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Science and the Religious Rhetorics of the Ineffable: A Comparison Between Two *Cosmoses*

A still more glorious dawn awaits,
not a sunrise, but a galaxy rise,
a morning filled with 400 billion suns –
the rising of the milky way.

– Carl Sagan (“The Lives of Stars”)

1. Introduction

In 2009, John Boswell, A.K.A. melodysheep (2009a), released his first musical remix on YouTube, “A Glorious Dawn,” featuring Carl Sagan in clips from the 1980 documentary *Cosmos*. Boswell adeptly loops Sagan’s imitation of a bird song to create the video’s initial rhythm and focuses on the above quote as the “chorus” of the song. By clipping specific moments within the documentary, melodysheep highlights both Sagan’s awe-inspiring vision of the universe and his concern for humanity and its relationship with the environment – “because the sky calls to us, if we do not destroy ourselves” (2:05). For Sagan, our future depends on science, or “how well we understand this cosmos, in which we float like a mote of dust” (1:10). Sagan’s vision of hope and interconnectedness relies on a sense of awe that goes beyond scientific formulae and postulates. Throughout the music video, we see Sagan gazing out into the universe with a look akin to religious ecstasy, as he includes his audience into his witness by using first person plural. Sagan’s moral vision does not come directly from postulated truth, but from a personal relationship with the cosmos that he has developed through science – an experience he hopes to share with the rest of the world. Melodysheep does an excellent job capturing this aspect of Sagan’s philosophy.

Since scholars of rhetoric have begun identifying persuasive elements of scientific discourse fueled by Thomas Kuhn’s revolutionary look at the social construction of science (Bazerman 1988; Ceccarelli 2001; Fahnestock 1999; Kuhn 1962; Latour and Wolgar 1979), identifying religious elements of public scientists like Carl Sagan is nothing new. In his article, “The Priestly Voice,” Thomas Lessl

(1989) identifies religious rhetorics by distinguishing between two types of discourse, that of the priest and that of the bard. In a priestly manner, scientific thinkers like Carl Sagan and Neil deGrasse Tyson, mediate “between two cultures – that of the common individual and that of an elite institution,” holding firmly to an elite worldview while interpreting it to the masses (187). For Lessl, this represents the primary role of religious discourse, or the priestly voice, to influence common culture with knowledge developed separately by experts, whether they be scientists, theologians, or bishops. These treatments of scientific discourse primarily address logos – or how rationality works among scientists and their audiences. Lessl fails to point out the non-rational elements of Sagan’s documentary that are meant to communicate an experience that cannot be wholly contained by the mind or captured by rational discourse.

Though the recent remake of *Cosmos*, spear-headed by Neil deGrasse Tyson and Seth MacFarlane, attempts to recreate Sagan’s personal voyage in new ways, a close comparison will show an emphasis of the rational over this experience of wonder and connectedness. Using Rudolph Otto’s ([1923] 2013) *The Idea of the Holy*, I will show the essential role this ineffable experience plays in Sagan’s original documentary. Though Tyson’s version attempts to recreate this experience with new ideas, discoveries, and special effects, he tends to emphasize the primacy of the rational mind over emotional or spiritual ways of knowing. But this article will go further and argue that non-rational forms of experience and knowledge are essential to the rationality, or propositional nature, of both science and religion. The ineffable experience, and the religious rhetorics it deploys, are not simply methods of persuasion, but essential, innovative rhetorics that drive scientific exploration and community engagement. Analyzing non-rational and rational elements in both religious and scientific discourse can help rhetors negotiate points of discord without reifying the polarization between science and religion, building bonds of identification across propositional divides.

2. Beyond the Exchange Between Terms

The divide between religion and science has arguably widened in the twenty-first century, as some religious groups strengthen their stance toward political issues like creationism, abortion, and the environment. In this context, religion and science are often seen as distinct “objects” that have stable boundaries. But religion and science bleed together, overlap, and inform each other. For example, the most recent quest for the Higgs boson has often been framed as the search for the “God particle” or a single source – or fundamental unit of reality – that closely relates to the Western, mostly Judeo-Christian, notion of God. In his book

Rhetoric of Religion, Kenneth Burke (1970) calls this an exchange of terms between sacred and secular knowledge: “What we say about words in the empirical realm, will bear a notable likeness to what we say about God, in theology” (Burke 1970, 15-16). In science, Thomas Lessl (1993) calls this a “tendency towards religiosity in scientific symbolization” that represents “a special kind of symbolic transformation that may occur in any sector of the marketplace” (127-128). Even though scientists may not “believe” in the supernatural or in religion, the world and language that describe those “realities” still very much exist and become culturally entwined as scientists make sense of new discoveries or ideas.

In the 1980 version of *Cosmos* (1980a), Sagan uses forms of Hindu logic to describe and think through how humanity relates to a scientific vision of the cosmos. In the introduction, he famously describes humanity as “star-stuff,” because the cosmos is within us – “a way for the cosmos to know itself.” In many forms of Hinduism, Brahman, or the Divine Ground, is the essence of all forms of existence, and consciousness emerged into the world so that Brahman can know itself. This is often called “cosmic-consciousness.” In Episode 10 (1980c), Sagan describes how Hindu philosophy coincides with a cyclic timeline of the universe – “no doubt by accident.” He uses the life/death cycle of the Hindu God, Brahman, to explain the theory that the universe contracts and expands:

There is the deep and appealing notion that the universe is but the dream of the god who after 100 Brahma years dissolves himself into a dreamless sleep and the universe dissolves with him. Until, after another Brahma century, he stirs recomposes himself and begins again to dream the great cosmic lotus dream.

Later, Sagan reinforces this link using a well-known statue depicting the cosmic dance of Shiva with a drum in one hand, symbolizing the sound of creation, and a flame in the other, symbolizing the death of the universe. Sagan sees the cultural logics of religions as a “premonition of modern astronomical ideas,” but from a rhetorical point of view, these religious rhetorics coexist with scientific discourses.

Even so, the rational and propositional nature of many religious and scientific rhetorics can often hide these intertwined relationships. Propositional rhetoric determines the quality of a given belief system by the “truth” of its propositions. During the Enlightenment, as science gained in prestige, religion slowly moved under a scientific screen and was increasingly deployed as an intellectual belief expressed as a series of propositions (Dixon 2010; Harrison 2010; Smith 1991). According to Peter Harrison and other scholars, the construction of religion as a category began with the Enlightenment’s attempt to judge and compare different faiths, primarily by rationally testing propositions through a “conceptual grid” (Dixon 2010, 31). In other words, the rational and propositional aspect

of religious thought is heavily influenced by scientific discourse, just as scientific thought is often influenced by religious discourse. According to many at that time, Christianity became the religion that best withstood these rigorous tests, but as science developed into its own discipline, or set of practices, scientists soon attained the authority once held by religious leaders. Because many kinds of Christianity still judge validity via rational examination, science's undermining of these propositions creates what we interpret now as the conflict between science and religion. For example, if the creation story is not rational in a scientific sense, then Christianity is ultimately untenable, because the Enlightenment has established that the reliability of religion is mostly founded on its literal or scientific truth. Within this frame, religious or mystical experience is not a defining aspect of religion, but rather how that experience becomes rationalized.

When comparing the two versions of *Cosmos*, Neil deGrasse Tyson's version clearly relies on this rational test more so than Sagan's version, which relies on a kind of mystical experience that he shares with his audience. Though Tyson is very conversational, the new version of *Cosmos* (2014a) makes a subtle shift from a kind of personal witness or testimony to a direct argument that is illustrated by a visual adventure "with many heroes." Within a "Personal Voyage" (the subtitle to Sagan's version), Sagan positions himself as a witness, hoping to help us see the universe in new ways. The subtitle of Neil deGrasse Tyson's version is "A Spacetime Odyssey," which makes no reference to the personal "I" that is so prevalent in Sagan's documentary. In fact, "Odyssey" implies not so much a voyage of discovery as an adventure, positioning Tyson and his fellow scientists from history more as heroes than witnesses. Tyson is not communicating an experience so much as he is arguing for the primacy of scientific thought.

Consequently, before exploring the "rhetorics of the ineffable," a distinction must be made between persuasive speech meant to communicate a proposition and persuasive speech meant to invoke an experience. Blurring these distinctions is one reason why defining religious rhetorics becomes so difficult. Studies in religious rhetoric often reify the boundaries between science and religion by focusing on propositional statements about God or the Divine and persuasive techniques in sermons, biblical texts, or persuasive genres involving the Divine. For example, Laurent Pernet's (2006) definition of religious rhetoric is mostly content-related: "What we call religious discourse consists, first of all, in speaking about the gods," limiting religious rhetoric to mostly traditional Western forms of spirituality that often rely on propositions and the notion of a person-like deities (233). To identify religious rhetorics in evolutionary thought, Thomas Lessl (1993) has for several decades defined religious rhetorics as metaphorical, symbolic speech that is irreducible to any literal reference and points to metaphysical referents that can be

understood, but not defined (127). Though these approaches nicely illustrate how science relies on rhetorical techniques beyond pure *logos*, such scholarship also tends to maintain a division between religion and science because they focus on proposition rather than experience.

In an early comparative religion book, *The Idea of the Holy*, Rudolph Otto ([1923] 2013) attempts to define what he sees as “a category of interpretation and valuation peculiar to the sphere of religion” – that is the idea of the holy (loc. 71). For Otto, anything that can be thought, contained by the mind, or made into propositions is rational (loc. 19). Religion has rationality, just as science, when “the nature of God is thus thought of by analogy with our human nature of reason and personality” (loc. 14). In other words, when we propose to explain the transcendent, whether it be God or the cosmos, we are making rational propositions about the non-rational – or that which cannot be wholly contained by discourse or the mind. Otto uses the term *ineffable* to stand for that which “completely eludes apprehension in terms of concepts” (loc. 74). The ineffable, then, “cannot, strictly speaking, be taught, it can only be evoked, awakened in the mind; as everything that comes ‘of the spirit’ must be awakened” (loc. 109). Modern (Western) religions tend to rationalize and moralize the ineffable experience “with ever increasing momentum” (loc. 1079). Yet, it is not possible to strip religion entirely of the “holy” or ineffable, since it is the core of the religious experience. Perhaps, the same can be said of science. The motivation for scientific exploration may not necessarily be to expand the mind or to find “truth.” Rather, the scientific endeavor itself emerges from an attitude of wonder and amazement that exists at the core of all human experience – an experience that connects both religion and science. Though Sagan cherishes scientific rationality, this is not the foundation of his moral vision. Sagan consistently relies on the ineffable experience to make space for a new moral vision that can persuade his audience to take action both environmentally and socially.

3. Sagan and the Ineffable Cosmos

The rhetoricity of *Cosmos* and its religious use of symbols has already been established in Thomas Lessl’s (1985) article, “Science and the Sacred *Cosmos*.” In this article, Lessl notes that this “intermingling of scientific and cultural symbols” creates discourse more akin to religion than science. Lessl’s primary point is that Sagan uses religious rhetorics to propagate a moral and political agenda that is not scientific in the purest sense: “The familiar body of scientific learning that it references simultaneously serves as a metaphor for a historical vision of progress that is imbued with more traditional notions of value, purpose, and even design”

(2014, 12). The subtitle “Personal Voyage” comes to mean both a “cosmic evolution” and “historical progress.” Beneath these rhetorical moves, though, is a more “personal” aspect of this voyage, which ties to the ineffable. Sagan’s documentary is not simply the rhetorical use of religious discourse; it is a religious experience by Rudolph Otto’s definition.

Despite Otto’s focus on religion, the categories he develops to identify the ineffable are useful when examining Sagan’s *Cosmos*. For Otto, the ineffable experience cannot be categorized entirely as rational or non-rational, but must be considered as a combination of both – or the ground from which both experiences emerge (loc. 1593). Otto breaks down the ineffable experience into four elements: (1). a “creature-consciousness” or a sense of insufficiency or impotence (loc. 128) (2). in relation to something felt as objective or outside the self (loc. 156) (3) that is hidden or beyond conception (loc. 175), (4) inspiring awe and wonder (loc. 241). Ultimately, the ineffable produces identification “with Something that is at once absolutely supreme in power and reality and wholly non-rational,” lying outside our ability to rationalize (loc. 317). Such an identification can just as easily be the cosmos as God. Otto saw the rational and non-rational not as binary oppositions, but as necessary complements that are interwoven within each other (loc. 1476). In other words, the rational elements of religion are made more profound by permeating them with the non-rational, and disregarding these ineffable experiences ultimately impoverishes the rationality of religion. This very same relationship between the rational and the non-rational can be found in both versions of *Cosmos*, but in varying degrees.

The ineffable experience is key to understanding Sagan’s body of work. In his last book before his death, Sagan (1996) asserts the necessity of the spiritual within science:

In its encounter with Nature, science invariably elicits a sense of reverence and awe. The very act of understanding is a celebration of joining, merging, even if on a very modest scale, with the magnificence of the *Cosmos*. And cumulative worldwide build-up of knowledge over time converts science into something a little short of transnational, trans-generational meta-mind. (loc. 610)

This is the “personal voyage” referred to by Sagan’s subtitle of *Cosmos*, and fulfills all of Otto’s categories for the holy experience. First and foremost, our experience of the *Cosmos* creates both a sense of awe and insufficiency (or “creature-consciousness”): “When we recognize our place in an immensity of light years and in the passage of ages, when we grasp the intricacy, beauty and subtlety of life, then that soaring feeling, that sense of elation and humility combined, is surely spiritual” (loc. 609). This sense of “elation and humility” references something outside of the self, but produces a deep sense of identification or oneness. Though

Sagan certainly builds on this spiritual experience to moralize and rationalize the scientific view of the cosmos, this sense of the holy is not extraneous to Sagan's enterprise. It is not just there as a persuasive technique for the unscientific masses or to identify non-scientists with the scientific enterprise, as argued by Lessl (1985, 177). Rather, Sagan's rational approach to the universe is incomplete without this ineffable experience ... perhaps not even possible.

In the original 1980 version of *Cosmos*, Carl Sagan uses this cosmic bond not only to motivate interest in science, but to construct a worldview that invokes humanity's cooperation, peace, and care for the earth's natural environment. Much like many religious moments, this experience is a "humbling and character building experience" (1980a). Throughout *Cosmos: A Personal Voyage*, we see Sagan observing nature as he discusses different aspects of astronomy. In the introduction to the series (1980a), we find Sagan walking along a beautiful shoreline as he talks about the "grandest mysteries ... beyond human understanding." He describes his experience with the cosmos:

Our contemplations of the cosmos stir us.
There is a tingling in the spine,
a catch in the voice, a faint sensation,
as if a distant memory of falling from a great height.
We know we are approaching
the grandest of mysteries.
The size and age of the cosmos are beyond ordinary
human understanding.

For Sagan, the cosmos is not just something to research with the mind, but to "contemplate" with the whole body, bringing in physical sensations like "tingling in the spine."

These experiences with nature create metaphors that help both Sagan and his audience contemplate realities beyond human understanding and language. For example, many of Sagan's audience have likely had similar experiences along the ocean or other bodies of water that cannot be entirely described by words or rationally explained. The waves of the shoreline on which Sagan walks is also a metaphor for the "The Shores of the Cosmic Ocean" – the title of Sagan's first episode. The ocean becomes a way of visualizing the vastness of space in relation to our own experiences. This conceptual metaphor is further reinforced by other visual images. When describing the cosmos "in which we float like a mote of dust," the audience sees a seagull hovering over the ocean like a speck of dust. Certainly, these experiences are a core aspect to many mystical elements of religious discourse, but rather than seeing the ineffable as "coopted" by science to promote a political and moral agenda, it is more productive see the ineffable as part and parcel to both science and religion.

Sagan's goal is to communicate a new way of seeing the world that can only be achieved through ineffable experiences, like those described by Rudolph Otto. This is not to discount the moral or rational aspects of Sagan's documentary, but to show how the ineffable experience precedes the moralization and rationalization of science. The rational and non-rational come together most clearly in the well-known segment that is often called "The Pale Blue Dot" (1980c). To create an ineffable experience, Sagan uses a Voyager image looking back at earth to create a sense of smallness or "creature-consciousness." Sagan relies mostly on parataxis, or short simple sentences, to emphasize the smallness of our reality: "From this vantage point, the earth may not seem of particular interest, but for us it's different. Consider again that dot. That's here. That's home. That's us. On it, everyone you love, everyone you know, everyone you ever heard of, every human being that ever has lived out their lives. ..." This goes on a while, then pivots around, using a similar kind of parataxis to describe how ridiculous the violence in human history appears from this new vantage point:

The earth is a very small stage in a vast cosmic arena. Think of the rivers of blood spilled by all those generals and emperors so that in glory and triumph they can become the momentary masters of a fraction of a dot. Think of the endless cruelties visited by the inhabitants of one corner of this pixel on the scarcely distinguishable inhabitants of some other corner. How frequent their misunderstandings. How eager they are to kill one another. How fervent their hatreds. Our posturings. Our imagined self-importance. Our delusion that we have some privileged position in the Universe are challenged by this point of pale light.

The ineffable experience produced by new perspectives from space creates a sense of humility and awe in relation to something outside ourselves that is beyond total comprehension. But to come to complete fullness as a religious discourse, at least in Rudolph Otto's terms, these new perspectives must create a moral impetus. But it is important not to mistake this moral impetus as preceding the rhetorical use of the ineffable, when, in fact, the ineffable precedes such moral visions, as will become clear once we compare this 1980 version with the more recent, narrated by Neil deGrasse Tyson.

4. Tyson and the Rational Odyssey

Given the continued popularity of Sagan's documentary online, one may wonder about the reasons behind a remake. In an interview with Dan Vergano of *National Geographic News* (March 9, 2014), Tyson gives several reasons why he and the *Cosmos* team decided to revise this popular documentary for Fox and the National Geographic Channel. First, 34 years of research has developed new perspectives on the *Cosmos* that are no longer "trapped in a Cold War mind-set,

which polarized people and affected everything.” That said, religious opposition against this environmental vision has arguably increased, focused mostly around the human origins debate. Though not directly related to the environment, many creationist views place humanity at the center of the universe ... or the reason the cosmos and environment exist at all (rather than merely a node in a vast system). Tyson rarely directly engages creationist thought, but Seth MacFarlane cites the “resurgence of creationists and ‘intelligent design’ theory” as a major motivator for his push to remake the documentary in an interview with Meredith Blake (*LA Times*, March 7, 2014). The goal of this version is to battle “scientific illiteracy,” a phrase De Grasse Tyson often uses himself. Tyson clearly takes on a priestly voice, where invoking a sense of wonder becomes an emotional effect, created by the rhetor to make his audience more receptive to scientific knowledge and the moral vision this knowledge entails. In other words, the documentary is a persuasive text, rather than transformational one, as stated in his interview with Dan Vergano: “The whole point of telling these stories is to allow you to understand that science, the scientific method, is central to all of our lives.” Tyson is taking a much more rational stance against “mystical, magical thinking,” which he sees as the root cause of disease and suffering.

As with Sagan, Tyson admits to the inadequacy of language to describe the universe, but primarily as way of illustrating the need for science as the best way to test and explore those aspects of the universe that are currently beyond our reach. This mystery requires scientists to use their imagination to discover new and more accurate ways of seeing the world. In his introduction to Episode 1 (2014a), Tyson stresses that his “spacetime odyssey” will require imagination, “but imagination alone is not enough because the reality of nature is far more wondrous than anything we can imagine.” This is one of many statements that seems to target creationist modes of thought, but indirectly. In other words, instead of foregrounding experience of the ineffable, Tyson rationalizes mystery into a proposition. How we imagine the world, for example through biblical stories, is not enough, because scientific reality is beyond human imagination. Science is not simply a way to verify our observations or make accurate predictions, science becomes a way of “discovering” the nature of reality, aiding our imagination to see the universe in new ways. But for Tyson science provides a more reliable method, asking us to “test ideas by experiment and observation, build on those ideas that pass the test, reject the ones that fail, follow the evidence wherever it leads and question everything.” Following this inductive method, allows us to understand the cosmos as accurately as possible.

Tyson’s arc of narrative and metaphor demonstrates Lessl’s (1989) observations about how scientists use rhetorical means to create identification with non-scientists

in “The Priestly Voice.” Scientific discourse often uses a form of metaphor, or synecdoche, to portray “its particular ethos as the very essence of humanity” (188). Lessl’s primary example is Sagan’s “hagiography” of scientists like Harold Urey, used to establish character traits like “his willingness to change his mind” as a habit of thought that binds science together through history (193). This is even more pronounced in the more recent version (2014b), which uses Sunday school like cartoons for each “saintly” narrative that exemplifies the scientific method, identifying Ibn al-Hazen as the first to develop “an error-correcting mechanism, a systematic and relentless way to sift out misconceptions in our thinking.” Tyson then identifies the audience with this habit of thought by addressing them in second person as “seekers of truth” who must “question and critically examine” everything and “submit only to argument and experiment and not to the sayings of any person.” The bond between Tyson and his audience is not forged through similar ineffable experiences, but through a specific habit of mind that has been developed and passed down through the ages. As a result, there is a level of distrust towards the non-rational or ineffable, which must always be subjected to rationality and proposition. In other words, the balance between the rational and non-rational is tipped towards rationalization.

In Tyson’s narratives, religion becomes a symbol of the irrational, or the anti-rational, often playing an authoritative role that works against free thought, new ideas, and ultimately science. This aspect of religion is clearly associated with fundamental versions of Christianity, particularly those that rely on creationism or literal understandings of Genesis – discourse that has played an increasing role in public debate since Carl Sagan’s version of *Cosmos*. In the final episode of the remake (2014b), Sagan’s “pale blue dot” appears again, but in a context that seems to argue against what could be construed as religious fanaticism. Tyson asks his audience to go on a “thought experiment” that imagines a people on a solitary planet who think they know everything:

Pick a star – any one of the hundreds of billions of stars in our Milky Way Galaxy, which is just one galaxy out of the hundred billion in the known universe. How about that star? Or that one? Okay, this one. It’s orbited by dozens of planets and moons. Suppose, on one of them, there lives an intelligent species, one of the ten million life-forms on that planet, and there’s a subgroup of that species who believe they have it all figured out – their world is the center of the universe, a universe made for them, and that they know everything they need to know about it – their knowledge is complete. How seriously would you take their claim?

Tyson is constructing his vision of a tertiary audience, those reluctant to accept evolution as scientific fact. To do so, Tyson constructs religions as ideologies that restrict a true sense of mystery by over-rationalizing the ineffable experience. But in doing so, the pale blue dot becomes a rational tool to be used against

non-scientific propositions, rather than to invoke an ineffable experience that can build bridges between these two different visions of the world. This is why Tyson makes a special effort to highlight aspects of mystery in current scientific thought. For example, dark matter is his illustration for true mystery or “unknowing”:

We call it “dark energy,” but that name, like “dark matter,” is merely a code word for our ignorance.

It's okay not to know all the answers.

It's better to admit our ignorance than to believe answers that might be wrong.

Pretending to know everything closes the door to finding out what's really there.

In this case, mystery is the motivation for knowing or for “getting it right.” Later, he reinforces this point: “Nothing yet known to science can explain them, and we're fine with that. It's one of the things I love about science, we don't have to pretend we have all the answers.” The implication here is that other ways of thinking, like religion, claim to already have all the answers, for example in the Bible.

This foregrounding of imagination and adventure allows Tyson to rely much more on narrative, particularly as he picks and chooses the descendants of science, those who strictly adhered “to a simple set of rules.” For example, in the first episode (2014a), Tyson uses narrative to describe the hardships and persecution of Renaissance Italian Giordano Bruno, one of the first to challenge the Church's geocentric vision of the universe. Bruno discovered in banned books from ancient Rome the idea of the infinite universe, resulting in his expulsion from the Catholic Church. Then Bruno had what one might call an ineffable experience that transformed his understanding of the universe. He had a dream where he was trapped within a bowl-shaped universe. Lifting the curtain, he experiences infinity:

I spread confident wings to space and soared toward the infinite, leaving far behind me what others strained to see from a distance.

Here, there was no up, no down, no edge, no center.

I saw that the Sun was just another star, and the stars were other Suns, each escorted by other Earths like our own.

The revelation of this immensity was like falling in love.

According to Tyson, Bruno became an evangelist, “spreading the gospel of infinity throughout Europe.” But instead of accepting this idea, the Church excommunicated Bruno. After presenting at the University of Oxford, Bruno was mocked and subjected to the world's “most cruel and unusual punishment” by the Inquisition in Italy. Bruno went through seven years of interrogation, was paraded through the streets of Rome in humiliation, and burned at the stake. Nearly all the elements of the passion of Christ are there.

Neil deGrasse Tyson's version of *Cosmos* makes significantly different rhetorical moves than Sagan's original version. Tyson makes clearer and more direct

argumentative statements that are meant to show the absurdity of those who believe in other forms of propositional truth about the cosmos and creation, associating those strands of thought with moments in Christian history where religion persecuted or stifled free scientific thought. For Tyson, religion diminishes the mystery of the universe by claiming to have complete truth – a move often made by religion itself in more mystical forms. But by invoking mystery and imaginative experience, Tyson himself must rely on religious rhetorics to construct a history and body of thought that persuasively demonstrates the primacy of scientific thought in determining our place in the cosmos. In the end, Tyson shows the propositional forms of religion that have historically constrained scientific thought, but fails to identify non-rational aspects of religion that have often fueled scientific endeavor. Unlike Sagan, Tyson misses an opportunity to show how we are all interconnected through the ineffable experience – not just through rationality or the scientific method.

6. Conclusion

The broadcast of Tyson’s new version of *Cosmos* brought with it some predictable controversy from proponents of creationism or “intelligent design.” For example, Ryan Grenoble reported that a TV affiliate in Oklahoma inexplicably preempted Tyson’s first mention of evolution with a news promo (*Huffington Post*, March 13, 2014). According to Sara Gates of the *Huffington Post*, creationist thinkers like Danny Faulkner also demanded “equal airtime” with *Cosmos* (March 22, 2014)). But if we consider the propositional approach to truth that both science and religion often make, “equal airtime” does not make a lot of sense. Either something is true, or it is not. Scientific pursuits of truth do not fall into the same category as political punditry, according to Tyson:

I think the media has to sort of come out of this ethos that I think was in principle a good one, but doesn’t really apply in science. The ethos was, whatever story you give, you have to give the opposing view, and then you can be viewed as balanced. ... you don’t talk about the spherical earth with NASA and then say let’s give equal time to the flat-earthers.

The conflicts between religion and science are based on the unnecessary assumption that they are pursuing the same kinds of truth and that any moral vision requires such propositions to be true, as well. But if we understand that both science and religion emerge from similar kinds of ineffable experience, but simply rationalize those experiences in different ways, then the two do not necessarily need to meet head-to-head at the proposition level. Ineffable experiences associated with religion that create “creature-consciousness” can enhance our understanding

of science and identify where resulting moral visions support each other. The impetus for environmentalism is no less powerful when it emerges from the experience of wonder at God's "creation" or Brahman's participatory "energies." Religious understandings of "cosmic-consciousness" can help science understand the transformative aspects of scientific discovery that can create moments of collaboration with religious thinkers, rather than merely conflict. If we can simply take a breath and focus on our shared experiences of the ineffable that shape all our propositions and moral visions – even contradictory ones – we can find ways to build a better society together.

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