit messages of texts. Not all positive reviewers will reify the texts, authors, or science of the new cosmologies.

Several reviewers had nuanced thoughts about the texts' engagement with religion, particularly the tension Sideris notices between universal religious claims, critiques of religion, and claims that the cosmology will work with all religions. One wrote that authors cannot "harmonize all belief systems" because they contradict each other and thus an author will always prioritize one over others. Authorial attitude toward religion also concerned reviewers: "I also found the almost condescending at times tone toward traditional religious thought (often times called 'flat Earth' religion) to be tiresome. Paran's review of Dowd's book on Goodreads echoes Sideris's concerns that many new cosmologists do not engage sufficiently with scholarly sources about religion. While these observations are relatively few and far between, they illustrate that at least some popular readers are wary of universal religious projects or the critique of existing religions.

In short, even though I do not expect casual readers to study the new cosmologies with the same depth that Sideris does, several negative reviewers shared Sideris's major concerns. This resonance may be more significant than their numbers indicate since many reviewers are already on board with the new cosmology movement and thus may be slower to critique. These nuanced negative reviews also demonstrate the range of responses to new cosmologies among the general public: even those who support the new cosmologies are not all swayed by the parts of these texts that Sideris fears. Sideris's concerns of a consecrated science coupled with anthropocentric attitudes and ambiguous at best relationships to traditional religion are more fully supported by the positive reviews as many, though certainly not all, of them exhibit signals of these tendencies.

One of the most striking things about the positive reviews and rankings is just how many of them there are, as noted in Tables 1 and 2. Written reviews reveal that for many readers the texts are not just great books, they are "wonderful," "26 "awe-inspiring," 27 or "among the three or four most moving books I have ever read." 28 In contrast to the negative reviews, positive reviewers frequently praised the poetic language of the new cosmology texts: "the words she offers bring tears to this reader's eyes in their spare beauty." 29 They also noted that new cosmologies were "readable to a lay person" or that the blend of religion and science was well done. 31

Many positive reviewers clearly see the new cosmologies as sacred. New cosmologies were described as "a truly sacred text," and "wisdom literature for me." Amy Drew wrote, "As someone who identifies as a religious naturalist, I consider this book to be canon; it is one book of my bible." The wisdom contained in this book needs to be disseminated and discussed much like the sacred scriptures of the world's religions." Others describe being transformed by the text in religious ways: "My eyes, mind, and heart are opened." The wisdom contained in this book needs to be disseminated and discussed much like the sacred scriptures of the world's religions."

Such experiences were often described as a part of a much longer spiritual journey. Many reviewers reported coming to the text in question after hearing the author speak, reading a similar book, or participating in a class or discussion group, signals that they were open to such ideas.³⁷ Indeed, around twenty positive reviewers, particularly those who self-identified as naturalists, noted that the texts put pieces together that they had been trying to do on their own for years.³⁸ For instance, one wrote "I finally found my creation story."³⁹

Indeed, many positive reviewers of new cosmology texts often described the process of reading them as one might expect one to approach a sacred text. "It is a great place to start a journey of understanding Cosmology. I invite spiritual seekers to read this book and use it to add to their spiritual practice of reflecting and mindful respect for our earth and Universe." Devotion to the texts among the most ardent reviewers is extreme. About two dozen reviewers reported reading or watching the text two, three, or more times already, sometimes reading daily for weeks or rereading over ten or more years, soften with plans to reread much more in the future. This repetition was deemed necessary to savor the text, get its

message, and/or be transformed. "It [Journey of the Universe] was one that I slowly read, either in between classes or on a park bench, just to freshen up my mind and reorient myself and my being." Reviewers often approach reading the new cosmologies as a meditative practice aided by the format of the books, especially Goodenough's *The Sacred Depths of Nature*. 46 Many are compelled to continue their devotion after reading—through other books, discussions, lectures, films, and so on and by sharing their experiences with others. 47

Reviewers recommend texts to particular groups, that is, students,⁴⁸ or for everyone.⁴⁹ Many have begun to disseminate the texts, or articulated plans to do so whether by starting discussion groups, or recommending or giving the book to their religious leaders, family, or many others.⁵⁰ In other words, the texts are doing much more than conveying ideas. They are inciting their readers to do many things with them: to write reviews, study, venerate, and spread the good news.

Professors, Sunday School instructors, and other teachers speak of their intention to use it in their classes, or past experiences in doing so.⁵¹ Indeed, multiple people report learning of the new cosmologies, especially Journey of the Universe and The Universe Story, in college courses or adult religious education.⁵² When professors write about their intent to or actual use of the book or film, it may be to introduce "ethical issues about the environment," "to encourage authentic hope along with the burden of truth [about anthropocentric environmental degradation],"53 or to "truly inspire our students to understand and feel deeply within themselves how their own reality is an indispensable and sacred part of the whole cosmos."54 A teacher notes that ideas of the new cosmologies need to be unpacked in the classroom, "depending on what you hope students get out of it," but most often instructors mention the texts in conjunction with encouraging particular ideas without mentioning the need to assess them critically.⁵⁶ While the nature of a popular book review may not be the place for such contextualization, the breathless praise of the texts by many who teach or aim to teach them makes me think that the texts are being endorsed in class. Sideris would be concerned about this advocacy.

The fervor of the positive reviews indicates that there is a popular following of the new cosmologies. What is so inspirational for people about these texts? Do followers of the new cosmologies focus on abstract knowledge, science, and scientists more than encounters with the natural world as Sideris fears? How do they interact with the new cosmologies' claims to universalism and complicated relation to religion?

Many reviewers emphasized the knowledge they gained by reading the texts or that the texts were "thought-provoking"⁵⁷ or "mind expanding."⁵⁸ Sideris, of course, is quite concerned that new cosmologies promote wonder about knowledge, particularly scientific knowledge, over experience of and in nature.⁵⁹ Reviewers do frequently prioritize abstract knowledge

and scientists. Many are keen to establish that the science is right, true knowledge. They praise texts for being about "the REAL origins of life, for theists and non-theists alike." This approach [of *Journey of the Universe*] makes for a very a succinct and enjoyable story that has all the makings of a great myth... except it is real!"61 "I've sent it to my granddaughters as a primary source to acquaint them with how things really work."62 Indeed, all the new cosmology texts I studied had reviews expressing devotion or awe about the author and science. 63 Some found a spiritual message coming from a scientist particularly powerful, 64 others focused on the power of science, the ingenuity of scientists in general, or a particular scientist, especially Goodenough and Swimme. For instance, Benjamin Godfrey writes "[Goodenough's] view of Nature as sacred has brought to the front and center the notion that the emotional aspects of religion should include a reverence and awe of nature, including the laws of nature studied and identified by scientists."65 Reviewers also appealed to scientific authority when they mentioned positive endorsements by scientists on the back of the books as significant evidence of the quality of the book. 66 Thus, it is not just that the new myths are being sacralized, but rather that at least for some readers, science and scientists are also reified. As Sideris is particularly concerned for what this sacaralization will mean for environmental ethics, let us turn to discussions of the environment in reviews.

Many reviews, especially of *Journey of the Universe* and *The Universe Story*, highlighted the books' arguments about the need for humans to protect and/or stop destroying the environment. 67 "It [the journey film] is also a call to step into your own greatness by working to cocreate a just, healthy, beautiful, and sustainably life-giving future for humanity and the larger body of life."68 When reviewers are detailed on this point they often assume, as in *Journey of the Universe*, that if the story is right, right action will certainly, necessarily follow. For instance, Abner Rosenweig wrote that "if we could all learn to contemplate this cosmic perspective more often, the planet would be a much healthier place." Some reviews, particularly of *Journey* of the Universe, adopt ideas from the text about human responsibility and power to shape the unfolding of the universe for good as a culmination of evolution to date. 70 I saw few reviews that that questioned this power or argued that it should be accompanied by humility, concerns of Sideris. A rare critic of human power wrote "the author came off as a bit arrogant when she called humans the dominant species because, we can think about our world in deep terms. . . . Still, she was right to say that we need to take care of them [animals])."71

Although many reviews do align with Sideris's fears that the new cosmologies promote anthropocentrism by sacralizing science, scientists, and human power, a substantial number, especially in response to *Journey of the Universe* and *The Universe Story*, connect these texts to the reviewers'

direct experience of nature. Three major patterns exist. First, when people write about awe or wonder in their reviews, it is often directly attributed to the universe, nature, or a particular element in nature as well as or instead of science or scientists.⁷² "I was extremely impressed with the cinematography, which draws you into the beauty of our universe and reminds us how amazing, expansive and complex life is." Second, a few reviewers maintain that descriptions of the natural world in the texts or images of nature in the Journey of the Universe film remind and reawaken direct experience of nature that the reviewer has had in the past. Marion Foerster wrote that *Journey of the Universe* "has helped me regain the wonder I felt as a child exploring the life around me with my field geologist father."⁷⁴ Finally, some reviewers talk about reading and meditating on the texts while in "nature," 75 on a park bench, 76 or while watering the garden.⁷⁷ One suggested to readers: "Don't just read the book. Experience it and integrate it into your everyday life. Read it while sitting under a tree or by campfire or flashlight sitting under the stars with friends." For these readers, the texts led to transformative experiences of the natural world, seemingly the types of genuine wonder that Sideris advocates.

We also see a varied response among positive reviews which consider the new cosmologies' relationship to religion. Some find the texts of the new cosmologists appropriately respectful and/or open to many religions: ⁷⁹ "Journey of the Universe plaits scientific knowledge together with wise insights from the world's diverse cultures about the unfolding natural world and humans within it." Others, however, see in the new cosmology, especially in Goodenough's work, a replacement for traditional religion. For instance, Connie C. Barlow wrote in her review: a "new wisdom tradition expressed in the time-tested artistry of poems and psalms will have emerged for those, like Goodenough, on the path of religious naturalism." 81

In sum, several trends can be seen among reviewers who view the new cosmologies positively. Reviewers are inspired by the text as evidenced by descriptions of their strong affective and intellectual reactions. The majority corroborates Sideris's concerns about the sacralization of science over encounters with the natural world, but some reviews highlight or encourage directly valuing and experiencing nature. Responses to the new cosmologies are varied, complicated, and may depart significantly from the main message of the text. More research is needed to understand how readers of the new cosmologies actually engage with the texts and how the texts shape their worldview and practices.

CONNECTION TO RELIGION AND SCIENCE

This brings me to my final section of the article, a reflection on what Sideris's text and my suggested extension of her project bring to the study

of religion and science. As I have written elsewhere with Lea F. Schweitz, I am concerned that science and religion scholars often overemphasize textual analysis and authoritative religious practices or leaders or scientific experts over religious practices and the experiences, beliefs, practices, and informal documents of laypeople, and thus their writing yields a limited picture of religion (Fredericks and Schweitz 2015). Sideris branches out from classic work in religion and science as she examines the work of new cosmologists who are sacralizing science rather than traditional religion. In this way, her work is more in keeping with developments in the study of religion and nature who argue that movements not traditionally counted as religious, such as radical environmentalists, may be religious (Taylor 2010). Additionally, Sideris's advocacy of genuine wonder, dependent as it is on personal experience of the natural world, is a more democratic, lay person's approach than what we often see in religion and science scholarship. As such, Consecrating Science can serve as a model of how to consider the range of religious phenomena in more of its diversity.

Yet, as I have argued above, considering lay beliefs and practices in more depth could add significantly to our scholarship. Documentary analysis can help flesh out these studies, especially for those of us trained in textual analysis. I encourage scholars of religion and science to consider how the explosion of informal and publicly available texts available online could aid understanding of many issues we study. It would of course, be good to supplement this work with research on practices, material culture, and other dimensions of religious life. Doing so is particularly important because the modes of documentary analysis suggested here almost certainly focus on people with temporal, financial, and technical privilege that gives them time to read, reflect, and write reviews in online spaces. Thus, a challenge of this project, like much religion and science, is to consider not just people of privilege, but all people.

While *Consecrating Science* broadens the scope of religion and science scholarship, Sideris does still focus on texts, abstract ideas, and intellectual leaders in both her critical and constructive work. Certainly, this type of analysis is important, and critical given the shape of the new cosmology movement, but for someone who is as committed to the experience of nature as she is, it is curious that she almost always writes about it secondhand, through the words and descriptions of Carson, Eiseley, Dillard, and others. As wary of univocal stories as she is, her work could benefit from more discussion of the *practices* of genuine compatibilist wonder in addition to her rich epistemological arguments (Sideris 2017, 169–96). Particularly, it would be helpful to see how multiple stories can inform our experience, study of, and care for the natural world. In the last pages of her final chapter, Sideris looks to narratives of Indigenous activists who "are actively engaged in creating new religious expressions, even as they draw on ancient beliefs and customs" (Sideris 2017, 201) in order to support her

case that a universal story as advocated by the new cosmologists is problematic. I wish she had discussed in more detail how multiple stories can be recognized, celebrated, and used to inform beliefs and practices. Sideris argues that Indigenous stories are those that "only [Indigenous people] can tell" (Sideris 2017, 201). Can the rest of us learn anything from such stories? Which stories can inform any one group? What happens when people are themselves multicultural and/or live side by side with neighbors of other traditions?

Here, Sideris may be helped by the four-part method of biocultural conservation, "Ecotourism with a Hand Lens," developed by Ricardo Rozzi and his colleagues (Goffinet et al. 2012, 24). In this method, research, communication about research using evocative metaphors, direct experience of the natural world linked with ethics, and "in situ conservation" each inform the other. Alongside cutting-edge biological research, Rozzi and colleagues study traditional ecological knowledge, traditional uses for biota, and the myths about places, biota, and ecosystems (Rozzi et al. 2008, 336; Goffinet et al. 2012, 64; Rozzi et al. 2012). For instance, they have extensively studied the mosses and lichens of Cape Horn which they describe as "miniature forests," given what they look like when studied with a magnifying glass. They certainly wonder at the beauty, complexity, and otherness of these biota and their ecosystems (Goffinet et al. 2012). Rozzi and colleagues have also simultaneously studied the woodpeckers of Cape Horn and Yagan myths about birds. Educational campaigns that link all four parts of their method help locals, scientists, and tourists appreciate and work to conserve biocultural diversity. This method lifts up local stories while recognizing the importance of story, metaphor, and ethics to scientific research (Rozzi et al. 2008, 325-26). While space constraints prevent me from digging deeper, it seems that Rozzi's method models the compatibilist wonder Sideris desires while giving more concrete examples to move beyond the epistemological arguments that Sideris emphasizes in her final, constructive chapter.

Rozzi's methods also push people to consider what is lost due to the homogenization of global human culture. This leads me to one final place where Sideris's work, and most in religion and science, could be expanded. Namely, she could think more about ecosystems devastated by humans and incredible injustices experienced by the most vulnerable human communities. In these settings, is genuine wonder still the aim? Does it have a different caliber here? Exploring such questions would help Sideris turn away from the study of elite knowledge and experience as she wishes. Raising these questions would also help us move studies of religion and science to a fuller consideration of the human experience. Consecrating Science is a major step along this path; many more are left to come.

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NOTES

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